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Image: *Ceratomyxa* sp by Brian Saunders



Australian Society for Parasitology Inc.

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COUNCIL OF THE AUSTRALIAN SOCIETY FOR PARASITOLOGY INC.

Executive

President: Peter HOLDSWORTH
Animal Health Alliance (Australia) Ltd
Locked Bag 916
CANBERRA ACT 2601
Tel: (02) 6257 9022 Fax: (02) 6257 9055
Email: peter.holdsworth@animalhealthalliance.org.au

Executive Secretary: Heather KOCH
Animal Health Alliance (Australia) Ltd
Locked Bag 916
CANBERRA ACT 2601
Tel: (02) 6257 9022 Fax: (02) 6257 9055
Email: Heather.Koch@animalhealthalliance.org.au

Treasurer: Ian MORTIMER
Dept Agriculture, Fisheries and Forestry
GPO Box 858
CANBERRA ACT 2601
Tel: (02) 6272 5226
ian.mortimer@daff.gov.au

Vice-President: Shelley WALTON
Infectious Diseases Division
Menzies School of Health Research
PO Box 41096 Casuarina
Darwin NT 0811
Tel: (08) 8922 8928
Fax: (08) 8927 5187
Email: Shelley.Walton@menzies.edu.au

President-elect: Terry SPITHILL
School of Animal and Veterinary Sciences
Charles Sturt University
Locked Bag 588, Wagga Wagga NSW 2678
Tel (02) 6933 2439 Fax: (02) 6933 2991
Email: tspithill@csu.edu.au

Other Members

IJP Editor: Brendan CRABB

Archivist: Julie-anne FRITZ
School of Biochemistry and Molecular Biology
Australian National University
Canberra ACT 0200
Tel: (02) 6125 2203
Fax: (02) 6125 0313
Email: julie-anne.fritz@anu.edu.au

Newsletter Editor: Michelle POWER
Biological Sciences, Macquarie University, North Ryde, NSW 2109
Tel (02) 9850 6974
Fax (02) 9850 8245
mpower@els.mq.edu.au

Webmaster:
Jason MULVENNA
QIMR, Herston QLD 4006
Tel: (07) 3845 3664
Email: Jason.Mulvenna@qimr.edu.au

Bancroft-Mackerras Medal Convenor: Andrew THOMPSON
School of Veterinary and Biomedical Sciences
Murdoch University, Murdoch WA 6150
Tel (08) 9360 7423
Fax: (08) 9310 4144
Email: a.thompson@murdoch.edu.au

ARC/NHMRC Network Convenor
Nick SMITH
Institute for the Biotechnology of Infectious Diseases
University of Technology, Sydney
PO Box 123, Broadway, NSW, 2007
Tel: (02) 9514 4013
FAX: (02) 9514 4201
Email: nick.smith@uts.edu.au

ACT: Adele LEHANE
School of Biochemistry and Molecular Biology
Australian National University,
Bldg 41, Linnaeus Way, Canberra ACT 2006
Tel: (02) 6125 8589
Fax: (02) 6125 0313
Email: adele.lehane@anu.edu.au

SA: Kate HUTSON
Marine Parasitology Laboratory,
School of Earth & Environmental Sciences
The University of Adelaide,
Adelaide, SA 5005
Tel: (08) 8303 5282
Fax: (08) 8303 4364
Email: kate.hutson@adelaide.edu.au

NSW: Catherine MILLER
Institute for the Biotechnology of Infectious Diseases
University of Technology, Sydney
PO Box 123, Broadway, NSW, 2007
Tel: (02) 9514 4006
FAX: (02) 9514 4201
Email: catherine.miller@uts.edu.au

TAS: Barbara NOWAK
School of Aquaculture
University of Tasmania
Launceston TAS
Tel: (03) 6324 3814
Fax: (03) 6234 3804
Email: b.nowak@utas.edu.au

NT: Deborah HOLT
International Health Division
Menzies School of Tropical Health
PO Box 41096 Casuarina, DARWIN 0811
Tel: (08) 8922 8196
Fax: (08) 8927 5187
Email: d.holt@menzies.edu.au

VIC: Jody ZAWADSKI
Primary Industries Research Victoria
475 Mickleham Road
Attwood, 3049 Victoria
Tel (03) 9217 4380
Fax: (03) 9217 4299
Email: Jody.Zawadski@dpi.vic.gov.au

QLD: Rebecca TRAUB
School of Veterinary Science
University of Queensland
St Lucia, QLD 4072
Tel: (07) 3365 3225
Fax: (07) 3365 1255
Email: r.traub@uq.edu.au

WA: Amanda ASH
School of Veterinary and Biomedical Sciences
Murdoch University, WA 6150
Tel (08) 9360
Fax (08) 9310 4144
Email: aash@murdoch.edu.au

Incorporation Secretary: Katharine TRENHOLME
Malaria Biology Laboratory QIMR Herston QLD 4006
Tel: (07) 3362 0432 Fax: (07) 3362 0104



FROM THE PRESIDENTS DESK

Your ASP Executive Committee has been very active of late. ASP website details for the Executive, State Representatives and other positions have been updated. A new Secretariat, Thinking Futures, is now operating very successfully with all membership matters handled capably by Maree Conway. The first financial payment was made to Kellware for the production of the Intimate Aliens Hands-on Exhibit after signing of a contract. The second payment will be made following completion and delivery of the exhibit.

The payment for this exhibit has drastically reduced the operating funds for the Society and it is suggested that no new projects be taken on for the time being. Other continuing projects which are being monitored are the Vet Parasitology text book, the History of Parasitology in Australia & PNG Book and the Para Site Internet-based Parasitology website. It is hoped that these projects could be finalised this year.

The Annual Conference 2009 to be held in Sydney is progressing well, Invited lecturers having been selected and arranged. Arrangements for ICOPA XII to be held in Melbourne from 15– 20 August 2010 are well

underway.

A subcommittee for the selection of the new Editor-in-Chief (EiC) of the IJP was convened for the selection process to take place in early December. The panel consisted of Peter Holdsworth (Chair), Carolyn Behm, Nick Sangster and David Piedrafita. Two expressions of interest were received for the position to be vacated by Brendan Crabb at the end of March 2009 when his 3 year term concludes. Interviews were conducted by teleconference on 11 December. Both candidates were suitably qualified to undertake the position from a science perspective, however the panel decided unanimously that the preferred candidate was Alex Loukas because of the clear vision and direction he articulated for the taking the journal forward in the future.

The Executive has processed 2 new applications for JD Smyth Awards and signed off on 2 others from the previous period and made payments. Plans have commenced for the handover to the 2009 executive under the presidency of Terry Spithill. This is the first executive which will run for a 2 year term.



This issue of the newsletter comes with some sadness as we remember the passing of an ASP member in Paul Presidente from Victoria. His passing is felt by all his colleagues in the parasitology and veterinary fields. We extend our sympathy to his family at this time.

Best wishes to all in 2009.

Regards
Dr Peter Holdsworth
President 2008/2009



Closing Dates for Nominations for ASP Awards

- **Bancroft-Mackerras Award - 30th Sept 2009 (for award in 2010)**
- **Invited Lectureships Travel Grants - December 31st 2009**
- **JFA Sprent Prize – Next round to be in 2010**
- **JD Smyth Travel Awards - June 30th 2009 and December 31st 2009**
- **ASP Fellowships - before mid term Council meeting (Jan 2010)**

Information: Newsletter announcements or www.parasite.org.au



Newsletter Editor

I must profusely apologise for the lateness of this edition of the ASP Newsletter. Since being appointed in a new lectureship position in January I have been focused on preparing and delivering a first semester unit in Vertebrate evolution. Yes, you have read that correctly, vertebrate evolution!

As I sit here and try to define a direction for this editorial (of sorts) I am reflecting on the last few years of my career, and one of the most recent moments that remains both fresh and sweet. The day before Christmas when called to the head of Departments office - to be told (by almost the entire selection panel) that I was successful in my quest for a lecturer's position.

This was followed with 'keep this quiet' as various sorts of administrative procedures had to be finalized (I managed to keep it quiet-ish!). Little did I realize that I was about to go on a vertical learning curve, and not just relative to the evolution of vertebrates. So what has the world of Academia brought with it? teaching contributions to three units, an assortment of committees, courses on how to teach and supervise research students, more students and very little lab time. What of the rewards? A diversity of tasks, significant learning and enthusiastic students. Although the lab time is missed I find that I am experimenting with teaching and learning; testing approaches to undergrad confidence building,

testing my ideas for teaching, and testing my capabilities as a teacher. What have I discovered? That the rewards are sweet!

Michelle Power

Is a teaching career in a University something you wish to pursue?

Come along to the 'Early Career Researcher' workshop at ASP, Sydney July 12th - 15th and here of teaching experiences from Academics in the Society, and how you can work towards an Academic career.

Ian Brereton, Tina Skinner-Adams, Luke Gudat, John de Jersey, Lieve Naesens, Antonin Holy (University of QLD and QIMR)
Discovery of new anti-malarial drugs

Tania de Koning-Ward (Deakin University) Dissecting the contribution of a complex that exports malaria proteins to disease

Malcolm McConville, Spencer Williams (University of Melbourne) Novel metabolic enzyme in Leishmania parasites

Stephen Duffull, Julia Simpson, Richard Price University of Melbourne and Menzies School of Health Research) Design of anti-malarial pharmacokinetic studies

Stephen Rogerson, James Beeson, Mirja Hommel (University of Melbourne and WEHI) Immunity to malaria during pregnancy

NETWORK NEWS

Grant Winners

Congratulations to recent NHMRC and ARC grant winners - another strong indication of the health and vitality of Australian parasitology research:

NHMRC: Fellowships

Professor John Reeder (Macfarlane Burnet Institute)

A/Prof. Brian Cooke (Monash University)

Dr Chris Engwerda (QLD Institute of Medical Research)

Prof. Malcolm McConville (University of Melbourne)
Prof Ray Norton (Walter and Eliza Hall Institute of Medical Research)

Prof. Tim Davis (University of WA)

NHMRC: Projects

John Dalton, Sheena McGowan, Don Gardiner (IBID, UTS and QIMR) A path to new anti-malaria drug discoveries by understanding enzyme structure

Deb Holt, Shelley Walton, Ben Dunn, Bo Yang Baker (Menzies School of Health Research)
Towards novel therapies for scabies: analysis of aspartic proteases

Katherine Trenholme, Don Gardiner, John Dalton, Chris Brown (QIMR and IBID, UTS) Analysis of a *P. falciparum* aminopeptidase

Denise Doolan, Philip Felger (QIMR) Protein microarrays for cross-species malaria vaccine development



Diana Hansen (WEHI)
NK cell-DC cross-talk in malaria

Georges Grau, Angeles Sanchez
Perez University of Sydney)
Brain endothelial cell membrane
stabilisation and its involvement in
cerebral malaria

NHMRC: European Union Col- laboration Research Program

Georges Grau (University of Syd-
ney) Research to investigate cere-
bral malaria

ARC DISCOVERY

A/Prof DA Carter; Dr J Slapeta
(University of Sydney)
Chromera velia a new organism
for understanding malaria and re-
lated parasitic diseases

ARC LINKAGE INTERNATIONAL

Prof RB Gasser; Prof PW Stern-
berg; Dr W Zhong (University of
Melbourne) Automated, smart ge-
nomic data integration for the ex-
ploration of developmentally regu-
lated molecules in parasites of ma-
jor socioeconomic importance

ARC LINKAGE PROJECTS

Prof RB Gasser; Dr I Beveridge
(University of Melbourne)
Catchment sources of microorgan-
isms developing an integrated
strategy for the sustained preven-
tion of waterborne disease out-
breaks in humans in Melbourne

A/Prof UM Ryan; A/Prof ID
Robertson (Murdoch University)
Determining the impact of proto-
zoan pathogens and strongyle
worms on prime lamb

Network Researcher Exchange, Training and Travel Awards

Congratulations to the most recent
Network Exchange, Training and
Travel Award Winners:
Corinna Paeper, ANU, to attend
courses at Wageningen Univer-
sity.

Elizabeth Perkins, The Univer-
sity of Adelaide, to fund a Re-
searcher Exchange to visit
Prof. Jean-Lou Justine in New
Caledonia.

Patrick Driquez, QIMR, to fund
a Researcher Exchange to visit
Prof. Phil Felgner in California.

Malcolm Jones, QIMR, to fund
a workshop to launch a project
for estimating the economic bur-
den of parasites in Australia.

Fernanda Caldasc Cardoso,
QIMR, to fund a Researcher Ex-
change to visit Prof. Edgar
Cavalho and Dr Jeff Bethony in
Brazil.

Leann Tilley, La Trobe Univer-
sity, to fund a visit by Kieran
Kirk for a grant writing retreat.

Tamsin Barnes, The University
of Queensland, to fund a Re-
searcher Exchange to visit Drs.
Patrick Giraudoux and Paul
Torgerson.

Eric Hanssen, La Trobe Univer-
sity, to fund a Researcher Ex-
change for a laboratory visit by
Prof Hans-Peter Beck from the
Swiss Tropical Institute.

Haylee Weaver (ANU) to fund
a researcher exchange to the Uni-
versity of Nebraska.

Liting Lim (University of Mel-
bourne) for a COST Apicom-
plexan Biology Training Work-
shop in Geneva.

Terry Spithill and colleagues
to organise a grant writing work-
shop.

Jake Baum (WEHI) for a pro-
ject, co-funded with the Fluores-
cent Applications Network, to
visit Rob Sinden in London, to
develop live imaging of the in-
sect-stage of malaria.

Natalie Spillman (ANU) to visit
Nick Klonis at LaTrobe to meas-
ure ion fluxes in single malaria-
infected cells.

Kathy Andrews (QIMR) to visit
Zbnek Bozdech at Nanyang Uni-
versity, Singapore, to investigate
synthetic HDAC inhibitors as
antimalarials.

Abdul Jaffar (University of
Melbourne) to visit Zdzislaw
Swiderski and Daniel Mloccocki at

Warsaw Medical University to
study syncytial structures in tape-
worm oncospheres.

Rama Jayarai (Menzies School) to
attend a workshop on Materials and
Methods for Lateral Flow Applica-
tions in San Diego.

Ashlie Hartigan (University of
Sydney) to visit Prof Dyokova for
training in protist biology and tax-
onomy.

Janelle Wright (Charles Sturt
University) to visit Prof Alan Wil-
son (University of York) for train-
ing and collaboration in helminth
proteomics.

This is the last of the awards
for the Network Researcher Ex-
change, Training and Travel
Scheme but the **Network Mentor-
ship Scheme** is still in operation.
Early career researchers are en-
couraged to apply to the Network
Convenor (nick.smith@uts.edu.au),
in strict confidence, for funding to
participate in the Network Mentor-
ship Scheme. The scheme allows
young investigators to be paired
with experienced, successful re-
searchers to discuss, plan, prioritise
and set targets for their career.
Typically, the early career re-
searcher will fly to the institute of a
senior parasitologist and spend a
day there. Arrangements for pro-
fessional development and progress
to be reviewed by the pair annually
can also be arranged. Importantly,
mentors need not be from an indi-
vidual's home institution but can be
drawn from across the Network.
The scheme has proved very valu-
able for several young researchers
and their mentors already.

To apply, simply write to Nick
with a brief outline of your re-
search interests and aspirations.
You can also indicate a preferred
mentor or ask Nick for advice on
whom amongst the Network par-
ticipants may be most suitable.

Nick Smith



JD Smyth travel award report

MICHAEL LEES

Stepping off the plane in Chicago, I knew I was heading into a politically charged environment when airport security instructed me to “make like Obama and move to your left!” Thus was the tone on campus for the rest of my three month visit to the University of Chicago. Without a shadow of doubt, I can safely say that I have never *ever* been offered so many pieces of political merchandise as what I was in the months leading up to the presidential election. Pavements became canvases for elaborate Obama murals and homes were plastered with billboards endorsing their local man. Nevertheless, I couldn’t get too caught up in all this excitement as I reminded myself that I was in fact in Chicago to work with Prof. Rima McLeod and her energetic team.

Rima McLeod is Professor of ophthalmology and visual science, medicine and pathology at the University of Chicago. Her primary research interest is in aiming to understand the genetic basis for susceptibility to congenital toxoplasmosis. Prof. McLeod has developed a unique and extremely important cohort of approximately 200 families (NCCCTS) involving a child who has suffered congenital toxoplasmosis. Regular visits to the University of Chicago Hospital are scheduled across the course of the child’s life, with visits consisting of consultations from several specialists with the careful documentation of clinical data, and collection of blood from the child and family members where possible. It was a great honour to be in contact with Prof. McLeod and a privilege to be invited to work in her lab in order to augment the work I had already conducted for my PhD in revealing a role for the P2X₇ receptor in the innate response to *Toxoplasma gondii*.

The aim for my visit was to determine if a loss in P2X₇ receptor function indicated by a known SNP, correlates with a phenotypic change in the ability of a patients cultured cells to kill the intracellular parasite following activation of the receptor. In order to complete this experiment, the use of haplotype data on the cohort obtained from Prof. Jennie Blackwell (University of Western Australia) was employed to help select the most appropriate patient samples for analysis. The experiment required the development and optimisation of an assay that allowed regular monitoring of intracellular *T. gondii* replication in a 384 well plate format to minimise the number of cells required. I was extremely fortunate to be able to work with the Cellular Screening Facility at the University of Chicago, which helped to program a robotics platform that would perform hourly measurements of fluorescent intracellular *T. gondii* numbers using an Acumen eX3 instrument. The results show that loss of P2X₇ receptor function correlates with inability of the cells to reduce the numbers of intracellular *T. gondii* compared to a wild-type receptor.

Other secondary goals during my visit were to assess methods for reducing P2X₇ expression for further experiments that could be conducted upon my return to Australia.

These goals were also achieved in a human cell line, with the successful knockdown of P2X₇ expression using a passive siRNA delivery system as well as the construction of a knockout plasmid for later transfection.

As a whole, it would be easy for me to describe my time at the University of Chicago as successful, valuable and worthwhile to my research. However that would be a gross understatement as to how great an impact this has had for me on many different levels. Experimental results aside, the experience I gained working in Prof. McLeod’s lab has further primed and inspired me in continuing my research career. Furthermore, Prof. McLeod has also offered the option for me to return following the completion of my PhD for a postdoctoral position.

Finally, I will always be grateful to Rima McLeod, William Witola and Ernest Mui for their invaluable guidance and friendship during my visit.

None of this would have been possible were it not for the financial support I have received from the ASP and the ARC/NHMRC Research Network for Parasitology. I also sincerely thank my supervisor, A/Prof Nick Smith for his continuing support throughout my PhD. I could not ask for better supervision and support from my scientific community, which I am proud to have represented during my time in the United States.



JD Smyth travel award report

ELIZABETH PERKINS

With my JD Smyth Award I was able to visit the laboratory of Professor Jean-Lou Justine in Noumea, New Caledonia. New Caledonia is a French colony with Noumea being the capital. It is the third largest island in the South Pacific region and is surrounded by the world's largest lagoon and beautiful coral reefs. While this sounds like an ideal location for a tropical holiday I was there for anything but that! This was my last opportunity to collect monogenean parasites for the molecular phylogenetic work I have been doing during my PhD. While it was tempting to be distracted by the beautiful blue water and the endless croissants I was determined to make the most of my last chance to flesh out my phylogenetic trees with as many monogenean taxa as possible. Through the work of Professor Justine New Caledonia has been recognised as a region supporting a large diversity of monogeneans parasites allowing me to maximise the diversity and numbers represented in my analyses.

The first few days generally began bright and early as we headed out fishing at around 7am for four days straight! Depending on just how windy it was we managed to get out to a range of the beautiful reefs that surround New Caledonia and set about catching some fish. While there is nothing to fancy about the fishing, hand lines and a bit of squid, it is very effective with a wide range of fish coming up.

The locals definitely seemed to have the advantage in the fishing department but us Aussies rallied and managed to catch a few to. Though I can't be sure of the final numbers more sinkers may have been sacrificed in the process than fish caught!

I had gone to Noumea with a bit of a fish "wish" list and while you can never predict exactly what will take your bait many of the exact fish we were after did just that. Though, sometimes there seemed to be more excitement over the edible fish than the fish we wanted to dissect! After a morning of fishing it was time to do some real work. Afternoons were occupied with fish dissecting (thanks Ian!) and searching through fins, branchiostegal membranes, gills and scrapings for elusive worms. There were some fantastic finds with the branchiostegal membranes proving an excellent site for worms. During the second week, in between boat trips, we began our mission to introduce Noumea to seine netting, Aussie style. This was all to the amusement of the New Caledonians as dragging a seine net is simply unheard of over there. They put out seine nets and leave them, they never drag them! Despite the somewhat sceptical looks and stifled giggles we forged ahead and managed to snare a couple of *Neotrygon kuhlii* in less than ideal netting conditions. Fortunately they also had worms and the parasites found were a new location record. In the final days we managed some more days out on the boat and with the assistance of some spear fishers got some fantastic fish to look through. In total we dis-



26 different fish species for nearly two boxes of worms in vials. A fantastic effort and some very useful additions to my work.

I thank the ASP for the JD Smyth Award and the ARC/NHMRC Parasitology Network for providing me with funding for this trip, it wouldn't have been possible otherwise.

I must thank Vanessa Glennon and Ian Whittington for coming on this trip with me. Ian spent many hours dissecting fish and has the wounds to prove it while Vanessa's command of the French language made sure we always knew what was going on and were well fed. Thanks also to Professor Jean-Lou Justine, Cindy and Isabelle for welcoming us so warmly to Noumea, allowing us to invade their lab for almost three weeks and keeping us well fed with SAO's. It was greatly appreciated and an exceptionally memorable trip.



STATE NEWS

Australian Capital Territory

From the School of Biochemistry and Molecular Biology, ANU

Conference News.

Carol Behm, Julie-Anne Fritz and Alison Knight jetted off to Hydra, Greece last September to participate in the Conference on Molecular and Cellular Biology of Helminth Parasites. Julie-Anne was awarded a Burroughs Wellcome Fund Traveling Fellowship to support her attendance. The theme of the conference was 'New Technologies, New Opportunities', and one of its main aims was to bring together investigators of model worms such as *C. elegans* and researchers of other helminths, to encourage the input of new ideas and perspectives into the helminth parasitology field's major questions.

Grant News.

Congratulations to Kieran Kirk, who was awarded an NHMRC Project Grant (\$400K for 2009-2011) for the project 'Transport of amino acids and polyamines in the malaria parasite'. Kieran is currently in Stellenbosch, in the heart of the South African winelands, for the annual workshop of the 'South African Malaria Initiative'. This is a South African government funded initiative established three years ago to support and help coordinate malaria research in South Africa. Kieran is on the external advisory board for the Initiative.

Congratulations also to Natalie Spillman for receiving an ARC/NHMRC Research Network for Parasitology Award for a Researcher Exchange.

Natalie is planning to spend a number of weeks in Nick Klonis' lab in the Department of Biochemistry at La Trobe University in March to carry out single cell analyses of pH and $[Na^+]$ regulation in *P. falciparum* trophozoites and merozoites using fluorescence microscopy. Natalie expects that the merozoite measurements in particular may be technically challenging given their small size (~1 μ M by 1.5 μ M); however the Klonis lab has expertise in making quantitative fluorescence measurements in subcellular structures of a similar size. We wish Natalie the best of luck with her measurements!

NEW SOUTH WALES

Institute for the Biotechnology of Infectious Diseases

Congratulations to our Director John Dalton who will take up a position at the Institute of Parasitology at McGill University in Canada. Many thanks to John for his hard work in strengthening and promoting IBID over the last five years and we wish him well in the future. We have also recently farewelled Sheila Donnelly who has returned to Ireland to take up a lectureship and Kelly Mai who has taken a postdoc position at UNSW.

Congratulations to Rob Walker, Catherine James and Stephane Hammerter who all submitted their PhD theses late last year.

Rob is working as an RA for Nick Smith on his *Eimeria* project and Catherine as an RA for Mary Davey on her *Haemonchus* project while they wait for their results and look for postdoctoral positions. Congratulations also to Nick Smith on his promotion to Professor that became effective in March. Another well deserved award!

Right: Michelle, Sam, Liette and Cristel at Biology Dept Pirate theme party.

Macquarie University

Congratulations to Michelle Power, Macquarie University's new Vertebrate Evolution lecturer! Michelle's appointment has also opened up an avenue for Biology at Macquarie to reinstate its Parasitology Unit; Ecology and evolution of parasites set to be offered from 2011.

We have said goodbye to our three international interns, Sarah Lord, who obtained some very interesting results on her characterization of parasites in Australian sea lions; Tyler Allen who had great success in developing a new detection method for *Cryptosporidium*; and Alina Kelman who worked on *Eimeria* detection in marsupials. We welcome Dom May into the lab who is looking at parasite diversity in reptiles. Liette Waldron and Cristel Cheung have had a busy start to the year and are continuing the human *Cryptosporidium* epidemiology study. The recent *Cryptosporidium* outbreak in Sydney is taking Cristel and Liette a step closer to a milestone of 1000 human poops. Samantha Emery continues her research in brush tail wallaby parasites. We welcome Mathew Lott to the group. Matt will be working on rock wallaby genetics in association with Sam Emery's parasite work. We are all looking forward to a productive year of research!



STATE NEWS

NORTHERN TERRITORY

In August, over 20 researchers from five institutes in three states converged in sunny Darwin for a three day workshop on scabies research hosted by the Menzies School of Health Research. Members of the Menzies Skin Pathogens team were joined by collaborators from the Queensland Institute of Medical Research, the Queensland Department of Primary Industries, Monash University and La Trobe University. The workshop was funded by the Network for Parasitology with further contributions from each of the participating institutions. The workshop was highly multidisciplinary, addressing clinical, molecular and immunological aspects of scabies. Current projects were presented followed by extensive discussion and strategic planning of future work.

But in true ASP style it wasn't all hard work. After the sessions finished each day we found time for a sunset drink overlooking the harbour and managed to sample some of the delicious food from Darwin's numerous markets. Two days of intense discussion were followed up with a more relaxed (but still very productive!) day of discussions on a boat cruising the beautiful Mary River. An abundance of bird and animal life kept everyone entertained. Unfortunately we did not succeed in catching any fresh fish for the barbie but no-one was sure they actually wanted to reel in a barramundi in case one of the plentiful crocodiles was following closely behind it.

Thanks again go to the Network for supporting this very productive and worthwhile meeting.

QUEENSLAND

School of Veterinary Science, University of Queensland

Mal Jones has joined the parasitology group at Vet Sciences as a lecturer in veterinary biology and parasitology. Mal is reveling in his new tenured status, and notes that this is the first time since 2000 that he has approached the end of year break knowing for sure that he has a job awaiting him on return. Although based at the Vet school, Mal will maintain his links with QIMR to continue his research into schistosomiasis. Meanwhile Mal's PhD student Amber Glanfield is in the final stages of writing her PhD thesis on iron transport in schistosomes. His new PhD student, Sujeevi Nawaratna, co-supervised with Geoff Gobert of QIMR, is enjoying a few weeks break in Sri Lanka before she gets back into her studies.

Nick Jonsson has returned to the laboratory for a couple of weeks and is studiously ignoring his administrative responsibilities.

He's working with Sean Corley to try to uncover the causes of resistance to amitraz in the cattle tick.

Rebecca was relieved to wrap up her teaching for 2008 but was kept busy by attending the Canine Vector-Borne Disease and Parasitic Zoonosis Asia Pacific Forum, which kicked-off in Bangkok in late October 2008. The meeting was attended by Dr Norbert Mencke, Dr Susanne Siebert and Dr Pakkawan Satranarakun from Bayer HealthCare Animal Health, Prof. SungShik Shin from Chonnam National University, Korea and Prof. Huang from the National Taiwan University (see picture). The Forum, which is supported by Bayer HealthCare Animal Health, consists of a working group of veterinary parasitologists in the Asia Pacific region that meets once a year to discuss current scientific findings as well as future trends and needs concerning the distribution, pathogenesis, clinical presentation, diagnosis and prevention of canine vector-borne diseases. Prior to this Rebecca had the rare opportunity to visit the infamous Baliem Valley in Wamena, Papua, Indonesia, when she was invited to attend an ACIAR project planning workshop on the



L to R: Susanne, Norbert, Rebecca, Prof. Huang, Dr Pakkawan and Prof. Shin at the Asia Pacific CVBD Forum kick-off meeting in Bangkok.



STATE NEWS

improvement and sustainability of sweetpotato-pig production systems in Highland and West Papua, lead by Prof. Colin Cargill from SARDI. Rebecca's involvement with the project primarily involves the control of swine-related parasitic zoonoses including *T. solium* cysticercosis, which rates among the most common and significant zoonosis in the region. Rebecca was not truly moved by the experience, especially the amazing culture and warmth displayed by the Dani people. Rebecca also had the opportunity to host Dr Rune Stensvold from the Statens Serum Institut, Copenhagen for a ten day period in November. Rune provided the Vet School with a fascinating presentation on the enigma that is *Blastocystis* while collaborating with Rebecca and Dr Robyn Nagel from the Toowoomba Gastroenterology Clinica on a UQ funded project on the emerging issue of *Blastocystis* treatment failure.

Department of Primary Industries and Fisheries

It has been fairly quiet in the **Applied Biotechnology Animal** group at DPI&F since the last newsletter with many people away at conferences, taking rec leave or leaving the department.

Wayne Jorgensen, Ala Lew-Tabor, Manuel Rodriguez Valle and Emily Piper all headed over to VI International Conference on Tick and Tick-borne Pathogens held in Argentina and presented loads of work to critical acclaim! Following the conference, Wayne and Ala headed off to visit collaborators at Washington State University whilst Emily stayed on in South America for a much-deserved holiday.

Alex Loukas from QIMR instigated a one-day workshop (at very short notice; well done Alex!) on Vaccines for Blood-Feeding Pathogens. It was well attended by members of the tick vaccine project and was really useful way to hear what else is going on in Brisbane and for general networking (and for Louise Jackson and Alex to discuss storm damage). Here's hoping that something similar can be organised in 2009.

Con Constantiniou and his wife Elena have left Australia and headed back home to Romania after 4 years of dedicated and detailed work on *Eimeria* and then a one-year stint working with cattle ticks. Con was a UQ post-doc who worked closely with DPI&F staff. He has produced some of the best parasite images we have ever seen while studying the immunological aspects of the cattle:tick interface. The incredible amount of data he has produced is currently being written up for publication that will also include some of his amazing images of the feeding ticks. We are all going to miss Con and certainly admire him for his dedication to his work. As a parting gift to Con and Elena, Bronwyn Venus made a spectacular quilt incorporating some of Con's images - amazing stuff!

Taryn Fletcher from the **Tick Fever Centre** has taken a year's leave of absence and is currently residing in the UK and looking for work. We will miss her funny stories and hope that she will return to DPI&F when she realises that Australia is a much nicer place to live!

The Parasitology section of **Biosecurity Sciences Laboratory** is still receiving Asian honey bees from northern Queensland (up to the 18th infected premise) and still no exotic mites to be found. This is good news for the European honey bees of Australia.

Louise, Ala and Wayne along with Nick Jonsson (UQ) attended the inaugural meeting of the Scientific Advisory Committee on Cattle Ticks and it is hoped that this will become an annual meeting with all cattle tick-infested states attending. The facilities for maintaining acaricide-resistant ticks on cattle at the Centre for Advanced Animal Science (CAAS) at UQ's Gatton campus are now in use. The pens are mighty luxurious and we are hoping that there will be no problems such as escaping ticks.

SOUTH AUSTRALIA

South Australian Museum/The University of Adelaide

The Marine Parasitology Laboratory is bustling with visitors over summer. Associate Professor Marcus Domingues from The University of São Paulo, Brazil is on a 3 month sabbatical, working with Ian Whittington and Leslie Chisholm on hexabothriid parasites. Welcome Marcus! When he is not working hard on his hexabothriid database, he has been enjoying South Australian ways, wine and wildlife. He purchased a didgeridoo in his first week in Adelaide and has blown everyone away with his talents – complete with circular breathing and kookaburra mimics! He has also taken up fishing, catching salmon in the surf, whiting and a snook as long as his arm! After perfecting the art of smoking fish (enjoyed with a glass of South Australian wine) he examined the gills for diplectanid parasites!

Emma Brock, studying Marine Biology at The University of Adelaide has joined the Marine Parasitology Laboratory as part of summer scholarship awarded to her by the South Australian Research and Development Institute, Aquatic Sciences.



She is working on an eight week project investigating parasites of garfish as potential stock indicators and is supervised by Kate Hutson (The University of Adelaide) and Mike Steer (SARDI). Emma has impressed everyone with her dedication, enthusiasm and hard work. She is up at SAFCOL fish markets in the early mornings, has dissected over 160 fish and recovered 12 parasite species including new host and locality records! She will write up her results in a report and give a talk at SARDI in the near future to summarise her findings. After completing her scholarship she plans to travel to Fremantle in Western Australia with Kate to assist with her parasite collections before beginning the final year of her undergraduate degree.

The Marine Parasitology Laboratory is particularly excited to see the return of a familiar face! Rissa Williams is back at The University, taking unpaid leave from her Biosecurity NZ job to attempt to finish as much of her PhD thesis as possible over the next three months.

Vanessa Glennon, Lizzie Perkins and Ian Whittington recently returned from a field trip to Noumea to study the monogeneans of a variety of warm water, coral reef fishes working with Professeur Jean-Lou Justine. In total, 26 fish species were processed. They returned with good worms (from fish!), good tans and good stories. The material was an (almost) final collecting trip to gather material of Lizzie's PhD. Within a week of returning from Noumea, Lizzie and Ian, plus colleague Dr Terry Bertozzi (SA Museum), traded a tropical island for a less tropical island and had a brief 3-day, 2-night trip to Kangaroo Island for the final (really!) field trip for Lizzie's thesis. Specifically, the visit was to collect specimens of a capsalid species from the ventral surfaces of a small stingaree species, *Trygonoptera mucosa*. It was a successful mission with sufficient capsalid material for Lizzie's

molecular studies, for Ian's morphological requirements and a bonus was bringing back parasite eggs for study in the lab.

Vanessa Glennon was employed casually throughout 2008 around her other duties during last year such as completing her PhD thesis and tutoring undergraduate students, to compile a checklist of the Monogenea for the ABRS's Australian Faunal Directory. Ian Whittington and Vanessa hope to complete the draft using the wonderful software Platypus before the end of January. In early February, Vanessa takes up a new 2-year appointment with the University of Adelaide working on a new men's health initiative.

Kate recently spent a couple of days working with Martin Gomon and Di Bray at Museum Victoria on fish held in the collection. It was a fantastic opportunity to recover parasite specimens from fish hosts that are particularly difficult to sample. She is also on the way to the midterm meeting for ASP in Sydney and is making the most of the opportunity to complete her parasite collections along the coast south of Sydney with commercial fishers. She is looking forward to completing her field work by the end of January and spending the remainder of the year consolidating and writing about the parasite species she has collected.

In September 2008, Leslie Chisholm secured the position of Collection Manager in Parasitology (3 days/week) at the SA Museum and started in October. Congratulations Leslie! A warning to all parasitologists who may have outstanding loans of many years duration. Leslie is on the task of reclaiming 'overdue' loans. Mal Jones may be the record-holder at 20 years!

Lesley Warner entertained Ian Beveridge and Emeritus Professeur Marie Claude Durette-Dusset (Museum National d'Histoire Naturelle, Paris) who visited the SA Museum to access type material of trichostrongyle nematodes in the Australian Helminthological Collection, in November 2008.

TASMANIA

Malaria Research University of Tasmania

The Malaria Research Group at the Menzies Research Institute is headed by Prof Simon Foote. The laboratory is located in the Steps Building on the Sandy Bay Campus. The group's broad aims are the discovery of new host response mechanisms and new host genes that are important in survival from malaria infection, as well as developing novel antimalarial drugs. The general experimental systems being employed are the *in vitro* culture of *P. falciparum* and mouse malaria infection using a murine-specific strain of malaria, *P. chabaudi*. Dr Brendan McMorran and Karen Drysdale are conducting studies on the role platelets play in malaria, particularly focussed on the protective effects these cells afford during malaria infection. They have discovered that platelets bind to infected erythrocytes and directly kill the parasite within. Platelets are also important in surviving malaria infection. Dr Gaetan Burgio, along with Honours student Rhea Longley, is running a mouse genetics-based research program aimed at discovering novel genes that are important in survival to infection. Mice with experimentally-induced genomic mutations have been challenged with *P. chabaudi* and those displaying unusually increased resistance to infection have been identified.



STATE NEWS

The identification of mutations and underlying genes in these malaria-resistant mice is in progress. It is anticipated that some of the mutated genes that give rise to resistance will relate to novel host mechanisms involved in controlling infection. Another research program is investigating a novel approach to antimalarial therapy development, called 'host directed therapy' or HDT. The HDT strategy involves developing drugs that target and inhibit host (red blood cell) enzymes or metabolic processes that are of minimal importance in a mature red cell, but are essential for the growth of the intraerythrocytic parasite. Specifically we are studying host red cell enzymes that are scavenged by the parasite to supplement its own growth requirements. Theoretically an HDT drug would be free of the drug resistance issues faced by currently used antimalarial compounds, since the targeted enzyme is produced by the host cell rather than the parasite. This project is being conducted by PhD student, Clare Smith and Honours student, Sophia Frankcombe, in collaboration with Dr Jason Smith, Brendon Gourlay and Adrian Singline at the University of Tasmania's Department of Chemistry.

University of Tasmania

We have lost some of our members in 2008 due to interstate relocations after PhD completions. However, we now have two members in Hobart, who are not working on fish! We are also desperately looking for new PhD students, have a number of scholarships available for Amoebic Gill Disease research and potential projects on other fish parasites. If interested please contact B.Nowak@utas.edu.au.

Melanie Andrews' PhD project has been progressing well. She is currently working on the description of developmental stages of this parasite.

She has just described a new species of *Caligus* found on striped trumpeter. Her project covers many aspects including the identification of these parasites, as well as the description of the developmental stages for *C. goldsmidi*, and finally the identification of suitable treatment methods. In addition to her project, she is working as a casual technician on tuna parasites. Melanie is hoping to finish her thesis in the first half of the year.

PhD student Neil Young has finished his laboratory work and moved to Melbourne where he is writing up his PhD, which will be submitted early this year.

Our former PhD students who did their theses on Amoebic Gill Disease Renee Florent and Matt Jones graduated in December 2008. Matt is working for salmon industry and Renee moved to Canberra to work as the national coordinator of Science Week.

Clare Smith, who joined ASP last year, is a PhD student with the Menzies Research Institute, University of Tasmania. Her supervisors are Prof Simon Foote and Dr Brendan McMorran (who also joined ASP last year).

Her project involves investigating targets for a novel host-directed antimalarial therapy. She had a very successful 2008 as she was named the Tasmanian winner of the GlaxoSmithKline AusBiotech student excellence awards. The prize included registration to the AusBiotech conference (where Clare presented a poster on "A novel host-directed antimalarial therapy"), flights and accommodation. The AusBiotech 2008 conference was held in Melbourne from 26-29 of October, with over 1700 participants from 32 countries attending. The plenary speakers included Dr Alan Trounson (President of the California Institute for Regenerative Medicine, USA), Dr Alastair Robertson (Deputy chief executive, science strategy and investment, CSIRO) and Dr Florence Wambugu (Chief executive officer of Africa Harvest Biotech Foundation International, Kenya). It was a great opportunity to make contacts in the biotech industry and hear about some of the latest breakthroughs. Clare also just found out that she won a GlaxoSmithKline Australia post-graduate support grant.



Above: The announcement of the Tasmanian winner, Clare Smith with the chair of the Tasmanian branch of AusBiotech, A/Prof Anthony Koutoulis



Barbara Nowak has been recognised through a special award in Poland, where she received the title Professor of Biological Sciences, at a ceremony held in Warsaw's Presidential Palace last month. The academic title of professor is conferred by the President of Poland on the basis of a submission from a Polish university and it is only awarded to Polish academics with exceptional scientific achievements, including significant contribution to supervision of research higher degree students and postdoctoral fellows. Barbara Nowak's title was based on a submission from the Jagiellonian University in Cracov, which is one of the oldest European universities, dating back to 1364.

WESTERN AUSTRALIA

International Visitors

It has been great having Andre Buret in the lab on sabbatical. The six months has just flown but has resulted in some excellent science on the *Giardia* front. As well as instilling some tremendous ideas for future research, Andre managed to fill every spare moment between experiments with a new activity only a few of which are depicted here, and ranged from sky diving to pastel landscapes. Another visit by Tim Paget overlapped that of Andre's and resulted in a truly multidisciplinary period of *Giardia* research. However, Tim's recreational activities were more 'traditional' than those of Andre's, the pub and golf, but he left Murdoch the winner of a small yet prestigious golf challenge! International links with the *Giardia* research community will continue with a six month return visit from Thomas Geurden who arrives in April on an Endeavour fellowship.

Michael Grigg from NIH also paid a short visit to the group in October which was excellent in terms of extending collaborative links with the work we are doing on the molecular epidemiology of *Toxoplasma* in wildlife. Nevi visited Mike's lab in 2007 on a Network grant and the follow up visit from Mike was really valuable.

Ruangrat Buddhironkawatr (June) < from Mahidol University is here for three months to work on *Toxoplasma* from wildlife samples she has collected in Thailand.

Suradej Siripattanapipong < from Mahidol University will be here on a Royal Golden Jubilee Scholarship for 6 months from April this year. He will be working on the molecular epidemiology of *Giardia* infections in Thailand

And finally:

Nasim Zanguee from Khorramshahr University of Marine Sciences, Iran, will be visiting Murdoch for 6 months from May to work on gre-garines in fish.

Group People

Annika > Has finished her PhD and is out in the real world working as a Product Specialist for Carl Zeiss.

Nevi > Has handed her PhD in and has taken up a post doc position at the University of Nottingham.

Rob> In the process of writing up his PhD thesis has joined the work force at Sarstedt as a Sales Representative before he recommences his research career as a postdoc

Hanna> Has made the move to Wagga Wagga with Scott and baby Emma to start a new chapter in her life. She is in the final stages of her PhD.

Andrea Khong < Has joined the group to work with Tanya on our new DNDi drug discovery project for Chagas disease

Wan Hon > Will be commencing her PhD on biofilms and the interaction with *Cryptosporidium* and *Giardia*



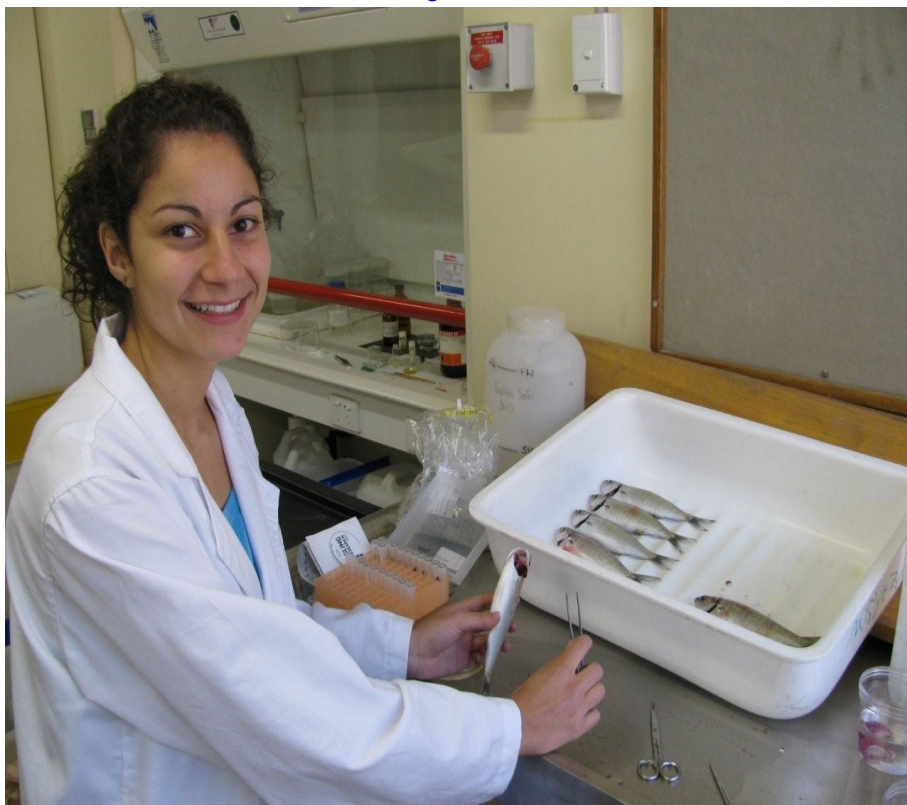
Above: Andre and Zippy



Amanda was awarded a \$3500 Mary Walters Bursary from the Federation of University Women (AFUW-WA) which will allow Amanda to continue her studies in Africa looking at parasites of the African Painted Dog. To date field trips over the past two years have established study sites and populations in Zambia, Zimbabwe and Namibia. Locating these animals in the wild is notoriously hard and in situ conservation groups in each of these countries have been instrumental in enabling this and the subsequent sample collection to occur.

Future field work will consolidate the sampling from these wild populations and result in longitudinal studies of parasite burdens within these populations.

Travel: Andy was invited to participate at a Gates Foundation 'think tank' in Seattle in January, which was concerned with research needs for the chemotherapy of Chagas Disease. He heads off to Bangkok in April to examine PhD students at Mahidol and participate at the Royal Golden Jubilee meeting. In June he has been invited by the Linnean Society and Royal Society of Tropical Medicine and Hygiene to give a paper on *Giardia* and *Cryptosporidium* at a special symposium in London on Biodiversity, Infections and Global Health: future trends and policy relevance, and in August he will Chair and contribute to a session on Opportunistic Protists at the XIII International Congress of Protistology in Búzios, Rio de Janeiro.



Conference



Welcome to two new ASP members:

Sarah Catalano from University of Adelaide (top)

Claire Smith from the University of Tasmania (below)



Nominations for Bancroft-Mackerras Medal

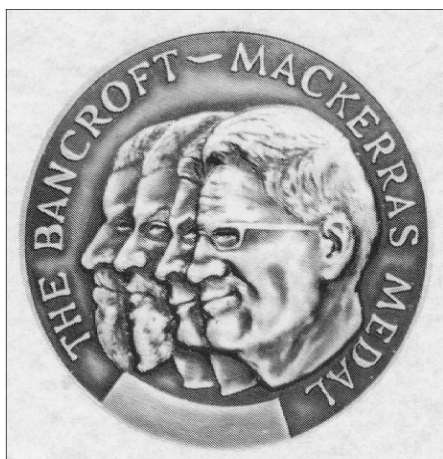
The Bancroft-Mackerras Medal may be awarded to a member of the Society who, in the opinion of the selection committee, has made an outstanding contribution to the science of parasitology, particularly in work published during the last five years.

Nominations should be made by a proposer and seconder, and should consist of:

- A detailed statement of nomination describing the nature of the "outstanding contribution to the science of parasitology" for which he/she has been responsible. The statement should be signed by the proposer and seconder, or each may submit a separate statement.
- A *curriculum vitae* including a list of all publications.

Note that the Medal is intended for members whose research program has been productive during the last five years. The permission of the nominee is not required and the nominee need not be aware of the nomination.

Nominations should be sent direct to the current ASP Executive Secretary. Detailed information on nomination and selection procedures is given in the By-Laws of the ASP Constitution. Nominations are due each year at the end of September.



Nominations for ASP Invited Lectureship Travel Grants

To complement the scientific presentations at the Scientific Meetings of the ASP, overseas researchers of international reputation in a field of parasitology may be invited to attend and present their work. The invited speaker's expertise must be common to a discipline or symposium conducted at the Scientific Meeting. The visitor must be nominated by a member of the Society.

The Society will provide a travel grant to assist in the finance of the trip. The support will be based on an economy class direct

return airfare from the recipient's home city to Australia, the necessary interstate travel and reasonable living expenses based on actual costs. Registration at the Scientific Meeting will also be included.

The total value of the lectureship will be determined by Council but it is expected that the recipient, or his/her Australian sponsor, will also seek to provide additional or alternative financial support.

Applicants must include the following information:

Details of visiting specialist

An up-to-date *curriculum vitae* must be attached to the application. The following details should be supplied:

- Date and place of birth
- Present nationality (and former nationality, if applicable)
- Present position held
- Full address of employing institution, including phone, fax and Email numbers
- Detailed evidence of expertise in relevant discipline (list of publications, etc.).

Details of Australian nominator

- Name of member organizing the visit, including full address, phone, fax and Email numbers
- Details of all other applications which have been made for financial assistance towards travel/accommodation costs. Total value of other contributions must be included.

Details of program

The program should normally last a minimum of 2 working weeks and cover at least 2 States or Territories.

Details should include:

- Date of visit
- Program being arranged, including institutions to be visited (with dates) and the purpose of each visit (lecture, seminar, workshop, research discussion, etc)
- Aims, rationale and likely benefits of visit
- Contribution to be made at Society's Scientific Meeting

Applications plus supporting documentation should be sent to the ASP President by the end of December in the year preceding the Conference. Applicants should check with the Conference Organisers for details of conference theme, symposia, workshops, etc. before submitting an application.

JD Smyth Travel Awards

These awards are designed specifically to assist full-time postgraduate student to travel overseas to gain knowledge on techniques that may not be available in Australia, to form liaisons that may benefit their careers in the longer term and to promote the cause of parasitology in Australia. It is primarily to conduct research or to attend conferences and visit research institutes. The fellowship is not provided for the primary purpose of attending a conference. Applicants must be members of the ASP Inc of at least 6 months standing and enrolled in a postgraduate degree at a recognised Australian University.

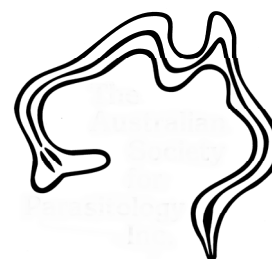
Four scholarships are awarded each year and applications are considered in two rounds, with closing dates in December and June. The maximum value of the fellowship is to be determined annually by the Council and may be up to \$2500. Recipients are to be chosen by a selection committee appointed by Council.

Applications should include details of the travel to be undertaken, the applicant's research, evidence of the supervisor's support, budget and an abbreviated CV. For research based proposals, applicants should nominate the international laboratory to be visited, the purpose of the visit, including techniques and skills to be gained, and the timeframe. If attendance at a conference is to form part of the travel then the conference name and a copy of the conference abstract should also be included. Full details of laboratory visits are to be included. Proof of acceptance of the abstract by the conference organisers **must be provided prior to receiving the award**. The application must not number more than 6 pages including the CV, extra information and abstract (if applicable).

Awardees will be required to provide a report of their trip within three months of return from their travel.

Applicants should apply to the current Executive Secretary of the Australian Society for Parasitology using the application form from the web site or this newsletter. Applications must be accompanied by the details requested above and an abbreviated CV. Email, mail or fax your application.

Applications should be received by the due dates: June 30th, 2008 and December 31st 2008.



APPLICATION FOR JD SMYTH POSTGRADUATE TRAVEL AWARD

Name:

Address:

Phone:

Fax:

Email:

University:

Enrolled Degree:

Supervisor's Certification

I hereby affirm that is a bona fide postgraduate student working under my supervision.

Name:

Signed:

Date:

Research Visit

Name and address of laboratory to be visited:

Name of host:

Purpose of visit:

Justification:

Conference Attendance (if applicable)

Conference Title:

Venue:

Type of presentation to be given:

Title of Abstract:

(Please attach a copy of the abstract)

Justification:

Budget Please provide a budget including details of travel expenses, accommodation and research costs. Please also provide details of any other funding sought or received for this travel.

Curriculum vitae Please attach a brief curriculum vitae.

Additional information Applications NOT to exceed 6 pages.

Successful applicants will be required to submit a report to the ASP council within three months of their return from their travel.

Applications must be received by the due dates: June 30th or December 31st

Email, mail or fax your application to: The Executive Secretary of the Australian Society for Parasitology
(www.parasite.org.au/Council.html)





The Australian Society for Parasitology Inc.

Secretariat: ASP Inc c/- Thinking Futures

PO Box 2118,

Hotham Hill, Victoria Australia 3051

Fax 03 9329 3448

Email: maree.conway@thinkingfutures.net

APPLICATION FOR MEMBERSHIP

Tax Invoice ABN: 65 979 686 445

Surname:

Given names:

Title:

Institute

Email:

Postal address:

Telephone:

Fax:

Other Email:

Signature:

Date:

***Proposed by (Name):**

(Signature):

***Seconded by (Name):**

(Signature):

*The Society's Constitution requires that the Applicant be known personally to at least one of the sponsors for membership. Both the proposer and seconder must be members of the Society.

This application must be accompanied by payment of one year's subscription in Australian dollars: \$80 for full members (inc GST), and \$20 for student members (inc GST)[†], \$500 (inc GST) for sustaining members.

[†] Applicants for student membership must have the following statement signed.

Registered Higher Degree:

Institution:

Name of Head of Department:

Signature of Head of Department:

I enclose a cheque for A\$ payable to the "Australian Society for Parasitology Inc."

OR Please debit my (tick one) Visa Bankcard /Mastercard

Card number: _ _ _ _ _ _ _ _ _ _

Expiry date _ _ / _ _

Cardholder name: Cardholder signature:

Applications for membership are considered by a Committee of the ASP. Successful applicants will receive a receipt and a copy of the Constitution from the Secretariat. Unsuccessful applicants will be advised and their subscription fee refunded.



Scholarship opportunities

Honours Project: Dung Beetles, Parasitic Nematodes and Climate Change

University of New England: Southcott Honours Scholarship in Parasitology (\$5000)

Dung beetles, both native and introduced, are essential for nutrient cycling on sheep and cattle farms on the Northern Tablelands of NSW. Dung beetles eat, shred and bury mammal dung, and so enhance productivity and soil health by:

- increasing soil carbon levels
- recycling many nutrients (nitrogen, phosphorus, sulphur) that would otherwise either be lost to the atmosphere or be locked up in dried out pads left on the surface
- increasing the water infiltration rate of soils
- improving the water quality of runoff
- increasing earthworm numbers, as they move in to use the abandoned dung beetle tunnels
- destroying larvae of nuisance bush flies and damaging buffalo flies
- removing dung from the surface of paddocks - pads significantly reduce the amount of surface area available for pasture production and also cause rank growth around the pads that is not palatable to livestock
- reducing the need for artificial fertilisers and other farm chemicals

However, we still know very little about dung beetle ecology and most research has been done on cattle dung.

In processing the dung, the dung beetles also kill many livestock parasite eggs. A recent study, conducted by the Northern Tablelands Dung Beetle Express and CSIRO at Chiswick, has shown that native and introduced dung beetles process sheep dung and reduce survival of the parasitic nematode, Barber's Pole Worm (*Haemonchus contortus*), to varying degrees. *H. contortus* is the main parasite of sheep in the region and presently requires frequent drenching for its control.

Data collected over the last 35 years suggest that the life cycle of *H. contortus* has changed as the climate has warmed. Larvae no longer go into a diapause-like inhibition of development during winter. Instead they continue to develop to egg laying adults and so affect sheep health all year round.

Much more work needs to be done to determine:

- which species of beetle will process sheep dung, under what conditions, and how fast;
- how temperature and rainfall influence beetle activity;
- how beetle activity influences nematode egg and larval development and survival;
- to what extent healthy dung beetle populations might reduce the need for drenching; and
- whether dung beetles act as transport vectors for nematode larvae.

Southcott Honours Scholarships in Parasitology of \$5000 per Honours student, to go towards living expenses, are available. Projects would need to include work on parasitic nematodes and be conducted at Chiswick Research Station (10km south of Armidale).

This would be a great opportunity for students to gain broad experience working with UNE, CSIRO and the Northern Tablelands Dung Beetle Express (NTDBE) and to contribute to the development of sustainable agriculture in the region in the face of climate change. The NTDBE is a community group made up of landholders, Landcare and CMA staff and has over 10 years experience in establishing and monitoring dung beetles in the region.

For more information contact: Dr Nigel Andrew nigel.andrew@une.edu.au. For further information on the Southcott Honours Scholarship in Parasitology visit: <http://www.une.edu.au/scholarships/undergraduate/southcott.php>





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:

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PO Box 2118,
Hotham Hill, Vic 3051
Or Fax 03 9329 3448
Or Email: maree.conway@thinkingfutures.net

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membership site
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2009 Australian Society for Parasitology & ARC/NHMRC Research Network for Parasitology Annual Conference

**Sunday 12 – Wednesday 15 July
University of Sydney, NSW, Australia**

Speakers and themes:

Opening Plenary Lecture

Genevieve Milon (Institut Pasteur, France)

Elsevier Plenary Lectures - Host Cell Modulation

John Boothroyd (Stanford University, USA)

Alan Sher (National Institutes of Health, USA)

Human Helminthiases

David Dunne (University of Cambridge, UK)

Tom Nutman (National Institutes of Health, USA)

David Rolinson (Museum of Natural History, UK)

Jeff Bethony (George Washington University, USA)

Banchob Sripa (Khon Kaen University, Thailand)

Don McManus (QLD Institute of Medical Research, Australia)

Malaria Vaccine: Fact of Fantasy?

Michael Good (QLD Institute of Medical Research, Australia)

Richard Carter (University of Edinburgh, UK)

Denise Doolan (QLD Institute of Medical Research, Australia)

Louis Schofield (Walter and Eliza Hall Institute of Medical Research, Australia)

Immunopathology

Georges Grau (University of Sydney, Australia)

Christian Engwerda (QLD Institute of Medical Research, Australia)

Nick Hunt (University of Sydney, Australia)

Environmental Health

Nigel Beebe (University of QLD, Australia)

Bart Currie (Menzies school of Health Research, NT, Australia)

Lydden Polley (University of Saskatchewan, Canada)

Ectoparasites of Livestock

Shaun Coffey (Industrial Research Ltd, New Zealand)

Gary Levot (Department of Primary Industries, New South Wales)

Population genetics and epidemiology of parasites of livestock

Una Ryan (Murdoch University, WA, Australia)

Ala Lew (Queensland Dept Primary Industries and Fisheries, QLD, Australia)

Aaron Jex (University of Melbourne, VIC, Australia)



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