Print Post Approved PP 255003/08218

The Australian Society for Parasitology Inc.

NEWSLETTER

ARC/NHMRC RESEARCH NETWORK FOR PARASITOLOGY

Volume 21 Issue No. 1 March 2010

IN THIS ISSUE

From the President's desk

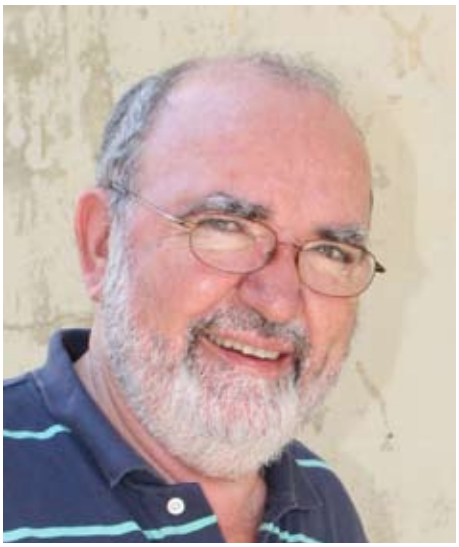
There has been a lot of activity within the ASP since my December report. Firstly, I thought the December Newsletter was very informative with a fresh and well designed format thanks to Lisa Jones. Well done Lisa! We will produce 6 Newsletters this year so our members will be well informed of ASP and State news and developments.

The major activity since December was the Strategic Planning Workshop which was held at GTAC in Parkville on 17-18 February. The participants were invited by the Executive and Council and represented a cross section of the ASP in terms of experience (academics, students, early career researchers), research interests and State representation: Terry Spithill, CSU; Nick Sangster, CSU; David Jenkins, CSU; Nick Smith, UTS; Lisa Jones, UTS; Alex Loukas, JCU; Denise Doolan, QIMR; James McCarthy, QIMR; Deb Holt, Menzies Darwin; Kate Hutson, JCU representing SA; Mark Sandeman, Monash; Ian Beveridge, U Melb; Vern Bowles, U Melb; Geoff McFadden, U Melb; Amanda Ash, Murdoch; Kate Richards, Latrobe; Ian Sutherland Hopkirk NZ. We invited the President of the NZ Society Ian Sutherland to attend to provide some outside thinking. Maree Conway of Thinking Futures facilitated the Workshop.

As anticipated, the Workshop generated a lot of ideas which are currently being captured into a report which will be used by Workshop participants to develop a draft plan. Both the report and the plan will be circulated to Members to gain comments and feedback. Council will discuss the final plan which I will circulate and present at the AGM in August.

The Workshop was informed by three documents: the Websurvey of members conducted in Dec 2009; the Environmental Scan conducted by Maree Conway in Jan-Feb 2010; and my President's Issues paper of Feb 2010. These documents are available online (http://asp.wildapricot.org); they will be emailed to members and posted to members who receive a hard copy of the Newsletter.

With respect to the 2011 Annual Conference, Council has agreed to the offer by Alex Loukas to host the **2011 ASP Annual Conference in Cairns from Sunday 10th July – Wednesday 13th July**. Alex, Nick Smith and Lisa Jones have selected the venue and will promote the conference at ICOPA in the hope of capturing some of our international attendees to return in



2011. So mark your diaries.

ICOPA plans are progressing well. The Symposia are now finalized and most Chairs selected and confirmed. Travel Awards for delegates from resource poor countries have been decided and letters of offer are being mailed out. Fund raising is continuing. As of today we have 245 registrants and 290 Abstracts submitted for ICOPA XII which I am advised is a very good number this far out from the meeting.

As advised in December, the ICOPA Organising Committee is sending out regular broadcast emails with updates on the Conference: if you are not receiving these updates please contact the ASN office at 03-5983 2400 or icopa@asnevents.net.au. Please keep raising the awareness of ICOPA and encourage your collaborators and students to attend.

Finally, as announced in December, we will be offering ASP Student Travel Grants to ASP student members registered at an Australian University. Download an application form from the ASP website at www.parasite.org.au/student_travel.html .The deadline for applications is 15 May 2010 submitted to Lisa Jones at lisa.jones@uts.edu.au

Good luck to everyone with their grant submissions!

Regards

Terry Spithill

News from the ARC/NHMRC Research Network for Parasitology

Australian parasitology research continues to thrive as shown by the NHMRC's recognition of both some leading groups of researchers (via EU Collaborative and Program Grants) and outstanding individuals (via Fellowships), both well established and just starting out in their careers. My congratulations to you all. The EU Collaborative Grant award to "OzeMalaR" is especially heartening, so soon after the announcement of the continuation of the ARC/NHMRC Research Network for Parasitology (thanks to funding from the ASP), as it will provide so many wonderful opportunities for collaborative research in our malaria community. At the same time, it will allow us to direct more Network funds to researcher exchanges for parasitology researchers generally. A fantastic result! Finally we'll be featuring a research story from Australian parasitologists who publish in The International Journal for Parasitology. This issue, it's a paper on tapeworm vaccines from Marshall Lightowlers' team. Be sure to to check out the other Editor's choices too.
http://www.elsevier.com/wps/find/L04_423.cws_home/main

Nick Smith
Convenor, ARC/NHMRC Research Network for Parasitology

Network Researcher Exchange, Training and Travel Awards

Network Travel Award Winners

Congratulations to JD Smyth Travel Award and Network Travel Award winners in the first round of the Award scheme for 2010.

JD Smyth Travel Award winner

Ashlie Hartigan, The University of Sydney, successfully applied for a Network Travel Award and was awarded the prestigious JD Smyth Postgraduate Travel Award for a Researcher Exchange to The Academy of Sciences, Institute of Parasitology in Ceske Budejovice, Czech Republic for her research into the lifecycles and biology of myxozoan parasites that threaten frog species.

Network Researcher Exchange, Training and Travel Award winners

Justin Boddey, Walter & Eliza Hall Institute, for a Researcher Exchange to Dr. Maria Mota's laboratory at the Institute of Molecular Medicine, Lisbon, Portugal for his research into how malaria delivers virulence proteins into the hepatocyte at its host.

Jan Slapeta, The University of Sydney, for travel by Dr. **Giselle Walker**, University of Cambridge, UK to The University of Sydney, to study the ultrastructure of the *Chromera*, a model for apicomplexan organelles.

Hamish McWilliam, Monash University, for a Researcher Exchange to Don McManus's laboratory at the Queensland Institute of Medical Research to identify stage-specific proteins critical to the survival of *Schistosoma japonicum*.

Natalie Spillman, Australian National University, for a Researcher Exchange to Alex Maier's laboratory at the Department of Biochemistry at La Trobe University, Melbourne for research to determine the sub-cellular localisation of important transport proteins of *Plasmodium*.

Closing Dates for Nominations for ASP Awards

ASP Student Travel
15 May 2010

Network Travel Award
28 May 2010
1 October 2010

Bancroft-Mackerras Award
30 September 2010 (for award in 2011)

JFA Sprent Prize
30 September 2010

ASP Fellowships
By 9 January 2010

Visit the ASP website for more **information www.parasite.org.au**

Travel Award Application dates for 2010

The Network Researcher Exchange Training and Travel Award scheme has been an outstanding success and young researchers are particularly encouraged to apply for assistance.

Closing Dates for Network Travel Award applications in 2010

Friday 28 May 2010

Friday 1 October 2010

Applications will be assessed by a specific assessment committee and applicants will be advised of the outcome, where possible, within 4 weeks.

The best application from an eligible student in each round will be selected as a winner of the prestigious J.D. Smyth Postgraduate Travel Award.

All applicants must be current ASP members to be eligible to apply for the Travel Awards.

For more information see the Network website **www.parasite.org.au/arcnet/funding**

Download an application form
www.parasite.org.au/arcnet/funding/travel_form.doc

Guidelines for the Network Researcher Exchange, Training and Travel Awards can be found at
www.parasite.org.au/arcnet/funding/travel_guide.pdf

Congratulations and Researcher news

NHMRC Grant

Congratulations to Prof **Michael Good** (Griffith University) awarded an Australian Fellowship commencing in 2010 for his clinical medicine and science research into cellular immunology, and vaccine development.

NHMRC - European Union Collaborative Research Grants

Congratulations to **Geoff McFadden** (The University of Melbourne) **Kevin Saliba** (Australian National University) and colleagues who were successful in their project grant application for Australia – Europe Malaria Research Cooperation – OzEMalaR and were awarded $830,000 over 5 years. Malaria is a global problem with no single solution. A large, but sometimes disjointed, research community is addressing the problem, but more collaboration is vital. OzEMalaR will link 34 Australian labs with 47 European, African & Indian malaria researchers. Funding will enable exchange of modern technologies by supporting early career researchers (PhD and postdocs) from Australia to work and be trained in top European labs. European trainees will work and be trained by Australian malariologists using reciprocal EU support.

Read more on the Network website www.parasite.org.au/arcnet/news/news_ozemalar_feb2010.html

Malaria parasite image Copyright 2007 D J P Ferguson, University of Oxford, UK.

Congratulations to **Stuart Ralph** (University of Melbourne)

Targeting Protein Synthesis in the Apicoplast and Cytoplasm of *Plasmodium*

New antimalarial drugs are desperately needed. Protein synthesis in *Plasmodium falciparum* is a validated target for existing drugs and is a promising target for new drugs. This project brings together malaria biologists with chemists and computer scientists to explore this promising field. Researchers will apply modern methods of drug target characterisation to find the most promising enzyme targets involved in protein synthesis and to identify inhibitors as leads for developing antimalarial therapies. Australian researchers involved in this project will provide expertise in bioinformatics prioritisation of *Plasmodium* drug targets from the aminoacyl tRNA synthetase family of enzymes.

Program Grant

Alan Cowman, Brendan Crabb, Terence Speed, Geoff McFadden, Louis Schofield, James Beeson

Interaction of malaria parasites with the host: disease, pathogenesis and control

Training (Postdoctoral) Fellowships 2010

Adele Lehane (Australian National University)
Overseas Based Biomedical Fellowship

Matthew Dixon (La Trobe University)
Australian Based Biomedical Fellowship

Lev Kats (Monash University)
Overseas Based Biomedical Fellowship

Researcher news

Congratulations to **Andy Thompson** (Murdoch University) who was recently elected as a Fellow of the Linnean Society of London, the world's oldest active biological society, founded in 1788.

Congratulations to **Geoff McFadden** (School of Botany, University of Melbourne) who was awarded the 2009 Ramaciotti Medal for Excellence in Biomedical Research. The Medal recognises Geoff's work in developing new ways to combat one of the world's major health problems, malaria. Through their research, Geoff and his colleagues have been able to identify a whole series of biochemical pathways in the malaria parasite that do unique things and make unique products for the parasite that are excellent drug targets.

Congratulations to **Alan Cowman** (Walter and Eliza Hall Institute of Medical Research) who was awarded the 2010 Howard Taylor Ricketts Award by the University of Chicago. The award recognises outstanding accomplishment in the field of medical sciences. "It was a very nice surprise and a great honour to join a list that includes such stellar scientists," Alan said. Alan's research has led to better understanding of how the malaria parasite evades the human immune system as well as anti-malarial drugs. It has also revealed much about how the malaria parasite invades and remodels the human red blood cell. Collectively, this knowledge is being used to identify vaccine and drug candidates against malaria.

Researcher news cont...

Walter and Eliza Hall Institute researchers have identified a key protein used by the malaria parasite to transform human red blood cells, ensuring the parasite's survival.

Their discovery means researchers have a clear target against which to develop a new class of anti-malarial drugs that destroy the parasite.

Alan Cowman, head of the institute's Infection and Immunity division, said the parasite, *Plasmodium falciparum*, remodels the red blood cells by exporting hundreds of so-called 'effector' proteins into the cytoplasm of the red blood cell. "These are key virulence proteins that allow the parasite to survive in the human and hide from the human immune system," Professor Cowman said. "There has to be a mechanism that allows these effector proteins to be exported but until now we haven't known what it is."

Alan, Justin Boddey, Tony Hodder, Svenja Gunther, and Andrew Pearce from the WEHI, in collaboration with Richard Simpson, Heather Patsiouras and Eugene Kapp of the Ludwig Institute for Cancer Research, Brendan Crabb and Paul Gilson at the Burnet Institute and Tania de Koning-Ward at Deakin University, have identified a protein called Plasmepsin V as being essential for effector proteins to be exported into the red blood cell.

Their research was published on 4 February 2010 in the international journal, *Nature*.

Alan said experimentation had shown that the action of Plasmepsin V on the effector proteins was the first step in priming the proteins to be exported beyond the parasite's membrane into the red blood cell cytoplasm.

"Plasmepsin V is responsible for determining that all the hundreds of effector proteins are exported. If we could find drugs to block Plasmepsin V the malaria parasite would die," he said.

Alan said because Plasmepsin V was a protease it was an attractive drug target. "Drugs that target proteases have been very effective in combating HIV so, by analogy, drugs that impede the function of Plasmepsin V should also show promise," he said.

Story sourced from WEHI website.
http://www.wehi.edu.au/site/latest_news/malarias_key_survival_protein_identified_offering_drug_hope

Alan Cowman and Justin Boddey (pictured above) have identified a key protein used by the malaria parasite to transform human red blood cells

WEHI researchers have also uncovered a group of proteins that could form the basis of an effective vaccine against malaria.

James Beeson, Freya Fowkes and Jack Richards from WEHI along with Julie Simpson from The University of Melbourne, have identified proteins produced by malaria parasites during the blood-stage that are effective at promoting immune responses that protect people from malaria illness.

Full story can be found on the WEHI website
http://www.wehi.edu.au/site/latest_news/promising_candidates_for_malaria_vaccine_revealed

Network Mentorship Scheme

Early career researchers are encouraged to apply to the Network Convenor (nick.smith@uts.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 (nick.smith@uts.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.

IJP feature article

Field trial with the TSOL18 vaccine in pigs in Cameroon. Photo courtesy of Marshall Lightowlers.

Marshall Lightowlers, Craig Kyngdon, Charles Gauci, Garry Anderson (The University of Melbourne), Emmanuel Assana, Stanny Geerts, Pierre Dorny, Redgi De Deken (Institute of Tropical Medicine, Belgium) and André P. Zoli (University of Dschang, Cameroon) have their International Journal for Parasitology rapid communication article "Elimination of *Taenia solium* transmission to pigs in a field trial of the TSOL18 vaccine in Cameroon" in press.

Marshall and his team have been working on a vaccine for the pig parasite *Taenia solium* for more than 10 years and he talks to Lisa Jones about his research.

Marshall tell me about your TSOL18 vaccine?

We have been working in Werribee towards an eventual goal of making a vaccine against *Taenia solium* for nearly 30 years. Groups working on other anti-parasite vaccines have been doing similar things for just as long. We've had more luck.

Taenia solium causes infection in people's brains. The parasite is transmitted by pigs. We figure that if we stop pigs getting infected we break the life cycle and indirectly remove the source of infection for people. *T. solium* is really hard to work with – it is not present in Australia, the parasite is infective for humans and the only place we can get infective material to work with is from human patients with taeniasis. We started in the 1980s by working with a model parasite with the group being led by Mike Rickard. A company gave us suitcases full of money to make them a vaccine against *Taenia ovis* – an economic problem in sheep. At the time there had never been any effective defined antigen vaccine against any parasitic organism. A group of us including Gavin Harrison and David Heath in New Zealand, who did the vaccine trials and antigen purifications, and our group in Melbourne where the molecular work was done, were successful in making an effective recombinant vaccine. It was the first one (we just beat Peter Willadsen's lot at CSIRO who later the same year published details of the Bm86 tick vaccine).

The year we published the *T. ovis* vaccine data, I took over leadership of the group at Werribee after Mike Rickard went off to reshape CSIRO Animal Health. My salary came, and still comes from, the NHMRC and so the value of the T. ovis vaccine to me was as a model for developing vaccines against related, medically important parasites. The cestode parasites of most medical importance belong to the same family as *T. ovis*. First we looked to see if we could use the *T. ovis* knowledge and materials to quickly make a vaccine against a related parasite, but relatively easy to work with. We were successful in doing this for *T. saginata* in cattle and then

IJP feature article cont...

we embarked on the medically important ones. We had success first with developing the EG95 vaccine against hydatid disease in a collaboration with David Heath in New Zealand. Finally we swung our attention to *T. solium*. Charles Gauci cloned the antigens which were tested in two separate experiments in Mexico by Ana Flisser. One antigen in particular, TSOL18, was >99% protective in both trials. We have since obtained independent confirmation from experiments done by other research groups in Cameroon, Peru and Honduras; all achieving >99% protection against an experimental infection in pigs.

What is neurocysticercosis and how do people develop this disease? Is there any other cure or vaccine available?

To understand what neurocysticercosis is and how you get it, you need to understand the parasite's life cycle. Humans are the obligate definitive host for *T. solium*. The normal life cycle involves tapeworm eggs being shed in the faeces of a person with the tapeworm and pigs getting infected with the larval stage by eating the faeces (very common in developing countries) or food contaminated with tapeworm eggs. Infected pigs have the parasites in their muscles for their life time. None of this is of great medical concern. Having a tapeworm doses not often cause severe medical problems. Medical problems arise if the tapeworm eggs (in human faeces) are accidentally eaten by a human. Like pigs, humans can also become infected with the parasite's larval stage but in humans the larvae often travel to the brain and spinal chord. The parasite encysts in these places and grows to form a mature larva. Disease caused by this infection is known as neurocysticercosis. The symptoms depend on the number and location of the cysts. The most common symptom is epilepsy.

You can see from the lifecycle that the full transmission of the disease occurs only where:

1. There is unsanitary disposal of human faeces; and

2. Pigs are allowed to roam free.

Surprisingly both of these conditions occur very commonly in many African countries, in Central America, the northern parts of South America and in Asia. The disease can be eliminated by use of toilets and/or preventing pigs from roaming free. Unfortunately there are many reasons related to poverty and lack of education which prevent these things changing in developing countries.

The tapeworm can be removed from humans by treating them with a drug that kills the worm, but if the pigs remain infected, new tapeworm infections are established in the human population and transmission continues. If it were feasible to eliminate tapeworms from the human population for long enough, the transmission cycle could be broken, but this would require 3 monthly treatment of the human population over a period of years to be effective. Alternatively, education of the population about the disease and the dangers of defecation in open places, and the provision and maintenance of latrines, would also be effective. However, the only places in the world where such things have led to the parasite being eliminated are places where these things have occurred together with general economic advancement eg the parasite used to be endemic throughout Europe – but Europeans no longer defecate in the fields and have free-roaming pigs so the disease has disappeared.

Your IJP publication reports your results from vaccine trials run in piglets in Cameroon, what made you select this location and what other places in the world would the vaccine be useful for?

Our IJP paper describes the results of our first field trial with the TSOL18 vaccine in pigs and was funded by the Wellcome Trust. The trial was carried out by Emmanuel Assana in Cameroon through a collaboration with Stanny Geerts and Andre Zoli. Cameroon was chosen as a place to undertake a field trial because the disease was know to be hyperendemic in the far north region of the country and our colleagues, Stanny Geerts and Pierre Dorny already has collaborators in Cameroon who had expertise with the parasite.

Two things are remarkable about this study. Firstly we were not just able to decrease transmission of the parasite but to completely eliminate any transmission to the pigs involved in the trial. Secondly, we used a strategy involving a combination of the TSOL18 vaccine plus a drug therapy.

The vaccine stops an animal becoming infected; it does not kill parasites that are already present in an animal prior to vaccination. Armando Gonzalez in Peru discovered that one treatment of pigs with oxfendazole will kill all *T. solium* cysts in the muscles of an infected animal. By giving this drug at the same time as the animals are vaccinated, any infections already present in the young animals prior to them being vaccinated are killed by the drug. Any lesions caused by the dying parasites in the meat eventually disappear over about a 6 month period during which time the pigs cannot get any new infections because of the vaccine.

Our vaccine+chemotherapy strategy is potentially applicable to any area where *T. solium* is endemic. This includes many non-Islamic countries in Africa, Asia, Central America and the northern part of South America.

Tell us what happens next in your vaccine research?

Two areas of activity will proceed simultaneously. We will scale up production of the vaccine and develop need to GMP protocols for commercial-scale vaccine production. We have formed a collaboration to undertake this activity with the Global Alliance for Livestock Veterinary Medicines (GALVmed). At the same time we will work towards defining the minimum activities required for the vaccine to work in the field. In our trial we vaccinated three times – when the pigs were about 2 months old, 3 months old and 8 months old. We need to find out whether the second and third injections were really required and to develop methods to minimize the number of injections. Ideally we would like to have to treat the pigs on only one occasion.

In the future I would like us to collaborate with others in undertaking a large scale control program. Madagascar may be a suitable place and the aim would be to eradicate the disease permanently.

This publication has been selected as an IJP editor's choice article (http://www.elsevier.com/wps/find/L04_423.cws_home/main)

And is available free to view online

http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6T7F-4Y9SVY7-1&_user=10&_coverDate=02%2F04%2F2010&_rdoc=1&_fmt=high&_orig=search&_sort=d&_docanchor=&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=df115fa1de6ed2e3672d64be45428c9a

International Journal for Parasitology

Impact Factor 3.75*

*©Journal Citation Reports® published by Thomson Reuters, 2009
www.elsevier.com/locate/ijpara

April 2010 issue includes:

Current Opinion: Protein export in *Plasmodium* parasites: from the endoplasmic reticulum to the vacuolar export machine,
Brendan S Crabb, Tania F de Koning-Ward, Paul R Gilson

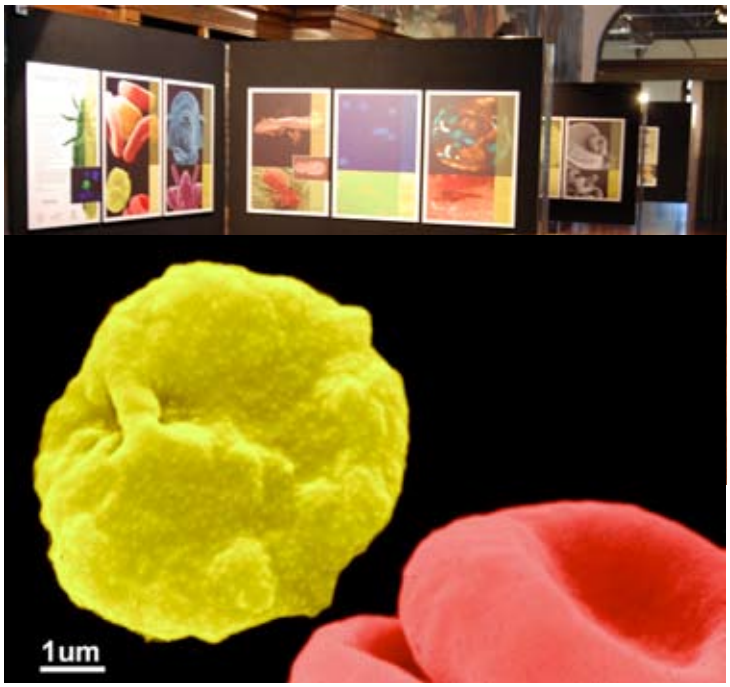
Rapid Communicaton: Elimination of *Taenia solium* transmission to pigs in a field trial of the TSOL18 vaccine in Cameroon,
Emmanuel Assana, Craig T. Kyngdon, Charles G. Gauci, Stanny Geerts, Pierre Dorny, Redgi De Deken, Garry A. Anderson, André P. Zoli, Marshall W. Lightowlers

Original Research Articles:

RNA interference in a cestode reveals specific silencing of selected highly expressed gene transcripts,
Lisa Pierson, Angela Mousley, Lynda Devine, Nikki J Marks, Tim A Day, Aaron G. Maule

Disparate infection patterns of *Ceratomyxa shasta* (*Myxozoa*) in rainbow trout (*Oncorhynchus mykiss*) and Chinook salmon (*Oncorhynchus tshawytscha*) correlate with internal transcribed spacer 1 sequence variation in the parasite,
Stephen D Atkinson, Jerri Bartholomew

Events



Malaria parasite image from "Parasites in Focus". Copyright 2007 D J P Ferguson, University of Oxford, UK.

"Parasites in Focus" exhibition at the Wollongong Science Centre

60 Squires Way, Fairy Meadow (Innovation Campus)

Wollongong
Phone: (02) 4286 5000
Web: sciencecentre.uow.edu.au

Twenty-six superb photographic prints showing the amazing microscopic world of the parasite accompanied by three hands-on parasite exhibits: parasite game show "Who's my host?", "Virtual Microscope" and "Real Microscope" to view parasites close up in all their glory.

Check Network Events on our website to find out when Parasites in Focus will be at a venue near you, or contact Lisa (Lisa.Jones@uts.edu.au) if you would like to host the exhibition.

http://www.parasite.org.au/arcnet/events

Conference news

XIIth International Congress of Parasitology

15 - 20 August 2010

1. Registration now open

Delegates can now register direct from the web page. The early bird discounted rate is now available and accommodation can be booked at the same time. Earlybird Registration Deadline - Monday 17th May, 2010.

www.icopaxii.org

2. Apply for ASP Student Travel grant applications by 15 May 2010

The Australian Society for Parasitology Inc. provides support for full-time students enrolled in a higher degree at a recognized Australian University, and for recent graduates of less than 1 year's duration, to attend the ASP annual conference which in 2010 will be incorporated in ICOPA XII.

http://www.parasite.org.au/student_travel.html

3. Satellites and pre-meetings running prior and post ICOPA 2010 are detailed on the website

• 4th International Symposium on Geospatial Health "A One Health Approach to Geospatial Health", August 13th-14th 2010

• Consortium on Anthelmintic Resistance SNPs (CARS) Meeting, Saturday August 14th 2010

To submit your abstract, register and for further information please visit the conference website:

www.icopaxii.org

2011 ASP Annual Conference will be held in Cairns Sunday 10th July – Wednesday 13th July

Bancroft-Mackerras Medal guidelines

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.

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
c/- Thinking Futures
PO Box 2118
Hotham Hill, Vic 3051

Or Fax 03 9329 3448

Or Email: maree.conway@thinkingfutures.net

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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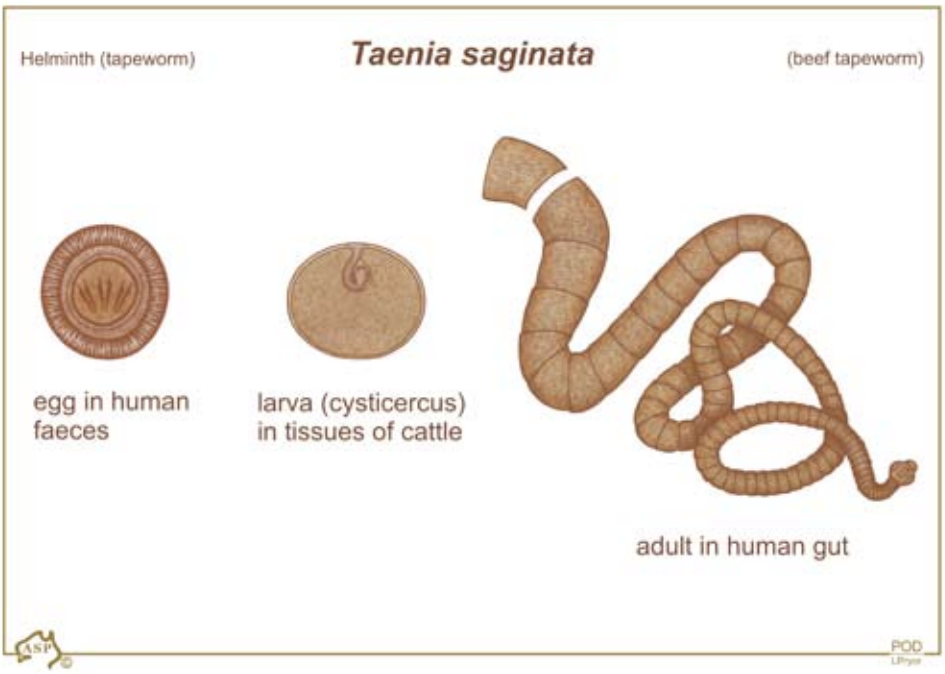

Image from PARASITE web-based resource

Jobs in parasitology

See the latest jobs in parasitology on the Network website

http://www.parasite.org.au/arcnet/jobs

Murdoch University

PhD Studentship: Functional Proteomics of *Giardia*

Funding Bodies: ARC / Proteomics International

A PhD scholarship is now available to join an international research group applying the latest proteomic technologies in studies on the intriguing and enigmatic protozoan parasite Giardia. Funding is available from a successful ARC Linkage application and Proteomics International. Proteomics International is one of Australia's leading biodiscovery companies with a focus on proteins, peptides and biomarkers. The PhD student project will provide a unique mix of industry experience and work within an academic environment under the guidance of experienced supervisors.

Background and project outline: Giardia is the most common intestinal protozoan parasite of humans and many other animals, including pets and livestock. It is a cause of diarrhoeal disease and failure to thrive, particularly in children where the impact of infection may be particularly severe in disadvantaged communities, and impairs production in sheep and cattle. Giardia is also of evolutionary and biological significance in terms of understanding the origin of higher animals as well as fundamental questions about the parasitic way of life.

This project will compare proteins from a variety of well characterised isolates of Giardia and using the available genomic database, identify proteins associated with disease processes and host infectivity as well as proteins of practical value such as drug targets and diagnostic markers.

The studentship will be based at the School of Veterinary Biology and Biomedical Science at Murdoch University but will work closely with other members of the research team at Curtin University, Proteomics International and the Universities of Calgary and Kent.

The studentship is available immediately for a duration of three years. The stipend is $26,669 pa, tax free. The scholarship is open to Australian and New Zealand citizens and permanent residents. The successful applicant will have an honours degree, upper IIA minimum, or research masters in a relevant discipline.

For more project information contact Professor Andrew Thompson on (08) 9 360 2466/2428 or email an application, including a full CV and an introductory letter describing any relevant experiences that would make you a suitable candidate, together with contact details for two referees, to Prof Thompson at: a.thompson@murdoch.edu.au

Trudeau Institute, NY, USA

Faculty appointments in Immunology and infectious disease

The Trudeau Institute is recruiting new faculty at junior and senior levels with interest in the areas of immunology and infectious disease. We are looking for individuals who will develop vigorous, extramurally funded, research programs that will integrate with the highly collaborative scientific environment at the Institute (www.trudeauinstitute.org). Applications from related disciplines are encouraged.

The Institute offers excellent, well-equipped, laboratory space and extensive shared facilities, including animal, molecular biology, flow cytometry, bio-imaging, and histology cores. A modern, state-of-the-art animal facility offers skilled colony maintenance with database tracking, on-site genetic screening and a wide variety of standard and genetically altered mice at subsidized rates. The Institute has excellent containment facilities for in vitro and in vivo BSL2 and BSL3 activities and is poised to open a brand new research facility that is select agent capable.

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Application deadline is April 30, 2010.

Applications should be addressed to:

Dr. Andrea Cooper, Chair, Faculty Search Committee, Trudeau Institute, Saranac Lake, NY 12983.

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Council of the Australian Society for Parasitology Inc.

Executive

President
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

Vice-President
Peter Holdsworth
Animal Health Alliance (Australia) Ltd
Locked Bag 916
Canberra ACT 2601
Tel: (02) 6257 9022
Fax: (02) 6257 9055
E: peter.holdsworth@animalhealthalliance.org.au

Executive Secretary
Michelle Power*
Biological Sciences, Macquarie University,
North Ryde, NSW 2109
Tel (02) 9850 6974
Fax (02) 9850 8245
Email: mpower@els.mq.edu.au

*Interim contact David Jenkins
Email: djenkins@csu.edu.au

Treasurer
Nick Sangster
School of Animal and Veterinary Sciences
Charles Sturt University
Locked Bag 588, Wagga Wagga
NSW 2678
Tel (02) 6933 4107
Fax: (02) 6933 2991
Email: nsangster@csu.edu.au

State Councillors

ACT
Simon Cobbold
Research School of Biology
Building #41 Linnaeus Way
Australian National University
Canberra ACT 0200
Tel: (02) 6125 8589
Email: simon.cobbold@anu.edu.au

NSW
Jan Slapeta
Faculty of Veterinary Science
University of Sydney
Camperdown, NSW 2006
Tel: (02) 9351 2025
Fax: (02) 9351 7348
Email: jan.slapeta@sydney.edu.au

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

QLD
Tamsin Barnes
School of Veterinary Science
University of Queensland
QLD 4072
Tel: +61 7 33653203
Mob: +61 422 980499
Fax: +61 7 33651255
Email: t.barnes@uq.edu.au

SA
Kate Hutson
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

TAS
Brendan McMorran
Menzies Research Institute
University of Tasmania
Private Bag 23
Hobart, Tasmania 7000
Ph. (+613) 62262769
Fax (+613) 62267704
E: brendan.mcmorran@utas.edu.au

VIC
Bernd Kalinna
Department of Veterinary Science
University of Melbourne
Parkville, Melbourne VIC 3010
Tel: (03) 8344 8805
Fax: (03) 8344 7374
E: bernd.kalinna@unimelb.edu.au

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

Other Members

Incorporation Secretary
Katharine Trenholme
QIMR Herston QLD 4006
Tel: (07) 3362 0432
Fax: (07) 3362 0104
E: Katharine.Trenholme@qimr.edu.au

IJP Editor
Alex Loukas
Queensland Tropical Health Alliance, James Cook University,
Cairns QLD 4878
Email: editor@IJP.org.au
Tel: (03) 5256 1394

Webmaster
Jason Mulvenna
Queensland Tropical Health Alliance, James Cook University,
Cairns QLD 4878
Email: Jason.Mulvenna@jcu.edu.au

Archivist
Julie-Anne Fritz
Research School of Biology
Building #41 Linnaeus Way
Australian National University
Canberra ACT 0200
Tel: (02) 6125 2203
Fax: (02) 6125 0313
Email: julie-anne.fritz@anu.edu.au

Newsletter Editor
Lisa Jones
ARC/NHMRC Research Network for Parasitology
IBID, UTS, PO Box 123, Broadway,
NSW, 2007
Tel: (02) 9514 4006
Fax: (02) 9514 4201
Email: lisa.jones@uts.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
E: a.thompson@murdoch.edu.au