ARC/NHMRC RESEARCH NETWORK FOR PARASITOLOGY

Wednesday, 20 December 2006

Dear Network Participant,

The Christmas edition of the ARC/NHMRC Research Network for Parasitology Newsletter holds the following items for you:

[1] 2007 ASP & ARC/NHMRC Research Network for Parasitology Annual Conference will take place from Sunday 8 – Wednesday 11 July at the Chifley on Northbourne Hotel, Canberra

The 2007 ASP & Network Annual Conference program will include an outstanding mix of international and Australian scientists and include the following invited speaker themes:

- Functional Genomics
- Evolutionary Biology of Parasites
- Parasites in Wildlife and Conservation Biology
- Immunology, Immunomodulation and Vaccines
- Drug Targets, Drugs and Drug Resistance in Tropical Parasites (this theme is co-sponsored by the Royal Society of Tropical Medicine and Hygiene as part of its Centenary Year Celebrations)

This conference is an opportunity for parasitologists from Australia, and around the world, to discuss the latest research in parasitology. It will run over four days beginning with a Welcome reception on Sunday evening (8th), the scientific program will start Monday (9th) morning, and will culminate with the conference dinner on Wednesday (11th) evening. There will be plenty of opportunities for contributed talks and posters on any and every topic parasitological.

Registration fees will again be kept very low and will include morning and afternoon teas, lunches, poster session drinks and dinners at the conference. Don't forget that student ASP members are eligible for generous financial assistance to attend the conference from the ASP provided they have been members for a minimum period of about 6 months before the conference – so download an ASP membership application form now from http://www.parasite.org.au/member.htm

Registration and Abstract Submission are expected to open in mid-late January 2007

[2] The Marine Biological Laboratory: funding for Summer Research Fellowships

The Marine Biological Laboratory is pleased to announce the availability of funding for Summer Research Fellowships for junior or senior investigators holding a Ph.D., M.D., or equivalent degree. These prestigious awards provide costs for research and housing, and also enable Fellows to benefit from the rich intellectual and interactive environment of the scientific community at the MBL. Proposals for Fellowship support will be considered in, but are not limited to, the following fields of investigation:

- Cellular and Molecular Physiology
- Neurobiology
- Parasitology
- Molecular Biology

- Developmental Biology
- Ecology
- Microbiology

Application Deadline: January 15 2007
More info: http://www.mbl.edu/research/summer/fellowships_list.html

Don't forget that the Network can supplement awards for students wishing to attend the Biology of Parasitism course through the Network Travel Awards. Download an application form from the Network website http://www.parasite.org.au/arcnet/initiatives.shtml

Awards

[3] Network Travel Award Winners

Congratulations to the most recent Network Researcher Exchange, Training and Travel Award winners:

- **Prof. John Dalton,** Institute for the Biotechnology of Infectious Diseases, University of Technology Sydney, for a Researcher Exchange to bring Wains International Fellow Dr. Mark Robinson to visit for 12 months in 2007
- **Prof. Alan Cowman**, The Walter and Eliza Hall Institute of Medical Research, for a Researcher Exchange to bring Dr Gordon Langsley, Lab Head at the Institut Cochin, Paris, France to visit for a 2 week period in December 2006
- **Dr Nathan Bott**, Senior Research Officer at SARDI, attended the Fish Histopathology course recently at The University of Tasmania.

Profiles

[4] Prof Peter O'Donoghue

Congratulations to Professor Peter O'Donoghue who was awarded an Australian Society for Parasitology (ASP) Fellowship at the ASP & Network Annual Conference in July this year for his outstanding contributions to the science of parasitology. Peter is a Reader in Parasitology, at the School of Molecular and Microbial Sciences, University of Queensland. His son, Adam, interviewed Peter recently for the Network Newsletter.

Tell me about your area of research?

I have specialized in studies on protozoan organisms, single-celled parasites. I practice as a diagnostician in human and animal health where I help identify the causative agents of infection and disease. I am somewhat of a generalist and have worked on most protozoan phyla, including sporozoa, flagellates, amoebae and ciliates. I have worked on infections in a range of host species, mostly mammals but also birds, reptiles, amphibia, fish, crustaceans and, more recently, insects. I love the diversity of my work, not only the biological diversity of the hosts and parasites, but also the technological diversity. I use various combinations of conventional morphological and modern molecular techniques to characterize protozoan species. Nothing becomes monotonous as everyday and every project is different. It is always exciting!

How did you become involved in parasitology research?

It was quite serendipitous. I was completing an Honours degree in microvascular research at the University of Adelaide when I was approached to begin a PhD at the Institute of Medical and Veterinary Science in Adelaide on sporozoan infections in sheep. I was bitten by the research bug and I soon became intrigued by the fascinating microscopic life-forms. I was also appalled to see the effects of these parasites on animal health and wanted to

learn more about their pathogenicity. My studies took me to Germany as a von Humboldt Postdoctoral Fellow and I fortunate to work with people who had recently discovered the life-cycles of various sporozoan parasites. The excitement at that time was infectious and I became a life-long convert to parasitology.

What interests you about working in this area?

Two things, biodiscovery and biodiversity. Protozoa manage to package all their life functions into one cell whereas the rest of the eukaryotes resort to multicellular specialization. We regard the protozoa to be primitive organisms ancestral to the metazoa, but the protozoa alive today are sophisticated cells with highly developed subcellular specializations. We are still discovering unique features of their cellular and molecular biology which makes them so successful as parasites and symbiotes of other organisms. Australia has many unique animals so it is to be expected that we should have many unique parasites. There are substantive collections of Australian helminths and arthropods but comparatively poor ones of protozoa. I will continue to document protozoan species richness in Australia for as long as I can through the compilation of publications, collections, databases, checklists and image banks.

How do you see your research developing in the future?

Most of my research has generated more questions than answers and there is so much I want to do. However, like all researchers, I am hamstrung by the vagarities of funding agencies with changing priorities. Over the years, my research has followed the money. There have been some interesting changes in direction from production-limiting diseases in agriculture, to aquacultural enterprises, to wildlife research, to water quality assessment, to termite bio-control, etc. However, two things have remained relatively stable: the wealth of medical parasitology and poverty of basic taxonomy. There has always been some money to work on clinical parasitic diseases in local populations, whereas there has never been enough money to conduct essential alpha-numeric taxonomic studies to identify parasites.

Tell me about your involvement with the ASP?

I first became a member of the ASP in 1974 and attended my first meeting in Armidale. I was well prepared for my talk and was using diazo slides but the projector blew up after one minute. I gave the rest of my talk at a frantic pace using the blackboard as a substitute, and I think my enthusiastic anxiety carried the day. Since then, I have been involved in many aspects of the Society and have thoroughly enjoyed the camaraderie and humour evident within the Society. I acted as Newsletter Editor for a decade and it was always fascinating to learn of the varied exploits of our members. As a long-serving Council member, I was also impressed by the generosity and philanthropy of

the Society in spending its impressive journal-derived income essentially on student members.

Tell me about the highlight of your science career so far?

That's a difficult question, it is all relative. I was thrilled to graduate last year from the University of Queensland with a Doctor of Science (DSc). It was quite cathartic to take stock of your own career and submit it for peer review. Maybe it was just a symptom of my mid-life crisis but the award felt like vindication. It also allowed me to apply some wisdom in hindsight and identify some common trends that I am now exploring. For example, what are the organelles of energy transduction in amitochondriate ciliates and flagellates? What cytoskeletal structures may be phylogenetically informative?

How does it feel to be made an ASP Fellow, both personally and professionally?

Personally, I am honoured by the Fellowship. I am also somewhat humbled because all of my research has been collaborative, all of my service has been part of a team, and all of my teachings have involved receptive students. I have been the beneficiary of that combined effort and I gratefully acknowledge their anonymous contribution. Professionally, I foreshadow additional responsibilities and extra work. I do not regard being elected a Fellow as a pre-retirement accolade, but rather as a chance to become a recognised spokesperson, advocate and lobbyist for our discipline.

What would you like to do in the future?

Like many scientists, my desk has a growing pile of partially completed works. I would like to find enough time to finish them. I would also like to use modern information technologies to leave an inheritance to future generations. I want to use recently developed interactive software programs to create random-access taxonomic keys to protozoan parasites of Australia, complete with bells and whistles in the form of colourful diagrams, photos and videos.

We thank Peter for his continued support of the Network and congratulate him for being awarded the status of ASP Fellow and for his recent promotion to Professor.

Conferences

[5] COST ACTION B22 meetings for 2007

The COST ACTION B22 Annual Congress will take place in Dundee from 10-13th June 2007. To register and for more information visit the conference website http://www.costb22.dundee.ac.uk
Email the conference office with any queries: costb22@dundee.ac.uk

Expert Meeting COST ACTION B22 Drug Development for Parasitic Diseases, "Medicinal Chemistry in Parasitology" 19-20 February 2007, Dipartimento di Scienze Farmaceutiche, Università degli Studi di Modena e Reggio Emilia, Via Campi 183, Modena, ITALY
More details can be found on the website
http://cdm.unimo.it/home/dipfarm/costi.mariapaola/mcpII_2007_home.html

WG2 Expert meeting "Vitamin and co-factor biosynthesis in protozoan parasites – drug targets with excellent potential?"
Organisers: Peter Macheroux, Sylke Müller and Graham Coombs.
Schloss Seggau near Graz, Austria
Dates: 27th and 28th April 2007
Website: http://www.icp.ucl.ac.be/cost/costB22/COST_B22graz.pdf

WG3 and WG4 Expert meeting "In vitro and in vivo screenings of new antiparasitic compounds: focus on Helminths"
Organisers: Reto Brun & Donatella Taramelli
Venue: Basel
Dates: Late October- November 2007

WG2 meeting on Polyamines to be held in Stockholm
Organisers: Lo Person and Ole Heby

WG2 expert meeting on Energy metabolism of protozoan parasites to be held in September/October in Bordeaux, France
Organisers: Frederic Bringaud, Paul Michels and Fred Opperdoes

WG5 expert meeting on "Drug resistance in parasites" to be held in Québec, Canada, November 2007
Organiser: Marc Ouelette.

Positions vacant

[6] Research Opportunities in Molecular Parasitology in the Cooke laboratory at Monash University

Several research opportunities exist in the Cooke laboratory at Monash University for highly motivated individuals wanting to become involved in exciting work to determine the cellular and molecular mechanisms by which parasites of red blood cells (malaria and babesia) cause disease in humans and animals. The laboratory is supported nationally by a NHMRC Program Grant and internationally by the N.I.H.

Research Assistant
This individual will contribute to high quality research in a project team working on cellular and molecular aspects of malaria pathogenesis. The

successful applicant will have completed a BSc (Hons) degree and be able to work fairly independently. Previous experience in Molecular Parasitology is highly desirable but not essential. This is a 12 month fixed-term appointment to cover a period of maternity leave.

Research Fellow
This individual will drive projects to determine the function of novel proteins in malaria parasites which play a role in the structural and functional alteration of red blood cells. The successful candidate will have a PhD and track record in microbiology, molecular cell biology or a related area. Previous experience in molecular parasitology is highly desirable.

Ph.D. Scholarship
A PhD scholarship is available for a period of 3 years study in the Cooke Laboratory. The successful applicant will have completed a BSc (Hons) degree and have been awarded a H1 or equivalent. The project will investigate the cellular and molecular mechanisms by which Babesia parasites invade and replicate in bovine red blood cells and elucidate mechanisms by which these parasites cause severe disease. The project will also concentrate on identification of the similarities and differences between babesia and malaria parasites.

Further Information
Assoc. Prof. Brian M. Cooke (brian.cooke@med.monash.edu.au)

Applications
Fiona Hibbert
Department of Microbiology
Monash University (Clayton Campus) VIC 3800
fiona.hibbert@med.monash.edu.au

[7] Institute for the Biotechnology of Infectious Diseases (IBID), University of Technology, Sydney (UTS)

Postdoctoral Research Opportunities

Expressions of interest are invited for two postdoctoral research positions in IBID's new research facilities at the Broadway Campus of UTS, in the heart of Sydney. Both positions are for up to 2 years.

The first position will be to investigate the activity of peroxidases and proteases in the apicomplexan parasite, *Eimeria,* with an emphasis on the role of these enzymes in processing structural proteins and catalysing their crosslinking to form the oocyst wall. It will also involve cloning and expression of the genes for these enzymes.

The second position is to develop a passive immunity model to evaluate vaccine candidates for *Eimeria*, with particular aims being to dissect the

molecular basis of action of the world's only commercial subunit vaccine against a protozoan parasite - CoxAbic (see http://www.coxabic.com) - and immunolocalise where and when the parasite's lifecycle is disrupted as a result of vaccination.

To lodge an expression of interest (including your CV) or for more details about the positions, please contact Associate Professor Nick Smith (email: nick.smith@uts.edu.au; Tel: 02 9514 4013).

[8] Institute of Organic and Pharamaceutical Chemistry, National Hellenic Research Foundation, Greece

MARIE CURIE POSTDOCTORAL RESEARCH FELLOWSHIPS

Applications are invited for research positions for Postdoctoral Fellows or scientists having more than 4 years experience to participate in the Marie-Curie Fellowships for Transfer of Knowledge (Development Scheme) project "Solid phase phospholipid and dendrimer synthesis" (Sopholides) (http://mc-opportunities.cordis.lu/show-PRJ.cfm?obj_id=8810) to be implemented at the Institute of Organic and Pharmaceutical Chemistry of the National Hellenic Research Foundation, Athens, Greece (www.eie.gr).

The project aims at developing cost effective, reliable and efficient technologies based on solid phase chemistry (SPOS) for the synthesis of bioactive phospholipid analogues. In parallel, SPOS will be used to prepare dendrimeric materials and, particularly, dendrimer-modified resins designed to provide increased loading capacity for solid supports. These modified resins will be evaluated for phospholipid solid phase synthesis. High-energy techniques with microwaves and ultrasound will complement these activities.

We seek to recruit two scientists with strong expertise in *organic synthesis*. Familiarity with high energy techniques such as microwaves or ultrasound and solid phase organic synthesis will be considered an additional asset.

To be eligible, the applicants must fulfill the criteria for Marie-Curie Fellows (For eligibility criteria see http://europa.eu.int/comm/research/fp6/mariecurie-actions/action/level_en.html) One post will be for a period of two years and is available from January 2007. The second post will be for a period of one year and is available from March 2007. Reimbursement will be at the standard rates for Marie Curie Fellowships around 47000 euros gross income per year, plus travel allowance of 1500 euros per year and a career exploratory award of 2000 euros. (see http://www.cordis.lu/fp6/sp2_wp.htm)

Applications should be e-mailed to tcalog@eie.gr and should include a full CV, publication list, summary of current research interests and the names and addresses of referees. NHRF is an equal opportunity employer and women scientists are encouraged to apply.

If you have any parasitology news stories please contact me by email Lisa.Jones@uts.edu.au or telephone 02-95144006. **We wish you all the very best for the New Year and hope that you enjoy your time over the Christmas period.**

Please send me items for the next newsletter by 10 January 2007.

Best wishes,

Lisa
Communications Coordinator,
ARC/NHMRC Research Network for Parasitology

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