Print Post Approved PP 255003/08218



NEWSLETTER

Volume 33 Issue No.1 March 2022

ANNUAL CONFERENCE CAIRNS 2022



NEWSLETTER

Volume 33 Issue No.1 March 2022

IN THIS ISSUE From the President's Desk

- 2 From the President's Desk
- 4 2022 ASP AGM
- 5 Conference news ASP2022
- 6 ICOPA 2026 bid
- 8 Education
- 9 ASP Online Seminar Series
- 11 <u>Outreach activities in WA and</u> <u>call out for Crafty Parasites!</u>
- 12 Herminthology
- 14 International Journal for Parasitology
- 18 <u>IJP:PAW</u>
- 22 <u>IJP:DDR</u>
- 24 Network News
- 28 <u>ASP Travel Award Report</u> <u>Megan Porter</u>
- 30 State News
- 33 Jobs in parasitology
- 34 ICOPA2022
- 35 Events
- 36 ASP Council

Dear Members,

A belated 'Happy New Year' to all our wonderful ASP members. I truly hope that transitions to the precarious 'new normal' with the resumption of face-to-face teaching, interstate and international travel and work-related social gatherings provides us all with a renewed sense of purpose and motivation!

Nevertheless, the road to 'recovery' brings its own set of challenges as academics face the task of temporarily compensating for the mass staff redundancies, in an environment of ever- increasing student numbers, administrative duties and managerialism. Despite the overwhelming benefits of biomedical research in tackling the pandemic, Australia continues to face a spate of concerns about the sustainability of a career in academic research. Not surprising, when Australia spends a mere 1.80 % of its GDP on R &D compared with the OECD average of 2.34%! In 2021, significantly delayed timing of ARC grant outcomes, devastatingly low NHMRC Ideas Grant success rates of < 10%, stark gender and career stage inequalities for funding disbursements of NHMRC Investigator Grants and the ongoing lack of transparency for the Medical Research Future Funds (MRFF), were some of the concerns discussed at Science Technology Australia Leadership Dialogue and the Australian Society for Medical Research Board of Directors and Affiliate Member Organisations' meetings I attended on behalf of the ASP. The ASP lent its support to both bodies to advocate for deep investment in science as its centrepiece for the 2022-23 budget, which has already seen a \$2.2 billion Research Translation Fund materialise. We now wait with abated breath for the 2022 Federal Budget to be announced on Tuesday 29 March. STA's Prebudget Submission can be accessed here: https://scienceandtechnologyaustralia.



org.au/wp-content/uploads/2022/01/ STA-Submission-2022-23-Pre-Budget-Submission_web.pdf www.scienceandtechnologyaustralia.org. au

On a more positive note, a huge thank you and congratulations to Prof Kevin Saliba (ANU) and the entire ICOPA Bid Committee for being shortlisted by the World Federation of Parasitologists to host ICOPA (XVI) in Sydney in 2026! We will be 'showcasing' our beautiful city, scientific achievements, and warm Aussie hospitality at the upcoming conference in Copenhagen. I encourage all ASP members both local and international to please assist in supporting our efforts by raising awareness of our bid through introductions to WFP member organisation executives (who each get a vote), by including the bid promotional slide (page 7 of this newsletter) in email signatures and international presentations and sharing our social media posts amongst your networks. If you are planning to attend this year's conference in Copenhagen and would like to volunteer at our exhibition stall, please

From the President's Desk continued

get in touch with Lisa Jones. Also, please do not forget to register and submit an abstract for the ASP annual conference in Cairns 4-7th July, in what is shaping to be a stellar scientific and networking event!! Check the website for conference news <u>https://www.parasite.org.au/</u> <u>conference2022/</u> A number of ASP Council positions will be available to nominate for and vote on at the upcoming ASP AGM in July. I therefore encourage you to send through your nominations to the Secretary by the 6th June. (secretary@parasite.org. au)

The ASP celebrated International Women's Day by profiling our invited speakers on our social media pages. To learn more on Professor Jane Hodgkinson, Dr Clare Anstead, Dr Elizabeth Warburton, Dr Meta Roestenberg and Professor Shokoofeh Shamsi check out Australian Society for Parasitology | Facebook <u>https://www.</u> facebook.com/ASParasitology/

Rina Fu continues to make us proud through her tremendous educational outreach actives, the latest delivered to a group of home-schooled children with special needs. Rina has also been supported by the ASP to create 'Crafty Parasites', an instructional educational video aimed at Year 3 to 6 students. If ASP members would like to be part of the "Craft Parasites" program for delivery to schools and general public please contact Lisa (secretary@parasite.org.au) for more information and access to the outreach materials.

Has to be said, that there is otherwise definitely something 'fishy' about this newsletter, with fish parasitology and parasitologists making plenty of waves (Mum joke!). But I will leave the jokes to Michelle Power (NSW Rep), who will feature at the STEAM ROOM – a science comedy experience (The STEAM Room: A science comedy experience | UNSW Sydney) see <u>page 35</u> of this newsletter.

I would like to take this opportunity to thank the ASP Executive, the Council and the ASP Officers for their continuing dedication and service to our Society. I look forward to meeting you all in Cairns. Best regards,

Rebecca Traub

President of the ASP

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

\$400 Undergraduate Prizes

The Australian Society for Parasitology is pleased to announce that it will be offering undergraduate student prizes of \$400 each to Australian Universities identified as offering a suitable course in parasitology, for presentation to the best undergraduate student in parasitology (highest passing mark/grade).

The course(s) must be taught by a financial member of the ASP (of more than one year standing), and must comprise at least 30% parasitology. Requests for 2022 prizes must be made by the eligible University to the ASP Treasurer by the 30th September 2022. Please complete the online application form:

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

2022 Australian Society for Parasitology Annual General Meeting

The 2022 Australian Society for Parasitology Annual General Meeting will be held as a hybrid face-to-face (at the 2022 ASP Conference) and online Zoom meeting on Wednesday 6th July. All ASP members will receive an email invitation to attend the AGM once the time has been confirmed.

Business to be conducted

The following business will be conducted at the 2022 Annual General Meeting of the Society:

- receiving the Society's financial statement, and audit report, for the last reportable financial year;
- presenting the financial statement and audit report to the meeting for adoption;
- electing members of the Council (see details below);
- appointing an auditor or an accountant for the present financial year;
- announcement of ASP Awards and Prizes;
- receipt of reports from Editors, Convenors, Archivists, Secretariat and subcommittees; and
- review and debate other actions or decisions by the Council.

If you have any trouble registering for the AGM or if you want to test out Zoom before the AGM to make sure it works for you please email <u>secretary@parasite.org.au</u> or phone 07 42321311.

The 2022 ASP AGM will be recorded. Other participants will be able to see and hear you if your microphone is on and your video is on. When you first join this meeting your microphone will be muted and your video will be off. We will use both raised hands for in-person voting and online polls to vote for AGM matters. If you can't access the poll then you need to let me know straight away so I can give you another option to vote. There is also a chat option so that you can send a message to all. The Executive will address all questions. This chat will also be recorded and saved for viewing afterwards. Please be respectful of everyone when participating in this meeting.

Shape the future, join the ASP Council

Every year the Australian Society for Parasitology (ASP) seeks nominations for positions on the ASP Council. Nominations for the ASP Council for terms beginning 6th July 2022 have opened. To nominate someone you must be a member of the ASP. To be a member of the ASP Council you must be an eligible (under section 61A of the Act) adult and a member of the ASP. Check whether you are a financial member on the ASP membership site (https://asp. wildapricot.org/).

Please see www.parasite.org.au/joincouncil to read about the positions on Council that we will be voting on at the 2022 ASP AGM. We invite you to seek and encourage appropriate candidates. Nominations should be emailed to <u>secretary@parasite.</u> org.au_and will close on 6th June 2022. The candidates will be announced by 29th June 2022 on the ASP website and by email and ASP members will vote for ASP Council positions online at the 2022 ASP AGM. We already have some candidates for Council positions, you can check these on the ASP website.

The ASP is an inclusive organisation. We encourage nominations from Indigenous



Australians, people with disability, people from diverse cultural and linguistic backgrounds, parasitologists of all ages and career stages and LGBQTI people. The Society is also committed to achieving gender equality across all its Committees including, but not limited to, the ASP Council. The Society recognises and values the wealth of talent, creativity and discoveries achieved by women in parasitology. We acknowledge that women continue to be under-represented in the field, particularly at senior levels. The Society is, therefore, committed to gender equality in our discipline and in the Society and hence we encourage nominations from women for ASP Council positions. (Read about Gender Equality within the ASP Principles, By-Laws and Guidelines https://www.parasite.org.au/the-society/ constitution/).

Please don't hesitate to get in touch if you have any questions. We look forward to electing strong and enthusiastic representatives to the ASP Council.

CONFERENCE NEWS

Volume 33 Issue No.1 March 2022



Early-bird registration & abstract submission 31 March 22

Join us 4-7 July 2022 for the Australian Society for Parasitology Annual Conference at Shangri-Ia The Marina, Cairns, Queensland

www.parasite.org.au/conference2022



Thanks to our sponsors Elsevier Parasitology, IJP, IJP:DDR, IJP:PAW, Vetoquinol Australia, Virbac, Boehringer Ingelheim Animal Health Australia and New England Biolabs.

CONFERENCE NEWS

Australia's bid to host ICOPA XVI in Sydney

ASP Member support for Australia's bid.

The Australian Society for Parasitology is bidding to host the International Congress of Parasitology (ICOPA XVI) in Sydney during National Science Week from 17 to 21 August 2026. We are holding space at the International Convention Centre (ICC Sydney), a modern purpose-built congress venue, located on the spectacular waterfront of Sydney Harbour.

The International Congress of Parasitology is held every four years. The aim of these meetings is to bring together parasitologists from all over the world to facilitate exchange of information related to parasitology or tropical medicine. We see hosting ICOPA XVI in Sydney as an excellent opportunity to showcase Australia's globally impactful local research, to forge new international connections and strengthen existing collaborations.

The World Federation of Parasitologists (WFP) has shortlisted Sydney & Montreal as the potential host city. The WFP Member Societies will vote to select the host city during this year's ICOPA Congress in Copenhagen, Denmark (21 to 26 August 2022).

The support of our members to promote Australia's bid will be critical to securing votes from WFP's members societies.

How can you help?

You can help to raise awareness of our bid and encourage support from your networks by:

- Showing our bid promotional slide (download the slide from <u>https://asp.</u> wildapricot.org/memberresources) at the end of any presentations or talks given to local and international audiences
- Sharing related social media posts through your private channels
- Supporting our Bid Committee to engage WFP member countries that you may have a professional or personal



Sydney Fireworks Australian Tourism Exhibition 2017 Credit: Destination NSW

connection with

• Attending this years' ICOPA Congress in Copenhagen, Denmark to demonstrate strong interest from the Australian community

We would love to hear from you to discuss how you may be able to support Australia's bid. Please contact our ICOPA XVI Bid Leader, Prof Kevin Saliba to discuss how you could become a bid advocate.

Prof Rebecca Traub

President

Australian Society for Parasitology Inc.

ICOPA XVI Sydney Bid Committee

- Prof Rebecca Traub
- Prof Kevin Saliba
- Dr Aleta Knowles
- Prof Nick Smith
- Ms Lisa Jones
- Dr Adele Lehane
- A/Prof Michelle Power
- Dr Cameron Raw

CONFERENCE NEWS

The

Australian Society

Inc.

for Parasitology Volume 33 Issue No.1 March 2022



For more information, please contact Prof Kevin Saliba at kevin.saliba@anu.edu.au



SUPPORT AUSTRALIA'S BID

Support the Australian Society for Parasitology's bid to host the

International Congress of Parasitology (ICOPA XVI) 2026





For more information, please contact Prof Kevin Saliba at kevin.saliba@anu.edu.au

EDUCATION



FASCIOLOSIS

2nd Edition

Edited by John Pius Dalton





ASP member and author of Fasciolosis, John Dalton presents at WAAVP 2013

Fasciolosis

2nd Edition

Edited by: John Pius Dalton, National University of Ireland Galway, Ireland

December 2021 | Hardback | 520 Pages | 9781789246162

December 2021 | ePDF 9781789246179 | ePub 9781789246186

ASP Members can use the code CCASP20 for 20% off individual (non-trade) orders of print books, up to a maximum of 10 copies per customer. This offer is available until the 31st December 2022, for orders placed on the CABI Bookshop only using this link: https://www.cabi.org/product-category/animal-and-veterinary-sciences/parasitology-and-infectious-diseases/

Fasciolosis is a major global infection of livestock causing both huge losses to the agricultural community and affecting human health as a foodborne disease. Fully updated throughout, this new edition continues to cover the life cycle, biology, and development of the parasite; clinical pathology, immunology, diagnosis and vaccine development; and emergence, cause and mechanisms of drug resistance. It reviews the temperate liver fluke Fasciola hepatica, together with molecular, biochemical, control, and epidemiologial aspects of the tropical liver fluke F. gigantica.

Many fundamental advances have taken place in the last two decades, but of particular importance has been the mapping of the draft genome of Fasciola. In addition, comprehensive advances in transcriptomics, proteomics and glycomics have been made, and the book therefore pays particular attention to these developments with the addition of brand-new chapters. Also covering the impact these parasites have had on the global human population, their distribution and their ecology, this book provides a comprehensive and accessible resource for scientists, researchers and students of medical and veterinary parasitology.

ASP Seminar Series



Our ASP Online Seminar Series has started again for 2022, with our first held on 11 March 2022 at 1pm AEDT. Co-hosted by Stuart Ralph and Sarah Preston, our first two speakers for 2022 were Jenni Hayward and Greg Brown. Our next ASP Online Seminar will take place Friday 13 May 2022 at 2pm AEST, please <u>register online</u>.

On 11 March 2022 Jenni Hayward from Australian National University presented "Elucidating and exploiting the mitochondrial electron transport chain of *T. gondii* parasites" and Greg Brown from Macquarie University presented "Hostparasite interactions during a biological invasion."

Jenni undertook her undergraduate studies in Arts/Science at Monash University, with Honours in Biochemistry in the lab of Professor Martin Stone. There, she characterised a family of anti-inflammatory proteins found in tick saliva. A move to Canberra led her to a research technician position at the John Curtin School of Medical Research, ANU in the lab of Professor Si Ming Man, where she studied the innate immune response to bacterial toxins. In her PhD, Jenni joined the Research School of Biology, ANU in the lab of Associate Professor Giel van Dooren to explore the wonderful world of parasitology, investigating how the mitochondrial electron transport chain complexes of *Toxoplasma gondii* parasites differ to their human hosts. Jenni has since moved back to Monash University to pursue postdoctoral studies in the lab of Associate Professor Fasseli Coulibaly, where she uses structural biology approaches to study how viruses make our cells their home.

Abstract: As you read this abstract, your lungs are (I hope!) bringing live-sustaining oxygen into your body. Oxygen is required by our cells for one key purpose – to act as the final electron acceptor in the mitochondrial electron transport chain (ETC). The ETC is composed of a series of membrane-bound multi-protein complexes that work cooperatively to generate energy (ATP) via oxidative phosphorylation. *Toxoplasma gondii* parasites are unicellular and as such do not have lungs, but don't let their petite size fool you! T. gondii parasites chronically infect up to a third of the global human population and can cause serious disease in immunocompromised and pregnant individuals. The ETC is one of the few validated drug targets in T. gondii parasites, and yet little was known about precisely how this important pathway differs from that of humans. In my PhD, I investigated how the ETC complexes of T. gondii parasites differ from their human counterparts, and whether these differences can be exploited therapeutically. In this seminar, I will highlight some of my key findings about T. gondii ETC Complex III, and in doing so introduce a Seahorse XFe96 flux analyserbased method I developed to investigate ETC function. Finally, I will give a sneak peek at how we adapted this method to screen the Medicines for Malaria Venture "Pathogen Box" compound library to identify and determine the target of novel

EDUCATION

ASP Seminar Series continued



Above: Our two seminar speakers (left) Greg Brown from Macquarie University and (right) Jenni Hayward from Australian National University

inhibitors of the T. gondii ETC.

Greg Brown's research as a graduate student was on snakes and turtles in Canada. In 1998, he joined Rick Shine's lab at the University of Sydney to study the ecology of snakes at Fogg dam near Darwin. The cane toad invasion reached Fogg dam in 2005, and Greg started to study their ecology as well. The research on toads eventually expanded to incorporate their parasites, culminating in the project he's currently involved in- again in Rick Shine's lab, but now at Macquarie University.

Greg Brown Macquarie University "Hostparasite interactions during a biological invasion"

Coevolutionary host-parasite 'arms races' can be disrupted by new evolutionary forces imposed by biological invasions, affecting both host and parasite densities, as well as their traits. The spread of cane toads (Rhinella marina) and their parasitic lungworm (Rhabdias pseudosphaerocephala), across tropical Australia provides an ideal opportunity to study a perturbed host-parasite system. We are conducting a cross-infection experiment using common-gardenreared toads and lungworms from the invaded range across northern Australia to quantify traits of the parasite (infectivity and virulence) and the host (resistance and tolerance). Specifically, our aim is to assess whether interactions between host and parasite are more affected the spatial

distance between their populations (i.e. local adaptation) or by the difference in establishment times (i.e. invasiveness) of their populations.

Our seminar series image was created by Thorey Jonsdottir from the Burnet Institute.

If you have ideas for speakers, themes or chairs for future ASP Seminar Series presentations please email secretary@ parasite.org.au with suggestions. See the ASP website and social media channels for information about the ASP Seminar Series.

OUTREACH

Outreach activities in Western Australia

ASP member RIna Fu has been busy with outreach activities in Western Australia.

Dr Rina has been busy bringing parasitology to homeschool children, including those with special needs. Dr RIna says "Parasites are such an easy sell as not only are they morphologically intriguing, they can make a habitat of many of our body systems. This clever characteristic of our beloved parasites makes parasitology ready-tointegrate into what children are already learning as part of the school curriculum. It was quite a challenge to pitch the content to children as young as 4 years old to all the way to 15 years old, I think the home-school mums did an amazing job preparing them for learning together across our equivalent pre-primary to year 10. I'm so happy to receive positive feedback from across all age-groups that they found the games and experiments really fun and enjoyable. It's heartwarming to receive hugs too!"

We love your work Dr Rina and also can't wait to see our very first program of "Crafty Parasites" with malaria featured in this awesome education and outreach activity. Keep an eye on our social media pages and the ASP website for more information. If you would like to use





any of our "Crafty Parasites" programs for your Outreach activities to schools and the general public please email Lisa (secretary@parasite.org.au). The first program of Crafty Parasites will feature malaria and be launched to conincide with World Malaria Day on Monday 25 April 2022. Crafty Parasites programs will be linked to the Australian Curriculum and feature parasites whilst engaging in interactive hands-on science fun.

> Dr Rina has been busy bringing parasitology to homeschool children, including those with special needs.

HERMINTHOLOGY





Dr. Anna-Sheree Krige is a scientist at the University of Western Australia with an interest in investigating the association between parasites and invertebrates, and the broader impacts of this relationship on wildlife and human health. Her interest in parasites began during her honours year as she developed skills in taxonomy and sequencing with a focus on detecting and retrieving 'quality' DNA sequences using non-destructive methods to preserve the morphology of archived Australian museum specimens. Whilst screening archived ticks for a novel Australian bacterium (genetically related to the exotic Lyme disease pathogen) she discovered a knowledge gap concerning invertebrates and their relationship with native parasites beyond the detection of a molecular signal.

During her PhD she expanded her skills to include expertise in an array of cutting-edge visualisation techniques including electron microscopy and fluorescence in situ hybridisation. By 'manying' together the latest advancements in molecular and microscopy approaches, she has begun to build a comprehensive understanding of the role of various invertebrates in the transmission of several parasites.

Her latest research centres on debunking the mystery surrounding Australia's neglected trypanosome (bloodbome parasite) life cycle(s) through examining potential vectors including ticks and biting flies, a.k.a. tabanids or March fies. She hopes that by exploring the association between Australian trypanosomes and invertebrates of interest, we can begin to better understand the conservation and biosecurity impacts of these relationships.

"I love the detective work involved in finding parasites within invertebrates - an area often overlooked when dealing with blood-borne parasites. I almost feel like a 21st Century Sherlock Holmes; only I'm a woman and instead of a lockpick and hunting hat, I don a lab coat and use a microscope coupled with various other techniques to make my deductions."

Read her latest publication on tabanids here: https://doi.org/10.1016/j.meegid.2021.105152



'I love the detective wo involved in finding parasites within invertebrates - an area often overlooked when dealing ith blood-borne parasites. I most feel like a 21st century rlock Holn Dr. Anna-Sheree Krige Reserver





If you think you, or something you know, deserves to be featured please contact herminthology (Bramail.com for details.



Dr Shazia Ruybal-Pesántez is a genomic epidemiologist based at the Walter and Eliza Hall Institute of Medical Research and Burnet Institute in Melbourne, Australia. She is broadly interested in the applied and genomic epidemiology of infectious diseases, particularly malaria. Her work has involved international collaborations in West Africa, Asia-Pacific and the Americas, and spans applied epidemiology and capacitybuilding in the field, to genetics and genomics in the lab, to the downstream analytics using advanced approaches and digital tools.

Shazia's PhD research examined the role that the genetic diversity of the malaria-causing parasite, Plasmodium falciparum, plays in sustaining the reservoir of infection in Ghana to better inform malaria control efforts. She discovered that residents of all ages harbored infections that were genetically diverse and structured to ensure lifelong carriage of parasites despite the acquisition of naturally acquired immunity to different parasite antigenic variants.

Her current postdoctoral research focuses on combining population genetics, epidemiology, and bioinformatics approaches to better understand malaria infection dynamics and host-parasite factors that contribute to sustaining malaria transmission.

"I grew up in several countries in Latin America and Africa, experiencing first-hand that many health inequities stem from infectious diseases. This experience sparked my passion for infectious diseases epidemiology and population health research."

Read more about her PhD research findings recently published in the International Journal for Parasitology here: https://doi.org/10.1016/j.jipara.2021.12.001





Volume 33 Issue No.1 March 2022

HERMINTHOLOGY



initiative demonstrating the possibilities for young women in science by profiling female parasitologists across all career stages.

If you think you, or something you know, deserves to be featured please contact <u>herminthology@gmail.com</u> for details.



Emily Francis is a PhD student in the Veterinary Parasitology Research Group at The University of Sydney whose research is centred around the molecular identification of gastrointestinal nematodes in Australian livestock. Through her research she hopes to elucidate the molecular identify of Australian gastrointestinal nematodes, their distribution and resistance profiles, and to fast-track their identification on farm and at diagnostic labs. She became interested in parasitology during her undergraduate degree honours project where she developed a species-specific Cooperia PCR assay and provided the first molecular evidence of *C. pectinata*, *C. punctata* and *C. oncophora* in Australian cattle.

"A love of rural life, livestock and a passion for parasitology run in equal measure through my veins, so there was never any question about where my career would take me after completing my Bachelor of Animal and Veterinary Bioscience at the University of Sydney in 2019. Having grown up on the land in the small rural township of Dunedoo, central-west New South Wales, I am no stranger to the ins and outs of managing livestock and have witnessed first-hand the devastating consequences of ineffective parasite control. As a livestock parasitologist, I am grateful for the opportunities we receive to communicate our research to our colleagues. But, as the daughter of a farmer, I recognise the need to bridge the gap between research and farm-level action, and help navigate farmers through the maze of parasite management and drench resistance in their livestock, to minimise stock losses and maximise production. This is what drives me to continue pursuing a career in parasitology as a Woman in STEM."

"Cooperia spp. are often overshadowed by parasites believed to be more path ogenic production-limiting nematodes – and who doesn't love an under-dog! Plus, they have two cute little 'dots' on their anterior end known as 'refractile bodies' which are always fun to spot during larval differentiations. They're easily my favourite parasite!"

Read her paper just out in The International Journal for Parasitology here: https://doi.org/10.1016/j.ijpara.2022.01.002





In collaboration with ICOPA 2022 and The World Federation of Parasitologists we're bringing you the profile of Plenary Keynote speaker Professor Barbara Nowak from the Institute for Marine and Antarctic Studies at the The University of Tasmania.

Barbara has been working on fish health and diseases for over 35 years. The two main parasites she works on are the cause of amoebic gill disease (ADG), *Neoparamoeba perurans*, and the blood fluke *Cardicola forsteri*. Her research forms the basis of an international effort to reduce the impact of AGD on the aquaculture industry. Her research team has developed experimental methods including amoeba culture, disease challenge and detection of the parasite, allowing virulence factors for the amoeba to also be determined. These methods have been adopted worldwide to detect and manage this disease, fast-tracking research progress. In addition to studying parasites to develop control strategies against the diseases they cause in aquaculture, she uses parasitic infections to measure wild fish health and to determine effects of pollution.

"Working with others passionate about fish parasites has been fun and has resulted in some fantastic scientific discoveries. One of our biggest eureka moments and the outcome of a big team effort was the discovery of an intermediate host of *C. forsteri*. We almost lost hope that we could achieve this within our financial and time constraints, so were thrilled when we finally found it! Another great scientific discovery was the identification and description of the species of amoeba causing ADG, *N. perurans*. At that time, it was thought the disease affected only farmed fish in Tasmania, but after we confirmed outbreaks in new locations, we nowknow it affects aquaculture worldwide."

"Fish parasites are a big part of my professional life and also one of my hobbies. As a recreational diver I often notice macroscopic ectoparasites on fish underwater, so I can apply my knowledge even during my diving holidays and on diving weekends."

Read about the importance of her work here: https://doi.org/10.1007/s11160-021-09663-x

Photo of Barbara by Jon Bryan



JOURNALS

International Journal for Parasitology

What's new in the IJP? Check out these awesome front covers and read all of the articles in the latest IJP issues.

Recent media coverage

Nico Smit's paper from the 2020 Fish Parasites Special Issue recently featured in the US Discover Magazine and in the UK Sun newspaper.

https://www.discovermagazine.com/ planet-earth/this-terrifyingly-cute-parasiteeats-tongues_

You can watch the interview with Nico Smit on the ASP YouTube channel (https://youtu.be/ZQ7RteroaLc) and read all of the articles from the IJP Fish Parasites Special Issue (https:// www.sciencedirect.com/journal/ international-journal-for-parasitology/ vol/50/issue/10). See links in the ASP newsletter Vol 31.5 https://www.parasite. org.au/wp-content/uploads/2020/12/ ASPnewsletterVol31No5lores.pdf

51:12 (November)

Miles, S., Magnone, J., García-Luna, J., Ancarola, M.E., Cucher, M., Dematteis, S., Frischknecht, F., Cyrklaff, M., Mourglia-Ettlin, G., 2021. Ultrastructural characterization of the tegument in protoscoleces of Echinococcus ortleppi. Int. J. Parasitol. 51, 989-997. https://doi. org/10.1016/j.ijpara.2021.05.004

IJP

INTERNATIONAL JOURNAL FOR PARASITOLOGY





IJP

INTERNATIONAL JOURNAL FOR PARASITOLOGY

www.journals.elsevier.com/internationaljournal-for-parasitology

Editor In Chief: Brian Cooke

Facebook: <u>www.facebook.com/IJPara</u> Twitter: <u>@IJPara</u> Instagram: ijpara

52:01 (January)

Coff, L., Abrahams, J.L., Collett, S., Power, C., Nowak, B.F., Kolarich, D., Bott, N.J., Ramsland, P.A., 2022. Profiling the glycome of Cardicola forsteri, a blood fluke parasitic to bluefin tuna. Int J Parasitol. 52, 1-12. https://doi.org/10.1016/j. ijpara.2021.06.004



ISSN 0020-7519

VOLUME 52 ISSUE 1 JANUARY 2022



FI SEVIER



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Editor In Chief: Brian Cooke

Facebook: <u>www.facebook.com/IJPara</u> Twitter: @IJPara Instagram: ijpara

52:02-03 (February)

Lisnerová, M., Lisner, A., Cantatore, D.M.P., Schaeffner, B.C., Pecková, H., Tyml, T., Fiala, I., Bartošová-Sojková, P., Holzer, A.S., 2022. Correlated evolution of fish host length and parasite spore size: a tale from myxosporeans inhabiting elasmobranchs. Int J Parasitol. 22, https:// doi.org/10.1016/j. ijpara.2021.05.008



ISSN: 0020-7519

AVOLUME 52 ISSUES 2-3 FEBRUARY 2022



JOURNALS

International Journal for Parasitology continued

IJP

INTERNATIONAL JOURNAL FOR PARASITOLOGY

52:04 (March)

Alcantara, D.M.C., Graciolli, G., Toma, R., Souza, C.S., 2022. Sex-biased parasitism, host mass and mutualistic bat flies: an antagonistic individual-based network of bat-bat fly interactions. Int. J. Parasitol. 52, 217-224. https://doi.org/10.1016/j. ijpara.2021.10.010





www.journals.elsevier.com/international-journal-forparasitology-parasites-and-wildlife/

Editor: R.C. Andrew Thompson

Facebook: www.facebook.com/IJPPAW/

Please enjoy recent IJPPAW publications by ASP members and interviews with lack Ingelbrecht et.al. from Murdoch University about "A new microbothriid monogenean Dermopristis pterophilus n. sp. from the skin of the Critically Endangered green sawfish Pristis zijsron Bleeker, 1851 (Batoidea: Pristidae) in Western Australia" and with Abdul Jabbar from University of Melbourne about "Genetic characterisation of Echinocephalus spp. (Nematoda: Gnathostomatidae) from marine hosts in Australia 17: 161-165)."

Jack, tell us why it's important to study parasites of the green sawfish Pristis zijsron Bleeker?

Jack: There are many reasons why it is important for us to study parasites of green sawfish Pristis zijsron. Certainly, one that initially comes to mind stems from something that many people can identify with, which is a sense of ethical responsibility to preserve biodiversity wherever we can. Coextinction (the loss of a species as a direct consequence of another going extinct that it depends upon) is now being viewed as one of the most common forms of biodiversity loss. Sawfishes are amongst the most threatened marine fauna in the world, with green sawfish in particular classified as Critically Endangered by the IUCN. By identifying parasites that depend on green sawfish as a host, we may better understand the ecological implications that would arise should green sawfish go extinct.

attest to the fact that there is far more to parasites than their role as mere agents of disease. Parasites can serve as important biological indicators for estimating factors such as host and environmental health, and have even assisted researchers in evaluating the movement and population connectivity of host species. The latter examples could be especially important when applied to research on green sawfish, as rapid declines over the last century have rendered remaining populations of this species (and other sawfishes) highly fragmented, with very little also known about their long-term movements.

What is the significance of your finding that the new species exhibits site attachment preference: infections were greatest on and immediately adjacent to the host pelvic fins?

Jack: The site specificity exhibited by the new species is not something of great ecological significance in and of itself. Many other species (including other monogeneans) have exhibited a similar attachment preference to *Dermopristis pterophilus*, where number of infections are greatest adjacent to certain fins. The interesting thing for us will be determining what the major driver is behind the observed site specificity. What exactly this may be, I cannot say at this time; however, it is something we are currently researching, and I look forward to the day where we can share the answer.

Your study described a new microbothriid monogenean Dermopristis pterophilus n. sp. from the skin of the Critically Endangered green sawfish Pristis zijsron Bleeker, 1851 in the Ashburton River delta, northern Western Australia, tell us what will be the next stage of your research?

Jack: In terms of what the next stage is for our research, describing the new species

was part of a larger investigation into describing the ectoparasite diversity of green sawfish, which will be the first of its kind for this host. This work will also include information on the diversity of ectoparasites found on another highly threatened elasmobranch, the giant shovelnose ray *Glaucostegus typus*. We have been collecting samples and recording data for several years now for this work in progress, and will be looking to have it completed within the next 12 months, so keep an eye out.

Download and read the research paper:

Jack Ingelbrecht, David L. Morgan, Karissa O. Lear, Travis Fazeldean, Alan J. Lymbery, Bradley M. Norman, Storm B. Martin, A new microbothriid monogenean *Dermopristis pterophilus* n. sp. from the skin of the Critically Endangered green sawfish *Pristis zijsron* Bleeker, 1851 (Batoidea: Pristidae) in Western Australia, International Journal for Parasitology: Parasites and Wildlife, Volume 17, 2022, Pages 185-193, ISSN 2213-2244, https:// doi.org/10.1016/j.ijppaw.2022.01.006

(https://www.sciencedirect.com/science/ article/pii/S2213224422000062)

Abstract: A new microbothriid monogenean *Dermopristis pterophilus* n. sp. is described from the skin of the Critically Endangered green sawfish *Pristis zijsron* Bleeker, 1851 in the Ashburton River delta, northern Western Australia. Analyses of the 28S ribosomal DNA marker and the molecular barcoding markers Histone 3 and Elongation Factor 1 alpha confirmed position among the Microbothriidae, with close affinity to the only other sequenced representative of Dermopristis Kearn, Whittington and Evans-Groing, 2010. The new species is morphologically consistent with the concept of *Dermopristis*; it has

Aside from this, most parasitologists could



www.journals.elsevier.com/international-journal-forparasitology-parasites-and-wildlife/

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two testes, lacks a male copulatory organ and has a simple haptor. It is smaller than its two congeners D. paradoxus Kearn, Whittington and Evans-Gowing, 2010 and D. cairae Whittington and Kearn, 2011 and is most similar to the former, distinguished only in that it lacks the strong, transverse, parallel ridges on the ventral body surface that characterise that species. It is more easily distinguished from D. cairae, differing in body shape, possession of a seminal receptacle, and relative position and size of the haptor. It may further differ from both species by fine details of the gut diverticula, although these details are difficult to ascertain. Spermatophores were observed in the new species, similar to those previously reported for D. cairae. The new species exhibits site attachment preference: infections were greatest on and immediately adjacent to the host pelvic fins (including male reproductive organs, i.e. claspers), moderate in proximity to the dorsal and pectoral fins, few on the caudal fin and peduncle, and infrequently, isolated worms occurred elsewhere on the



Above: A new microbothriid monogenean discovered on Critically Endangered green sawfish Pristis zijsron in the Ashburton River, Western Australia photo taken by David Morgan.

Below: Critically Endangered green sawfish Pristis zijsron (left) infected with a new microbothriid monogenean Dermopristis pterophilus. Number of infections greatest in proximity to host pectoral and pelvic fins (right) photos taken by David Morgan.



Jack Ingelbrecht et al. https://www.sciencedirect.com/science/article/pii/ S2213224422000062



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dorsal and ventral surfaces of the body. There was no incidence of infection on the head (including rostrum). We presume *D. pterophilus* is restricted to *P. zijsron* and thus likely faces the same threat of extinction.

Abdul, tell us why it's important that this study extended the intermediate host range of Echinocephalus larvae by including a sea snake for the first time.

Abdul: This study highlights the rich diversity of Australian fauna. We know very little about the host range, life cycle and pathogenic effects of Echinocephalus spp. in definitive, intermediate and paratenic/ transport hosts. Elasmobranchs are currently the only recognised definitive hosts, primarily rays but also some sharks, and teleost fishes and a few marine invertebrates thought to only be paratenic or second intermediate hosts.

What effect do larval and adult specimens of species of Echinocephalus Molin, 1858 (Gnathostomatidae) have on the various hosts found within Australian waters?

Abdul: We know very little about the pathogenic effects of Echinocephalus spp. on their hosts. It's believed that the presence of large number of parasites in intermediate hosts can affect host survival and impair the biological activity of edible invertebrates and can potentially impact on food security because mollusks can act as vectors of human pathogens and parasites.

Your study highlighted the importance of genetic characterisation of larval and adult specimens of Echinocephalus spp., what will be the next stage of your research?

Abdul: The identification and taxonomy of Echinocephalus in the past has been based on morphological features. This has led to some poorly described species that have confused taxonomy within Image: Anterior end of Echinocephalus larva from Octopus djinda (formerly Octopus O. aff. tetricus), showing six rows of hooks on the cephalic inflation.

> Christina Karagiorgis et. al. https://www.sciencedirect. com/science/article/pii/ S2213224421001334

the genus and may have potentially led

parasites. Modern technological methods

sequence data, have now been developed

to enable the definition and identification

of genetic markers which can lead to the

of this study highlight the importance

of genetic characterisation of larval and

adult specimens of Echinocephalus spp.

to resolve the current difficulties in the

Christina Karagiorgis, Richard J. Ploeg,

Tanapan Sukee, Scott C. Cutmore, Jorja

Claybrook, Neil R. Loneragan, Nicholas

Abdul Jabbar, Genetic characterisation

Gnathostomatidae) from marine hosts

Volume 17, 2022, Pages 161-165, ISSN

2213-2244, https://doi.org/10.1016/j.

of Echinocephalus spp. (Nematoda:

in Australia, International Journal for

Parasitology: Parasites and Wildlife,

ijppaw.2021.12.012

Q-X. Wee, Amber K. Gillett, Ian Beveridge,

Abdul Ghafar, Charles G. Gauci,

taxonomy of this genus.

accurate identification of species. Findings

such as molecular techniques, such as DNA

to misidentification of new species of



(https://www.sciencedirect.com/science/ article/pii/S2213224421001334)

Abstract: We genetically characterised larval and adult specimens of species of Echinocephalus Molin, 1858 (Gnathostomatidae) collected from various hosts found within Australian waters. Adult specimens of Echinocephalus were collected from a dasyatid stingray [Pastinachus ater (Macleay); n = 2] from Moreton Bay, Queensland and larvae from a hydrophiine sea snake [Hydrophis *peronii* (Duméril); n = 3] from Cape York Peninsula, Queensland, from an octopus (Octopus djinda Amor & Hart; n = 3) from Fremantle, Western Australia and from a lucinid bivalve [Codakia paytenorum (Iredale); n = 5] from Heron Island, Queensland Australia. All nematode samples were identified morphologically and genetically characterised using the small subunit nuclear ribosomal DNA (SSU). Some morphological differences were identified between previous studies of Echinocephalus spp. and those observed herein but the significance of these



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differences remains unresolved. Molecular phylogenetic analyses revealed that larval Echinocephalus sp. from H. peronii and C. paytenorum in Australia were very similar (with strong nodal support) to larval Echinocephalus sp. infecting two fish species from Egypt, Saurida undosquamis (Richardson) (Synodontidae) and Pagrus pagrus (Linnaeus) (Sparidae). The SSU sequences of larval Echinocephalus sp. from O. djinda and adults from P. ater formed a well-supported clade with that of adult E. overstreeti Deardorff and Ko. 1983 from the Port Jackson shark, Heterodontus portusjacksoni (Meyer), as well as that of the larval Echinocephalus sp., from the common carp (Cyprinus carpio Linnaeus) from Egypt. This study extends the intermediate host range of Echinocephalus larvae by including a sea snake for the first time. Findings of this study highlight the importance of genetic characterisation of larval and adult specimens of Echinocephalus spp. to resolve the current difficulties in the taxonomy of this genus.

Michelle Williams, Marta Hernandez-Jover, Md Shafaet Hossen, Shokoofeh Shamsi, Genetic characterisation of *Tanqua* (von Linstow, 1879) (Nematoda: Gnathostomatidae) larval forms including new host and locality records, International Journal for Parasitology: Parasites and Wildlife, Volume 17, 2022, Pages 127-132, ISSN 2213-2244, <u>https://doi. org/10.1016/j.ijppaw.2022.01.001</u>

(https://www.sciencedirect.com/science/ article/pii/S2213224422000013)

Abstract: In an unrelated study of spotted snakehead fish *Channa punctata* (Bloch) of family Channidae (N = 103) from Bangladesh, ten fish had taupe and clear coloured cysts attached to the intestinal mesentery. Investigation of the cysts revealed larval nematodes. The larvae were damaged and not suitable for detailed morphological study, however, key features such as tooth like projections of the pseudolabia and lateral pseudolabium were observed in specimens with undamaged cephalic regions. Molecular characterisation was undertaken and although the parasite genetic material was poor, five of the twelve nematode larvae through sequencing of the 18S ribosomal RNA gene, showed 98.17% match with sequences assigned for Tanqua tiara (accession number JF934728) deposited in GenBank. The prevalence of infection was 9.7% and the mean intensity 2.70. Tangua has not previously been identified in fish, or from the definitive host, the Asian water monitor Varanus salvator (Laurenti, 1768) of family Varanidae (class Reptilia), in Bangladesh. Therefore, this study represents a new host and locality record for this nematode species. In many previous reports from this region, nematode larvae have been identified morphologically and assigned to a diverse range of nematode genera. Some confusion therefore exists regarding their accuracy and further investigations are required using molecular methodology to clarify the species of larval nematodes which infect edible fish in Bangladesh.



Michelle Williams et al. <u>https://www.</u> sciencedirect.com/science/article/pii/ S2213224422000013



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

Editors In Chief: Andrew Kotze & Kevin Saliba

Facebook: www.facebook.com/IJPDDR/

Please enjoy interview with Nathan Bott from RMIT about his team's recent IJP DDR article "Praziquantel use in aquaculture – Current status and emerging issues" in the April 2022 issue of the journal.

Nathan, tell us why it's important to study Praziquantel use in aquaculture.

Nathan: Praziquantel has proven itself to be very effective in the treatment of platyhelminths, not just in livestock but also for human parasitic diseases. For example in the aquaculture industry where we conduct our research, the Australian Southern Bluefin Tuna industry, aporocotylid blood flukes are the biggest health risk. Prior to the use of praziquantel, mortality rates of up to 15% were observed, but since it has been introduced the industry average is less than 2%. The implementation of praziquantel treatment has been overwhelmingly a net positive for the industry.

Your study identifies that parasitic diseases are major constraints in fish mariculture, is drug resistance against anti parasitic drugs increasing and do you see this as a growing problem in the industry?

Nathan: There hasn't been widespread resistance observed to praziquantel treatment like there has with other antiparasitic drugs, but it does occur in some situations, and we need to remain vigilant. Our research which is funded by the Fisheries Research and Development Corporation and the Australian Southern Bluefin Tuna Industry Association has focussed on husbandry techniques and we monitor fluke numbers and other health indicators pre- and post-praziquantel treatment and then at the main harvest period. This allows us to monitor for any significant changes. It is still a successful approach to blood fluke management in Southern Bluefin Tuna (SBT).

Your article states the anthelmintic praziquantel has potential for broader application than its current use in the global aquaculture industry, tell us what will be the next stage of your research?

Nathan: The next phase of our research is focussed on host-parasite interactions with a view to identifying new druggable targets and/or vaccines. We have recently published the glycome of one of the SBT blood flukes, *Cardicola forsteri* (in Coff et al., 2022 IJP). We are also in the process of completing the *C. forsteri* genome, the transcriptome of pre- and post-praziquantel treated *C. forsteri* and SBT. Praziquantel continues to be a highly effective treatment strategy but we are exploring all options.

Luke J. Norbury, Sho Shirakashi, Cecilia Power, Barbara F. Nowak, **Nathan J. Bott**, Praziquantel use in aquaculture – Current status and emerging issues, International Journal for Parasitology: Drugs and Drug Resistance, Volume 18, 2022, Pages 87-102, ISSN 2211-3207, <u>https://doi. org/10.1016/j.ijpddr.2022.02.001</u>

(https://www.sciencedirect.com/science/ article/pii/S2211320722000045)

Parasitic diseases are major constraints in fish mariculture. The anthelmintic praziquantel (PZQ) can effectively treat a range of flatworm parasites in a variety of fish species and has potential for broader application than its current use in the global aquaculture industry. In this review we report on PZQ's current use in the aquaculture industry and discuss its efficacy against various flatworm parasites of fish. Routes of PZQ administration are evaluated, along with issues related to palatability, pharmacokinetics and toxicity in fish, while PZQ's effects on non-target species, environmental impacts, and the development of drug-resistance are discussed.



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

Editors In Chief: Andrew Kotze & Kevin Saliba

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Praziquantel use in aquaculture – Current status and emerging issues







Image: L.J. Norbury et.al. https://www.sciencedirect.com/science/article/pii/S2211320722000045

NETWORK NEWS

News from the ASP Network for Parasitology

Travel Awards

Congratulations to Megan Porter from Charles Sturt University who won an ASP Researcher Exchange, Travel and Training Award in 2021. Read about Megan's experience on page 26. **The next deadline for applications for the ASP Researcher Exchange, Travel and Training Award & JD Smyth Postgraduate Travel Award scheme is 30 September 2022** Please ensure that you read the guidelines before applying for an ASP Travel Award. <u>https://</u> www.parasite.org.au/awards/jd-smythpostgraduate-travel-awards/

2022 ASP Conference

Join us face-to-face at the 2022 ASP Annual Conference from 4-7 July at Shangri-La The Marina, Cairns, Queensland.

www.parasite.org.au/conference2022/

Registration and abstract submission has opened for the 2022 ASP Annual Conference. For the best conference rates please register and submit your abstract by the early-bird deadline 31 March 2022.

www.parasite.org.au/conference2022/ registration/

The three-day program will include an outstanding mix of quality international and Australian scientists with the following confirmed invited speakers:

Plenary Speakers

- International Journal for Parasitology (IJP) Invited Lecturer
 Dr Meta Roestenberg (Leiden University Medical Centre)
- IJP: Parasites and Wildlife (PAW) Invited Lecturer
 Dr Elizabeth Warburton (University of Georgia, USA)
- IJP: Drugs and Drug Resistance (DDR)
 Invited Lecturer
 Professor Jane Hodgkinson

(University of Liverpool)

Symposium Speakers

- Dr Clare Anstead (University of Melbourne)
- Dr Michael Smout (James Cook University)
- Professor Shokoofeh Shamsi (Charles Sturt University)
- Dr Scott Carver (University of Tasmania)
- Professor Peter Irwin (Murdoch University)
- The 2022 Bancroft-Mackerras Medal for Excellence Winner

The 2022 ASP conference will open on Monday July 4, 2022, 5pm with a Welcome Reception BBQ dinner in the Backyard at Shangri-La The Marina, Cairns sponsored by Virbac. Poster night will take place on Tuesday July 5, 2022, at Shangri-La The Marina, Cairns and the Conference dinner will take place on the last evening of the program, Thursday July 7, 2022, at Hemingway's Brewery Cairns Wharf sponsored by Vetoquinol. Hemingway's is walking distance from the conference venue. Early Career Researchers are invited to a breakfast event on the first morning, Tuesday July 5. Once again we will offer a parents/carers and children room during the conference separate from the lecture theatres so that parents/carers will be able to watch and listen to the conference presentations live online.

If delegates are unable to attend due to COVID19 or something else that stops them from being able to attend in person we will be able to offer delegates virtual attendance options with all sessions live-streamed and interactive.

The policy on gender equality is on the Conference website www.parasite.org.au/ conference2022/advice/policy/

For social media posts please use #2022ASP

Please note that the Australian Society for Parasitology requires all 2022 ASP Conference attendees over 16 years of age (includes delegates, speakers, volunteers and any other persons who will be physically attending any conference events) to be fully vaccinated with an up-to-date vaccination against COVID19 to attend this conference in person unless you can show proof of your medical exemption.

ASP Conference Sponsors

Thanks to our wonderful 2022 ASP Conference sponsors.

Elsevier Parasitology, International Journal for Parasitology (IJP), IJPDDR & IJPPAW

Vetoquinol Australia

Virbac

Boehringer Ingelheim Animal Health Australia

New England Biolabs

Acknowledgement of Country

The land on which this meeting takes place was originally the home of the Yirrganydji people. The ASP acknowledge the Gimuy-walubarra yidi are the traditional custodians of Cairns and surrounding district. Gimuy is the traditional place name for the area Cairns City now occupies. The ASP recognise their continuing connection to the land and waters, and thank them for protecting this coastline and its ecosystems since time immemorial. The ASP pay our respects to Elders past and present, and extend that respect to all First Nations people present at this meeting.

Closing dates

www.parasite.org.au

ASP Fellowships 1 January 2023

ASP Researcher Exchange, Travel and Training Awards & JD Smyth 30 September 2022

John Frederick Adrian Sprent Prize 30 September 2022

Bancroft-Mackerras Medal for Excellence

NETWORK NEWS

Volume 33 Issue No.1 March 2022

ASP Annual Conference Sponsors





INTERNATIONAL JOURNAL FOR PARASITOLOGY











Boehringer Ingelheim

NETWORK NEWS

News from the ASP Network for Parasitology

Network Mentorship Scheme

Network Mentorship Scheme Early career researchers are encouraged to apply to the Network Convenor (nick.smith@parasite.org.au), in strict confidence, for funding to participate in the Network Mentorship Scheme. The scheme allows young investigators to be paired with experienced, successful academics to discuss, plan, prioritise and set targets for their career. 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 and covers mentorship across all aspects of working in parasitology including research, teaching, leadership, communication and outreach and other areas of professional development. In light of the COVID-19 outbreak worldwide travel may not be possible however the Network will still be able to introduce ECR researchers to mentors and they will be able to meet virtually during the COVID19 pandemic.

Grant winners

Congratulations to recent ARC Discovery Grant winners!

Professor Malcolm McConville; Professor David Wishart, University of Melbourne (\$789,650, 4 years):

The project aims to investigate the full metabolic potential of a group of eukaryotic organisms using advanced analytical and computational techniques. It will identify novel metabolites and enzyme activities that are currently not predicted from genome annotations. Expected outcomes of the project include the delineation of new metabolic processes that are common to all eukaryotes, the characterization of new enzymes families, and the generation of comprehensive metabolic databases. An improved understanding of cellular metabolism will provide direct benefits in biotechnology, food production, environmental monitoring and the diagnosis and treatment of human metabolic and infectious diseases.

With best wishes,

Nick and Lisa

www.youtube.com/user/ASPParasiteNetwork www.parasite.org.au www.facebook.com/ASParasitology www.twitter.com/AS_Para



Our wonderful conference logo was designed by Bernard Singleton, an indigenous artist based in Cairns, Queensland who we have worked closely with for a number of years. Bernard painted the magnificant Gula Guri mayin, (which means "Heal the body"), which explores themes of parasites and health. https:// www.parasite.org.au/outreach/gula-guri-mayin/

Volume 33 Issue No.1 March 2022

NETWORK NEWS

Flashback to some of our past ASP Annual Conferences

















































Selection of photos from ASP Conferences 2008 - 2019

NETWORK NEWS ASP Travel Award Report: Megan Porter

Megan Porter from Charles Sturt University won an ASP Researcher Exchange, Travel and Training Award in 2021 to travel to Darwin for training in to develop skills in isotopic statistical analysis and to develop my fish capture and euthanasia techniques from collegues at the Northern Territory Department of Primary Industries and Resources (NTDPIR), and researchers from both the Fisheries Research and Development Corporation (FRDC) and Charles Darwin University (CDU). Read about Megan's ASP Travel Award below:

Australian Society of Parasitology Researcher Exchange, Training and Travel Award Report

17 March 2022

Megan Porter

As the 2021 recipient of the Australian Society of Parasitology (ASP) Researcher Exchange, Travel and Training Award, I was able to travel to Darwin, Northern Territory, for many invaluable training and networking opportunities. During the twoweek period of my stay, I was successful in meeting several project collaborators, presenting the importance of my parasitological studies, and developing new skills in marine wildlife examination and processing.

The PhD project that I am undertaking is in collaboration with researchers from the Northern Territory Department of Primary Industries and Resources (NTDPIR)(Fisheries), and researchers from Charles Darwin University (CDU), all of whom are operating and contributing to, a large, multidisciplinary project on the stock of the Black-spotted croaker in northern Australian waters. In preparation for a meeting with all collaborators and stakeholders of this project, I met with a highly experienced biostatistician for analysis of my results on the environmental influence on parasite assemblage in black-spotted croaker populations. The biostatistician, who operates with the NTDPIR, guided me through the use the statistical software program R Commander, and demonstrated how

to utilise the program in performing a Linear Discriminant Function Analysis (LDFA) on results from my PhD research. I was able to develop new skills in statistical analysis and generate complex functions, and graphs for use in my thesis. Some of these results from the analysis with the biostatistician were presented during the stakeholders meeting where I was able to explain the influence of environmental factors on parasite-host systems and demonstrate the use of parasites as biological tags in fish stock discrimination.

During my researcher exchange in Darwin, I was fortunate to be involved in the examination and processing of several new marine species and associated parasites as part of emerging research projects with the NTDPIR. I undertook postmortem examination of marine species including sea snakes (Hydrophis ornatus), Mangrove Jack (Lutjanus argentimaculatus) and Wedgefish (Rhynchobatos spp.), and additionally collected several parasites from each species, with many of these new to be reported. Laboratory work with the NTDPIR was highly beneficial as I was able to learn and develop skills in different parasite collection and identification methods dependent on marine host species examined. In addition to parasite-host studies, I spent time learning how to remove, examine and interpret fish otoliths for aging and migration studies of marine fish.

As a recipient of the ASP Researcher Exchange, Training and Travel Award, I was determined to undertake all networking opportunities presented and am extremely satisfied with the numerous connections that I was able to develop whilst in Darwin. Government representatives from the Fisheries Research and Development Corporation (FRDC) who are funding the blackspotted croaker project, were present at the stakeholders meeting. Researcher collaborators on the large croaker project were also present during the stakeholders meeting and these people included researchers from both NTDPIR and Charles Darwin University, members of the commercial fishing sector, and representatives of many other aspects of the project from several research backgrounds, including those contributing knowledge on microbial water communities and croaker diet tracking using isotope analysis. I engaged with project managers who were again affiliated with both NTDPIR and CDU, and discussed several current and emerging research opportunities, including

post-doctoral positions that may become available in 12 months-time. Professional relationships were created with other PhD candidates in marine research, and incredibly I was also about to meet with, and discuss emerging research with a member from the Australian Institute of Marine Sciences, and the new Head of Science at the Museum and Art Gallery of the Northern Territory.

I gained invaluable knowledge and assistance whist working with a postdoctoral researcher for the NTDPIR croaker project who provided me with experienced assistance in stable isotope analysis and interpretation of results. This researcher, who is also a co-author on the stable isotope manuscript for my PhD, assisted me with another set of analysis in the statistical software program R commander, helping me to generate and then discuss, results on the complex interactions of stable isotopes in parasitehost systems. In addition to the isotope manuscript, a second publication will be generated as a result of this research travel award, one which focuses on the influence of several environmental changes on parasite load and intensity, results of which have been finalised with the biostatistician of the NTDPIR.

The skills developed, knowledge gained, and the incredible networking opportunities brought on from this research trip were incredibly rewarding and have encouraged me in many aspects of my doctorate studies. I am very grateful to all members of the Australian Society of Parasitology and the immense opportunities they continue to provide for emerging researchers. The flexibility that the society provided, allowing me to adapt my original application during the COVID-19 pandemic was outstanding and I appreciate and thank the Society for this opportunity.

NETWORK NEWS ASP Travel Award Report: Megan Porter









Clockwise from top right Wedge fish head ready for processing Cestode from intestinal system of Wedge fish Monogenean parasite from Mangrove Jack gills Fetal sea snake from bycatch Searching for intestinal parasites using a dissector microscope



STATE NEWS

State News

QLD

QIMR

Pengfei Cai and Dr Catherine Gordon

(along with Don McManus) were awarded an E-Asia award at the end of last year. This cooperative research project between Japan, Australia, and the Philippines aims to develop inexpensive point-of-care (POC) diagnostics for Asian Schistosomiasis that are rapid and field-friendly and to develop innovative environmental DNA (eDNA) detection tools for surveillance of schistosomiasis. Accurate and rapid diagnostics are a key cornerstone for controlling and eliminating schistosomiasis in Asia. Our research project will develop and trial molecular and immunology based POC and molecular-based eDNA detection methods in a schistosomiasis-endemic area of the Philippines.

community. Her PhD project examined the mitochondrial electron transport chain of apicomplexan parasites, uncovering novel proteins in this pathway and new drugs that target it. In addition to a terrific project, Jenni was a major contributor to undergraduate teaching, winning awards for her demonstrating prowess. She supervised many undergraduate student projects, infecting her students with a passion for parasitology and research science. Jenni is heading off to the Coulibaly lab at Monash University to pursue a postdoc in the structural biology of viruses. We thank lenni for everything she did for us and wish her the very best!

WA

Murdoch University

We have a couple of new PhD students starting at Murdoch University. **Leah Botten** has started her PhD candidacy this February with a project titled "The role of the introduced fox (Vulpes vulpes) as a reservoir species for disease-causing parasites: Risk factors for wildlife, domestic animals and human health". Her supervisors are Dr Amanda Ash, Dr Narelle Dybing, Professor Trish Fleming and Dr Bethany Jackson.

Ashleigh Peck has also started her PhD this month with her project titled "Investigating mosquito borne viruses and parasites in Western Australia using Next Generation Sequencing". Her supervisors are Dr Amanda Ash and Professor Alan Lymbery.

We look forward to watching these students and projects progress.

University of Queensland

Awards for Animal BioTicknology Group

Congratulations to **Dr Ali Raza** who has accepted a Senior Scientist position in Parasitology Section at Biosecurity lab, DAF, QLD Government's Department of Agriculture and Fisheries, and is starting this new role from Feb 28th 2022.

ACT

Australian National University

Congratulations!

Jenni Hayward wrapped up her PhD in the ANU Toxo Lab. Since joining in 2019, Jenni has become an integral part of the lab and the larger ANU parasitology Jenni Hayward finishes her PhD and celebrates with ACT ASP members below



STATE NEWS

State News continued

New South Wales

Macquarie University

Our very own NSW State Rep Michelle Power will feature in the Sydney Comedy Festival at the Comedy Store on May 4th, it's sure to be outrageously funny so get your tickets online now!

THE STEAM ROOM science comedy show, is coming to the Sydney Comedy Festival in May.

Scientists will be trained by comedians to turn their research into a stand-up performance!

@DoctorKarl will join them on stage to headline the show!

Link for tix: <u>https://www.sydneycomedyfest.com.</u> <u>au/event/the-steam-room-feat-dr-karl-special-</u> <u>guests/</u>

Victoria

VIC MEMBERS EVENT

Victorian ASP members and their families, friends and colleagues are all invited to the next ASP Members event in Victoria.

Join us for an informal catch up at Naughtons Hotel just before the Easter break. The hotel has arranged some space out the back for the parasites*...(correction=*parasitologists) to mingle with some free nibbles and drinks (until the tab runs out).

When: Thursday 14th April from 4-6pm

Where: Naughtons Hotel, 43 Royal Parade, Parkville VIC 3052

Family and friends are welcome!

RSVP to Sarah: sj.preston@federation.edu.au



Get your tickets to see Michelle Power in the Sydney Comedy Festival May 4th #TheSteamRoom #ComedyStore





A reminder of past socialising in Melbourne at the 2018 ASP Annual Conference

STATE NEWS

State News continued

International India

We recently received this poem written on being a parasite by Vibhuti Bafna, a first year student of the medical school at Government Medical College, Ambikapur, Chhatisgarh, India. This poem is dedicated to her father, Dr. Naveen P Bafna.



Vibhuti Bafna

"I WAS A PARASITE"

VIBHUTI BAFNA

MBBS FIRST YEAR, GOVERNMENT MEDICAL COLLEGE, AMBIKAPUR CHHATISGARH, INDIA

A parasite I was, Presided in my mommy's belly because. Would ask for food, would ask water. Everything I could order. Would take up the nutrition, For every single cell fission Would get care and warmth And there again I transformed. I resided in my host for 9 months And then the world hunts. Fortunately, another host I get. Life then was reset This lasts longer, I bet. The new host welcomed me with endearment. With a life long agreement. An agreement to shower love, Agreement to help me rise above, Agreement to teach everything he know, To ensure that I glow. Agreement to handle every tantrum I throw, And still help me grow, An agreement that I can say, someone is there for me. And I can pleasantly be care free, An agreement to be there forever, Agreement to buy me I demand whatever, The host furnish me with nutrition home and affection, He provides me care and protection, The host now is mommy's other half, Maybe a reason outside the womb I could still laugh. Yes I am still a parasite.

Senior Research Officer The University of Queensland

<u>Senior Research Officer</u>, St Lucia Campus, Ecosciences Precinct, Dutton Park, University of Queensland, Queensland, Australia.

- QAAFI
- Academic Level B
- Full-time fixed term position through to 28 July 2023
- Closing date (Tuesday 5 April 2022, 11.00 PM AEST)
- UQ Careers reference (R-09181)

About This Opportunity

This is an exciting opportunity for a Senior Research Officer to engage in research to further their expertise and growing research profile to achieve national recognition in their discipline. At this level it is expected that in incumbent will efficiently manage service and engagement roles and activities.

Closing date Tuesday 5 April 2022, 11.00 PM AEST

For more information about the job and to apply online visit the UQ careers website <u>https://uq.wd3.myworkdayjobs.com/uqcareers</u>

Apply for this job online:

https://uq.wd3.myworkdayjobs.com/en-US/uqcareers/job/ St-Lucia-Campus/Senior-Research-Officer_R-09181-2

Postdoctoral Research Associate University of Liverpool

Postdoctoral Research Associate in Genomic Analysis of Pathogens and Vectors Grade 7

Infection Biology & Microbiomes

038693

£35,327 - £40,928 pa

12-Apr-2022 23:30

The Centre for Genomic Research (CGR) and the Tick Cell Biobank (TCB) are two resources under the umbrella of the University of Liverpool's Shared Research Facilities. The CGR is a large genomics facility with state-of-the-art robotics and sequencing platforms that incorporates national capability in the NERC Environmental Omics Facility and the COVID-19 Genomics UK Consortium. The TCB is the world's only dedicated culture collection for the generation, storage and distribution of cell lines derived from ticks and other arthropods. We are looking to recruit a post-doctoral scientist (PDRA) to conduct genomic analysis of pathogens and arthropod vectors of disease while working across both facilities. The PDRA position is funded for one year full-time and the successful candidate will join a team led by Professor. Alistair Darby (CGR Director and TCB Co-Investigator) alongside Dr Ben Makepeace (TCB Principal Investigator) and Dr Lesley Bell-Sakyi (TCB Manager). The PDRA will support national and international sequencing projects focused on the Covid-19 pandemic and other emerging infectious threats worldwide, especially vector-borne diseases, through genome or transcriptome assembly/mapping and design and execution of downstream bioinformatic analyses. The successful applicant will have a PhD in biological sciences, computer science, or statistics; a strong publication record; and expertise in bioinformatics as applied to challenging genomics/transcriptomics projects.

Closing date 12-Apr-2022 23:30 (UK time)

Apply online https://www.liverpool.ac.uk/working/jobvacancies/



ICOPA 2022 15th International Congress of Parasitology



August 21-26 | 2022 Copenhagen, Denmark

B



www.icopa2022.org



Committee: Raffi Aroian, Richard Martin, Sabine Specht, Angela Mousley, Erik Andersen, Paul Selzer, Alex Loukas, Jonathan Marchant, Mostafa Zamanian

THE STEAM ROOM A NIGHT OF SCIENCE COMEDY

health costs of helminth

infections

WITH DR KARL + Special Guests

Link for tix: https://www.sydneycomedyfest.com.au/event/the-steam-room-feat-dr-karl-special-guests/

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ASP Council continued

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