



## Combined Biological Sciences Meeting

On Friday 25th August 2017 the Combined Biological Sciences Meeting (CBSM) was held at The University Club of University of Western Australia. CBSM promotes biological science in Western Australia by encouraging the interaction of scientists, students, and industry from all of the life sciences. It was the 27th year of CBSM. The morning session included Early Career Researcher Development Session, Plenary, Dept of Health WA New Investigator Session and ECU New Investigator Session. The afternoon sessions included Enabling Technologies Session, Australian Society for Microbiology Symposium, Cell and Developmental Biology Symposium, Frontiers in Genetics Symposium, and Ecology, Environment and Evolution Symposium.

<http://www.cbsmwa.org.au/images/Program/cbsm2017.pdf>

<http://www.cbsmwa.org.au/>

## Poster Session

There were 69 posters covering the areas of:-

Section	Topic	No. posters
A	Biochemistry and Molecular Biology	9
B	Cell and Developmental Biology	9
C	Genetics	7
D	Immunology	6
E	Microbiology	16
F	Neuroscience	7
G	Ecology, Environment & Evolution	8
H	Senior Research Professionals	7

## RSWA Award

The Royal Society of Western Australia (RSWA) sponsored the \$300 prize for the Ecology, Environment and Evolution session G where there were 8 posters. In attendance on behalf of RSWA was RSWA President Professor David Haig. The winning prize for this session was accepted by **Anna-Sheree Krige** from the Vector & Waterborne Pathogen Research Group, School of Veterinary and Life Sciences, Murdoch University, for the poster 'Frozen in time: The first report of 'Candidatus Borrelia tachyglossi' in echidnas (*Tachyglossus aculeatus*) archived in the Queensland Museum, Australia' detailed at G6 (page 35):-

<http://cbsmwa.org.au/images/CBSM2017/cbsm2017posterabstracts.pdf>

<http://www.cbsmwa.org.au/home/supsoc>

<http://www.cbsmwa.org.au/prizes/student-prizes>

## Frozen in time: The first report of '*Candidatus Borrelia tachyglossi*' in echidnas (*Tachyglossus aculeatus*) archived in the Queensland Museum, Australia

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**Introduction:** The genus *Borrelia* contains many recognised pathogens of humans and animals. Several of these are known causative agents of Lyme borreliosis (LB), a significant tick-borne disease (TBD) of global health importance.

**Problem Statement:** The recent identification of a novel Australian *Borrelia* sp., '*Candidatus Borrelia tachyglossi*', within echidna-biting ticks (*Bothriocroton concolor* and *Ixodes holocyclus*), has prompted a further investigation into the presence of this bacterium in echidnas and their ticks.

**Procedures:** *Bothriocroton concolor* ticks and opportunistically sampled echidna skin biopsies from the site of tick attachment, along with spleen, muscle, kidney, and liver tissues were collected from seven echidnas (*Tachyglossus aculeatus*) archived frozen between 1992 and 2011 at the Queensland Museum, Australia. Two *Borrelia* genus-specific PCR assays targeting the *flaB* and 16S rRNA genes were conducted.

**Results:** A partial *flaB* (378 bp) fragment was successfully amplified in seven ticks (7/46; 15.2%) and two skin biopsies (2/33; 6.1%), with a 99.5-100% similarity to '*Candidatus B. tachyglossi*' genotypes B and C (Genbank: KY586964; KY586965). Of these positive samples, five ticks and both skin biopsies (5/7, 71.4%; 2/2, 100%) amplified the longer 16S rRNA (1,087 bp) locus with a 98.2-99.6% similarity to '*Candidatus B. tachyglossi*' genotype B (Genbank: KU954113). Phylogeny was consistent with previous reports suggesting '*Candidatus B. tachyglossi*' formed the fourth *Borrelia* clade.

**Conclusions:** This study presents the first report of *Borrelia* in echidnas. However, whether echidnas are a reservoir host for this bacterium could not be established at present.



Dr Charlotte Oskam @DrCharOskam · Aug 25

Congratulations to Anna-Sheree Krige for winning best poster in eco enviro & evo sponsored by @royalsocwa #echidna #ticks #borrelia

