



Victorian News

The Australian Society for Microbiology VIC Branch Newsletter

November 2016, Vol 495

Victorian Branch ASM:

The Australian Society for Microbiology
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klwaller@unimelb.edu.au

Submission Deadline: 4th of the Month

In this Issue:

- **2016 Bi-State Conference – Register Now**
- **ASM VIC Branch Christmas Party – Register Now**
- **Northern News – Event Report**
- **ASM BD Student Awards – Call for Abstracts**
- **History Column and Visiting Speakers Program (VSP)**
- **AUSME 2017 – Register Now**
- **19th International Symposium on Recent Advances in Otitis Media – Register Now**
- **ASM Annual Scientific Meeting & Exhibition – Save the Date**
- **Tri-State Scientific Meeting – Save the Date**
- **ASM VIC Calendar**

Find us on Facebook: <https://www.facebook.com/groups/250340155042466/>

**ASM Victorian Branch and ASM Food Microbiology SIG are
pleased to present**

2016 Bi-State Conference, Victoria / Tasmania

Date: Fri 25th & Sat 26th
November 2016

Venue: Peppers Seaport Hotel,
Launceston TAS



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Topics and Speakers include[#]:

- ***MALDI-TOF MS: is it all bells and whistles ... Our experiences with the MALDI-TOF MS since 2011***
- Belinda McEwan (Royal Hobart Hospital) -
- ***Outbreak of an exotic herpesvirus affecting oysters in Tasmania***
- Kevin Ellard (Biosecurity Tasmania) -
- ***Using genomics to track and reduce foodborne disease in Australia***
- Deborah Williamson (Microbiological Diagnostic Unit – Public Health Laboratory) -
- ***'The Pertussis Perplex – Shifting Schedules and Strategies'***
- Jodie McVernon (University of Melbourne at The Doherty Institute) -
- ***Bacteriophage formulated into a range of semi-solid and solid dosage forms maintain lytic capacity against isolated cutaneous and opportunistic oral bacteria***
- Joseph Tucci (La Trobe University) -
- ***Managing the public health risk of dairy products***
- Deon Mahoney (Dairy Food Safety Victoria) -
- ***Amplicon Analysis to Explore the Mechanisms of Beef Carcass Contamination***
- Scott Chandry (CSIRO Agriculture and Food) -
- ***Microbial-induced calcium carbonate precipitation: holding back the Sahara and reducing greenhouse emissions***

- Tom Ross (ARC Training Centre for Innovative Horticultural Products, University of Tasmania) -
- ***The good, the bad and the ugly - microbiology of fish diseases***
- Barbara Nowak (University of Tasmania) -
- ***Getting dirty, defining microbial community level drivers during phytoextraction of heavy metals***
- Ashley Franks (La Trobe University) -
- ***Culture-dependent and culture-independent assessment of meat spoilage community dynamics***
- John Bowman (University of Tasmania) -
- ***Inhibition of cell death and inflammation by bacterial gut pathogens***
- Jaclyn Pearson (University of Melbourne at The Doherty Institute) -
- ***Translating science evidence into public health policies***
- Heather Haines (Department of Health and Human Services, VIC) –
- ***To be confirmed***
- Mark Veitch (Department of Health and Human Services, TAS) –
- ***Finding the Needle in the Haystack by Acoustic Focusing Flow Cytometry***
- Antonio Castillo, ThermoFisher -
- ***Empowering Industry with the Application of Modern Technologies in Microbiology***
- Jeffery Hochgesand-Sunarjo and Jaelyne Birrell, Microgenetix –

The current conference program is available at: <http://victoria.theasm.org.au/home/bi-state-2016/>

Conference Fees & Registration* via: <https://www.trybooking.com/MRZZ>

| <u>Early Bird (register before 5pm 14th Oct)</u> | <u>after 5pm 14th October</u> |
|---|--|
| ASM Member \$180 | ASM Member \$200 |
| Non-member \$220 | Non-member \$240 |
| <i>Student (no early bird)</i> | |
| ASM Member \$145 | |
| Non-member \$170 | |
| <i>Single Day Registration</i> | |
| ASM Member \$145 (full) and \$120 (student) | |
| Non-Member \$170 (full) and \$145 (student) | |

*** Registration extended to 5pm Thursday 17th November 2016**

Accommodation

A number of discounted rooms are available at Peppers Seaport Hotel from Thur 24th - Sat 26th. To secure your discounted room, please contact the Hotel directly (03 6345 3333), being sure to mention your attendance at this meeting. The available discounted room rates are:

- City View rooms @ \$209 per night (sleeps 2)
- River View rooms @ \$219 per night (sleeps 2)
- Suite @ \$239 per night (can sleep 3, one on a fold-out couch)

Dinner on Friday night?

When registering, please indicate your interest in attending a dinner with other attendees on the Friday evening. This dinner will incur an additional cost (ie. it is not included in the registration fee), but will be held at a (yet to be determined) restaurant near the conference venue.

Enquires: Christine Seers (caseers@unimelb.edu.au) or Karena Waller (klwaller@unimelb.edu.au)



ASM Vic Branch Christmas Party



Microbiology of the Grape

Join us for an evening of Christmas cheer and hear about the exciting microbiology of Australian winemaking

**Venue: The Docklands Room,
The William Angliss Institute,
555 La Trobe Street,
Melbourne, CBD.**

When: Thursday 8th December, 6:30pm to 9:30pm

**Cost: \$15 ASM Members / \$20 Non-Members
(includes finger food and wine tasting)**

**For catering purposes, please RSVP for this event by
5pm Friday 2nd December 2016 via:
<https://www.trybooking.com/NVTU>**

**For further details, contact Ed Fox (Edward.fox@csiro.au)
or Mary Valcanis (valcanis@unimelb.edu.au)**



Call for Abstracts

Apply NOW to participate in

ASM BD Student Awards 2017

It's a great way to attend next year's ASM Annual Scientific Meeting in Hobart (2nd to 5th July 2017)

Where: Monash University, Clayton Campus

When: Tuesday 21st February 2017

Presentations: Competitors will deliver 12 minute presentations and receive 3 minutes of question time

Awards: Two major awards are available to help students attend the national ASM meeting. Winners will receive:

- ASM BD Award – conference registration, an airfare and \$300 towards the cost of accommodation and is awarded to the best student presenting research carried out as part of a PhD or Masters by Research
- Victorian ASM Branch Award – conference registration and \$200 towards the cost of an airfare and is awarded to the best student presenting research carried out as part of a Masters by Coursework or an Honours degree

Applications close: 5pm on Friday 3rd February 2017

**Further details (including application forms and instructions)
can be obtained by emailing:**

Karena Waller (klwaller@unimelb.edu.au)

Northern News

Event Report

Proudly sponsored by:



Northern News was presented by the ASM Victorian Branch at the Austin Hospital (Heidelberg) on Tuesday 25th October 2016. The evening was chaired by Dr Marcel Leroi and featured five speakers from Austin Health and Dorevitch Pathology. A range of fascinating case studies encountered in the medical microbiology laboratory were presented, each followed by engaging discussion. The talks highlighted the pathogenic role of diverse (and rare) bacteria in human infections, the difficulties faced in isolating them, the various techniques and efforts which go towards identifying them, and subsequent treatment regimens for patients. Approximately 50 attendees came to enjoy the very interesting talks which were preceded by a light supper and mingling.

Congratulations to young medical scientist Shabnam Gujadhur from Austin Pathology who was the winner of the ASM membership prize for her presentation on opportunistic pathogen *Mycobacterium abscessus*.

A special thank you to Dr Leroi for chairing the event and to all of our speakers for their informative talks which everyone who attended had the opportunity to learn from. A warm thank you is extended to Biomérieux for their generous sponsorship of the evening, to Austin Health for use of their lecture theatre, and to the organisers of the event.

Abstracts submitted by each of the speakers can be found on the following page in order of presentation.

Report contributed by: Jaelyne Birrell

“The Great Puzzling Bug (GPB)” by Shabnam Gujadar (Austin Health)

Mycobacterium abscessus is a rapid growing, non-tuberculous mycobacterium (RGM). It is an opportunistic pathogen responsible for skin and soft tissue infections, broncho-pulmonary infections and bacteraemia. Due to its cultural characteristics, unless there is a strong clinical suspicion, it can be easily overlooked. Routine cultures and conventional species-specific identification methods, namely MALDI-TOF, are time-consuming and often unsuccessful. Consequently, molecular techniques, such as 16s-23s rDNA intergenic spacer analysis, are faster and more reliable. Treatment with appropriate drugs is fundamental since *M. abscessus* is resistant to multiple antibiotics through intrinsic and acquired mechanisms(1). Here, we report a case of bacteraemia due to *M. abscessus*. Beaded, weakly-staining gram-positive bacilli were seen in blood cultures and could not be identified by MALDI-TOF. There was relatively slow growth on routine aerobic culture plates. Hence, the presence of a rapidly growing mycobacterium was suggested. This was confirmed by acid-fast stains and 16s-23s rDNA analysis. Empiric therapy directed towards RGM was commenced within 6 days of the 1st isolation. For *M. abscessus* group infections, the recommended regimen is a macrolide and amikacin, together with cefoxitin, imipenem or tigecycline(2) depending on susceptibility results. Directed therapy for our patient was cefoxitin and amikacin and after 5 weeks, cefoxitin was replaced by tigecycline. However, following 8 weeks of therapy, the patient unexpectedly deteriorated and died of a respiratory complication. From a diagnostic and therapeutic point of view, it is critical to consider the possibility of infection due to *M. abscessus* at an early stage and optimising therapy ensures best patient outcomes.

(1) Nessar R, Cambau E, Reytrat JM, Murray A, Gicquel B. *Mycobacterium abscessus*: a new antibiotic nightmare. Journal of Antimicrobial Chemotherapy. 2012 January 30, 2012.

(2) Van Ingen J, Boeree MJ, Van Soolingen D, Mouton JW. Resistance mechanisms and drug susceptibility testing of nontuberculous mycobacteria. Drug resistance updates: reviews and commentaries in antimicrobial and anticancer chemotherapy. 2012 Jun;15(3):149-61.

“Year of the Breast” by Aideanna Seenarain (Dorevitch Pathology)

Corynebacterium kroppenstedtii was first characterised in 1998 by Collins et al. The human clinical isolate that was first described was from a sputum of an elderly female patient with pulmonary disease. Since then, there have been quite a few cases that have showed the potential role of *C.kroppenstedtii* in inflammatory breast disease, particularly granulomatous lobular mastitis (GLM). This organism is unique among Corynebacteria in that it lacks mycolic acids; this lipophilia and a positive esculin reaction help distinguish *C.kroppenstedtii* from other Corynebacteria. Some histology studies have shown the organisms were located in breast tissue vacuoles that likely contained lipid. We have recently had two cases of women with breast abscess / mastitis in which *C.kroppenstedtii* was the sole organism isolated. Neither woman had been recently breastfeeding. In the first case the patient was treated with flucloxacillin with no improvement, however after receiving amoxicillin and clavulanate appears to be doing better. In the second case, the patient was treated with IM ceftriaxone followed by cephalexin with no improvement seen. Due to the difficulty in isolating this organism in the diagnostic laboratory and its lipophilic nature, there is little data available on antimicrobial therapies and therefore established infections have a poor outcome. This warrants careful examination of patients that present with ongoing breast pathology and further investigation into therapeutic approaches in managing these cases in order to improve patient outcomes.

“The Stubborn Headmaster” by Sindhu Nagabhushan (Austin Health)

Pyogenic liver abscesses caused by *Clostridium perfringens* are rare but often fatal, with death ensuing from massive haemolysis and septic shock (1). This is a case study of a 75 year old retired school principal who presented to Austin Emergency with fever and rigors following a 3 day history of malaise, urinary frequency and vague abdominal discomfort. He had a medical background of long standing type 2 diabetes mellitus, hypertension and hypercholesterolaemia. Initial investigation revealed a urinalysis with dipstick haematuria and a leukemoid blood film. Biochemical results indicated increased C-reactive protein and total bilirubin content. A Computed Tomography (CT scan) of the abdomen indicated a necrotic hepatic abscess with gas formation. Repeat FBE within 6 hours of admission showed a dramatic decrease in haemoglobin content and increase in reticulocytes consistent with massive intravascular haemolysis. This raised a suspicion of clostridial sepsis and antibiotic treatment was administered immediately. A positive blood culture, after 6 hours of incubation, confirmed the presence of non-motile gram positive bacilli that was identified as *C. perfringens*. Unfortunately, the patient passed away 18 hours after admission in spite of aggressive patient management and antibiotic therapy. The toxins produced by *C. perfringens* are the main virulence factors, the most potent being α toxin (Phospholysin C-lecithinase) which decomposes the phospholipid in cell membranes leading to cell lysis which favours anaerobic conditions for rapid multiplication of *C. perfringens* (2). Hence, it is important to consider *C. perfringens* septicaemia in patients with evidence of unexplained massive haemolysis and rapidly progressive sepsis-like presentations.

(1) Rajendran G, Bothma P, Brodbeck A. Intravascular haemolysis and septicaemia due to *Clostridium perfringens* liver abscess. *Journal of Anaesth Intensive Care*. 2010; 38: 942-945.

(2) Muhammad S. Khan, Muhammad K. Ishaq, and Kellie R. Jones, “Gas-Forming Pyogenic Liver Abscess with Septic Shock,” *Case Reports in Critical Care*, vol. 2015, Article ID 632873, 4 pages, 2015.

“*Bordetella hinzii*: Pathogen? Is it that rare or is it simply missed?” by Fungai Mukungunurwa (Dorevitch Pathology)

Bordetella organisms are small gram negative cocco-bacilli, catalase positive, and oxidase positive and have an optimal growth temperature of between 35 to 37 degrees Celsius. They are strict aerobes except for *B. petrii*. They normally grow on routine culture media except for *Bordetella pertussis* whose growth is inhibited by constituents of many media. In this discussion I will be looking at two separate cases of *Bordetella hinzii* isolated from sputum samples of an 86 year old female and 58 year old male patients at Dorevitch Microbiology Heidelberg laboratory and the various methods used in the identification of the organism. *Bordetella hinzii* is known to colonise the respiratory tract of poultry and was listed as an emerging and opportunistic pathogen in the CDC *Journal of Emerging Infectious Diseases* Volume 19, Number 3 of March 2013. The few documented human infections have all been associated with immunocompromised patients i.e. a cystic fibrosis patient, lung transplant patient, leukemic patient and one with HIV AIDS, who have not had any close contact with poultry. In the two cases at the Dorevitch Laboratory, the female patient had no chronic lung disease nor known contact with poultry, however her age qualifies her for an immunocompromised patient. Her condition was reportedly improving with Augmentin treatment. There was very little information known about the 58 year old male patient. *Bordetella hinzii* pathogenesis and transmission routes remain under investigation as most of the reported cases had no close contact with poultry.

1. James V, Karen C C, James H J, Guido F, Marie L L, David W W. *Manual of Clinical Microbiology* 10th Edition, Chapter 51: Pages 803-810.
2. Arvand M, Feldhues R, Mieth M, Kraus T, Vandamme P. Chronic cholangitis caused by *Bordetella hinzii* in a liver transplant recipient. *J Clin Microbiol*. 2004;42:2335–7. DOI:PubMed

3. Fry NK, Duncan J, Edwards MT, Tilley RE, Chitnavis D, Harman R. A UK clinical isolate of *Bordetella hinzii* from a patient with myelodysplastic syndrome. J Med Microbiol. 2007;56:1700–3. DOI:PubMed
4. Funke G, Hess T, von Graevenitz A, Vandamme P. Characteristics of *Bordetella hinzii* strains isolated from a cystic fibrosis patient over a 3-year period. J Clin Microbiol. 1996;34:966–9 . PubMed

“A case of septic rheumatoid arthritis” by Jenny Farrell (Dorevitch Pathology)

Neisseria meningitidis can cause serious invasive meningococcal disease, meningitis and septicaemia being the most common. It is less well known for causing septic arthritis, although it may be concomitant with septicaemia. Rarely however (1% of cases) it presents in the joint as primary meningococcal arthritis PMA. In these scenarios the patient has a hot, painful joint, usually accompanied with pus filled fluid, some fever and elevated CRP, FBE and ESR, but in other respects may appear quite well and does not suffer from rash and the more typical meningococcal type symptoms. This case report describes a 63 year old female patient with rheumatoid arthritis and diabetes mellitus that presented to Frankston ED (October 2016) with query septic rheumatoid arthritis. *Neisseria meningitidis* serogroup Y was the causative organism, identified by gram stain, culture and serotyping. The patient displayed no symptoms of meningitis or septicaemia, responded well to antibiotics and maintained stable health throughout infection. She is currently on IV Ceftraxone, at home and recovering well. The most common serogroups affecting Australians are B and C, but serogroup W is beginning to increase in Victoria. This case was an example of serogroup Y, probably due to the immune-compromised status of the patient who suffered from both rheumatoid arthritis and diabetes mellitus. Currently Australian children are immunised against group C at 12 months, while vaccines against group B are suggested for young adolescents and young adults and health care workers at risk. Vaccines for other groups are only advised if Australians are travelling overseas or at increased risk due to age, or ongoing health concerns.



Visiting Speakers Program

Do you know of an outstanding speaker coming to Australia?

If so, consider them for the Visiting Speakers Program (VSP).

Further information about the VSP and the speaker recommendation form can be found at:

<http://www.theasm.org.au/events/visiting-speakers-program/>

Alternatively, contact Catherine Satzke (catherine.satzke@mcri.edu.au), who is the VSP Coordinator for the ASM VIC Branch.



ASM History SIG – Column

The New Quarantine Act [post Federation] did not come into force until July 1909, when all of the quarantine stations Australia-wide were taken over by the Commonwealth. However the actual transfer of individual stations did not occur immediately.

ASM Inc is putting together a together a permanent microbiology display for the Point Nepean Quarantine Station.

Do you have any historical microbiological items to donate to the ASM History SIG for this ASM Inc display? If so, please contact Dr Di Lightfoot (dlight6@bigpond.com)

ASM memorabilia:

If any ASM members have significant ASM memorabilia that they would like to the donate to the ASM archives or would like to suggest topics suitable for possible symposia at future ASM Annual Scientific Meetings, please send details of the memorabilia or suggested symposia topics to:

History SIG convener
c/o Australian Society for Microbiology Office
9/397 Smith Street
Fitzroy VIC 3068

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Would you like to advertise your event, job vacancy or other news item in our newsletter?

Advertising rates are:

Not-for-profit adverts: free of charge

For-profit adverts: \$50 per advert

If so, please contact Karena Waller
(klwaller@unimelb.edu.au)

Conference Themes:

Aquatic
Terrestrial
Symbiosis
Engineered systems
Microbial toolbox

KEY DATES

16th November 2016 | Early Bird Deadline
16th November 2016 | Oral Abstract Deadline
2nd December 2016 | Poster Abstract Deadline



Prof Jennifer
Martiny



Prof Gene
Tyson



Prof Madeleine
van Oppen



A/Prof Timothy
Cavagnaro



A/Prof Peta
Clode



A/Prof Justin
Seymour



Prof Brajesh
Singh



Prof Sue
Harrison



**19TH INTERNATIONAL
SYMPOSIUM ON
RECENT ADVANCES IN
OTITIS MEDIA**

Gold Coast Convention and Exhibition Centre,
Gold Coast, Australia **4-8 June 2017**



INTERNATIONAL
SOCIETY FOR
**OTITIS
MEDIA**

**CALL FOR ABSTRACTS
NOW OPEN**

**SUBMISSION DEADLINE
3 FEBRUARY 2017**

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please visit **www.otitismedia2017.com.au**

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The Australian Society
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SA/NT BRANCH of ASM
and
PARASITOLOGY & TROPICAL MEDICINE SIG
proudly present

BACK-TO-BACK
2017 TRI-STATE
SCIENTIFIC MEETING

&
PARASITOLOGY MASTERCLASS

Darwin

22-25 September 2017

— Save the Date —



The Australian Society
for **Microbiology** 
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What you can expect?

Tri-State meetings have been initiated and supported by ASM branches in SA, WA and NT for over 25 years. The aim is to bring delegates together in an intimate and unique environment and provide good food, social and networking opportunities. You can expect a varied and engaging scientific program presented by some of Australia's top microbiologists.

The Parasitology Masterclass began with its inaugural meeting in Tasmania in 2009, In this, the 6th Parasitology Masterclass, it aims to again provide an excellent blend of wet workshops, classroom teaching, and formal presentations.

What you need to know?

Registration

- Places may be strictly limited so we will encourage to book early and to avoid disappointment (when registrations open).
- You can register for one, or both. Registration for both provides great cost savings.
- Register your interest to receive updates and early meeting details.



ASM VIC CALENDAR 2016

When planning meetings, please book dates with Karena Waller
(Phone: (03) 8344 0045, Email: klwaller@unimelb.edu.au)

- **2016 Bi-State Conference - 25th and 26th November 2016, Launceston TAS**
- **ASM VIC Branch Christmas Party – 8th December 2016, William Angliss Institute, Melbourne**
- **ASM BD Student Awards – 21st February 2017, Monash University, Clayton**
- **AUSME 2017 – 13th – 15th February 2017, Melbourne**
- **19th International Symposium on Recent Advances in Otitis Media – 4th to 8th June 2017, Gold Coast QLD**
- **ASM Annual Scientific Meeting and Exhibition – 2nd to 5th July 2017, Hobart TAS**
- **Tri-State Scientific Meeting – 22nd to 25th September 2017, Darwin NT**

**Submission Deadline for December ASM Victorian
News:
December 4th 2016**

Email submissions to: klwaller@unimelb.edu.au or
asmvicbranch@gmail.com