



Victorian News

The Australian Society for Microbiology VIC Branch Newsletter

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Submission Deadline: 4th of the Month

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Contact Details

Victorian Branch ASM:

The Australian Society for Microbiology
Victorian Branch
c/o: 9/397 Smith Street, Fitzroy VIC 3065
Weblink: <http://victoria.theasm.org.au/>
Email: klwaller@unimelb.edu.au or
asmvicbranch@gmail.com

ASM National Office:

9/397 Smith Street, Fitzroy VIC 3065
Tel: 1300 656 423
Fax: 1300 655 841
Email: admin@theasm.com.au
Weblink: www.theasm.org.au
ABN 24 065 463 274

Victorian Branch Committee:

Chair: Karena Waller

Email: klwaller@unimelb.edu.au

Tel: +61 3 8344 0045

Deputy Chair and VSP Coordinator:

Catherine Satzke

Email: catherine.satzke@mcri.edu.au

Secretary: Christine Seers

Email: caseers@unimelb.edu.au

Treasurer: Priscilla Johanesen

Email: priscilla.johanesen@monash.edu

Tel: + 61 3 9902 9153

Communications and Marketing
(incl. Newsletter Editor): Jacqueline Heath

Email: jhea@unimelb.edu.au

Clinical and Diagnostics: Seema Kanade

Email: seema.kanade@dorevitch.com.au

Clinical and Diagnostics: Jaelyne Birrell

Email: jaelyne.birrell@gmail.com

Clinical and Diagnostics: Sangeeta Singh

Email: vu2bhy@hotmail.com

Public Health: Mary Valcanis

Email: valcanis@unimelb.edu.au

Environmental Micro: Steve Petrovski

Email: Steve.Petrovski@latrobe.edu.au

Host-microbe Interactions: Maria Liaskos

Email: M.Liaskos@latrobe.edu.au

Student and ECR Affairs: Sarah Baines

Email: bainess@unimelb.edu.au

Student and ECR Affairs: Lauren Zavan

Email: lazavan@students.latrobe.edu.au

All notices should be emailed to: jhea@unimelb.edu.au

Call for Abstracts

Apply NOW to participate in

ASM Nancy Millis Student Award 2019

It's a great way to attend next year's ASM Annual Scientific Meeting in Adelaide
(30 June - 3 July 2019)

Where: Venue to be advised

When: Date to be advised (will be held in late February)

Presentations: Competitors will deliver 10 minute presentations and receive 5 minutes of question time

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

- ASM Nancy Millis Student Award – conference registration, a return economy airfare and \$500 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 (early bird rate) and \$400 towards the cost of a return economy airfare and/or accommodation 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 8 February 2019

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 for yet another successful year by the ASM Vic Branch. The event was held at Austin Hospital, Heidelberg, on Tuesday 23rd October 2018. This year the seminar room was packed to the rafters with approximately 100 people in attendance to hear case studies by medical scientists working in diagnostic microbiology, to enjoy food and mingling with members and non-members alike, and for the lucky few who booked in early, to join the Austin Lab Tours.

The presentations were chaired by Dr Marcel Leroi, Head of Microbiology at Austin Health, and featured six speakers from Melbourne's hospitals and private pathology. A range of intriguing case studies were presented which challenged the audience. The talks highlighted the pathogenic role of diverse (and rare) microbes in human infections, the difficulties faced in isolating them, the efforts towards identifying them, and subsequent outcomes for patients. Congratulations to young medical scientist Marie Anne Pathy from Austin Pathology who was the winner of the ASM membership prize for her presentation.

This year lab tours of the Austin Microbiology Laboratory featuring new Kiestra automation were extremely popular and led by Nahim Salem, Austin Microbiology Senior Scientist. The tours allowed participants to see Kiestra in action and feedback was positive. The organising committee hope to make lab tours an added feature of future Northern (& Southern) News events.

A special thank you to Dr Leroi for chairing the event, Mr Salem for taking the lab tours, and to all of the speakers for their informative and engaging talks. 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 speaker are below in order of presentation.

Report contributed by: Jaelyne Birrell (ASM Vic Committee)

Flying under the radar: a case of bacteraemia caused by an emerging uropathogen

Daniel Garang Kuir (Dorevitch Pathology)

A case of bacteraemia in a 67-year-old male patient is presented. He presented to ED with fevers and rigors. He had been unwell for a week and was being treated for urinary tract infection (UTI). His condition worsened, and was transferred to ICU where he was placed on oxygen, stabilised with intravenous fluids and empirically treated with Ceftriaxone after clinical diagnosis of urosepsis.

A set of aerobic and anaerobic blood culture bottles was taken and sent to our laboratory. Both bottles were loaded into the BacT/Alert® (bioMerieux, Australia) blood culture system. Both bottles became positive after 30 hours of incubation and the Gram stain of the blood culture broth showed small Gram-positive bacilli or cocco-bacilli.

A urine sample taken upon presentation showed significant pyuria ($>1000 \times 10^6$). The urine culture on CPS chromogenic agar showed poor growth initially considered as probable “skin contaminant” but was re-incubated for further assessment. The subculture of blood culture, after 24 hours of incubation, grew facultative, relatively small grey and non-haemolytic colonies approximately 1 mm in size, which were catalase and oxidase negative. Identification of the isolate performed on a mass spectrometry (MALDI-TOF MS; bioMerieux, France), yielded 99.9% identification of *Actinotignum schaalii*. This ID was later confirmed by a 16S rRNA sequencing by a reference laboratory. *A. schaalii* was also isolated from the urine sample when it was cultured on a horse blood agar incubated in 5% CO₂.

A. schaalii is an emerging uropathogen, which causes UTIs in elderly (male) patients (>60 years) with underlying urological conditions. It causes severe infections in a form of urosepsis, bacteraemia, endocarditis, cellulitis and spondylodiscitis.



(Daniel Kuir)

Pathogens without borders – An overlooked pathogen in post-operative wound infections

Maria Potamitis (Dorevitch Pathology)

A 75 year old woman who had recently undergone spinal surgery presented with a wound infection to her back. Four deep tissue specimens were collected and cultured in aerobic and anaerobic conditions. Initial cultures were identified as negative following 48 hours of incubation. Seven day anaerobic plates yielded a heavy growth of an organism that failed to be seen under traditional gram stain. This isolate was identified as *Mycoplasma hominis* via Maldi-Tof MS. The fastidious nature made the diagnosis of *Mycoplasma hominis* difficult in area outside of the genitourinary tract. The absence of a cell wall and thus their intrinsic resistance to beta-lactam antibiotics requires immediate laboratory identification for suitable treatment. Real-time PCR should be considered in patients experiencing post-operative wound infections.



(Maria Potamitis)

Candida auris

Anita Palatinus and Lisa Marks (Royal Melbourne Hospital)

Candida auris is an emerging multidrug-resistant *Candida spp*, which is associated with nosocomial outbreaks, invasive infection and high mortality.

C.auris poses a significant risk in a hospital setting due to increased survival time in the environment, colonisation of the skin leading to ease of transmission and reported multidrug resistance to multiple classes of antifungal drugs commonly used to treat *Candida* infection.

C.auris was first isolated in 2009 in a Japanese hospital from external ear discharge. It has since been reported in over 20 countries and has been known to cause bloodstream, wound and ear infections.

C.auris can be easily misidentified as other *Candida species* depending on the identification method used. Updated databases for MALDI-ToF and Vitek 2 systems have increased the ability for laboratories to identify *C.auris*. Phenotypic testing is still a challenge.

We present two patient cases of *C.auris* isolated in Australia from urine cultures in a Melbourne hospital. Both isolates were identified as *C.auris* using MALDI-ToF Biotyper 3.1 (Bruker Daltonics) and Vitek 2 YST identification card. The first isolate was also sent to the National Mycology Reference Centre (Adelaide, SA) where it was confirmed as *C.auris* by ITS sequencing and Maldi-ToF (Bruker). Minimum inhibitory concentrations (MIC) were performed on both isolates. Both showed characteristically high MIC's to Fluconazole (≥ 256 mg/mL) and raised MIC's to Amphotericin B (4mg/mL).

Whole genome sequencing was performed on both isolates at the Microbiological Diagnostic Unit.



(Anita Palatinus)

An unusual case of cerebral abscess

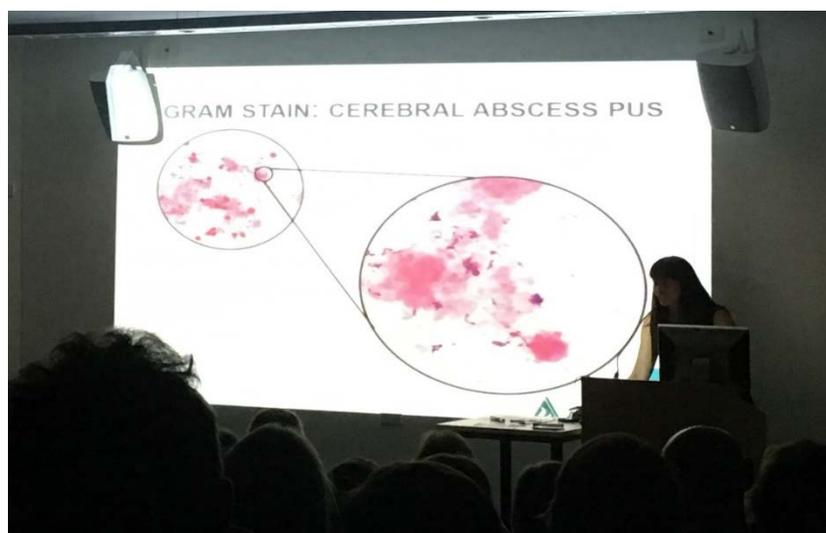
Marie Pathy

We present here an unusual case of cerebral abscesses in a 71-year-old male. The patient presented with a ten week history of fevers, night sweats, fatigue and haemoptysis. He was found to have an irregular lung mass on computed tomography (CT) and was investigated for lung cancer.

During his hospitalization he developed headaches and confusion. Initial brain CT examination was consistent with leptomeningeal and parenchyma metastatic disease from a presumed lung cancer primary carcinoma.

The patient was treated with dexamethasone (corticosteroid) to reduce cerebral inflammation. However, histology of the right lower biopsy and cytology on bronchial washings and brushings demonstrated no evidence of malignancy.

Progressively worsening headaches were reported; brain magnetic resonance imaging (MRI) examination four days later demonstrated innumerable ring enhancing lesions throughout the bilateral cerebral hemispheres and the left cerebellar hemisphere consistent with multiple cerebral abscesses. Microbiological investigation of this unusual case will be discussed.



(Marie Pathy)

Expect the unexpected

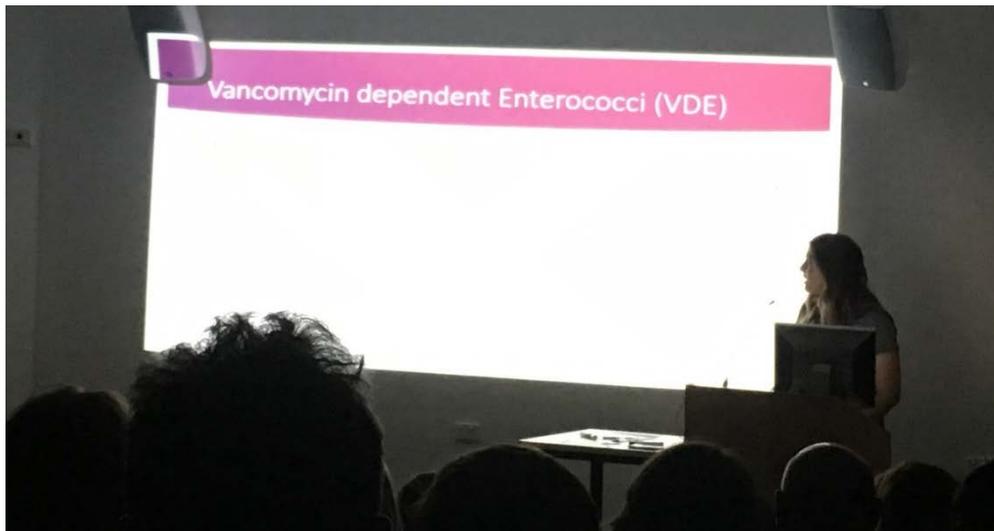
Patricia Szczurek

A 65-year-old male recently returned to Australia due to deteriorating health after spending 35 years abroad in the UK. He had a history of hepatitis C, past IV drug use, COPD, hypertension, and a recent deep vein thrombosis. He reported 18 months of non-specific illness with ~9kg weight loss, lower back pain and anaemia; extensive investigations had not been able to reveal the cause.

He presented with acute pulmonary oedema requiring intubation and admission to the intensive care unit. During this admission, bedside transthoracic echocardiogram was performed which demonstrated endocarditis involving all 4 valves with severe mitral and aortic regurgitation. Computed tomography (CT) of the brain demonstrated cerebral septic emboli.

The admission was further complicated by delirium, renal impairment, liver impairment, rash and hospital acquired pneumonia. As the patient was a very high-risk surgical candidate given his multi-valvular involvement, biventricular failure, and medical comorbidities, it was decided to refrain from surgical intervention and continue culture negative infective endocarditis coverage with antimicrobials but he continued to deteriorate and passed away.

This presentation will involve the post-mortem microbiological and other investigations pertaining to this case as well as a discussion on “culture-negative” endocarditis.



(Patricia Szczurek)

Amoeba or not – who are you?!

Cathy Lowe (Royal Children's Hospital - Microbiology Department)

Identification of amoeba in CSF sample is a rare event, with only 166 cases of granulomatous amoebic encephalitis that has been reported from around the world since 1996. This case below at Royal Children's Hospital (RCH) explores the difficult nature of identifying free-living amoeba (FLA) due to their changing life-cycle stages, the various laboratory tests performed and their limitations, clinical presentation and antibiotic therapy management.

A 6-month old baby girl presented at RCH with seizures and pyrexia of unknown origin for 50 days. A CSF sample was collected to further investigate the cause of her clinical symptoms. A raised white cell count was noted including elevated protein and glucose levels. Culture result was subsequently negative.

Alternative testing methods other than cell count and culture had to be explored to obtain a diagnosis and ensure correct patient management. When motile organisms were discovered from a direct wet motility preparation, this led to the suspicion of a FLA existing in the CSF. FLA are ubiquitous in nature - can be found in water, soil and air samples. There are four genera present that are associated with human diseases which could lead to primary amoebic meningoencephalitis, granulomatous amoebic encephalitis, cutaneous lesions or sinus infections. These amoeba's are *Acanthamoeba* species, *Balamuthia mandrillaris*, *Naegleria fowleri* and *Sappina diloidea*.

Laboratory diagnostic methods used to determine the presence of FLA are: - direct visualisation, antigen detection, PCR, amoeba cultivation, and environmental detection. These laboratory methods had been developed with the aid of Anatomical Pathology, Haematology, Molecular Microbiology, Genetics and CDC reference laboratory. The exhaustive testings performed over the last six months have ruled out common parasites, amoebas, bacteria, viruses and fungi. We continue to investigate other contributing factors, environmental pressures, and laboratory techniques to attain a diagnosis.



ASM History SIG

ASM Memorabilia

If any ASM members have significant ASM memorabilia that they would like to 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

How to join the Australian Society for Microbiology at a reduced rate!

Did you know that non-members can join the Australian Society for Microbiology at a reduced rate? Well, you can!

As a non-member, by paying the fee to attend an event hosted by ASM VIC Branch, you can use this amount to put towards an annual membership of the Australian Society for Microbiology.

To do so, please follow these instructions:

1. Register to attend the event hosted by ASM VIC Branch via the advertised trybooking link, and pay the attendance fee.
2. Attend the event, and then within 2 weeks after the event, go to the ASM membership area at <http://www.theasm.org.au/membership/>
3. Choose the appropriate membership for you and then click on:
[Click here to join or update your details](#)
4. Click 'Begin here' and create a Currinda membership profile for yourself. Then, pay the membership full fee.
5. Following payment, download the paid receipt (showing your payment) and email it along with your postal address to:
Priscilla Johanesen, Treasurer VIC Branch priscilla.johanesen@monash.edu
6. A cheque refunding the event fee will be posted to you.

Please note: you must complete the above process within 2 weeks following an event to take advantage of this offer. After this time, the event fee cannot be used to pay membership fees.

ASM Member Awards Apply Now

The ASM offers a variety of awards to its members. Take full advantage of your membership by applying now for one of the awards listed below with deadlines approaching. For more details and additional awards please refer to the National webpage <http://www.theasm.org.au/awards/>

The deadlines for all award applications are now **March 31st** of each year.

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.

MICRO NEWS and VIEWS

- How beetle larvae thrive on carrion
<https://www.sciencedaily.com/releases/2018/10/181015150646.htm>
- Gut bacteria may guard against diabetes that comes with aging
<https://www.sciencenews.org/article/gut-bacteria-may-guard-against-type-2-diabetes>
- Snails become risk-takers when hungry
<https://www.sciencedaily.com/releases/2018/11/181121142422.htm>
- What the approval of the new flu drug Xofluza means for you
<https://www.sciencenews.org/article/what-approval-new-flu-drug-xofluza-means-you>
- Lyme and other tickborne diseases are on the rise in the U.S. Here's what that means.
<https://www.sciencenews.org/article/cases-lyme-and-other-tickborne-diseases-rising>
- A new drug may boost dwindling treatment options for gonorrhea
<https://www.sciencenews.org/article/new-drug-may-boost-dwindling-treatment-options-gonorrhea>
- Fungus provides powerful medicine in fighting honey bee viruses
<https://www.sciencedaily.com/releases/2018/10/181004100044.htm>
- Frogs breed young to beat virus
<https://www.sciencedaily.com/releases/2018/11/181120125941.htm>
- Purple bacteria 'batteries' turn sewage into clean energy
<https://www.sciencedaily.com/releases/2018/11/181113080903.htm>
- Why some people may be more susceptible to deadly C. difficile infection
<https://www.sciencenews.org/article/why-some-people-may-be-more-susceptible-deadly-c-difficile-infections>
- How soil bacteria are primed to consume greenhouse gas
<https://www.sciencedaily.com/releases/2018/10/181029165528.htm>
- Messing with fruit flies' gut bacteria turns them into speed walkers
<https://www.sciencenews.org/article/messing-fruit-fly-gut-bacteria-turns-them-speed-walkers>
- These light-loving bacteria may survive surprisingly deep underground
<https://www.sciencenews.org/article/cyanobacteria-may-survive-surprisingly-deep-underground>
- Motley crews of bacteria cleanse water at huge oceanic Georgia Aquarium exhibit
<https://www.sciencedaily.com/releases/2018/10/181023130444.htm>
- A mysterious polio-like disease has sickened as many as 127 people in the U.S.
<https://www.sciencenews.org/article/mysterious-polio-disease-sickened-127-people-united-states>

World AIDS Day – 1st December 2018

On 1 December 2018, WHO will join global partners to commemorate World AIDS Day under the theme “Know your status”. This will also be an occasion to celebrate the 30th anniversary of World AIDS Day (WAD30) – a pioneering global health campaign first initiated by WHO in 1988. WHO Regional Offices will create additional region-specific messages and materials under the global theme.

WHO advocacy and communication for World AIDS Day 2018 will aim to achieve the following objectives: 1. Urge people to know their HIV infection status through testing, and to access HIV prevention, treatment and care services; and 2. Urge policy-makers to promote a “health for all” agenda for HIV and related health services, such as tuberculosis (TB), hepatitis and noncommunicable diseases.

Key Facts on HIV/AIDS:

- HIV continues to be a major global public health issue, having claimed more than 35 million lives so far. In 2017, 940 000 people died from HIV-related causes globally.
- There were approximately 36.9 million people living with HIV at the end of 2017 with 1.8 million people becoming newly infected in 2017 globally.
- 59% of adults and 52% of children living with HIV were receiving lifelong antiretroviral therapy (ART) in 2017.
- Global ART coverage for pregnant and breastfeeding women living with HIV is high at 80%.
- The WHO African Region is the most affected region, with 25.7 million people living with HIV in 2017. The African region also accounts for over two thirds of the global total of new HIV infections.
- HIV infection is often diagnosed through rapid diagnostic tests (RDTs), which detect the presence or absence of HIV antibodies. Most often these tests provide same-day test results, which are essential for same day diagnosis and early treatment and care.
- Key populations are groups who are at increased risk of HIV irrespective of epidemic type or local context. They include: men who have sex with men, people who inject drugs, people in prisons and other closed settings, sex workers and their clients, and transgender people.
- Key populations often have legal and social issues related to their behaviours that increase vulnerability to HIV and reduce access to testing and treatment programmes.
- In 2017, an estimated 47% of new infections occurred among key populations and their partners.
- There is no cure for HIV infection. However, effective antiretroviral (ARV) drugs can control the virus and help prevent transmission so that people with HIV, and those at substantial risk, can enjoy healthy, long and productive lives.
- It is estimated that currently only 75% of people with HIV know their status. In 2017, 21.7 million people living with HIV were receiving antiretroviral therapy (ART) globally.
- Between 2000 and 2017, new HIV infections fell by 36%, and HIV-related deaths fell by 38% with 11.4 million lives saved due to ART in the same period. This achievement was the result of great efforts by national HIV programmes supported by civil society and a range of development partners.

Reproduced from the World Health Organization

<http://www.who.int/news-room/events/detail/2018/12/01/default-calendar/world-aids-day>

Advertise in the ASM VIC Branch Newsletter!

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)

ASM VIC CALENDAR 2018

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

- **ASM Vic Branch Christmas Party – 29th November 2018, Melbourne, VIC**



asm2019
SOUTH AUSTRALIA



30 June -
3 July
Adelaide Convention
Centre
www.theasm.org.au

The Australian Society
for **Microbiology** 
bringing Microbiologists together

**Submission Deadline for November
ASM Victorian News:
December 4th 2018**

Email submissions to: jhea@unimelb.edu.au