Fungi, the second most frequent eukaryotic organisms, are responsible for many diseases in plants, animals and humans. They cause significant problems and economic losses in agriculture, food security and the health system as well as having an impact on biodiversity and ecosystems. Of the estimated 5 million fungal species, about 600 are known to cause human or animal infections, ranging from superficial infections of the nails and skin caused by dermatophytes, through mucocutaneous candidiasis to life-threatening invasive fungal infections caused by Candida, Cryptococcus and Aspergillus species, among others. The number of reported infections have significantly increased over the past three decades, with serious impacts on public health and an increased risk of biodiversity loss among animal species. In humans, superficial infections affect an estimated 1.7 billion (25%) individuals worldwide. The majority of superficial infections are not lethal but they can cause serious discomfort. Oropharyngeal or genital mucosal infections are also common and can be disabling. An estimated 75% of the women of childbearing age suffer from vulvovaginitis, mainly caused by Candida species, which are the third most common opportunistic fungal disease agents after Aspergillus spp., worldwide. Invasive fungal diseases are less common but they cause significant morbidity and mortality, killing about 1.5 million people every year worldwide, and are associated with substantial healthcare costs. More than 90% of fungus-related deaths are caused by four fungal genera: Aspergillus, Candida, Cryptococcus and Pneumocystis. Fungi are also responsible for other debilitating diseases, including blindness, and chronic subcutaneous infections. The growing threat of fungal infections is reflected in the global market for antifungals, which is expected to grow from $11.8 billion in 2013 to $15.9 in 2018.

Most fungal species that cause infections are opportunistic, with a minority considered as primary pathogens of humans or animals. As a result, understanding the pathogenesis of fungal infections is critical to improve antifungal treatment of confirmed disease. The application of new molecular and biochemical techniques has largely contributed to the development of improved fungal identification and new antifungal therapies. However, development of better and safer antifungal drugs is still needed.

Despite the growing importance of fungal infections, the number of fungal studies (private or public) and the available research funding lag significantly behind that of bacteria and viruses. To overcome this it is important to raise public awareness of fungal infection and their consequences.

In May 2015, the Australian New Zealand Mycology Interest Group (ANZMIG) of the Australian Society of Infectious Diseases (ASID) is hosting the 19th Congress of the International Society of Human and Animal Mycology (ISHAM) and will welcome medical mycologists and infectious diseases clinicians from around the globe. Discussions will include the latest findings in basic, applied and clinical medical mycology.

Australia has an active medical and veterinary mycological community that has made many pivotal contributions to medical and veterinary mycology at the international level. Historical studies focused principally on dermatophytes especially those associated with Australian Aborigines and native animals. Today international collaborations range from basic science projects studying DNA barcoding of pathogenic fungi by using comparative genomics to develop new standardised diagnostic tools, and discovering...
molecular mechanisms of fungal pathogenicity and their application to clinical studies. Cryptococcosis has been an important endemic fungal infection of both humans and animals in Australia since being first recognised in the early 1900s. However, it was the discovery of the natural habitat of C. gattii in 1990 that provided a major impetus for research on the epidemiology and ecology of this fungus. These studies defined the epidemiology of these serious fungal infections in Australia and elsewhere and through global collaborations, have revealed the origin of highly pathogenic strains and increased understanding of the molecular basis of cryptococcal pathogenicity.

The Australian and New Zealand Mycoses Interest Group (ANZMIG) is now the region’s premier medical mycology forum. The role of ANZMIG is to foster and promote research, education and training in the pathogenesis, microbiology, epidemiology, diagnosis, treatment and prevention of human infections caused by fungi and closely related organisms. To achieve this, ANZMIG has been instrumental in the conception, design and implementation of many mycological research and educational projects. These include; the Australian Candidemia Study and associated studies on invasive fungal infections in haematology patients and candidemia in ICU patients; the Australian Scedosporium study, the Aspergillus haematology study and several Cryptococcus studies. ANZMIG has also been instrumental in publishing the Australian Guidelines for use of antifungal agents in treatment of invasive fungal infection. It hosts a biannual Mycology MasterClass, which will be offered concurrently with the 19th ISHAM congress in 2015, as well as many other clinical mycology symposia and conference programs.

Australian researchers are active in the detection and identification of mycological disease from a wide variety of sources but especially human community- and hospital-acquired infections. The medical mycology community collaborates together through a well-established national network, the sharing of materials, the distribution of materials for quality control diagnostics and a variety of other interactions.

The Australian Society of Microbiology is pleased to showcase Australian mycological research to the world by devoting this special issue of Microbiology Australia to the ISHAM conference. Australia has been and is a driving force in the advancement of human and veterinary mycology, including clinical trials, development of antifungal guidelines, molecular epidemiology, and basic genetic studies of fungal pathogenesis. With our colleagues from around the world, we trust that ISHAM in Melbourne will lead to the expansion of existing global collaborations and the establishment of new ones between medical mycologists, infectious disease clinicians and basic researchers.

We wish all delegates of the 19th ISHAM congress an enjoyable and stimulating time in Melbourne.

References
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Biographies
The biography for Professor Wieland Meyer is on page 48.
The biography for Laszlo Irinyi is on page 48.

Professor Tania Sorrell is an Infectious Diseases physician and academic with long-standing research interests in the pathogenesis of cryptococcal infections, the epidemiology and management of systemic yeast infections and development of new fungal diagnostics and antifungal therapeutics. She is a past President of the Australasian Society for Infectious Diseases (ASID), a current member of the international Mycoses Study Group Education and Research Steering Committee and the Mycoses Interest group of ASID. She is Director of the Marie Bashir Institute for Infectious Diseases and Biosecurity at the University of Sydney and Service Director of Infectious Diseases and Sexual Health, Western Sydney Local Health District.