

BSMM News

Spring 2006



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Welcome to the Spring 2006 BSMM Newsletter. In here you will find reports from BSMM Members who have been awarded Grants by the Society, information about the Medical Mycology Diploma, and a list of forthcoming meetings of likely interest to Society members. Keep it for your summer holiday – it's more likely to fit in your suitcase than the latest Dan Brown novel.

Dick Hobson, BSMM Hon. Secretary

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BSMM Annual Scientific Meeting 2006

The 42nd Annual Meeting of the BSMM was held in the historic Clontarf Castle Hotel, Dublin, in March 2006. I had the pleasure of attending this year's meeting, and it was indeed a meeting to remember.

The Meeting began with an assessment by Malcolm Richardson of whether invasive aspergillosis is nosocomial or community-acquired. His pictures of "mouldy" rooms were particularly striking, and underlined the threat of acquiring mould infections from the environment. This was followed by a comprehensive presentation on paediatric zygomycosis by Emmanuel Roilides, who reminded us of the ongoing ECMM Zygomycosis survey. The evening's offered papers were a candidaemia study from Manchester, UK, and details of a project proposal to study the mould-related impact of Hurricane Katrina on human health in New Orleans. The oral session was followed by a poster session/reception at the Drawbridge Tavern, my abiding memory of which is that of Prof. Neil Gow diligently assessing 19 posters in

the midst of the prevailing revelry! The day's labours came to an entertaining end with dinner and the famous BSMM sing-a-long.

The morning session (Therapies and Host-Parasite Interactions) included four guest lectures and 3 offered papers. Dr. Russell Lewis examined the possibility of augmenting doses of various antifungals to treat systemic mycoses; no benefits were noted with increasing doses of amphotericin B, whereas some of the azoles and echinocandins exhibited more promising results. Prof. Rod Hay spoke about the host-response to dermatophytes, suggesting that this might be a model for adaptive immunomodulation; Dr. David Stevens' lecture on immunotherapy of mycoses highlighted current knowledge on this relatively new approach to management - the possibility of exploiting a synergy between antifungal drugs and cytokines was particularly interesting. Dr. Tom Harrison spoke on the use of quantitative cultures to answer pathophysiological and therapeutic questions about cryptococcal meningitis; The free papers covered the influence of caspofungin treatment on increasing chitin synthesis via a cell wall salvage response in *C. albicans*; the role of the ABC transporter Pdr5P in response to DAPG in *S. cerevisiae*, and the association between *Candida* cell wall glycosylation and host-fungal interactions.

In the next session (Virulence Factors and Medical Microbiology), Dr. Sean Doyle spoke on non-ribosomal peptide synthetases in *A. fumigatus*; Dr. Michael Anderson described his studies on comparative genomic analysis of *A. fumigatus*; he cautioned us to always first look at other differences between clinical isolates (e.g. growth rate, other phenotypic characters) before focusing on genomic differences. The offered papers that followed described the serum 1,3- β -glucan diagnostic test, a potentially valuable tool for the diagnosis of invasive fungal infections, and the experience of a Reference Laboratory in differentiating *C. albicans* from *C. dubliniensis* highlighting the potential use of Pal's agar and that the similarity in the epidemiology and susceptibility of the two species. Finally there was a presentation by Dr. Richard Summerbell advising medical mycologists to be ready to make DNA "bar coding" an integral part of their mycology practice and research. After the BSMM Annual General Meeting the

Society was treated to an excellent and memorable lecture by Dr. David Soll, the 2006 Foundation Lecturer. Dr. Soll highlighted his important contributions to our understanding of switching, mating, biofilms and pathogenesis in *C. albicans*; truly, a presentation to treasure. The day ended with the BSMM annual dinner and a ceilidh.

The next day Session 4 (Modulation of Infection and Immunity) began with a guest lecture by Jesus Pla on the MAP kinase network in *C. albicans*, which was described as the "nervous system" of the fungal pathogen. This was followed by an offered paper by Gary Moran in which he hypothesised that the *C. dubliniensis* *NRG1* gene suppresses filamentation and therein virulence in this species, influencing its survival during co-culture with RAW264.7 macrophages. I then presented my own offered paper on adventitious sporulation in mycotic keratitis, in which I showed that this could be a specific diagnostic aid for keratitis caused by *Fusarium solani*. The session (and meeting) ended with 2 invited presentations: Paul Fidel began with a poignant presentation of the havoc wrought by Hurricane Katrina on his city of New Orleans, and then expounded on the importance of CD8⁺ T-cells (the less well-known T-cell in HIV-infected individuals) in host defence against HIV-related oropharyngeal candidiasis. Margaret Hostetter rounded off the deliberations with an excellent presentation on the interaction of a *C. albicans* superantigen and heparin - a very interesting aspect of this was its clear relevance to CVC-associated candidaemia.

This was my first BSMM meeting and I thoroughly enjoyed it. I congratulate Dr. Kevin Kavanagh and the other members of the organising team for their excellent arrangements. I found the lunches and dinners a very good means of interacting with the other delegates. The Meetings Secretary put together a veritable feast of information in mycology, and deserves our applause. I thank the Executive Committee for awarding me a generous travel grant, which allowed me to attend the meeting.

Philip Thomas, Tiruchirapalli, India, BSMM Travel Grant recipient

BSMM Course in Diagnostic Mycology, Leeds 2006

It is 30 years since the first BSMM course in Diagnostic Medical Mycology took place in Leeds, and in April the course was again held in the Faculty of Biological Sciences at the University of Leeds. This year 47 delegates, including clinicians, biomedical scientists and

clinical scientists attended from all parts of the UK, as well as Malta, Eire and the Netherlands.

The course took place over 5 days and included lectures, practicals, tutorials and case studies. It began with registration on Monday morning, followed by introductory lectures on fungi and the infections that they cause. After a short talk on the use of the identification keys, delegates were provided with a range of "known" fungi to examine. Lectures in the afternoon concentrated on superficial mycoses, covering dermatophytosis and superficial yeast infections.



Dr Richard Barton throws some light on Diagnostic Mycology at the 2006 BSMM course (photo courtesy of Chris Jones)

Tuesday's practicals continued the theme of superficial infections, with sessions on yeast identification and diagnosis of dermatophytosis and cutaneous yeast infections. Lectures, however, moved away from superficial disease to cover subcutaneous mycoses, aspergillosis, cryptococcosis and systemic candidosis.

Sessions on Wednesday concentrated on antifungal agents - their use, susceptibility testing and the importance of antifungal resistance.

Wednesday evening was an opportunity to relax, with delegates, lecturers, demonstrators and technical staff attending the course dinner in University House. It was a chance to have a chat over a drink and a meal and find out about the other people on the course.

The following day, with a slightly later start for those who had partied the night away (!), there were further lectures on the systemic mycoses and the afternoon sessions allowed delegates to either spend more time examining cultures of "unknown" fungi or attend clinical sessions and case studies.

The course finished on Friday, with time to read results and a demonstration to reveal the answers to the "unknown" fungi!

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Overall feedback from delegates was very positive and most felt the course had given them an insight into practical and theoretical aspects of mycology.



Ruth Ashbee, course organiser, with Liz Johnson, BSMM President, at the 2006 BSMM Diagnostic Mycology course dinner (photo courtesy of Chris Jones)

A big thanks to all the lecturers, demonstrators and technical staff who worked so hard to make the course happen and thanks to the University of Leeds for hosting the course. Finally, thanks to the delegates for their enthusiasm and hard work during the week - I look forward to welcoming the next delegates to the course in 2008!

Ruth Ashbee, Course Organiser

BSMM Glyn Evans Award

I would like to take this opportunity to thank the BSMM for supporting my recent visit to the HPA Mycology Reference Laboratory in Bristol. The financial support was provided from the Glyn Evans Memorial Fund. He is remembered very fondly and is highly regarded by all those who were fortunate to meet him.

The aim of the visit was primarily to gain an insight into the molecular techniques used for the detection and identification of commonly occurring and unusual fungi and to encompass these techniques in our own laboratory in Glasgow. In-depth discussions took place regarding both the facilities required and the molecular methods used for the detection of *Aspergillus* and *Candida* species from a variety of samples. I viewed the entire process from start to finish on whole blood, serum, paraffin-embedded and tissue specimens using fascinating real-time PCR technology.

In contrast, another technique using Whatman filter paper was applied to the identification of unusual moulds from fresh cultures. This surprisingly simple yet effective

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method previously had applications in forensic science so it was endearing to see its potential use in the world of fungi! The process involved harvesting mould cultures of unknown identity in water then adding the suspension to Whatman filter discs followed by microwaving. The fungal DNA becomes trapped in the filter discs then small punches of the discs are removed and subjected to a washing stage before being added to the PCR mix. Amplified products are gel electrophoresed before being sent for sequence analysis. By comparing the sequence of the tested sample with that of known fungal sequences using a BLAST search, identification of the mould becomes possible.

As well as the molecular studies, I had the opportunity to observe a variety of unusual mould cultures (none were as pretty as my favourite fungus – the beautiful varied *Trichophyton rubrum*!). The optimum methods used for the storage of yeasts and moulds were also discussed as were the computer databases used for archiving these isolates.

Finally, the NCCLS (now CLSI) method for sensitivity testing of moulds using a range of antifungals was demonstrated. In our experience, and that of other laboratories, the visual interpretation of the results for mould sensitivity testing is more difficult than for yeasts, so this proved to be a very valuable exercise.

Thank you very much to Dr. Liz Johnson (another Mycology runner!) for agreeing to have me in the laboratory and for having the great attitude of encouraging others to discuss and exchange ideas. All the fabulous friendly staff made it a fun, action-packed visit so thanks very much to everyone for this most worthwhile experience.

Claire Alexander, Glasgow, Glyn Evans Mycology Award recipient

Information about Glyn Evans Mycology Awards is available at www.bsmm.org

BSMM Annual Scientific Meeting 2007

The 2007 BSMM Annual Scientific Meeting will be held on March 18th-20th 2007 in Leeds. The venue will be Devonshire Hall, University of Leeds. Devonshire Hall is an Oxbridge-style student hall with a very high standard of accommodation. Further details of the venue can be found under “Browse our Facilities” at www.universallyleeds.co.uk. Planning of the scientific programme is well underway.

Dick Hobson, Local Organiser

Jobs in Medical Mycology

The BSMM website (www.bsmm.org) has a Jobs Link section. Members are invited to submit details of relevant posts (scientific, clinical, diagnostic, PhD studentships etc.), with web links, to the Hon. Secretary, who will arrange for them to be posted.

**University College London and the BSMM
Diploma/MSc in Medical Mycology**

This is a distance learning course based at University College London and taught jointly with the BSMM. The modular nature of the course will enable students to complete it in three to five years.

Course material will be delivered via DVD and supported by the Internet. Students will also be required to attend practical courses in Leeds and Bristol. A personal tutor will be allocated to all students. The next course will commence in September 2006.

The aim of the course is to provide postgraduate education and a qualification within the field of medical mycology to those with a keen interest in laboratory or clinical mycology. It is open to laboratory scientists, registered medical practitioners and other health care professionals holding relevant qualifications.

For further information please contact:

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BSMM membership

Following recent expansion, the BSMM has 298 members, of whom 78 are overseas members. The Society welcomes 22 new members, who have joined the society since the last issue of the BSMM Newsletter. The new members are Silvia Argimón and Marion Drysdale (Aberdeen); Nicole Caplice, Mary O'Donnell, Tim Yeomans, Brenda McManus, Rachael Jordan, Martin Spiering, Deirdre Fitzgerald-Hughes, Francesco Citiulo, Leanne O'Connor (Dublin); Mohammad Hedayati (Mazandaran); Joy Michael, Cynthia Alexis and Lara West (London); Liz McLellan, Robert Townsend and

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Thushan De Silva (Sheffield); Sara Ginwalla (Edinburgh); Tina Demers (West Bromwich); Lakshmi Priya Gunasekaran (Manchester) and Sarah Connor (Leeds).

Forthcoming meetings

16th Congress of the International Society for Human and Animal Mycology (ISHAM)
June 25th-29th 2006 Paris, France
Details: www.imedex.com/announcements/isham06.asp

Eighth International Mycological Congress
August 20th-25th 2006, Cairns, Australia
Details: www.sapmea.asn.au/conventions/imc8

Sixth International Symposium on Coccidioidomycosis
August 23rd-27th 2006, Stanford, C. albicans, USA
Details: <http://cme.ucsd.edu/cocci/>

Society For General Microbiology 159th Meeting
September 11th-14th 2006 York, UK
Details: www.sgm.ac.uk/meetings

Federation of Infection Societies 2006
November 29th-December 1st 2006, Cardiff, UK
Details: www.britishinfectionsociety.org

2007 BSMM Annual Scientific Meeting
March 18th-20th 2007, Devonshire Hall, Leeds
Details: www.bsmm.org

Society For General Microbiology 160th Meeting
March 26th-29th 2007 Manchester, UK
Details: www.sgm.ac.uk/meetings

3rd Trends in Medical Mycology (TIMM)
October 28th-31st 2007, Torino, Italy
Details: www.TIMM2007.org

And finally...



Items for the next BSMM Newsletter

Items for publication in the next BSMM Newsletter should be sent to the Hon. Secretary, Dick Hobson: richard.hobson@leedsth.nhs.uk