

## ECMM activities: an overview

The ECMM continues to attract individuals who are interested in undertaking projects with ECMM support. This year Dr Petrikos from the Hellenic Society for Medical Mycology has initiated a survey of zygomycosis in Europe — you can read more about this elsewhere in this Newsletter. A study group to survey fungal infections in intensive care units is being planned by Dr Lena Klingspor in Sweden. Dr Sybren De Hoog, who has been coordinating the ECMM working group on



*The organizers of the 10th ECMM Congress in Wrocław*

*Pseudallescheria* is also organizing a symposium in January on the African perspective on fungal disease. This meeting is part-sponsored by ISHAM and the ECMM. We are not a wealthy society, but we do our best to invest in activities that clearly extend our range of interests beyond the most common fungal diseases into the less well explored arenas.

Our meeting in Wrocław this year was a great success, which generated a lot of positive feedback. We are very grateful to Prof Eugeniusz Baran and Dr Jacek Szepletowski for the enormous amount of hard work they put in personally to ensure the congress ran smoothly. The meeting made a profit for the Society, which is a very positive finale for an important moment in the history of the ECMM. The meeting in Wrocław was the last ECMM congress of its type. Next year we meet in Berlin at the second Trends in Medical Mycology congress sponsored jointly by ourselves and the EORTC. Already an exciting programme is being assembled for Berlin, and the organizers have attracted generous sponsorship from our colleagues in the pharmaceutical industry. From now on there will be a biannual TIMM congress in every odd-numbered year.

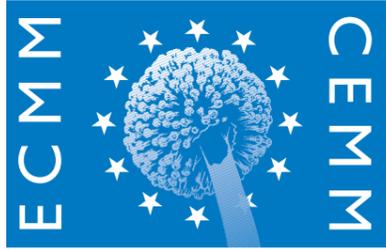
In years with an even number (excepting 2006, when the ISHAM Congress will take place in Paris) there will be an ECMM meeting held to provide training in medical mycology. Each meeting will focus on a particular theme, and we hope these workshops will particularly attract young participants who are entering the field of medical mycology. The timing of the ISHAM Congress means that the first of the new training workshops will take place in 2008.

We hope we can continue to expand the projects we undertake in the ECMM. We are not a wealthy society, and our status as a confederation of national societies sometimes means that we seem remote from you, the individuals who make up our numbers. Please do not let such considerations deter your enthusiasm to approach the ECMM with any ideas or projects you think this society might sponsor. Because we reach medical mycologists all over Europe we can sometimes achieve things on a broader scale than a national society.

Frank C. Odds  
ECMM President

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**Mycology Newsletter**

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## ECMM Affiliated Societies

(Information provided by the member Societies)

**All-Russian National Academy of Mycology**

President: Y.V. Sergeev  
Vicepresident, Head of Medical Section:  
S.A. Burova  
Secretary: A.Y. Sergeev (ECMM delegate)  
Treasurer: V.M. Leschenko  
Membership 2004: 246  
National meeting: Third Russian Congress of  
Medical Mycology, March 24-25, 2005  
Website: www.mycology.ru

**Associação Portuguesa de Micologia Médica (ASPOMM)**

President: M. Rocha  
Vicepresident: R.M. Velho  
Secretary: M.L. Rosado (ECMM delegate)  
Treasurer: M. Gardete  
Membership 2004: 50

**Asociación Española de Micología (AEM) Sección de Micología Médica**

President: J. Pontón San Emeterio  
Secretary: F.J. Cabañes Saenz  
Treasurer: F. Hernandez  
President Medical Mycology Section:  
J. Pemán García (ECMM delegate)  
Membership 2004: 142  
National meeting: Every two years  
Journal: Revista Iberoamericana de  
Micología

**Austrian Society for Medical Mycology/ Österreiche Gesellschaft für Medizinische Mykologie (ASMM/ÖGMM)**

President: R. Würzner  
Vicepresident: G. Ginter-Hanselmayer,  
B. Willinger  
Secretary: C. Lass-Flörl (ECMM delegate)  
Vicesecretary: H.-J. Dornbusch  
Treasurer: C. Speth  
Vice-treasurer: K. Kuchler  
Membership 2004: 119  
National meeting: twice a year

**British Society for Medical Mycology (BSMM)**

President: F. C. Odds (ECMM delegate)  
General Secretary: H.R. Ashbee  
Meetings Secretary: E. Bignell  
Treasurer: D.M. MacCallum  
Membership 2004: 281  
National meeting: April 3-5, 2005, Canterbury  
Newsletter: BSMM Newsletter

**Bulgarian Mycological Society (BMS)**

President: T. Kantardjiev (ECMM delegate)  
Vicepresident: G. Mateev  
Secretary: A. Kouzmanov  
Treasurer: T. Velinov  
Membership 2003: 41

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**Hungarian Dermatological Society Mycology Section**

President: G. Simon (ECMM delegate)  
Secretary: G. Fekete  
Membership 2004: 59

**Israel Society for Medical Mycology**

President: E. Segal  
Vicepresident: I. Polacek  
Secretary: I. Berdicevsky (ECMM delegate)  
Treasurer: D. Elad  
Membership 2004: 60  
National meeting: twice a year

**Mycology Group of Bosnia Hercegovina**

President: L. Ozegetic (ECMM delegate)  
Secretary: M. Babic  
Membership 2003: 19  
National meeting: twice a year

**Netherland Society for Medical Mycology (NVMY)**

President: J.F.G.M. Meis (ECMM delegate)  
Secretary: E.P.F. Yzerman  
Scientific Secretary: S. de Hoog  
Treasurer: M.H. Dammer  
Membership 2004: 155  
National meetings: April 2005, Arnhem;  
October 2005, Utrecht  
Newsletter: NVMy Newsletter

**Nordic Society for Medical Mycology**

President: M.C. Arendrup (ECMM delegate)  
Vicepresident: M. Richardson  
Secretary: P. Sandven  
Treasurer: D.M.L. Saunte  
Membership 2004: 85  
National Meeting: April 2005, Copenhagen  
Newsletter: at web site  
Website: www.nsmm.nu

**Polish Dermatologic Society Mycology Section**

President: E. Baran  
Vicepresident: Z. Adamski, R. Maleszka  
Secretary: J. Szepietowski (ECMM delegate)  
Treasurer: R. Białynicki-Birula  
Membership 2004: 98  
National meeting: 2006, Gdansk  
Journal: Mikologia Lekarska (Medical  
Mycology)

**Société Belge de Mycologie Humaine et Animale/Belgische Vereniging voor Menselijke en Dierlijke Mycologie**

President: D. Swinne  
Vicepresident: D. Parent, M. Lontie  
Secretary: P.E. Lagneau, K. Lagrou  
Treasurer: F. Symoens  
ECMM delegate: N. Nolard  
Membership 2004: 187

**Société Française de Mycologie Médicale**

President: O. Morin  
Vicepresident: N. Contet-Audonnet,  
A. Detry, P. Boiron  
Secretary: B. Dupont (ECMM delegate)  
Treasurer: C. Lacroix  
Membership 2004: 400  
National meeting: May 25-27, 2005, Besançon  
Journal: Journal de Mycologie Médicale

**Swedish Society for Clinical Mycology**

President: J. Faergemann  
Vicepresident: T. Kaaman  
Secretary: L. Klingspor (ECMM delegate)  
Treasurer: M.L. von Rosen  
Membership 2004: 85

**Swiss Mycological Group**

ECMM delegate: M. Monod

**Turkish Microbiological Society Mycology Section**

President: Ö. Ang  
Secretary: C.B. Johansson  
Treasurer: D. Yaylali  
ECMM delegate: E. Tümbay  
Membership 2003: 150  
National meeting: 2005, Konya  
Newsletter: Bulletin of the Turkish  
Microbiological Society.



Reinhard Würzner

## Austrian Society for Medical Mycology/ Österreichische Gesellschaft für Medizinische Mykologie (ASMM/ÖGMM)

crobiology and Preventive Medicine/Österreichische Gesellschaft für Hygiene, Mikrobiologie & Präventivmedizin (ÖGHMP), the ASMM considers itself as offspring and as partner of both societies and will maintain strong links to them - most of the ASMM members are also members in one or both of these societies.

At present the ASMM does not organise its own national annual meetings, but encourages its members to participate in the DMykG and ÖGHMP meetings. The president of the ASMM has agreed to organise the MYK2006 for the DMykG in Innsbruck as a joint meeting with the ASMM.

After over three years of proving to be a very active society with organisation of several symposia and workshops - for further details

please visit the ASMM homepage at <http://www.oegmm.at> - the ASMM has applied for membership in the ECMM which was kindly accepted on the occasion of the ECMM meeting in Wroclaw in spring 2004. The ASMM has 119 members at present, including 16 companies.

In order to maintain the present momentum, the ASMM would be very interested in hosting an ECMM meeting in the not too distant future in Vienna, but this will be discussed with the other ECMM members. Nevertheless, the ASMM wants to emphasize that it is committed to contribute to the future success of the ECMM at a very early stage of its membership.

Reinhard Würzner

President of the ASMM/ÖGMM

### Symposia and Workshops of the Austrian Society for Medical Mycology

- Clinical Mycology and Diagnostics  
Innsbruck, June 2002
- Molecular Diagnostics of Fungal Infections  
Vienna, December 2002
- Diagnostics and Therapy of Fungal Infections in Immunosuppressed Patients  
Innsbruck, July 2003
- Systemic Fungal Infections: Prevention, Diagnostics and Therapy  
Graz, October 2003
- Joint Statusworkshop with the German Hygiene & Microbiology Society (DGHM)  
Innsbruck, February 2004
- Joint Mycology-Workshop with the Austrian Hygiene & Microbiology Society (ÖGHMP)  
Bad Ischl, May 2004
- Medical Mycology - Practical Course  
Vienna, November 2004

The Austrian Society for Medical Mycology (ASMM/ÖGMM) was founded on November 21st 2000, in order to increase the flow of information concerning international and national meetings and improve the medical education and research in the field of Medical Mycology in Austria. Such a separate legal entity was considered necessary as medical education and science funding is still dependent on national governments and different country-specific political and financial structures.

The particular aims of the ASMM were, and still are, the organisation of symposia and practical courses, the standardisation of diagnostic procedures and the establishment of therapeutic guidelines. A further aim is the exchange of know-how within Austria to spread or learn special techniques.

Despite the ASMM's independence from both the German-speaking Mycological Society (Deutschsprachige Mykologische Gesellschaft - DMykG) and the Austrian Society for Hygiene, Mi-



Maiken Cavling Arendrup

## Nordic Society for Medical Mycology: presentation of a new society

Other sessions included fungal infections in various patient groups (the immunocompromised host, the intensive care setting, the organ transplant patient) and sessions on skin and oral manifestations of fungal infections and diagnostics of invasive fungal infections. Programme & abstract book and pictures from the meeting are available at the NSMM Internet site [www.nsmm.nu](http://www.nsmm.nu)

Future NSMM events include "Medical Mycology an Introduction Seminar" a one-day course in medical mycology which will be held in Copenhagen at Statens Serum Institute March 31st 2005 and the "2nd NSMM scientific meeting" focusing on "Proper use of Antimycotics" which will be held also in Copenhagen on April 1st 2005. Information on both arrangements can be found at the web-site.

The board established at the founding meeting consists of the following eight members:

Maiken Cavling Arendrup, MD, PhD - *President, Meetings Secretary for the 2<sup>nd</sup> scientific meeting*, Head of Unit of Mycology and Parasitology, Statens Serum Institut, Copenhagen, Denmark,  
Malcolm Richardson PHD, FIBIOL, FRCPATH - *Vice-President*, Associate professor in Medical Mycology, University of Helsinki, Haartman Institute, Helsinki, Finland,

Ditte Marie Lindhardt Saunte, MD - *Treasurer*, Unit of Mycology and Parasitology, Statens Serum Institute, Copenhagen, Denmark,  
Per Sandven, MD, PhD - *General*

The Nordic Society for Medical Mycology (NSMM) was formed in Copenhagen the 25th of August 2003. The motivation hereof has arisen from the fact that although medical mycology is a growing field and relevant to doctors and scientists in many medical and microbiological specialities, mycology still forms a rather small area in each of the Nordic countries. Thus, it is our hope that a Nordic society will increase the possibilities of collaboration across the borders by creation of a forum where doctors, scientists, students and others with interest in human and animal medical mycology can meet.

The society plans to arrange at least one annual scientific meeting and in various ways arrange or facilitate the arrangements of courses in medical mycology.

The first scientific meeting was a joint meeting held together with the Swedish Society of Clinical Mycology in Stockholm March 12th 2004. Professor Frank Odds was invited Key-note speaker, giving a lecture entitled "Candidosis to-

*Secretary*, Head of Unit of Bacteriology and the National Mycology Reference Laboratory, Institute of Medical Microbiology Rikshospitalet University Hospital, Oslo, Norway,

Lena Klingspor MD PhD BSc - *Meetings Secretary for the 1<sup>st</sup> scientific meeting*, Karolinska Institutet, Huddinge University Hospital, Stockholm, Sweden,

Jan Faergemann, MD, PhD, Professor in Dermatology, Department of Dermatology, Sahlgrenska University Hospital, Göteborg, Sweden,  
Niels Anker Peterslund, MD - Department of Haematology, Århus C, Denmark,

Juha H. Salonen, MD, Päijät-Häme Central Hospital, Lahti, Finland.

Applications for membership of the society are most welcome, the application form can be found at our web page: [www.nsmm.nu](http://www.nsmm.nu) or can be acquired by e-mail request at the following e-mail address: [Per.Sandven@rikshospitalet.no](mailto:Per.Sandven@rikshospitalet.no)

Maiken Cavling Arendrup

President of the NSMM





The opening ceremony was held in the Aula Leopoldina, the Baroque hall of the Wroclaw University



## Congress of the European Confederation of

# Medical Mycology

The symposia and lectures at the 10<sup>th</sup> ECMM Congress were characterised by a large variety of topics of relevant interest. Some examples of the high quality lectures are here reported.



The 10th Congress of ECMM in Wroclaw Poland turned out to be a very successful meeting, with several hundred participants from all over the world. The local organizers, Prof.'s E. Baran and J. C. Szepietowski together with the Mycological Section of the Polish Dermatological Society undertook a difficult job to attract scientists, mycologists and clinicians from all continents in a wonderful meeting to discuss topics related to fungi and fungal diseases. During the congress, excellent presentations were delivered by the invited speakers. In addition, a great number of high-quality submitted abstracts contributed to lively poster and oral presentation sessions. The social program of the meeting also was quite nice.

The first day of the meeting, June 17, 2004 started with the meeting of the ECMM Council. The opening ceremony was then held followed by a welcome reception where friends and colleagues met in a relaxing, warm and joyful atmosphere. The next day, Friday, and the subsequent days the meeting continued with excellent lectures delivered by national specialists. In addition, scientific symposia were organized by experienced faculty and contained high-quality lectures on specific topics related to biology, pathogenesis, diagnosis and management of fungal diseases. The prestigious E. Drouhet Lecture was delivered by Prof. Eugeniusz Baran who presented with a series of beautiful pictures the Wax Mycological Models Collection stored in Wroclaw's Department of Dermatology. This presentation intended to review the history of wax mycological models collection built and found in the Department for many decades. These models represented skin lesions, tumors or other pathological conditions. They were called "moulages". The audience was enthusiastic to participate in 3 well-attended satellite symposia generously supported by grants of equal number of pharmaceutical companies.

The next ECMM annual meeting will be held jointly with EORTC as 2nd TIMM (Trends in Medical Mycology) in Berlin, 23-26 October 2005 in the new renovated Berlin Congress Centre located at the historical Alexanderplatz in the middle of the cultural centre of Berlin. During 2006, ECMM will not hold a separate meeting, but a co-sponsored meeting within ISHAM in Paris from June 25 to 29, 2006. Please schedule your attendance to our future meetings in Berlin 2005, Germany and in Paris 2006, France. We are looking forward to seeing all the members of the national mycological societies to actively participate in these two very important ECMM meetings.

Emmanuel Roilides

## Fungal infections in immunocompromised hosts

The session chaired by I. Berdichevsky, L. Polachek and Z. Adamski focussed on different topics concerning invasive mycoses in the IC host, including pathogenesis, advances in molecular diagnosis and typing, the present status of invasive fungal infections in patients with AIDS and epidemiology and management of invasive mycoses in the immunocompromised child.



The Drouhet Lecture was delivered by Prof. Eugeniusz Baran on "The wax mycological models collection in Wroclaw's Department of Dermatology"

### Pathogenesis

June Kwon Chung (National Institute of Health, Bethesda) gave a fascinating presentation on the mechanism by which *Cryptococcus neoformans* penetrates into the brain and CSF via circulating blood causing meningoencephalitis, which was one of the least understood steps in CNS cryptococcosis.

How yeast cells interact with and cross the blood brain barrier was investigated using an *in vitro* model of the human blood-brain barrier. Within 15 to 30 min exposure to *C. neoformans*, human brain microvascular endothelial cells were shown by SEM to produce extensive microvillus-like projections and to adhere to the penetrating yeast cell at the entry site on the surface of the endothelial cell. In addition, using TEM, the fungal cell was shown to be enclosed in a vacuole within the endothelial cell and to cross the endothelial monolayer cells without affecting their integrity. No yeast cells were found between endothelial cells.

An *in vivo* mouse model study corroborated these data. Histopathology showed that, 3 h post-infection, the yeast cells were within microvascular endothelial cells in the mouse brain and that clusters of *C. neoformans* were present in the brain parenchyma away from the vessels by 22 h. In contrast, association of the yeast cell with the choroid plexus was not detected.

Both *in vitro* and *in vivo* results indicate that *C. neoformans* cells invade the central nervous system by transcellular crossing of the endothelial brain-blood barrier.

### Molecular diagnosis and typing

An update of the molecular methods developed in medical mycology was presented by Aristeia Velegraki (Mycology Reference Laboratory, University of Athens). The variety of clinical presentations of invasive fungal infections in the immunocompromised host as well as the antifungal susceptibility trend of common and emerging fungal pathogens pose diagnostic and therapeutic challenges requiring adoption of dependable sensitive and specific laboratory assays. Molecular diagnostic methods seem to be the best candidates to fit the above requirements. Technological developments have introduced into the clinical laboratory methods for detection, identification, and quantification of fungal DNA or mRNA by single and multiplex real time PCR. In addition, assays such as the line probe assay (LiPA) for recognition of specific fungal pathogens in clinical material or the use of peptide nucleic acid (PNA) probes for detection of fungi in histological material are now considered for use in fungal diagnostics. More promising are the

multiplex PCR and the microarray assays as they represent an evolution of well-established techniques and are supported by the development of procedures that facilitate data analysis and interpretation of results. Molecular methods such as DNA fingerprinting, AFLP, PCR-SSCP, and multilocus sequence typing (MLST) are also becoming essential for understanding the epidemiology of nosocomial infections. Furthermore, the recent development of a reverse transcription PCR for studying azole resistance gene expression and regulation in *Candida albicans* isolates can contribute in optimising management strategies for invasive *Candida* infections.

### Invasive fungal infections in patients with AIDS

Spinello Antinori (Infectious and Tropical Disease Institute, University of Milan) reviewed the changing face of opportunistic mycoses in HIV-positive patients treated with highly active antiretroviral therapy (HAART). He focussed on the dramatic decrease in the incidence of pneumocystosis, cryptococcosis and esophageal candidosis observed either in Europe and USA as the consequence of the introduction of HAART. The potential direct activity of protease inhibitors against fungal pathogens, especially *Candida* spp. and *Pneumocystis jiroveci* was



addressed. Prof. Antinori summarized the spectrum so far described for cryptococcal disease following immune reconstitution inflammatory response (IRIS): paradoxical intracranial cryptococcomas, paradoxical recurrent meningitis, mediastinitis and lymphadenitis. Finally he discussed the feasibility of discontinuing primary and secondary prophylaxis for PCP and maintenance therapy for cryptococcosis, histoplasmosis and penicilliosis after HAART-induced immunorecovery.

Maria Anna Viviani

### Management of fungal infections in the immunocompromised child

Systemic fungal infections have not only emerged in the adult population, but also in children and especially in preterm infants. Certain children are at higher risk to develop fungal infections: children suffering inherited (chronic granulomatous disease, myeloperoxidase deficiency, severe combined immunodeficiency), and acquired immunodeficiencies (HIV, chemotherapy induced neutropenia), acute myeloid leukaemia, complicated abdominal surgery, longterm use of broad-spectrum antibiotics and steroids, patients with implanted catheters and preterm infants below 1.500g birth weight. Even a full-term newborn is not immunocompetent and due to a high *Candida* colonization rate of the mother during pregnancy, it may develop oropharyngeal candidiasis and diaper dermatitis or congenital cutaneous candidiasis. Candidaemia and disseminated candidiasis are inversely correlated with the gestational age and birth weight: Extremely low birth

weight infants (ELBW) have a risk of up to 20% for developing neonatal candidiasis during their stay in the neonatal intensive care unit (NICU). From a recent epidemiological study conducted in Germany, 50% of ELBW infants are colonized with fungi, and from those that develop disseminated infection the mortality rate is 30%. *C. albicans* is the most commonly isolated pathogen (70%), but 23% were other *Candida* spp. with *C. parapsilosis* the leading one. Other so far rare yeasts, such as *Trichosporon* and *Rhodotorula* spp. as well as rare moulds are emerging in paediatric oncology patients undergoing bone marrow transplantation or stem cell transplantation. Unfortunately, in general almost 60% of the children and 90% of the newborns receive treatment with unlicensed drugs in Europe, so it is the paediatrician's choice either to prescribe a drug with high efficacy in adults that has not been tested in children or a drug with less efficacy that has been tested in children. Antifungals that are commonly used in paediatrics are conventional and liposomal amphotericin B as well as the azoles fluconazole and itraconazole due to their oral bioavailability. The new antifungals of the next generation triazoles (voriconazole, posaconazole and ravuconazole) as well as the echinocandins (caspofungin, micafungin, anidulafungin) have potential for the paediatric population due to their broader spectrum, oral bioavailability for the azoles as well as their tolerability and excellent safety profiles. Before these drugs can be recommended in paediatrics, clinical trials including pharmacokinetic and pharmacodynamic studies for the different age groups are warranted. Despite these potent antifungals, mortality rates in paediatrics caused by yeasts and moulds are still far too

high. Therefore the concept of prophylaxis, empirical and preemptive antifungal therapy has been implemented in the care of paediatric oncology patients. Currently it is under debate in the paediatric community whether these concepts need to be expanded to other patient groups such as preterm infants. Initial studies have shown reduced colonization and less fungal infections in fluconazole treated patients in comparison to placebo, but survival rates were so far not significantly different. From a number of studies it appears that thrombocytopenia in preterm infants is highly suspicious for a fungal infection. Other patient groups, such as cystic fibrosis (CF) patients and asthmatics are not clearly regarded as immunocompromised, but long-term use of systemic and inhaled steroids as well as implanted catheters may predispose to fungal infection. It is already well known that allergic bronchopulmonary aspergillosis can be caused not only by *Aspergillus* spp., but by different other moulds and various mould infections have been observed in the destroyed lung of CF-patients.

It is a future task to assign more attention and focus in research to fungal infections in paediatric patients with special regard to preterm infants and other immunocompromised (oncology, HIV) and immunocompetent (cystic fibrosis, asthmatics) children at high risk for developing fungal infection or mould allergy. The new antifungals need to be investigated in this population including in preterm infants and new concepts of antifungal preemptive therapy and prophylaxis need to be carefully evaluated in children to reduce morbidity and mortality caused by fungi.

Frank-Michael Müller

## Host-fungus relationships

This symposium, chaired by E. Roilides, S. Levitz and P. Kurnatowski, gave a fascinating insight into the innate immunity as well as the recognition of fungi by different membrane cell receptors

O. Ibrahim-Granet (Unité des *Aspergillus*, Institut Pasteur, Paris) focussed her talk on the interactions between the alveolar macrophage which is the first line of defence against *Aspergillus fumigatus* and the conidia of this fungus. Cellular mechanisms involved in the phagocytosis and the killing of conidia have been described. Polymerisation of the actin cytoskeleton is essential for phagocytosis and the killing of conidia is directly associated with acidification of the phagolysosome and the production of reactive oxidant intermediates. In this talk the activation of MAP kinases in alveolar macrophages was reported, also activation of the transcription factor NFκB in response to the interaction with *A. fumigatus* conidia. The activation of the transcription factor as well as expression of the cytokines are correlated with the first stage of germination of the conidia within the phagolysosome.

S. Levitz (Boston University School of Medicine, USA) focussed his talk on the contribution of Toll-Like Receptors and mannose



receptors to the immune response to *Cryptococcus neoformans* and *A. fumigatus*. TLR2, TLR4 and CD14 recognize the major cryptococcal capsular polysaccharide. Mice lacking TLR adaptor proteins and CD14 show reduced survival when infected with *C. neoformans*. TLR2 signalling was essential for optimal macrophage proinflammatory cytokine responses to *A. fumigatus* and TLR4-/- and MyD 88 immunosuppressed deficient mice died sooner when infected with *A. fumigatus*.

In the third talk C. Gil-Lamaignere (University of Heidelberg, Germany) reviewed the participation of acquired and innate immunities in host defence against *Candida* infections with a particular emphasis on the role of polymorphonuclear leucocytes. The involvement of pH variations, reactive oxidant production and release of an-

timicrobial peptides killing processes was discussed. Expression of inflammatory cytokines suggests that *Candida* modulates host gene expression to its advantage.

The last presentation was made by E. Roilides (University of Thessaloniki, Greece) on host defence against emerging fungal infections.

The enhancing activity of the oxidative stress of polymorphonuclear leukocytes against *Scedosporium*, *Rhizopus*, *Fusarium* and *Aspergillus* species following treatment by different cytokines, particularly IL5, has been shown.

Several studies have shown immunomodulatory effects on the function of the polymorphonuclear leukocytes following the combination of cytokines and antifungal agents such as azoles. This suggests the utility of cytokines as adjunctive therapy in combination with conventional antifungal chemotherapy.

Oumaima Granet



# The ECMM Young Investigators Travel Award

Nikolaos Tegos from the Mycology Reference Laboratory of Medical School, University of Athens, was awarded the 2004 ECMM Young Investigators Travel Award

It was a great honour receiving the ECMM Young Investigators Travel Award as judged on the content of my poster entitled "Diploidy and single nucleotide polymorphism identified in the rDNA ITS 2 region of bloodstream *Candida albicans* isolates from a single intensive care unit" (Authors: N. Tegos, P. Menounos, A. Mitroussia-Ziouva and A. Velegraki), which was presented at the 10<sup>th</sup> ECMM Congress, held at Wroclaw, Poland in June 2004.

I am a 3<sup>rd</sup> year PhD student undertaking my thesis in the Mycology Reference Laboratory (Hellenic Centre for Diseases Control), Department of Microbiology, Medical School, University of Athens, Greece. My studies are focused on the molecular identification and sub-

typing of *Candida* species isolated from immunocompromised patients, a high risk group of individuals for opportunistic fungal infections. Over the past decade fungal infections have risen from 2.0 to 10.8 cases per 1000 hospital admissions. Of these, *C. albicans* constitutes the most common aetiology of nosocomial infections that not only it is accounting for mortality rates of up to 40% in bloodstream infections, but it is also a biologically complex microorganism demonstrating virulence-associated phenotypic plasticity.

The aim of my study was to validate the potential of the ITS regions of the nuclear rDNA complex as molecular markers for reliable typing of *C. albicans* nosocomial isolates. For this purpose a population

of sixty six (66) bloodstream strains, isolated over a period of two years from a single Intensive Care Unit (ICU), were studied by PCR amplification of the ITS 1 and ITS 2 regions followed by single strand conformation polymorphism (SSCP) analysis of the amplification products. ITS2 PCR-SSCP clustered the strains in 8 distinct groups, whereas the ITS 1 region was found conserved. Sequencing of the ITS 2 amplicons (ABI Prism 310 Genetic Analyzer, Applied Biosystems, USA) confirmed this clustering and, furthermore, revealed five novel types (GenBank Acc. Nos AY 560099-AY 560106) additional to the three already published. Of these, three were the result of diploidy and the remaining two of single nucleotide substitutions. *C. albicans* diploidy identified in the ITS 2 region is reported for the first time. In addition, ITS 2 PCR-SSCP showed that ICU patients hospitalized at the same period of time were infected by the same *C. albicans* SSCP subtype. Therefore, recognition of *C. albicans*

ITS 2 subtypes and diploidy in different clinical isolates is feasible by PCR-SSCP. These results corroborate that diploidy can be recognized in the *C. albicans* ITS 2 region and hence this locus can serve as a marker for detecting it. They can also contribute in the confirmation of the notion that the endurance of genetic phenomena in divergent clinical microenvironments can highlight the epidemiology of nosocomial infections owing to this genetically intricate yeast.

The 10<sup>th</sup> ECMM Congress was particularly educational in that it comprised sessions with multidisciplinary topics, a trend which induces the awareness to new comers in the field, like me, that Mycology can confidently amalgamate a plethora of science disciplines with a multitude of medical and veterinary specialties. I wish to thank to the ECMM for granting me the opportunity to benefit through the Young Investigators Travel Award.

Nikolaos Tegos



The ECMM President congratulates Dr. Nikolaos Tegos

## About the ECMM Young Investigators Travel Award

### To poster presenters and speakers of the 11th ECMM Congress in Berlin

#### ABOUT THE AWARD

The ECMM Young Investigators Travel Award facilitates young, nonestablished investigators in medical mycology to make educational or practical study visits to medical mycology oriented departments or institutions in other European countries. As a rule, the Awardee will be selected from among those presenting a poster in the annual ECMM Congress. An outstanding oral presentation may also be considered.

The presentations are judged by a Prize Committee on the basis of the scientific quality, including novelty, reliability and significance, of the Awardee's presentation. The sum of the Award is presently 1000 EUR, to support the travel and living costs of one week. The institute visited is freely selected by the Awardee.

**Eligibility:** The Award is meant for young (not older than 35 years) persons who are citizens of European countries or work in Europe. The Awardee should not hold an established (other than grant-funded) post in medical mycology. It is also wished that the Awardee is a member of a national society or at least aims to apply for membership. Eligible first or presenting authors are preferred, but an outstanding team may be selected if it can direct the Award to junior coauthors who are eligible.

Those individuals and teams wishing to be considered as candidates of the Award in the 11<sup>th</sup> Congress of the ECMM in Berlin, 2005, are kindly asked to fill this form and submit it to the Congress Secretariat at first convenience.

#### AUTHORS' STATEMENT

- Concerning our presentation, titled: \_\_\_\_\_

- By authors (please mark the presenting author): \_\_\_\_\_

Presented  As a poster /  Orally (Tick square as appropriate);

Yes, we wish that our presentation is considered as a candidate for the ECMM Young Investigators Travel Award. Our presentation meets the eligibility criteria as follows (tick all squares that are appropriate):

**1) The following team members are aged 35 years or less:**

- First author  
 Presenting author  
 Other coauthor(s) (who?)

**2) The following team members do not hold an established position:**

- First author  
 Presenting author  
 Other coauthor(s) (who?)

**3) The following team members are citizens of, or work in, a European country and are either members of a ECMM member society or willing to submit a membership application if selected.**

- First author  
 Presenting author  
 Other coauthor(s) (who?)

To be signed by the first or presenting author:

Date / / 2005,

To be submitted as paper, fax or email to the Congress Secretariat (Congress Care, Muntelbolwerk 1, P.O. Box 440, 5201 AK's-Hertogenbosch, The Netherlands, fax: +31 73 690 1417, email: [info@congresscare.com](mailto:info@congresscare.com). To facilitate handling, we kindly recommend submission before October 15<sup>th</sup>, 2005. However, forms given at the Congress registration desk at latest October 23<sup>th</sup>, will be considered.



## Second Trends in Medical Mycology 2005 in Berlin



The second international congress on Trends in Medical Mycology (TIMM-2) will be held in Berlin (Germany) on 23-26 October 2005. The yearly congress of the European Confederation of Medical Mycology (ECMM) and the bi-annually international conference Trends in Invasive Fungal Infection

(TIFI) have merged in 2003. Therefore Trends in Medical Mycology will be organised under auspices of the EORTC and the ECMM. The first TIMM organized in October 2003 in Amsterdam, has been a very successful meeting with approximately 1000 participants enjoying an outstanding meeting. It is now our privilege to organize TIMM-2 in Berlin, one of the most rapidly changing big cities of the world. Here you will find both a fascinating process of innovation and the omnipresent trademarks of a unique tradition of science, culture and politics. Berlin is the place where Rudolf Virchow, Robert Koch and many other prominent medical scientists spent the most productive period of their professional life.

The congress venue is located right in the heart of Berlin at the Alexanderplatz and will take place at the Berlin Conference Center. We have prepared an ambitious program spanning all hot topics of medical and clinical mycology, consisting of 33 program parts with

symposia, interactive morning sessions, plenary and poster sessions, oral presentation sessions, workshops, a key note lecture and last but not least industry sponsored symposia. Main topics are antifungals, emerging fungal pathogens, fungal infections in the different patient population (immunocompromised host, children, hematology/oncology), dermatomycology, diagnostic methods, molecular methods, host-fungus relationship and allergy, mycotoxins). Apart from symposia several interactive sessions with presentation and discussion of clinical case scenario will be included as well as workshops with face-to-face discussion on selected topics with experts (e.g. how to use molecular database?, interpretation of radiology findings?, importance of fungi in plants for humans? etc.). The welcome reception will be a "Berlin-like" come-together-party for all who enjoy a vibrant place with food, music and dance. In contrast, the congress dinner is planned in the outstanding German Historical Museum in the middle of the fascinating "Museumsinsel", formerly known as "Zeughaus". The Zeughaus is the oldest building located on the avenue Unter den Linden. It is one of most beautiful secular buildings of the Baroque period in northern Germany and owes its special place in art history to the high quality of its sculptural works.

The deadline for abstract submission is 1 June 2005. Information on the program could be found at the internet ([www.timm2005.org](http://www.timm2005.org)). For further information please contact the congress secretariat at Congress Care ([info@congresscare.com](mailto:info@congresscare.com) or [www.congresscare.com](http://www.congresscare.com)). Detailed information on the final program will be given at the website in the beginning of 2005.

We would be delighted to welcome all of you in the capital of Germany for the largest European meeting on medical mycology.

Markus Ruhnke and  
Georg Maschmeyer  
for the Executive Committee

## The 7<sup>th</sup> ASM Conference on Candida and Candidiasis. Impressions



Esther Segal

From Thursday, March 18 to Monday, March 22, 2004 the 7th ASM Conference on: "Candida and Candidiasis" was held at the Hyatt Regency Hotel in Austin, Texas, USA.

About 350 participants were at this conference. It was an exciting mixed "crowd", composed of many known faces, such as John Bennett or Michael Pfaller from the clinical field, and Pete Magee, Richard Calderone or William Fonzi from basic research, intermingled with many, many young faces, for whom this may have been the first encounter in this form with the *Candida* topic. Also, although it was an ASM Conference, the participants actually represented the whole globe, including a significant number from Europe, and few from Asia, the Middle East or Latin America.

The opening session on Thursday evening focused on the past, present and future of *Candida* research with leading experts from basic (David Soll), clinical (John Rex) and industry (Chris Hitchcock) research. It was a most interesting concept contributing to a broad in depth perspective on what was already achieved and what could possibly be expected to be gained in the future.

The scientific program of the following three and a half days con-

sisted of 11 symposia sessions with invited presentations and 3 poster sessions with 247 posters.

The organizers of the conference based the program of the symposia sessions on a novel interesting approach. Each session was chaired by two conveners assigned by the organizers. The conveners presented research from their groups and selected the rest of the presentations from the submitted abstracts. The topics covered the major current areas of interest of *Candida* research, including among others, *Candida* mating, genomics and proteomics, signaling, biofilms, epidemiology and population studies, non-*albicans Candida*.

Of the large number and variety of the interesting lectures, to pick a few scientific highlights, would be a difficult task. Based on personal impression, the presentation of Beatrice Magee on the role in virulence of mating and ploidy in *C. albicans*, was exciting. In view of the finding that *C. albicans* can produce tetraploids and that natural isolates are diploid, they infected mice with diploid (heterozygous and homozygous at the mating type locus [MTL]) and tetraploid strains. They noted that the tetraploids were less virulent, and that the configuration of the MTL affects virulence only in some strains. Importance of ploidy was also discussed by James Anderson from Toronto, who stressed the impact of ploidy on the evolution of resistance to fluconazole in *C. glabrata*. Special interest could also be assigned to the presentation of Michael Kruppa at the session of Signaling. He reported on quorum sensing in *C. albicans* by farnesol, which is an endogenous lipid and is produced under high density cell population. High cell density affects morphogenesis and this effect

seems to be regulated by farnesol. Another presentation of interest at the same session was that of Joachim Morschhauser from Germany who described a study which provided insights into the mechanisms how *C. albicans* senses an environmental signal that regulates hyphal growth. It was also exciting to be informed by Derek Sullivan about the initiation of the project of sequencing of the *C. dubliniensis* genome.

As a more general observation, it could be noted that the conference was rich in presentations describing transcriptional profiles of *C. albicans* in different models, as the use of DNA micro-arrays technology has become more extensive.

The 3 poster sessions (247 posters) that were held each afternoon during the 3 full days of scientific activity were grouped by topic area, and each day all topics were covered. This resulted in very significant participation during these sessions, mingling of senior and younger participants and lively discussions around the poster boards.

The conference organizers provided breakfasts, lunches and coffee breaks, which supplied additional opportunities for interactions between the participants. The social activities included an opening reception and a banquet on Sunday. The latter was a most lively event with music and dancing. Austin is a city well known for its musical activities, which added an additional flavor to the social part.

In summary, the 2004 ASM Candida Conference in Austin was a successful event, both scientifically as well as socially, and the *Candida* community looks forward to the next conference.

Esther Segal

A new international meeting on *Aspergillus*

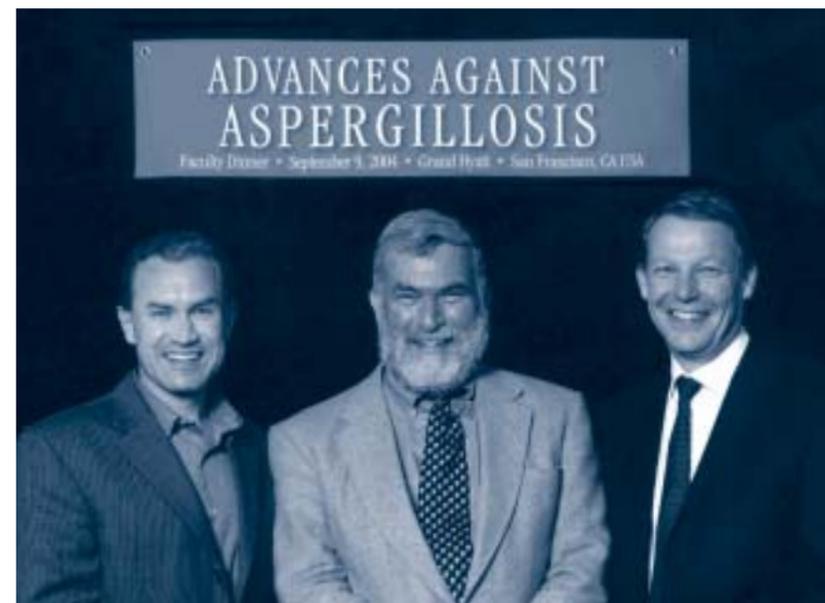
# Advances Against Aspergillosis



**A new international monothematic Congress on *Aspergillus* and aspergillosis has begun. This is a remarkable event, bringing together from world-wide the leading scientists and clinicians to present their state-of-the-art research and insights on *Aspergillus* and aspergillosis. In this article the founders, David A. Stevens, David W. Denning and William J. Steinbach, explain the genesis of the meeting, the inspiring principles and the design of its first edition held at San Francisco on September 2004. In addition, a synopsis of the meeting sessions is presented to give the reader an overview of the various presentations and events.**

The inaugural meeting of Advances Against Aspergillosis was held from Sept. 9-11, 2004 at the Grand Hyatt Hotel in San Francisco. Overall, this new international meeting was designed as a way of assembling many of the leading clinicians and basic scientists from around the world to drive forward the scientific and medical research agenda in *Aspergillus* and aspergillosis. The international flavor of the meeting was evidenced by the inclusion of 60 Faculty from 12 countries. The strong scientific program and attractive venue of San Francisco proved to be an excellent combination, with 364 registrants from 28 countries. Attendees included clinicians (oncologists, hematologists, pulmonologists, infectious disease specialists), basic research scientists (mycologists, immunologists), medical technologists, veterinarians, industrial hygienists, graduate and post-doctoral students, as well as pharmaceutical industry representatives. The generous sponsorship of numerous pharmaceutical companies helped offset the costs of the meeting and provided additional satellite symposia, as well as social events. Support from the International Society for Human and Animal Mycology (ISHAM) was used for important travel scholarships to allow young scientists that had submitted an abstract for poster presentation to attend the meeting. Three of these awards were made, two other donors funded two other awardees, and the meeting offered funding to 14 others.

Day one of the meeting included open registration, and a welcome reception, sponsored in part by Vicuron Pharmaceuticals, for registrants and faculty. The reception was held on the 36<sup>th</sup> floor of the Grand Hyatt providing stunningly clear views of San Francisco and a friendly atmosphere for the attendees to mingle, renew friendships, and create new ones. A dinner for the faculty and their guests was hosted by Gilead Sciences. Open to all attendees was an evening dinner satellite symposium sponsored by Merck following the welcome reception. In



William J. Steinbach, David A. Stevens, David W. Denning

this symposium current clinical issues of treatment using the newer antifungals and criteria for diagnosis of aspergillosis were presented by J. Perfect and W. Hope. Two additional breakfast symposia were open to all attendees. The initial session began at 7:00 AM Friday morning and was co-sponsored by BioRad Laboratories and Enzon Pharmaceuticals. Among the issues discussed were new diagnostic testing assays, antifungal susceptibility testing patterns and clinical response of aspergillosis patients to lipid-formulated amphotericin B. The faculty included P. Pappas, P. Verweij, P. Chandraskar, and M. Kleinberg. A second breakfast symposium sponsored by Schering-Plough was held the following day and included talks on oral prophylaxis and chronic pulmonary aspergillosis by E. Bow and D. Denning.

Friday morning began the first of two full days of scientific sessions. The official opening of the meeting was performed by Dr. David A. Stevens, who welcomed all and provided a synopsis of the genesis of the meeting. The evolution of the meeting began with the writing of a review paper, which evolved into a 173-page full supplement published in 2003 by "Clinical Infectious Diseases", with further evolution into the idea of organizing a meeting

solely dedicated to *Aspergillus*, to finally the meeting proper. Drs. Stevens, Denning, and Steinbach became the Chairs of the meeting, inviting other interested scientists to participate in the Organizing (five members) and Scientific (12 members) committees. The goals for the meeting were numerous and translational in nature. They wished to assemble the world's leading clinicians and scientists to advance the scientific and medical research agenda in *Aspergillus* and aspergillosis, to present the very latest advances and thoughts on aspergillosis from speakers actively advancing the field with new discoveries, and to engender collaborative relationships amongst clinicians, basic scientists, as well as industry to further advance the field. Thus, the program for the meeting encompassed a broad range of topics including basic research, genomics, molecular biology, molecular genetics, immunology, pathogenesis, clinical medicine, veterinary medicine, diagnostics and epidemiology. Overall, the program included 45 invited speakers, 4 speakers chosen from submitted abstracts, 87 submitted abstracts presented in posters, and three industry sponsored satellite symposia.

The scientific sessions began with epidemiology of *Aspergillus*, focusing on the frequency of infec-

tion and mortality in humans and animals, environmental sources of infection including water supplies in patient rooms, and links of response to *Aspergillus* to asthma (D. Warnock, A. Warris, E. Tovey, C. Hogaboam, and L. Tell). The following session addressed the difficult issues of diagnosis of aspergillosis from phenotypic aspects to molecular methods used in clinical laboratories, as well as how radiological diagnostics contribute to the overall clinical differential decision making process (N. McClenny, C. Morrison, D. Buchheidt, and R. Greene). A novel aspect of the programming for the meeting became apparent with the intentional interspersing of sessions dealing with clinical sciences with those of basic sciences, allowing a marriage of the two crucial halves of scientific advancement. Thus, the third session of Friday initiated the basic science and molecular biology part of the program. The session topics began with an overview and up-date of the four genome sequencing projects related to species of *Aspergillus*. These sequences are due for publication in the fall of 2004 and will become an invaluable resource for the *Aspergillus* community. Also discussed were the topics of sexual reproduction in *A. fumigatus*, comparative cell wall structure and function and biosynthesis of ergosterol and transporter genes in relation to the development of drug resistance (W. Nierman, P. Dyer, J-P. Latgé, and G. Goldman). The intensity of the scientific portion of the meeting became apparent with three additional sessions following the afternoon break. The first of these returned to the clinical side with a roundtable discussion of the utility and key issues debating prophylactic versus empirical antifungal therapy in immunocompromised patients (K. Marr and E. Anaissie) in a session chaired by P. Pizzo, who pioneered the concept, and T. Walsh.

A true highlight of the conference followed with four speakers chosen by the conference committee members from the submitted abstracts. Each of the four 10 minute talks were superbly presented by the young investigators and exam-

ined characterization of the stuA protein (D. Sheppard), role of neutrophils in a model of ABPA (S. Park), the contribution of platelets to host-defense (C. Lass-Flörl) and the gene *LaeA* as a determinant of virulence (S. Balajee). These young investigators are to be commended for their efforts and preparation and will undoubtedly be important forces in the future of *Aspergillus* research.

The final session of Friday was a roundtable discussion on various *in vivo* models of aspergillosis and their use in studies of pathogenesis, virulence, and therapeutics. The two primary talks provided overviews of the past use of avian and mammalian models of infection and the future directions of developing animal models of aspergillosis that better emulate human disease (K. Clemons and T. Patterson). Included in the session were two shorter talks presenting recent studies using insects for models of infection (D. Kontoyiannis and D. Law).

The spectacular highlight of the social program occurred Friday evening with a 3 hour dinner cruise aboard the *Horatio Hornblower* on San Francisco Bay. The evening was clear with no fog, and the waters calm as the cruise provided captivating views of the Golden Gate Bridge, Alcatraz Island, San Francisco skyline, Bay Bridge and East Bay skylines. The Gail Dobson Quintet Jazz Group provided live entertainment and dancing. The evening proved very enjoyable, with many commenting on how surprisingly quickly the cruise was over and back in dock.

Saturday morning began the final day of packed scientific sessions. In the opening session the biology of *Aspergillus* was addressed with discussions on the synthesis and importance of conidial pigments and their contribution to escape from oxidative killing, the regulation of conidial germination and subsequent hyphal growth by MAP kinase, how well *Aspergillus* is able to grow at 37°C and an overview of *Aspergillus* mycotoxins, as well as their effects on growth (A. Brakhage, G. May, D. Askew, and K. Kamei). Im-

mediately following was a roundtable discussion on the nuances of *in vitro* antifungal testing of *Aspergillus*. Included were methodologies, and evolving resistance to echinocandins (J. Donnelly and D. Perlin). A clinical session on invasive disease in hematologic and immunocompromised patients was next up. The range of topics included disease in leukemic patients, hematologic stem cell transplant recipients, and primary immunodeficiency and pediatric patient populations (R. Herbrecht, C. Cordonnier, B. Segal, and W. Steinbach). Each of these overviews provided insightful clinical perspective for clinicians that do not specialize in these avenues of this infection.

The first session after the lunch break returned to the basic science part of the program covering the area of how *Aspergillus* interacts with its environment *in vitro*, and *in vivo*. These talks covered polarized growth, interactions with epithelial cells in the host, how the organism regulates the synthesis of amino acids, and the secretion of over 800 proteins from *A. fumigatus* (M. Mooney, M. Moore, S. Krappmann, and D. Archer). A return to the clinical aspects followed in the next session, which provided up-dates on the clinical presentation, treatment issues, and risk factors for aspergillosis in solid organ transplant patients. These included liver, lung and heart transplant patients (N. Singh, J. Golden, and J. Montoya).

The final session of the conference proved well worth the effort for those attendees staying until the end. The session covered the general topic of immunology and host-response to *Aspergillus*. The importance of innate immunity and what controls and regulates innate defense were well addressed. These ranged from the involvement of lung surfactant proteins and their role in innate immunity to the control of immunity by various cytokines, chemokines, and CSFs. How the acquired host-response is initiated via Toll-like receptors was also addressed. The importance of chemokine receptors was demonstrated by the increased susceptibil-

ity of animals deficient for CXCR2 or increased PMN response by over-expression of a CXCR1, as well as the role of GM-CSF and proinflammatory cytokines in macrophage killing. Additional talks dealt with ABPA and its pathology, progression and the immune response of Th2 promoting the disease. The antigenicity of various proteins derived from *Aspergillus* and the specificity of host-response to them during ABPA provided information on the role certain fungal proteins may play in a particular type of disease. Lastly, the prevention of aspergillosis was discussed and the utility of dendritic cell-based vaccines using various antigens in a CpG adjuvant, results that are encouraging for the future prevention of infection. Seven speakers were involved in this final session (T. Madan, T. Walsh, B. Mehrad, E. Brummer, R. Moss, V. Kurup, and S. Bellocchio). Dr. David Denning closed the inaugural meeting with comments thanking the attendees, all sponsors, and the faculty.

In summation, the first Advances Against Aspergillosis conference was extremely successful on several fronts. A fundamental tenet of this meeting was it brought together scientists from around the world and from both clinical and basic sciences, providing a venue for interactions and establishment of increased collaborative research. The Conference Chairs and the Committee members look forward to the second meeting, to be held in Europe (Athens) in early 2006.

The complete 2004 conference syllabus as a PDF file, as well as meeting updates and information for the 2006 conference, are available at the conference website:

[www.advancesagainstaspergillosis.org](http://www.advancesagainstaspergillosis.org)  
In addition, a supplement of speaker's papers from the 2004 meeting will be published in "Medical Mycology" in 2005.

Karl V. Clemons  
William J. Steinbach  
David W. Denning  
David A. Stevens



## ECMM Epidemiological Survey on Infections due to *Zygomycetes* in Europe

### Convenor

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There are few studies addressing the epidemiology of infections due to *Zygomycetes* in Europe. Most of them are detailed, yet, sporadic case reports or single-site reviews covering a time period. A systematic multicentre survey of these infections in Europe may, therefore, offer the opportunity to analyse epidemiological data that would consequently increase vigilance for early diagnosis and expand on existing prevention and treatment schemes. It will also give further details on the predisposing factors for these infections, highlight the possible role that antibacterial and antifungal chemotherapy play in the emergence of zygomycosis and disclose any potential temporal and geographical variation in its incidence.

Therefore, the specific goals of this epidemiological survey are a) to record cases of zygomycosis in collaborating countries and b) to analyse the zygomycete strains isolated from these infections.

Data will be collected from all European and other (i.e. Israel) countries collaborating in this study. In each country, a Coordinator will be responsible for disseminating information regarding the survey, as well as for distributing and collecting the completed epidemiological forms. The procedure for collecting cases will be individualised in each country, depending on pre-existence of national network for mycological surveillance or mycology reference centre. The following ways of approach for implementing this survey in each country are recommended: a) through the Hospital Microbiology Laboratories, b) through Pathology Departments and c) through Infectious Diseases, Haematology, Internal Medicine and Surgical Departments. A combined approach would be the most successful, as in each case drawing clinical information and corresponding isolates together will ultimately contribute in collecting valuable information on the biodiversity of pathogenic *Zygomycetes*

in Europe. Confidentiality regarding names of patients, clinical data and strain ownership rights will be meticulously followed as in the previous ECMM studies.

Clinical and epidemiological information on each case will be filled-in on the provided form. Every three months the Coordinator of each country will collect these forms and forward them to the Study Coordinator. An effort will be made to construct a web site so that participants are able to submit their data online.

The isolates corresponding to each recorded case will be submitted to the National Mycology Reference Lab, University of Athens. The mailing address of the Lab and instructions on how the strains are to be packaged and secured for shipping will be provided upon commencement of the study. In addition, serum specimens from each patient should be kept in store at each Centre for future serological studies.

The prospective study is planned to start on January 1<sup>st</sup>, 2005 and it will last for one year. One year (2004) retrospective data will be also collected.

All clinical and epidemiological data will be analysed yearly and will be available to all participants through the coordinating site.

In the event that publications result from the study, the participants having contributed the largest number of cases and isolates to the study will be cited as authors. Although the exact number of authors remains to be defined, all contributors will be appended to the authors in the first page of the article, as was the case with previous ECMM studies.

 <b>ECMM survey: Zygomycoses in Europe</b> <b>Clinical isolates / Medical form</b>				
Centre:		Country:	City:	
<b>Patient information</b>				
Country		City:	Race:	
Patient code:		Birthdate: (mo/y)	Sex:	Weight:
Hospital/Ward:		Occupation:		
Name of Physician:				
Name of Mycologist/Microbiologist:				
<b>Underlying disease / factors</b>				
Non-Hodgkin lymphoma	<input type="checkbox"/>	specify		
Hodgkin's lymphoma	<input type="checkbox"/>			
Leukemia	<input type="checkbox"/>	specify		
Autoimmune disease	<input type="checkbox"/>	specify		
Surgery	<input type="checkbox"/>	specify		
Trauma (accidental)	<input type="checkbox"/>	specify		
Burn	<input type="checkbox"/>	specify		
Cancer	<input type="checkbox"/>	specify		
BMT <input type="checkbox"/>	HSCT <input type="checkbox"/>	Non-ablative allogeneic transplant <input type="checkbox"/>	GVHD <input type="checkbox"/>	
Solid organ transplant	<input type="checkbox"/>	specify		
Diabetes	<input type="checkbox"/>	specify		
		Ketoacidosis at time of diagnosis:	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Chronic ambulatory peritoneal dialysis	<input type="checkbox"/>	specify		
Chronic renal failure	<input type="checkbox"/>			
Neutropenia	<input type="checkbox"/>	specify duration (days)	Polymorphonuclears <500 <input type="checkbox"/>	
		Resolution of neutropenia at time of diagnosis:	YES <input type="checkbox"/> NO <input type="checkbox"/>	
		At time of diagnosis neutropenia had resolved (days):		
Treatment with antibacterial antibiotics	<input type="checkbox"/>	specify		
Catheter	<input type="checkbox"/>	specify		
HIV / AIDS	<input type="checkbox"/>	specify		
		antiretroviral therapy: specify		
Other	<input type="checkbox"/>	specify		
<b>Treatment (within 1 month prior to diagnosis of zygomycosis)</b>				
	Drugs	Dosage	Date started	Date stopped
Corticosteroid				
Immunosuppressive				
Antifungal				
<b>Clinical data</b>				
Fever	<input type="checkbox"/>	specify		
Site of infection	<input type="checkbox"/>	specify		
Other clinical data	<input type="checkbox"/>	specify		
<b>Imaging data</b>				
XRay	<input type="checkbox"/>	specify		
CTScan	<input type="checkbox"/>	specify		
NMR	<input type="checkbox"/>	specify		

cont'd

<b>Mycology</b>		Date of diagnosis:		
<b>Histopathology</b>	Not done <input type="checkbox"/>	Organ/Biopsy/Autopsy: specify		
		Absence of hyphae <input type="checkbox"/> Presence of hyphae <input type="checkbox"/>		
<b>Microscopy &amp; Culture</b>				
<b>Sample 1</b> specify .....		Date:		
Direct microscopy	Not done <input type="checkbox"/>	Done <input type="checkbox"/>		
Culture	Not done <input type="checkbox"/>	Done <input type="checkbox"/> Identification (if completed):		
<b>Sample 2</b> specify .....		Date:		
Direct microscopy	Not done <input type="checkbox"/>	Done <input type="checkbox"/>		
Culture	Not done <input type="checkbox"/>	Done <input type="checkbox"/> Identification (if completed):		
<b>Sample 3</b> specify .....		Date:		
Direct microscopy	Not done <input type="checkbox"/>	Done <input type="checkbox"/>		
Culture	Not done <input type="checkbox"/>	Done <input type="checkbox"/> Identification (if completed):		
<b>Zygomycete pathology</b>		Date of diagnosis:		
Co-infection with	<input type="checkbox"/>	specify		
Rhinocerebral	<input type="checkbox"/>	specify		
Sinusitis	<input type="checkbox"/>	specify		
Cutaneous infection	<input type="checkbox"/>	specify		
Mycetoma	<input type="checkbox"/>	specify		
Ophthalmic orbit	<input type="checkbox"/>	specify		
Oral cavity	<input type="checkbox"/>	specify		
Gastrointestinal	<input type="checkbox"/>	specify		
Bloodstream infection	<input type="checkbox"/>	specify		
Osteomyelitis	<input type="checkbox"/>	specify		
Other	<input type="checkbox"/>	specify		
<b>Treatment of zygomycosis</b>				
Surgery	Specify		Date:	
Antifungal therapy	Drugs	Dosage	Date started	Date stopped
Outcome	Cured <input type="checkbox"/>	Date:		
	Death <input type="checkbox"/>	Date:		
<b>Zygomycete isolates</b>				
Ref. no	Date	Cultured from		
Ref. no	Date	Cultured from		
Ref. no	Date	Cultured from		
Ref. no	Date	Cultured from		
Ref. no	Date	Cultured from		
<b>Other remarks:</b>				



## ECMM Working Group on *Pseudallescheria/Scedosporium* Infections

### Convenor

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The Netherlands

At the 8th ECMM Congress in Budapest, 2002 an ECMM Working Group on *Pseudallescheria / Scedosporium* infections was founded, which held its launching workshops on 16 and 17 April at the CBS, Utrecht, The Netherlands, and on June 16 as a pre-congress activity in Wrocław, Poland. Altogether we had 33 speakers from 14 countries in a friendly atmosphere and nice ambiance. It was a pleasant surprise to note how much hidden knowledge on this fungal problem is already available in Europe. Subjects were surveillance, case reports, recent research data, and also future plans, ideas and techniques to be developed. Some areas of prime urgency were recognized.

The program contained four major areas, focusing on (1) clinical presentations, (2) the fungal agents of *Pseudallescheria* and *Scedosporium* and their ecology, (3) on animal models and antifungal therapy, and (4) on building up an efficient network with a web-accessible data base. Regular meetings are scheduled between partners active in the respective areas formed along these lines, and another workshop with the entire Working Group is scheduled in 2006. We will try to obtain European funding for the consortium, to which aim projects are being written. Adequate funding will facilitate our work considerably, and will attract wider attention to the problem of these frequently misdiagnosed fungi. Our ultimate aim should be a set of routinely applicable techniques, and protocols and guidelines for diagnostics, epidemiology and therapy.

### Theme 1: Clinical surveillance

*Pseudallescheria boydii* is a relatively frequent colonizer of the lungs of patients with cystic fibrosis. In these patients *Aspergillus* is also relatively common, and after antifungal therapy to eradicate this fungus, *P. boydii* frequently appears to have taken its place. The problem has then aggravated, because

*P. boydii* is more difficult to remove. Rarely this leads to invasive disease directly, but it is contra-indicative for heart-lung transplantation, which would have been the optimal therapy for these patients. Another important disease entity by *P. boydii* is cerebral infection after near-drowning or major trauma. The route of dissemination to the CNS is still a mystery, since blood is negative at culturing. *Scedosporium prolificans* is able to produce conidia in blood, which probably is an essential factor in the frequent disseminated infections due to this species. Systemic infections are nearly always fatal. One of the primary tasks of this subgroup is the development and wide distribution of an efficient isolation protocol. The subgroup is co-ordinated by Jean-Philippe Bouchara, Gerhard Haase and Sevtap Arikian.

### Theme 2: Biology of the etiologic agents

It is estimated that on average two cases by a *Scedosporium* species are diagnosed yearly in each academic centre in Europe. However, there are indications that this number varies considerably between otherwise comparable hospitals. This may be due to the fact that the fungi are recognized with difficulty in histological sections: it is then nearly indistinguishable from *Aspergillus*, which may lead to incorrect diagnosis of the infection as aspergillosis. The route of transmission is also insufficiently understood. We know that the fungus occurs in high concentrations in agricultural soil and mud of polluted ponds and ditches, but we do not understand how most patients acquire their infection. Since the fungus is only rarely isolated from outside air or the indoor environment, an air-borne infection route seems unlikely, although dispersal by sticking to e.g. *Aspergillus* conidia might be possible. One of the primary tasks of this subgroup is the development and wide distribution of diagnostic

protocols. The subgroup is co-ordinated by Juan Rodrigues-Tudela, Johannes Rainer and Sybren de Hoog.

### Theme 3: Animal models and therapy

Although several new antifungals were registered during the past years, such as voriconazole and caspofungin, treatment of invasive infection by *Scedosporium* species remains problematic. *S. prolificans* is multi-resistant and insensitive to polyenes such as amphotericin B and the azoles. The registered antifungals also show poor activity in animal models. This also holds true for the new azole voriconazole, that has a response rate of only 25% in patients with invasive infection. An azole that is still in the process of being developed, albaconazole, seems effective, but it is as yet uncertain whether the compound will be developed further. Research therefore focuses on the efficacy of combination therapy, such as voriconazole combined with terbinafine. *S. apiospermum* is also multi-resistant, though less than *S. prolificans*. Treatment with voriconazole seems to be the most effective, although 41% of the patients with invasive infection still fail to respond. One of the primary tasks of this subgroup is the further testing of combination therapy and the development of albaconazole for therapy against *S. prolificans*, as well as the preparation of a genomic bank of *P. boydii* for virulence studies. The subgroup is co-ordinated by Paul Verweij, Josep Guarro, Aristeia Velegraki and Bernard Cimon.

### Theme 4: Data management

A data base will be built by the Centraalbureau voor Schimmelcultures (Utrecht, The Netherlands, [www.cbs.knaw.nl](http://www.cbs.knaw.nl)), where all information concerning the fungus and its clinical course will be freely accessible on-line. Important nodes of the Working Group housing significant collections are located in Belgium, Spain

and France; free exchange of strains will be organized by Françoise Symoens at Brussels. In addition to research, the ECMM *Scedosporium* Working Group also aims to increase awareness of this fungus and provide information to the clinician. Diagnostic guidelines and protocols for isolation from clinical materials as well as for treatment will be made available to the public. One of the primary tasks of this subgroup is the implementation of the web-accessible data base and strain deposition structure. The subgroup is co-ordinated by Françoise Symoens and Vincent Robert.

### Information

Symposia on the theme are scheduled at several forthcoming congresses, such as TIMM Berlin, 2005. A Network Workshop is scheduled for Spring 2006 in Angers, France. General information on the Working Group can be obtained from Sybren de Hoog [de.hoog@cbs.knaw.nl](mailto:de.hoog@cbs.knaw.nl). All those who are interested in these fungi are stimulated to become a member of our Working Group.

# 6<sup>th</sup> International Conference on Cryptococcus and Cryptococcosis

Dear Colleagues:

The Sixth International Conference on Cryptococcus & Cryptococcosis will be held in Boston, Massachusetts from June 24 - 28, 2005. This is the first time that the conference has been held in the United States. The conference headquarters hotel will be the Boston Marriott Long Wharf Hotel, located in the heart downtown Boston on the city's historic and vibrant harbor.

Following an opening address to be delivered by Dr. Arturo Casadevall (Albert Einstein College of Medicine, Bronx, NY, USA), there will be twelve symposia covering the latest advances in the ecology and molecular biology of the fungus, the immunology of the host response to the fungus, and therapy for cryptococcosis. Top mycology researchers will be presenting their research findings and summarizing the state-of-the-art in their fields. Submission of abstracts is strongly encouraged and accepted abstracts will be assigned for either oral presentation or to poster sessions. Posters will remain on display for the entire conference.

A genome workshop, open to all conference registrants, will be held immediately prior to the conference.

Social events planned for the conference include an opening reception, a Boston Harbor boat cruise, and a banquet at the New England Aquarium. There is discounted registration for graduate students and postdoctoral fellows. An "Accompanying Person Package" is also available. Further information regarding this conference can be obtained at the conference web site:

<http://www.bu.edu/cme/iccc.html>  
or by sending an email to [iccc@bu.edu](mailto:iccc@bu.edu)

Stuart M. Levitz  
Conference Chair

Boston University School of Medicine  
Continuing Medical Education

Sixth International Conference on Cryptococcus and Cryptococcosis

June 24 - 28, 2005  
Boston, Massachusetts USA

## Medical Mycology in Africa



Over the last few years the significance of medical mycology in Africa has grown enormously. The dramatic increase of cryptococcosis in the Southern part of the continent is an obvious example. Mycetoma, histoplasmosis and dermatophyte infections are other major disease categories. The newly founded *Africa Fund for Fungal Biodiversity and Mycotic Infections* has taken the initiative to organize a symposium on mycological problems which are endemic to the African continent, including themes where African scientists have achieved major breakthroughs. This 1-day symposium will be held on 25 January, 2005 in conjunction with the congress of the Southern African Soci-

ety for Plant Pathology (SASPP) and under the auspices of the European Confederation of Medical Mycology (ECMM) and of the International Society for Human and Animal Mycology (ISHAM).

### Venue

The congress will be held at the sea-side resort in Hartenbos, near George on the Garden Route of the Southern Cape, South Africa. Accommodation options and costs for the abovementioned meetings will be communicated in the 2nd Circular, but rest assured that it would be most reasonable.

### Contact

If you have any questions concerning the programme, please contact Sybren de Hoog, [de.hoog@cbs.knaw.nl](mailto:de.hoog@cbs.knaw.nl) +31-30-2122663. For any administrative question or inquiries concerning your accommodation, please contact: Tineke van den Berg, [van.den.berg@cbs.knaw.nl](mailto:van.den.berg@cbs.knaw.nl) +31-30-2122645.

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## PATHOGENIC FUNGI

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*Instituto Venezolano de Investigaciones Científicas, Caracas, Venezuela and Georgetown University, Washington DC, USA*

### Volume 1: Pathogenic Fungi: Structural Biology and Taxonomy

**Publication date:** June 2004 **ISBN:** 0-9542464-7-0 **Price:** GB £99 or US \$199 (hardback). Pages: viii + 372

In this book expert international authors critically review current topics including morphogenesis, the cell cycle, and the cell wall of human pathogens. There is a focus on molecular and biochemical analysis and areas covered include the use of mathematical modelling to understand the building of three-dimensional cell structures in the morphogenetic process, novel approaches to aid the understanding of strain variability, the significance of environmental and patient strains, and the relatedness of "uncultured" fungi. In addition the use of molecular tools for the taxonomic classification of previously unclassifiable fungi is featured.

### Volume 2: Pathogenic Fungi: Host Interactions and Emerging Strategies for Control

**Publication date:** June 2004 **ISBN:** 0-9542464-8-9 **Price:** GB £99 or US \$199 (hardback). Pages: x + 470

The emphasis of this volume is on the two-way recognition systems that exist between the host and the fungus. Experts in fungal-host interactions discuss new initiatives for alternatives to drug therapy through the development of vaccines and passive antibody therapy. New target development, molecular modelling and drug resistance, both at the individual organism level and in a biofilm, are featured.

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