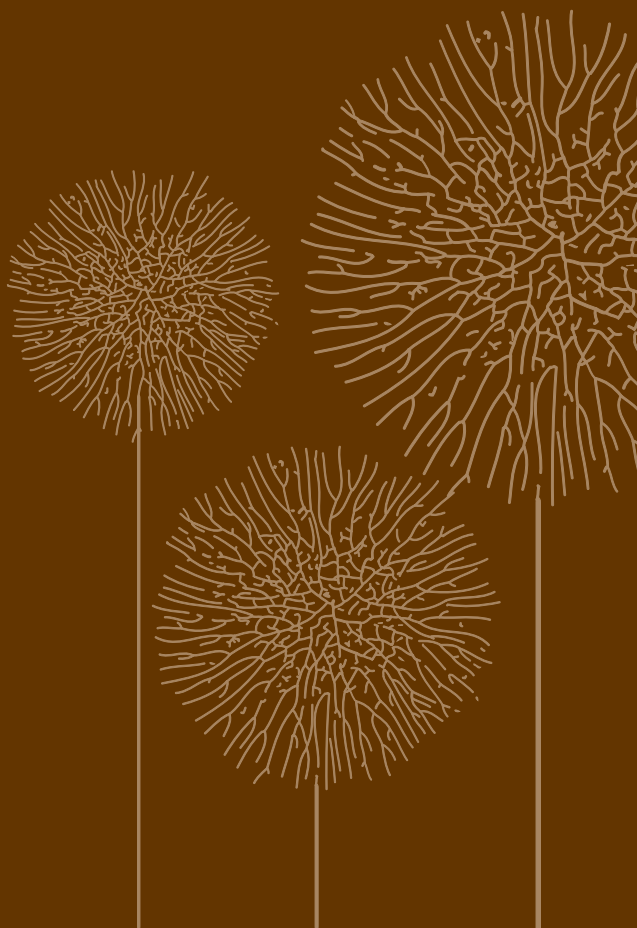


Program Book

# International Conference on Fungal Evolution and Charles Darwin: From Morphology to Molecules



**BIOTEC**  
a member of NSTDA

**9-11 July 2009**

Sirindhorn Science Home, Thailand Science Park, THAILAND

# ***International Conference on Fungal Evolution and Charles Darwin: From Morphology to Molecules***

**9-11 July 2009**

***Sirindhorn Science Home,  
Thailand Science Park,  
Thailand***



**BIOTEC**  
a member of NSTDA

## ***Organized by:***

National Center for Genetic Engineering and Biotechnology (BIOTEC)

National Science and Technology Development Agency (NSTDA)

Ministry of Science and Technology (MOST)

## ***Sponsored by:***

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## Conference Program - Summary

	9 July 2009	10 July 2009	11 July 2009
Morning Session	Registration 08.00 – 09.00		
	Opening Ceremony 09.00 – 09.30	Theme 3	Theme 5
	Theme 1	Keynote Lecture 3 09.00 – 10.00	Keynote Lecture 5 09.00 – 10.00
	Keynote Lecture 1 09.30 – 10.30		
		Plenary Lecture 7 10.00 – 10.30	
	Coffee Break 10.30 – 11.00		
	Plenary Lecture 1 11.00 – 11.30	Plenary Lecture 8 11.00 – 11.30	Plenary Lecture 13 11.00 – 11.30
	Plenary Lecture 2 11.30 – 12.00	Poster Presentation 11.30-12.30	Plenary Lecture 14 11.30 – 12.00
	Plenary Lecture 3 12.00 – 12.30		Poster Presentation 12.00-12.30
Lunch 12.30 – 13.30			
Afternoon Session	Theme 2	Theme 4	Theme 6
	Keynote Lecture 2 13.30 – 14.30	Keynote Lecture 4 13.30 – 14.30	Keynote Lecture 6 13.30 – 14.30
	Plenary Lecture 4 14.30 – 15.00	Plenary Lecture 9 14.30 – 15.00	Plenary Lecture 15 14.30 – 15.00
	Coffee Break 15.00 – 15.30		
	Plenary Lecture 5 15.30 – 16.00	Plenary Lecture 10 15.30 – 16.00	Plenary Lecture 16 15.30 – 16.00
	Plenary Lecture 6 16.00 – 16.30	Plenary Lecture 11 16.00 – 16.30	Plenary Lecture 17 16.00 – 16.30
	Poster Presentation 16.30 – 17.00	Poster Presentation and Social Activity 16.30 – 18.30	Poster Award and Closing 16.30 – 17.00
Evening Session			
		Dinner Talk 18.30 – 20.30	

# Conference Program

9 July 2009

## Morning Session

### Theme 1 : Speciation and species concepts

09.00 – 09.30	<b>Opening Ceremony</b> By Assoc. Prof. Dr. Sakarindr Bhumiratana <i>President of National Science and Technology Development Agency, Thailand</i>
09.30 – 10.30	<b>Keynote Lecture 1 :</b> <b>Adaptation examined through comparative genomics in experimental speciation</b> By Prof. Linda M. Kohn <i>University of Toronto, Canada</i>
10.30 – 11.00	<b>Coffee Break</b>
11.00 – 11.30	<b>Plenary Lecture 1 :</b> <b>Species concepts of <i>Fusarium</i> and possible examples of its speciation</b> By Dr. Takayuki Aoki <i>National Institute of Agrobiological Science, Japan</i>
11.30 – 12.00	<b>Plenary Lecture 2 :</b> <b>Complexities in naming fungal species resulting from the inability to define fungal genera, species, and individuals, and our mycological history</b> By Dr. Scott Redhead <i>Agriculture and Agri-Food Canada, Canada</i>
12.00 – 12.30	<b>Plenary Lecture 3 :</b> <b>Evolution of marine fungi, speciation by adaptation</b> By Dr. Jariya Sakayaroj <i>National Center for Genetic Engineering and Biotechnology, Thailand</i>
12.30 – 13.30	<b>Lunch</b>

## Afternoon Session

### Theme 2 : Bio- and phylogeography

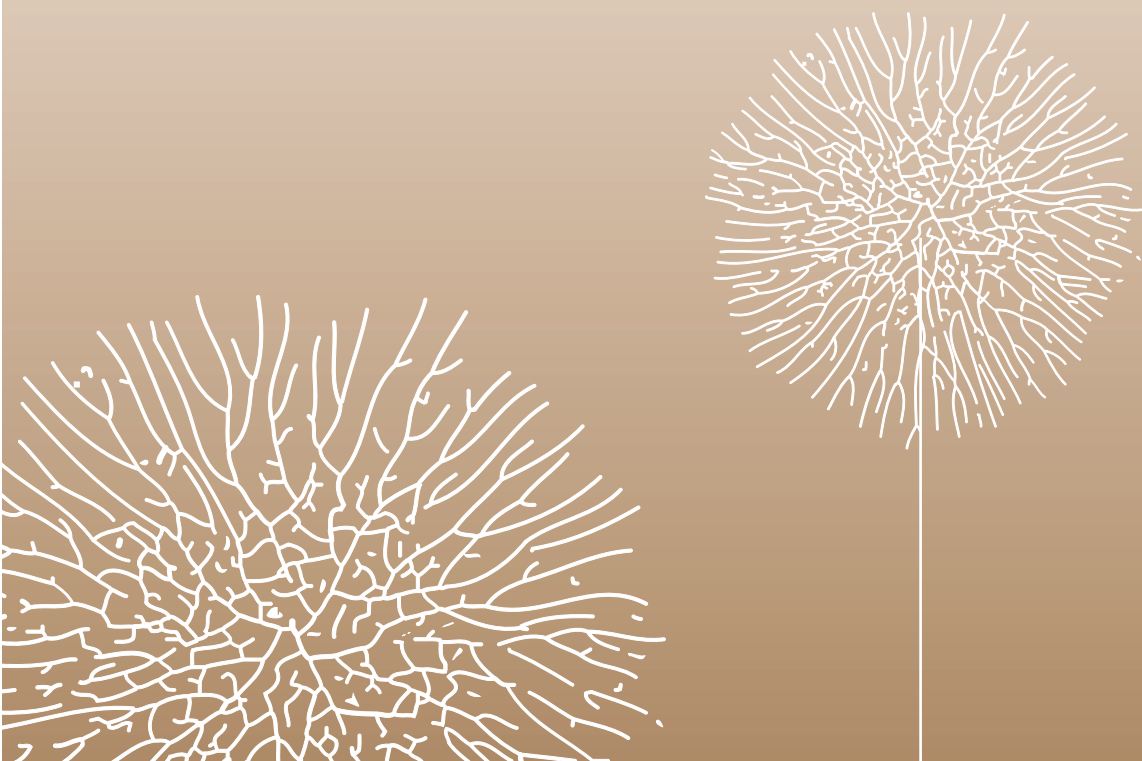
13.30 – 14.30	<b>Keynote Lecture 2 :</b> <b>Biogeography of macrofungi: Not everything is everywhere</b> By Dr. Gregory M. Mueller <i>Chicago Botanic Garden, USA</i>
14.30 – 15.00	<b>Plenary Lecture 4 :</b> <b>Comparative biogeography of closely related, ectomycorrhizal and saprotrophic basidiomycetes: Hysterangiales and Geastrales (Phallomycetidae)</b> By Dr. Kentaro Hosaka <i>National Museum of Nature and Science, Japan</i>
15.00 – 15.30	<b>Coffee Break</b>
15.30 – 16.00	<b>Plenary Lecture 5 :</b> <b>Adding leaves to the Fungal Tree of Life: DNA barcoding mushrooms</b> By Prof. Jean-Marc Moncalvo <i>Royal Ontario Museum, Canada</i>
16.00 – 16.30	<b>Plenary Lecture 6 :</b> <b>Progress and challenges with circumscribing species in lichen-forming fungi</b> By Dr. Thorsten Lumbsch <i>The Field Museum, USA</i>
16.30 – 17.00	<b>Poster Presentation</b>

10 July 2009	
Morning Session	
Theme 3 : Tree of life	
09.00 – 10.00	<b>Keynote Lecture 3 :</b> <b>Fungi in the Tree of Life: From plants to their rightful realm</b> By Prof. Meredith Blackwell <i>Louisiana State University, USA</i>
10.00 – 10.30	<b>Plenary Lecture 7 :</b> <b>From phytum to population : The molecular evolution of mycorrhizal fungi</b> By Dr. Dirk Redecker <i>University of Basel, Switzerland</i>
10.30 – 11.00	Coffee Break
11.00 – 11.30	<b>Plenary Lecture 8 :</b> <b>Evolution of hypocrealean pathogens of arthropods : A cretaceous explosion</b> By Dr. Joseph Spatafora <i>Oregon State University, USA</i> <u>Dr. Nigel Hywel-Jones</u> <i>National Center for Genetic Engineering and Biotechnology, Thailand</i>
11.30 – 12.30	Poster Presentation
12.30 – 13.30	Lunch
Afternoon Session	
Theme 4 : Metabolites, extrolites and their evolution	
13.30 – 14.30	<b>Keynote Lecture 4 :</b> <b>Extrolites, ecology and evolution : Functional molecular features are the leaders, gene are followers</b> By Prof. Jens Christian Frisvad, Ph.D., Dr. techn. <i>Technical University of Denmark, Denmark</i>
14.30 – 15.00	<b>Plenary Lecture 9 :</b> <b>Molecular and chemical ecology of the Xylariaceae: Importance of secondary metabolites for classification and phylogeny</b> By Dr. Marc Stadler <i>InterMed Discovery GmbH, Germany</i>
15.00 – 15.30	Coffee Break
15.30 – 16.00	<b>Plenary Lecture 10 :</b> <b>Evolution and regulation of secondary metabolite biosynthesis in filamentous fungi</b> By Prof. Barbara Howlett <i>The University of Melbourne, Australia</i>
16.00 – 16.30	<b>Plenary Lecture 11 :</b> <b>Secondary metabolites of insect pathogenic fungi</b> By Dr. Masahiko Isaka <i>National Center for Genetic Engineering and Biotechnology, Thailand</i>
16.30 – 18.30	Poster Presentation and Social Activity
18.30 – 20.30	Dinner Talk

11 July 2009	
Morning Session	
Theme 5 : Medical mycology	
09.00 – 10.00	<b>Keynote Lecture 5 :</b> <b>An emerging opportunistic pathogen, <i>Penicillium marneffei</i> in southern China and its pathogenesis study</b> By Prof. Liyan Xi <i>Sun Yat-Sen University, P.R. China</i>
10.00 – 10.30	<b>Plenary Lecture 12 :</b> <b>Medical mycology in Thailand and unique mycosis ; pythiosis</b> By Assoc. Prof. Dr. Angkana Chaiprasert <i>Mahidol University, Thailand</i>
10.30 – 11.00	<b>Coffee Break</b>
11.00 – 11.30	<b>Plenary Lecture 13 :</b> <b>Ecological fitting and pathogenic evolution in <i>Exophiala dermatitidis</i></b> By Dr. Montarop Sudhaham <i>CBS Fungal Biodiversity Centre, The Netherlands</i>
11.30 – 12.00	<b>Plenary Lecture 14 :</b> <b>Allergenic fungi of North America and aeroallergen index studied with Burkard Volumetric Spore Trap</b> By Assoc. Prof. Nabarun Ghosh <i>West Texas A&amp;M University, USA</i>
12.00 – 12.30	<b>Poster Presentation</b>
12.30 – 13.30	<b>Lunch</b>
Afternoon Session	
Theme 6 : Co-evolution of fungi and associates; Natural history	
13.30 – 14.30	<b>Keynote Lecture 6 :</b> <b>Cooperation and conflict between domesticated fungi and insect societies</b> By Prof. Jacobus J. (Koos) Boomsma <i>University of Copenhagen, Denmark</i>
14.30 – 15.00	<b>Plenary Lecture 15 :</b> <b>Has classic field based natural history studies and taxonomy a role to play in current mycology?</b> By Assoc. Prof. (lektor), Ph.D. Thomas Læssøe <i>University of Copenhagen, Denmark</i>
15.00 – 15.30	<b>Coffee Break</b>
15.30 – 16.00	<b>Plenary Lecture 16 :</b> <b>Algicolous marine fungi and their associations</b> By Dr. Julian Mitchell <i>University of Portsmouth, UK</i>
16.00 – 16.30	<b>Plenary Lecture 17 :</b> <b>Chemical interactions of endophytes and their hosts – from parasitism to mutualism</b> By Dr. Rainer Ebel <i>University of Aberdeen, UK</i>
16.30 – 17.00	<b>Poster Award and Closing</b>



# ***Biography***



Theme	Speaker
1. Speciation and species concepts	Prof. Linda M. Kohn
	Dr. Takayuki Aoki
	Dr. Scott Redhead
	Dr. Jariya Sakayaroj
2. Bio-and phylogeography	Dr. Gregory M. Mueller
	Dr. Kentaro Hosaka
	Prof. Jean-Marc Moncalvo
	Dr. Thorsten Lumbsch
3. Tree of life	Prof. Meredith Blackwell
	Dr. Dirk Redecker
	Dr. Nigel Hywel-Jones
4. Metabolites, extrolites and their evolution	Prof. Jens Christian Frisvad, Ph.D., Dr.techn.
	Dr. Marc Stadler
	Prof. Barbara Howlett
	Dr. Masahiko Isaka
5. Medical mycology	Prof. Liyan Xi
	Assoc. Prof. Dr. Angkana Chaiprasert
	Dr. Montarop Sudhadham
	Assoc. Prof. Nabarun Ghosh
6. Co-evolution of fungi and associates; Natural history	Prof. Jacobus J. (Koos) Boomsma
	Assoc. Prof. (lektor), Ph.D. Thomas Læssøe
	Dr. Julian Mitchell
	Dr. Rainer Ebel

**Prof. Linda M. Kohn**  
*University of Toronto, Canada.*

Linda Kohn is a Professor in the Department of Ecology and Evolutionary Biology at the University of Toronto. A Mycologist with wide interests in the field and well as the laboratory, she has long been fascinated with pattern and process in speciation. The work itself has evolved as new tools have emerged. She has delimited and described species, initially trained in the use of morpho-taxonomic approaches in the Sclerotiniaceae (and other Leotiomycetes) as a student of Richard P. Korf at Cornell University. More recently she has investigated the population-species interface with population genetic approaches exploiting multi-locus sequence data. She is also interested in the evolutionary history of speciation under domestication, host shifts, and shoot vs. root infection in Magnaporthe. She is a co-applicant and active participant on Sclerotinia sclerotiorum/Botrytis cinerea and Magnaporthe/Gaeumannomyces genome initiatives. With James Anderson, she is now engrossed in elucidating mechanisms of reproductive isolation emerging after adaptation to strong selection in experimental populations of Saccharomyces cerevisiae and Neurospora - the topic of her talk at this conference. She is a past President of the Mycological Society of America.



**Dr. Takayuki Aoki**  
*National Institute of Agrobiological Science, Japan*

Takayuki Aoki, born in Tokyo, February 1959, promoted at the Graduate School for Biological Sciences, University of Tsukuba in 1987, under the guidance of the late Prof. Keisuke Tubaki and the late Prof. Robert J. Bandoni, with a Ph. D. degree in Science (Biology) for the theme, Taxonomical studies of the Exidiaceae (Auriculariales, Basidiomycotina) and allied Heterobasidiomycetes. As a Post-Doc, he stayed as a DAAD scholarship holder in the school of Prof. Franz Oberwinkler, Lehrstuhl Spezielle Botanik, Institut fuer Biologie I, Universtaet Tuebingen, Germany from 1988 to 1989. In 1989, he obtained his position as a researcher at the Department of Genetic Resources I, National Institute of Agrobiological Resources, Ministry of Agriculture, Forestry and Fisheries, and started working on the genus Fusarium, as agriculturally important plant pathogens. In 1994, he stayed in the laboratory of Dr. Helgard Nirenberg, Institut fuer Mikrobiologie, Federal Biological Research Centre for Agriculture and Forestry, Berlin, Germany as a guest researcher to learn basic knowledge and skills for the Fusarium taxonomy. He promoted to a Senior Researcher in 1992, sifted to Genetic Diversity Department, National Institute of Agrobiological Sciences in 2001, further to the NIAS Genebank Unit in 2006, according to the re-organization of the institute. Currently he is active as a curatorial mycologist of Microorganisms Section of the NIAS Genebank (MAFF) in Japan and concentrating on taxonomic studies of Fusarium. From April 2007 to March 2009, he was a Treasurer of The Mycological Society of Japan



**Dr. Scott Redhead**  
***Agriculture and Agri-Food Canada,***  
***Canada***

Dr. Scott A. Redhead is curator of the Canadian National Mycological Herbarium (DAOM) and has been a research scientist with Agriculture & Agri-Food Canada since 1977. Currently he is the assistant nomenclatural editor (fungi) for proposals in *Taxon* published by the International Association of Plant Taxonomists. He began his study of fungi in 1966 in high-school, later obtaining his B.Sc. and M.Sc. while studying with R.J. Bandoni (Univ. B.C.), switching to the Univ. Toronto to study under Roy Cain, and completing his doctorate with David Malloch. Since 1972, he has published over 100 articles on diverse mycological topics covering biogeography, taxonomy, phylogeny, phytopathology, ecology, lichenology, nomenclature, and history. He has focused on the systematics of genera and families in the Agaricales most recently reconciling phylogenetic-based taxonomy with historical concepts and literature. Scott received the Mycological Society of America's Alexopoulos Prize in 1988 and the Canadian Botanical Association's George Lawson Medal in 2007.

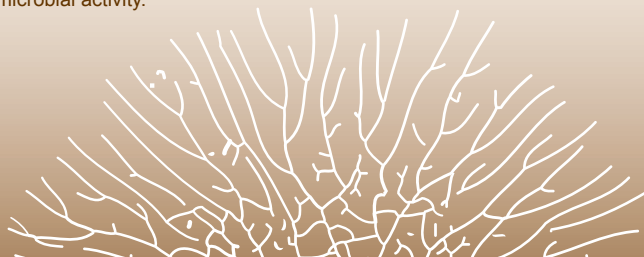


**Dr. Jariya Sakayaroj**  
***National Center for Genetic Engineering and Biotechnology,***  
***Thailand***

Dr. Jariya Sakayaroj graduated with a Ph.D. in Microbiology from Prince of Songkla University, Thailand. Before working at BIOTEC, she has joined the International Women in Engineering and Science Program in Canada and also working as a research assistant in City University of Hong Kong, China SAR.



Recently, she is working as a research scientist at Phylogenetics Laboratory, BIOTEC. She has published extensively on diversity and molecular phylogenetic study of freshwater, marine and endophytic fungi. Her recent research interest includes phylogenetic study of marine ascomycetes, especially unitunicates and bitunicates. Other areas of current research include study of endophytic fungi that produce antimicrobial activity.



## **Dr. Gregory M. Mueller** ***Chicago Botanic Garden, USA***

Dr. Gregory M. Mueller received his B.A. and M.S. from Southern Illinois University, Carbondale and his Ph.D. from the University of Tennessee. His research and teaching activities focus on the systematics, diversity, biogeography, ecology, and conservation of macrofungi, especially fungi that form ectomycorrhizas. He undertook postdoctoral work at Uppsala University in Sweden and at the University of Washington in Seattle before joining the staff at Field Museum of Natural History in 1985 as curator of fungi in the Department of Botany. In January 2009, Greg joined the staff at the Chicago Botanic Garden as Vice President for Science and Education. He is an adjunct faculty member at University of Chicago, University of Illinois at Chicago, and Northwestern University. In addition to working on northern Illinois and northwest Indiana fungi, Greg has carried out extensive fieldwork throughout Central and South America, parts of Europe, China, Japan, Australia, New Zealand, and Papua New Guinea. He is author of six books/book length volumes and nearly 100 journal articles. Greg is the International Coordinator for Fungal programs at the Costa Rican National Biodiversity Institute (INBio); a member of the International Union for the Conservation of Nature, Species Survival Commission, Fungal Specialist Group; a member of the Science Advisory Council for the Illinois Chapter of The Nature Conservancy; and is past President of the Mycological Society of America.



## **Dr. Kentaro Hosaka** ***National Museum of Nature and Science, Japan***

### **Education**

- University of the Ryukyus, Okinawa, Japan B.S. Biology 1999
- Oregon State University, Corvallis, OR Ph.D Botany & Plant Pathology 2005

### **Appointments**

- Graduate Assistant: curation and databasing for the mycological collections, Oregon State University Herbarium (OSC), Department of Botany and Plant Pathology, Oregon State University, Corvallis, OR (September, 1999 - December, 2005).
  - Postdoctoral Research Scientist: The Field Museum, Department of Botany, Chicago, IL (December, 2005-March, 2008).
  - Curator, Mycology: Department of Botany, National Museum of Nature and Science, Tsukuba, Ibaraki, Japan (April, 2008-present)
- Research areas for graduate studies**
- Molecular phylogenetics and biogeography of the genus *Hysterangium* and related taxa (Phallomycetidae, Basidiomycota, Fungi).
- Research areas for postdoctoral studies**
- Molecular phylogenetics and biogeography of the genus *Laccaria* and related taxa (Hydnangiaceae, Basidiomycota, Fungi). NSF, REVSYS DEB-0445216.



## **Prof. Jean-Marc Moncalvo** ***Royal Ontario Museum, Canada***

Jean-Marc Moncalvo is the Senior Curator of Mycology in the Department of Natural History at the ROM, and a cross-appointed Professor in the Departments of Ecology and Evolutionary Biology and Cell and Systems Biology at the University of Toronto.

Jean-Marc grew up on the shore of Lake Geneva and in the Swiss Alps. After completing his Ph.D. at the University of Lausanne, and a modest career in soccer, he travelled extensively throughout Asia with his wife Jasmine and spent three years as a visiting scientist at National Taiwan University in Taipei. He then moved with his family to North America to work as a research associate in the Department of Biology at Duke University in North Carolina. Jean-Marc joined the ROM in 2002 to take over responsibility for the extensive fungal collection.

Jean-Marc's research deals with molecular systematics, taxonomy, phylogeographic relationships, biological diversity and ecology of fungi, particularly of gilled mushrooms. He has published over 60 papers in scientific journals and books, and is regularly invited to talk at departmental seminars, international conferences, and mycology workshops. At the University of Toronto, Jean-Marc teaches an undergraduate course on fungi and a graduate course on molecular phylogenetics, and supervises graduate students and post-doctoral fellows.



## **Dr. Thorsten Lumbsch** ***The Field Museum, USA***

Dr. Lumbsch's research program centers on the systematic, taxonomy and evolution of fungi which form mutualistic symbioses with algae or cyanobacteria. The symbiotic organisms usually look very different from the single bionts and form a special lichen morphology. There are four major projects currently in the focus of his attention. i) Evolution of ascomata in lichen-forming ascomycetes in relation to those fungi that are phytopathogenous, mykorrhizal or saprobial. ii) Phylogeny and systematics of the Thelotremaaceae. iii) Another current research project concentrates on Antarctic lichens, their diversity and phylogeography. iv) Monographic studies in the genus Lecanora. This large crustose lichen genus occurs worldwide. Currently I plan to extend my studies towards south east Asian species. These studies aim at describing the taxa occurring in a region and compiling tools for the identification of these organisms. Morphological, anatomical and chemical characters are used to characterize the species.





## **Prof. Meredith Blackwell** ***Louisiana State University, USA***

Meredith Blackwell was born in Abbeville, Louisiana, a small town in the southwestern part of the state. After completion of her PhD with CJ Alexopoulos at the University of Texas, she spent two years at the University of Florida in Gainesville working with Henry Aldrich (1972-1974) and one year (1974-1975) as a postdoctoral associate with James Kimbrough. It was at this time that she first studied insect fungi, the minute termite-associated fungi previously described by Roland Thaxter. Her first faculty position was at Hope College, Holland, Michigan, a small liberal arts college with heavy teaching loads.

After six years she was granted tenure at Hope and in the same week offered a position at Louisiana State University (1985), where she has had more time for research and training of students, including many undergraduates. She began again at LSU as an untenured assistant, and she advanced to Boyd Professor, October 1997. Blackwell has published more than one hundred refereed papers. Her research has focused on several areas of mycology: systematics and ecology of Myxomycetes, distribution and biology of wood-decaying basidiomycetes, and evolution of arthropod-associated ascomycetes. Most recently, she has investigated associations between beetles and endosymbiotic yeasts along the Gulf Coast and in Panama. She collaborated on the fourth edition of *Introductory Mycology* in 1996 (C. J. Alexopoulos, C. W. Mims, and M. Blackwell). She has edited two books with entomologist colleagues on associations between fungi and insects (1984, 2004). She served as Secretary (1986-1988) and President (1992-1993) of the Mycological Society of America and as Secretary-General (1994-1998) and President (1998-2002) of the International Mycological Association. In 1983 she was awarded the Alexopoulos Prize of the Mycological Society of America in recognition of outstanding research efforts in the ten years since her PhD. In 1996 she was named a Centennial Fellow of the British Mycological Society, and in 1998, a fellow of AAAS. In 2003 she was named Distinguished Mycologist of the Mycological Society of America. The Mycological Society of America also honored her on two other occasions as recipient of the William H. Weston Teaching Award (2006) and Fellow (2007).



**Dr. Dirk Redecker**  
***University of Basel, Switzerland***

Dr. Dirk Redecker is a lecturer and principal investigator at the University of Basel (Switzerland). In his research, he has been interested in the ecology and evolution of mycorrhizal symbioses, in particular arbuscular mycorrhiza. He has been active in the development of molecular tools for phylogeny and identification of arbuscular mycorrhizal fungi and has studied the molecular ecology of these fungi in the field.

In 2004, he received the Alexopoulos prize of the Mycological Society of America. He is currently an associate editor of *Molecular Ecology* and editorial board member of *Mycological Progress*



**Dr. Nigel Hywel-Jones**  
***National Center for Genetic Engineering and Biotechnology, Thailand***

Dr. Nigel Hywel-Jones received a PhD in insect pathology from Exeter University in 1984. Since 1989 he has been based in Thailand studying the biodiversity of invertebrate-associated fungi. In 1993 he joined the National Center for Genetic Engineering and Biotechnology (BIOTEC) and established the Mycology Laboratory. This has resulted in many links with colleagues around the World to help promote the study of Thai fungal diversity. For the study of 'insect fungi' Dr. Hywel-Jones has made surveys in Australia, Brazil, Bhutan, Japan, Solomon Islands and the UK - as well as Thailand. Dr. Hywel-Jones is currently developing a new initiative for Bhutan.





**Prof. Jens Christian Frisvad, Ph.D.,  
Dr. techn.  
Technical University of Denmark,  
Denmark**

**Education and academic degrees**

DTU: M.Sc., 1976 (civ. ing., chemistry), Ph.D. 1982 (lic. techn.), Dr. Techn., 1998

**Employment**

Ph.D. study, DTU, 1976-79, research fellow, IBT, DTU, 1980-82, Post Doctoral fellow, DTU, 1982-85

Research fellow, IBT, DTU, 1985-86, Associate professor, IBT, DTU, 1986-2001,

Full Professor of Industrial Mycology, 2001 (IBT: Department of Biotechnology, later BIC: BioCentrum-DTU, but from 2008: Department of System Biology, DTU)

**Research activities**

The major research area has been discovery of new biotechnological products and prevention of fungal growth and mycotoxin production based on systematics, evolution, biodiversity and ecology of filamentous fungi. Special emphasis has been on a polyphasic approach to biosystematics with chemical chromatographic analysis of *Penicillium* and *Aspergillus* species being a core area (exo-metabolomics).

**Publications**

168 papers in international journals with peer review, 71 international book chapters with peer or editorial review, main or co-editor of 7 books and co-author of one book, one patent, 14 chapters in proceedings, two book reviews in international journals and 15 Danish papers. H-index 27



**Dr. Marc Stadler  
InterMed Discovery GmbH, Germany**

Being acquainted with various disciplines of basic and applied mycology, as well as with industrial microbiology and analytical chemistry, Marc Stadler has gained extensive experience in the discovery and development of novel drugs, pesticides, and other biotechnological products for the Life Science industries from fungi and other micro-organisms. He is



co-founder and Director of InterMed Discovery GmbH (<http://www.intermed-discovery.com>), and teaches mycology at Bayreuth University, Germany. His major research interests are the taxonomy, chemotaxonomy, chemical and molecular ecology, and phylogeny of the ascomycete family Xylariaceae. These fungi serve as model organisms to evaluate correlations between chemical diversity and functional biodiversity of filamentous fungi. This is accomplished by using a polyphasic combination of classical, molecular and metabolomic methodologies.

**Prof. Barbara Howlett**  
***The University of Melbourne, Australia***

Barbara HOWLETT is a Professor at the School of Botany, the University of Melbourne, Australia. Her undergraduate degree is in Biochemistry from the University of Melbourne, and she has a Master of Science degree from the Australian National University, Canberra, and a Ph.D from the University of Melbourne.

Her expertise is in fungal genetics and diseases of plants caused by fungal pathogens. Most of her research involves *Leptosphaeria maculans*, the fungus that causes blackleg disease of canola. Her approaches range from developing plant disease management strategies, to jointly leading an initiative to sequence and annotate the genome of this fungus. She is also analyzing genes involved in the biosynthesis of an important class of toxins in a range of filamentous fungi, including animal and plant pathogens.



**Dr. Masahiko Isaka**  
***National Center for Genetic Engineering and Biotechnology, Thailand***

Dr. Isaka graduated with a Ph.D. in organic chemistry from Tokyo Institute of Technology in 1991. He worked as a research scientist at the Institute of Drug Discovery Research, Yamanouchi Pharmaceutical Co., Ltd. Before moving to BIOTEC in 1997 as a researcher, he has published extensively on synthetic methods and, lately, on bioactive natural products. Recently, he has a research on Natural Products Chemistry in Thai Microorganisms. The goal of this research is to discover novel, biologically active compounds that can potentially be new drug leads or useful biological reagents from microbial sources.



**Prof. Liyan Xi**  
***Sun Yat-Sen University, P.R. China***

Professor Liyan Xi is the chairman of Dept. of Dermatology, The 2<sup>nd</sup> Affiliated Hospital, Sun Yat-Sen University. She is also vice president of Chinese Society for Medical Mycology since 2003. She graduated from Harbin Medical University where she received bachelor (Clinical Medicine) and master degree (Dermatology and Medical Mycology) in 1987, and attained her MD & PhD degrees at Institute of Dermatology, Chinese Academy of Medical Sciences, Beijing Union Medical College in 1990. She then joined the faculty at the Dept. of Medical Mycology, Institute of Dermatology, Chinese Academy of Medical Sciences, as research fellow until she changed her position to the Dept. of Dermatology, The 2<sup>nd</sup> Affiliated Hospital, Sun Yat-Sen University as a professor in 1998.

Professor Xi had been invited to Research Center for Pathogenic Fungi and Microbial Toxicoses, Chiba University in Japan as an lecturer and foreigner research fellow in 1995, 2002, 2003 respectively. She had also been invited to the Dept. of Pathology and Clinic Microbiology, Virginia University of USA in 2004, and the Centraalbureau voor Schimmelcultures (CBS), The Netherlands as a visiting scholar in 2007.

She focus her study on the Pathogenesis of *Penicillium marneffe* and Biodiversity of *Fonsecaea* for many years. Her publications since 2004 are listed following.



**Assoc. Prof. Dr. Angkana Chaiprasert**  
***Mahidol University, Thailand***

**Education**

- B.Sc.. (Botany) 2nd class honour with gold medal (Chulalongkorn University, THAILAND)
- M.Sc. (Botany), Chulalongkorn University, THAILAND
- Dr.rer.nat. (Biology) Ruhr University at Bochum, GERMANY

**Research Interest**

Molecular diagnosis, epidemiology and pathogenesis of mycoses and tuberculosis and detection of resistant genes in multi-drug resistant *Mycobacterium tuberculosis*

**Recent Position**

- Associate Prof. in Microbiology, Department of Microbiology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand
- Assistant Dean for Academic Affairs, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand



**Dr. Montarop Sudhadham**  
***CBS Fungal Biodiversity Centre,***  
***The Netherlands***

Dr. Sudhadham earned her doctoral degree at Centraalbureau voor Schimmelcultures (CBS) with a promotion at Institute for Biodiversity and Ecosystem Dynamics (IBED), Faculty of Science, University of Amsterdam with research topic in "The origin of pathogenicity of Black yeasts: Animal-associated natural life cycle and host shift of *Exophiala dermatitidis* in Thailand"



**Assoc. Prof. Nabarun Ghosh**  
***West Texas A&M University, USA***

Dr. Nabarun Ghosh, Associate Professor of Biology, has two Ph.D. degrees, one from the University of Calcutta and the other from The University of North Texas. He has been in research for the last 18 years. During his post-doctoral research in Neuroscience at the Division of Neuroscience at the Baylor College of Medicine he performed ultra-structural studies of parasympathetic innervations of the heart of deficient knockout mice using in situ



hybridization, immunocytochemical labeling with transmission electron microscopy. Dr. Ghosh has published 14 papers with undergraduate researchers since 2002. He has worked with 42 undergraduate researchers, assisted five in acquiring funding for their research, and published with 14 of his undergraduate researchers. He has supervised research for 12 Graduate students (MS). He has directed the Honors thesis for Saneea Almas on Digital Microscopy on Polytene Chromosome of *Drosophila melanogaster* (fruit fly)".

## **Prof. Jacobus J. (Koos) Boomsma** *University of Copenhagen, Denmark*

Jacobus J. (Koos) Boomsma received his PhD degree from the Free University of Amsterdam (1982) and had postdoctoral assignments at the Universities of Utrecht, Oxford and Cornell. He became Associate Professor at the University of Aarhus in 1990 and accepted a Professorship at the University of Copenhagen in 1999 where he now leads the Section for Ecology and Evolution and the Centre for Social Evolution at the Department of Biology. His research addresses questions of conflict and cooperation using mostly social insects as model systems. He is a Research Associate of the Smithsonian Tropical Research Institute in Panama where his team works on fungus-growing ants since 1993, but he has also interests in tropical programs in Asia and Africa. He has had sabbatical stays at the Universities of Utrecht, Würzburg and Regensburg, the latter two in connection with an Alexander von Humboldt Research Award (2001). He is, or has served, on the editorial boards of nine international journals and has been a Vice President of the European Society for Evolutionary Biology (1999-2001) and the Society for the Study of Evolution (2003). He is currently (2006-2010) the President and Congress Organizer of the International Union for the Study of Social Insects (IUSSI).



## **Assoc. Prof. (lektor), Ph.D. Thomas Læssøe** *University of Copenhagen, Denmark*

Assoc. Prof. Læssøe is interested in taxonomic studies of pyrenomycetes, especially tropical members of the Xylariaceae (Ascomycota). Currently the following geographical areas are under investigation: Ecuador, Brazilian mata atlantica and central Bahia, Puerto Rico, St. John (U.S. Virgin Islands), Sabah (Malaysia), Brunei, parts of Northern Europe and Far Eastern Russia. Other areas of current interest include the Lasiosphaeriaceae and Hypocreales, fungal biodiversity and Mycena (Basidiomycota) from Northern Europe. He is also an active member of a Scandinavian projects on saproxylic organisms.



### **Dr. Julian Mitchell** *University of Portsmouth, UK*

Julian Mitchell gained his PhD in molecular genetics at the University of Liverpool in 1985 and he started to study filamentous organisms during his post-doctoral research period. His interest in filamentous fungi continued and developed when he was appointed as a lecturer at the University of Portsmouth. Working with Professor E. B. Gareth Jones, Dr S. T. Moss and Dr N. L. Hywel-Jones he initiated molecular studies on the phylogeny of marine fungi and entomopathogenic fungi, as well as genetic studies on thraustochytrids. During this period Julian also became interested in employing techniques to detect and analyse molecular signals from environments, using them initially to study the role of bacteria in stone deterioration and sewage treatment. Latterly, working in association with Professor B. Schulz and Dr A. Zuccaro, these techniques have been used to study algicolous fungi. Over the last fifteen years, Dr Mitchell has served the British Mycological Society in a number of roles including special interest secretary, member of council and currently as membership secretary. At present he is the associate head of the School of Biological Sciences.

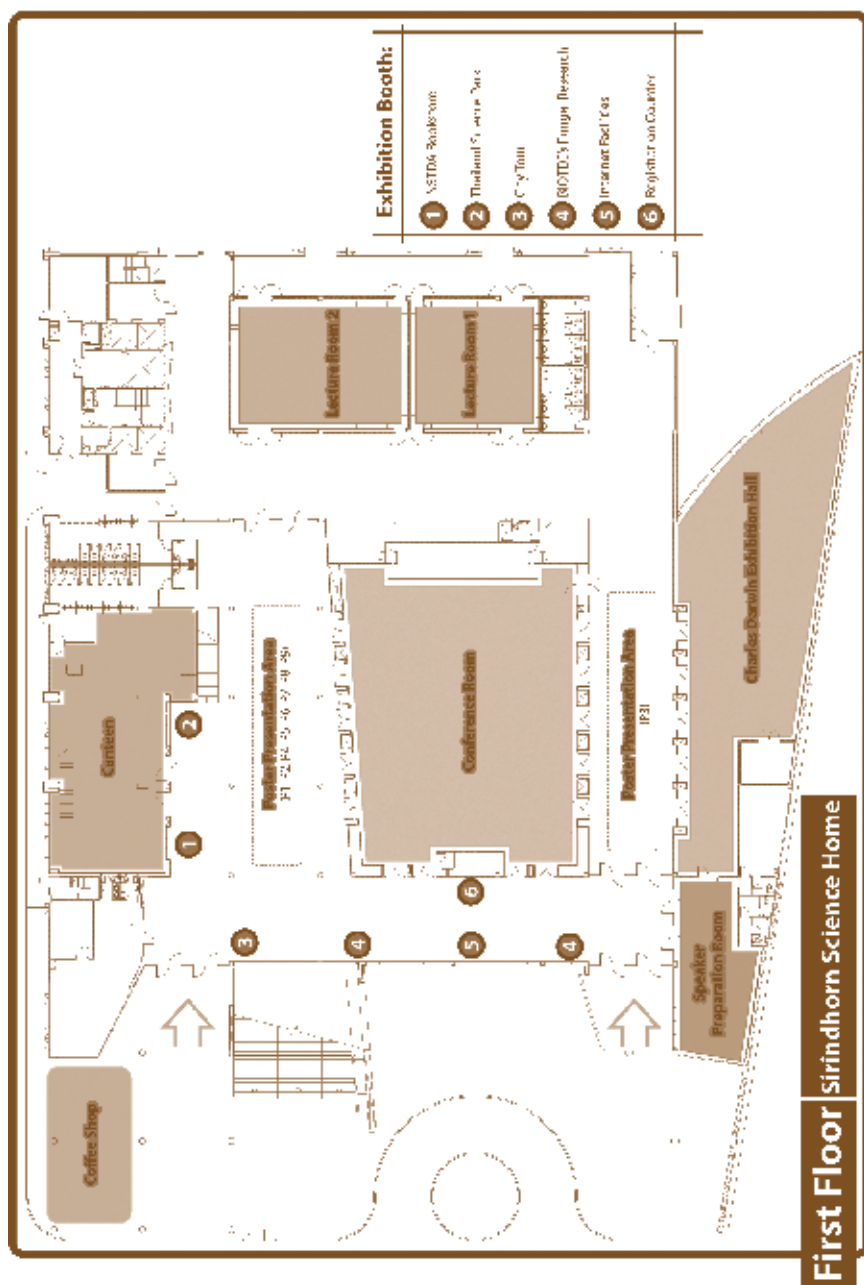


### **Dr. Rainer Ebel** *University of Aberdeen, UK*

Dr. Rainer Ebel obtained his PhD in Pharmaceutical Biology in 1998 at University of Würzburg, Germany, studying the chemical ecology of the Mediterranean sponge, *Aplysina aerophoba*. Subsequently, he worked as a postdoctoral research fellow in Professor Phil Crews' group at University of California at Santa Cruz, focussing on the natural products chemistry of marine-derived fungi. In 2000, he transferred to University of Düsseldorf, Germany where he was appointed a Juniorprofessor in 2002. Since 2007 he is employed as a lecturer in Organic Chemistry at the Marine Biodiscovery Centre, University of Aberdeen, Scotland.







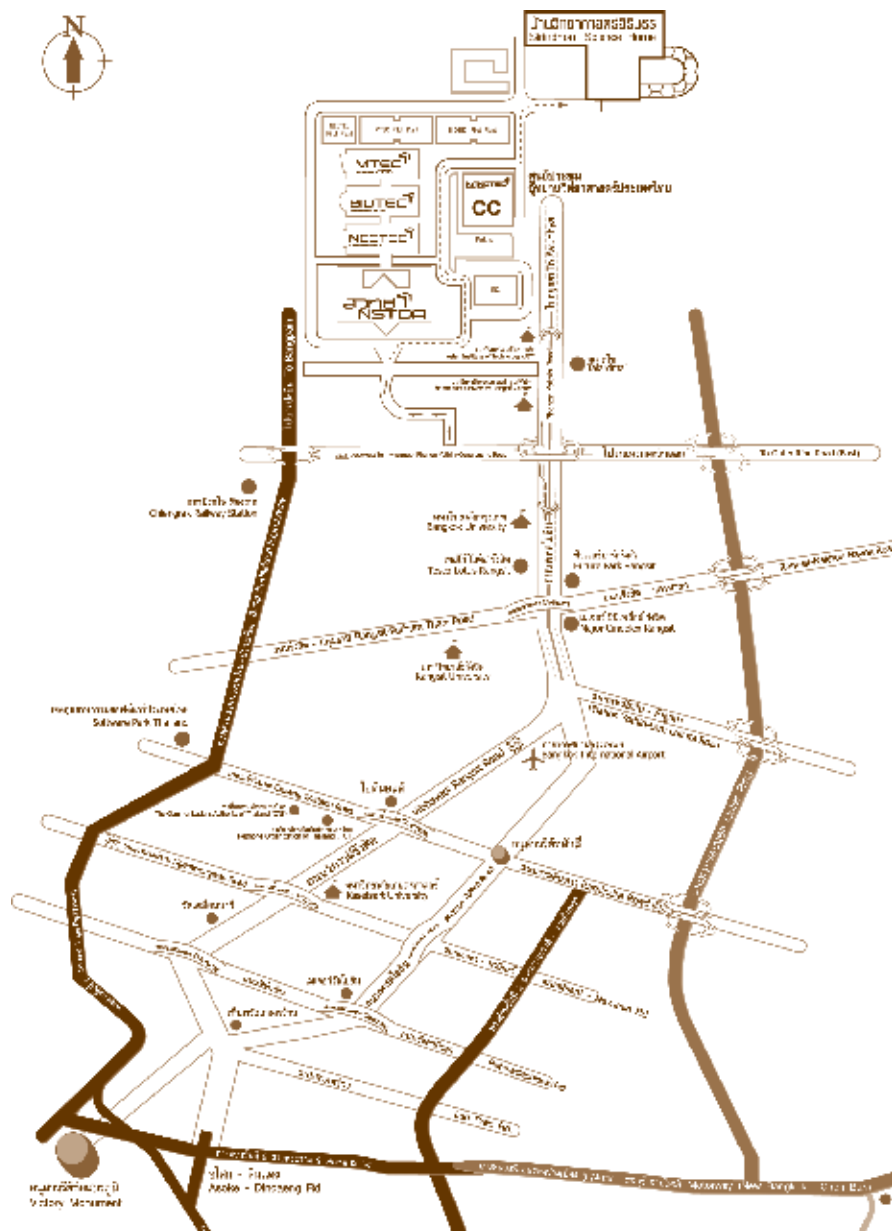
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To Thailand's heritage, our gift to the earth,  
a mindful conservation is due.



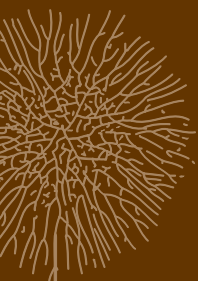
PTTEP is helping to protect Thailand's abundant forests by establishing the Thai Heritage, World Heritage Project to enable the whole of Thai society to care for the forests and to mutually preserve Thailand's archeological sites and major forested areas.

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