25th Fungal Genetics Conference at Asilomar
March 17-22
2009

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Scientific Program Chairs

Jay Dunlap
Department of Genetics
Dartmouth Medical School
Hanover, NH

Francine Govers
Laboratory of Phytopathology
Wageningen University
The Netherlands

Arrangements

Jim Kronstad
Chair, Fungal Genetics Policy Committee
The Michael Smith Laboratories
University of British Columbia
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Grant Coordination

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Department of Plant Sciences
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"Sexual Frenzy" by Tony Griffiths
Department of Botany
University of British Columbia

Fungal Genetics Reports, Volume 56- Supplement
Table of Contents

Scientific Program . . page 3
Ad Hoc session schedule . . page 7
Concurrent session schedules
  Wednesday . . page 8
  Thursday . . page 15
  Friday . . page 21
  Saturday . . page 28
Plenary Session abstracts . . page 35
Concurrent Session abstracts
  Wednesday . . page 43
  Thursday . . page 64
  Friday . . page 81
  Saturday . . page 100
Poster Session abstracts
  Comparative and Functional Genomics . . page 121
  Gene Regulation . . page 148
Indices
  Plenary and Concurrent Keyword . . page 287
  Poster Author . . page 289
  Poster Keyword . . page 300
List of participants . . page 304
List of student posters . . page 350
Conference Map . . Back Cover

Brief Schedule

<table>
<thead>
<tr>
<th>DAY</th>
<th>MORNING</th>
<th>AFTERNOON</th>
<th>EVENING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March 17</td>
<td>Arrival</td>
<td>Registration</td>
<td>Dinner Mixer</td>
</tr>
<tr>
<td>Wednesday</td>
<td>Plenary Session I</td>
<td>Concurrent Sessions I</td>
<td>Poster Session I</td>
</tr>
<tr>
<td>March 18</td>
<td>Genome evolution and dynamics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thursday,</td>
<td>Plenary Session II</td>
<td>Concurrent Sessions II</td>
<td>Poster Session II</td>
</tr>
<tr>
<td>March 19</td>
<td>Gene regulation and metabolism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friday,</td>
<td>Plenary Session III</td>
<td>Concurrent Sessions III</td>
<td>Poster Session III</td>
</tr>
<tr>
<td>March 20</td>
<td>Signaling, development and sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saturday,</td>
<td>Plenary Session IV</td>
<td>Concurrent Sessions IV</td>
<td>Invited Lecture and Banquet Party</td>
</tr>
<tr>
<td>March 21</td>
<td>Pathogenic and symbiotic interactions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunday,</td>
<td>Ad Hoc Sessions</td>
<td>Lunch</td>
<td>Departure</td>
</tr>
<tr>
<td>March 22</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Facility note
To accommodate the increased attendance at this year's meeting, the plenary sessions will be presented by audio-visual link in the Chapel. Once Merrill Hall is full, attendees will be directed to Chapel.

Citations
The program book for the 25th Fungal Genetics Conference at Asilomar is published as a Supplement to Fungal Genetics Reports. Please cite abstracts as follows: Fungal Genet. Reports. 56 (Suppl):Page#. The abstracts are available online at the FGSC web-site (www.fgsc.net).

Posters
Please set your poster up in the Fred Farr Forum Garage immediately after lunch the day of your poster session. Posters will be available to view beginning as they are set up following lunch. The size of the poster should not exceed 4 feet x 4 feet. Two authors will share a 4 x 8 poster stand. Authors of ODD numbered posters should be at their poster from 7:30-8:30 and authors of EVEN numbered posters should be at their posters from 8:30 - 9:30. If you have a poster that is not in the program book, you may post it at an un-numbered space.

<table>
<thead>
<tr>
<th>Topic</th>
<th># Range</th>
<th>Posters I</th>
<th>Posters II</th>
<th>Posters III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparative and Functional Genomics</td>
<td>1-112</td>
<td>1-112</td>
<td>113-227</td>
<td>228-337</td>
</tr>
<tr>
<td>Gene Regulation</td>
<td>113-227</td>
<td></td>
<td>113-227</td>
<td></td>
</tr>
<tr>
<td>Cell Biology</td>
<td>228-337</td>
<td></td>
<td>228-337</td>
<td></td>
</tr>
<tr>
<td>Biochemistry and Metabolism</td>
<td>338-386</td>
<td>338-386</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population and Evolutionary Genetics</td>
<td>387-437</td>
<td></td>
<td>387-437</td>
<td></td>
</tr>
<tr>
<td>Host Pathogen Interactions</td>
<td>438-571</td>
<td></td>
<td>438-509</td>
<td>510-571</td>
</tr>
<tr>
<td>Education</td>
<td>572-576</td>
<td></td>
<td>572-576</td>
<td></td>
</tr>
<tr>
<td>Other Topics</td>
<td>577-671</td>
<td>577-639</td>
<td>640-671</td>
<td></td>
</tr>
</tbody>
</table>

Please thank Anne Marie Mahoney and the Genetics Society of America for their continued support of the Fungal Genetics Conference at Asilomar.
TWENTY FIFTH FUNGAL GENETICS CONFERENCE

SCIENTIFIC PROGRAM

Tuesday March 17
3:00pm - 10:00 pm  Registration  Administration Building
6:00 pm  Dinner  Crocker Hall
7:30 pm - 10:30 pm  Social Reception  Merrill Hall

Wednesday March 18
7:30 am - 1:00 pm  Registration  Administration Building
7:30 am - 8:30 am  Breakfast  Crocker Hall
8:30 am -12:00 pm  Plenary Session I  Merrill Hall and Chapel

GENOME EVOLUTION AND DYNAMICS  Chair: Christina Cuomo, Broad Institute

Patrick Keeling  Microsporidia: intracellular fungi with reduced cells, genomes, and metabolism
Rays Jiang  Host-pathogen interaction drives genome plasticity in the late blight pathogen
Charles Saunders  The genome of Malassezia globosa, a fungus associated with dandruff
Thomas A. Richards  Horizontal gene transfer and the spread of trophic mechanisms in the eukaryotes
Bruce A. McDonald  The origins of plant pathogenic fungi

Following lunch, the morning speakers will be available on the benches outside the administration building to meet with students. Please allow time for students to meet the speakers. In the event of rain, please go inside the Administration building.

12:00 pm - 1:00 pm  Lunch  Crocker Hall

AD HOC Sessions (lunch provided)

12:15 pm - 2:00 pm  The Phycomyces genome: manual annotation and analysis.  Heather
Organizer: Luis Corrochano
12:15 pm - 2:00 pm  Colletotrichum Workshop.  Scripps
Organizers: Michael Thon, Serenella Sukno

3:00 pm - 6:00 pm  Concurrent sessions I

Interactions between fungal pathogens and their human hosts:
Population genetics and ecology:  Ted White and Judith Rhodes  Nautilus
Secondary metabolism:  Lynne Boddy and Kwangwon Lee  Merrill
Applied genomics and industrial mycology:  Barbara Howlett and Jurgen Wendland  Chapel
Architecture and tip growth:  Ken Bruno and Peter Punt  Heath
Circadian rhythms and photobiology:  Meritxell Riquelme and Rosa R. Mouriño-Pérez  Fred Farr Forum
Basidiomycete biology and genomics:  Sue Crosthwaite and Christian Heintzen  Kiln
Sarah Watkinson and Dan Cullen  Scripps

6:00 pm  Dinner  Crocker Hall
7:30 pm -10:30 pm  Posters I  Fred Farr Forum Garage

Poster Numbers  Topics
1-112  Comparative and Functional Genomics
338-386  Biochemistry and Metabolism
577-639  Other Topics

Authors of ODD numbered posters should be at their poster from 7:30- 8:30 and authors of EVEN numbered posters should be at their posters from 8:30 - 9:30. If you have a poster that is not in the program book, you may post it at an un-numbered space.
Thursday March 19

7:30 am - 1:00 pm Registration  Administration Building
7:30 am - 8:30 am Breakfast  Crocker Hall
8:30 am - 12:00 pm Plenary Session II  Merrill Hall and Chapel

GENE REGULATION AND METABOLISM  Chair: Joan W. Bennett, Rutgers University

Donald L. Nuss  Regulation and consequences of a fungal antiviral RNA silencing response
Rachel Brem  Natural genetic variation and the transcriptome
Jens Nielsen  Metabolism of Aspergilli at the genome level
Robert Proctor  Evolution of a secondary metabolite biosynthetic gene cluster in Fusarium
Eric U. Selker  Control of DNA methylation in Neurospora

12:00 pm - 1:00 pm Lunch  Crocker Hall

Following lunch, the morning speakers will be available on the benches outside the administration building to meet with students. Please allow time for students to meet the speakers. In the event of rain, please go inside the Administration building.

AD HOC Sessions (lunch provided)

12:15 pm - 2:30 pm Workshop: JGI Genome Portal / Community Annotation Tools  Chapel

Organizer: Igor Grigoriev

3:00 pm - 6:00 pm Concurrent sessions II

RNA functions, epigenetics and chromosome biology:  Hitoshi Nakayashiki and Yi Liu  Fred Farr Forum

Associations with plants:  Martijn Rep and Erika Kothe  Merrill
Natural products and small molecules:  Vera Meyer and Ben Horwitz  Kiln
Evolutionary genetics and genomics:  Jason Stajich and Linda Kohn  Chapel
Dimorphic transitions and morphogenesis:  Alex Andrianopoulos and Takashi Kamada  Heather
Biofuels and biomass disassembly:  Jonathan Walton and Scott Baker  Nautilus

6:00 pm Dinner  Crocker Hall
7:30 pm - 10:30 pm Posters II  Fred Farr Forum Garage

Poster Numbers  Topics
113-227  Gene Regulation
438-509  Host Pathogen Interactions
572-576  Education
640-671  Other Topics

Authors of ODD numbered posters should be at their poster from 7:30- 8:30 and authors of EVEN numbered posters should be at their posters from 8:30 - 9:30. If you have a poster that is not in the program book, you may post it at an un-numbered space.
Friday March 20

7:30 am - 1:00 pm  Registration  Administration Building
7:30 am - 8:30 am  Breakfast  Crocker Hall
8:30 am -12:00 pm  Plenary Session III  Merrill Hall and Chapel

SIGNSING, DEVELOPMENT AND SEX  Chair: Ursula Kues, GA Univ Göttingen, Germany

Michael Feldbrugge  mRNA trafficking during pathogenic development of *Ustilago maydis*
Alex Idnurm  Sex and light signaling in the zygomycete *Phycomyces blakesleeanus*
Howard Judelson  Regulatory pathways involved in spore formation in the oomycete *Phytophthora infestans*
Paula Sundstrom  cAMP signalling in morphogenesis in *Candida albicans*
Jesus L. Aguirre  ROS signalling and control of development

12:00 pm - 1:00 pm  Lunch  Crocker Hall

Following lunch, the morning speakers will be available on the benches outside the administration building to meet with students. Please allow time for students to meet the speakers. In the event of rain, please go inside the Administration building.

AD HOC Sessions (lunch provided)

12:15 pm - 1:00 pm  Neurospora business lunch.  Organizer: Yi Liu  Chapel
12:15 pm - 2:00 pm  *Cryphonectria parasitica* genome sequence and annotation.  Organizer: Donald L. Nuss  Nautilus
12:15 pm - 3:00 pm  Magnaporthe workshop.  Organizer: Thomas Mitchell and Nicole Donofrio  Heather
12:15 pm - 2:30 pm  Dermatophyte genome sequencing workshop.  Organizer: Ted White  Fred Farr Forum

After lunch
1:00 – 2:30  Neurospora functional genomics project.  Organizer: Jay Dunlap  Chapel

3:00 pm - 6:00 pm  Concurrent sessions III

Fungal and oomycete effectors:  Paul Birch and Thierry Rouxel  Merrill
Phylogenomics:  Joey Spatafora and David Geiser  Chapel
ROS in development and pathogenesis:  Paul Tudzynski and Wilhelm Hansberg  Heather
Cytoskeleton and motors:  Mike Plamann and Gero Steinberg  Fred Farr
Education and public outreach:  Pat Pukkila and Pietro Spanu  Scripps
Sex and development:  Yin-Won Lee and Frances Trail  Kiln
Analysis and regulation of carbon metabolism:  Bernhard Seiboth and Ronald P. De Vries  Nautilus

6:00 pm  Dinner  Crocker Hall
7:30 pm -10:30 pm  Posters III  Fred Farr Forum Garage

Poster Numbers  Topics
228-337  Cell Biology
387-437  Population and Evolutionary Genetics
510-571  Host Pathogen Interactions

Authors of ODD numbered posters should be at their poster from 7:30- 8:30 and authors of EVEN numbered posters should be at their posters from 8:30 - 9:30. If you have a poster that is not in the program book, you may post it at an un-numbered space.
Saturday March 21

7:30 am - 1:00 pm  Registration  Administration Building
7:30 am - 8:30 am  Breakfast  Crocker Hall
8:30 am - 12:00 pm  Plenary Session IV  Merrill Hall and Chapel

PATHOGENIC AND SYMBIOTIC INTERACTIONS  Chair: Jim Kronstad, UBC Canada

Neil A. R. Gow  Immune recognition of the fungal cell wall
Barbara Valent  Life inside a rice cell; lessons from the blast fungus
Lynda Ciuffetti  Toxins for life and death, a mechanism of pathogenesis
Paola Bonfante  Cellular and molecular plant responses to AM fungi
Meredith Blackwell  Insects in the lives of fungi

12:00 pm - 1:00 pm  Lunch  Crocker Hall

Following lunch, the morning speakers will be available on the benches outside the administration building to meet with students. Please allow time for students to meet the speakers. In the event of rain, please go inside the Administration building.

AD HOC Sessions (lunch provided)
12:15 pm - 1:45 pm  Zygomycetes and the microsporidia Workshop.  Organizer: Joe Heitman  Nautilus
2:00 pm - 5:00 pm  Concurrent sessions IV

Zygomycetes and chytrids:  Mat Fisher and Santiago Torres  Scripps
Cool tools for fungal biology:  Gary Foster and Steve Osmani  Heather
Nitrogen regulation networks:  Bettina Tudzynski and Meryl Davis  Kiln
Metabolomics and Proteomics:  Peter Solomon and Kim Hammond-Kosack  Fred Farr Forum
Associations with microbes and insects:  Alfredo Herrera-Estrella and Pieter van West  Nautilus
Dothideomycete comparative genomics:  Steve Goodwin and Gert HJ Kema  Chapel
Speciation and evolution:  Tatiana Giraud and Jan Schirawski  Merrill

5:00 pm - 5:30 pm  Reception  Merrill Hall and Chapel
5:30 pm - 6:15 pm  Invited Lecture  Merrill Hall and Chapel
Claudio Scagnocchio, University of Paris XI, Orsay, France

6:15 pm  Banquet  Crocker Hall
8:00 pm - 12:30 am  Closing party  Merrill Hall
Quiet alternative  Surf and Sand Living Room

Sunday March 22

7:30 am - 1:00 pm  Registration  Administration Building
8:30 am - 12:00 pm

AD HOC Sessions/Workshops
9:00 am - 12:00 pm  Fusarium Workshop.  Organizer: Bob Procter  Kiln

12:00 pm  Check-out

Box lunches will be available to attendees who sign up for them in advance.
Ad Hoc Workshops

Wednesday March 18, 12:15 pm - 2:00 pm

The Phycomyces genome: manual annotation and analysis
Organizer: Luis Corrochano
Box lunches will be provided for the first 25 attendees

Colletotrichum Workshop
Organizers: Michael Thon, Serenella Sukno
Box lunches will be provided for the first 10 attendees

Thursday March 19, 12:15 pm -2:30 pm

JGI Genome Portal / Community Annotation Tools
Organizer: Igor Grigoriev
Box lunches will be provided for the first 50 attendees

Friday March 20, 12:15 - 1:00 pm

Neurospora Business Lunch.
Organizer: Yi Liu
Box lunches will be provided for the first 60 attendees

12:15 pm - 2:00 pm

Cryphonectria parasitica genome sequence and annotation
Organizer: Donald L. Nuss
Box lunches will be provided for the first 15 attendees

Magnaporthe workshop
Organizers: Thomas Mitchell and Nicole Donofrio
Box lunches will be provided for the first 40 attendees

Dermatophyte genome sequencing Workshop
Organizer: Ted White
Box lunches will be provided for the first 25 attendees

1:00 – 2:30

Neurospora Functional Genomics Project
Organizer: Jay Dunlap

Saturday March 21, 12:15 pm -1:45 pm

Zygomycetes and the microsporidia Workshop. Organizer: Joe Heitman
Box lunches will be provided for the first 25 attendees

Sunday March 22, 9:00 am- 12:00 pm

Fusarium Workshop
Organizer: Bob Procter
Concurrent session schedules

Wednesday, March 18

Interactions between fungi and their human hosts

Co-chairs: Ted White and Judith Rhodes

Abstracts for this session begin on page 43

3:00-3:20
Tom Sharpton, University of California at Berkeley
Evolutionary genomics identifies proteins important to the interaction between *Coccidioides* and its host

3:20-3:40
Robert Cramer, Montana State University
Hypoxia adaptation and fungal virulence in *Aspergillus fumigatus*

3:40-4:00
Bill Nierman, JCVI
*Aspergillus fumigatus* gene expression in experimental murine lung infections

4:00-4:20
Won Hee Jung, University of British Columbia
Ferroxidases in *Cryptococcus neoformans*: their roles inside macrophages and in antifungal susceptibility

4:20
Break

4:40-5:00
Kirsten Neilson, University of Minnesota
Giant Cell virulence in *Cryptococcus*

5:00-5:20
Ingrid E. Frohner, University Vienna
*Candida albicans* cell surface superoxide dismutases degrade host-derived reactive oxygen species to escape innate immune surveillance

5:20-5:40
David Kadosh, University of Texas
A filament-specific transcriptional regulator determines *Candida albicans* morphology and virulence

5:40-6:00
Richard Bennett, Brown University
Understanding sex in a hostile environment – cryptic mating in *Candida albicans*
Wednesday, March 18

**Population genetics and ecology**

Co-chairs: Lynne Boddy and Kwangwon Lee

Abstracts for this session begin on page 46

3:00 - 3:20  
Anne Pringle  
**Dispersal as a key to fungal population biology: creating wind, and travelling with humans.**

3:20 - 3:40  
James Anderson  
**Whole genome sequencing of experimental yeast populations identifies determinants of divergent adaptation and reproductive isolation**

3:40 - 4:00  
Chris Ellison  
**Evolution of the mating-type chromosome in Neurospora tetrasperma**

4:00 - 4:20  
Jan Stenlid  
**From population genetics to population genomics in wood decay fungi**

4:20 - 4:40  
Break

4:40 - 5:00  
Stefano Torriani  
**Evolutionary history of the mitochondrial genome in Mycosphaerella populations infecting bread wheat, durum wheat, and wild grasses**

5:00 - 5:20  
Anastasia Litvintseva  
**“Out of Africa” origin of human pathogenic fungus Cryptococcus neoformans var. grubii**

5:20 - 5:40  
Yuriko Nagano  
**Fungal diversity in deep-sea sediments - a whole new world?**

5:40 - 6:00  
Frank Kempken  
**Fungal insect competition and the secondary metabolism**
Wednesday, March 18

Secondary metabolism
Co-chairs: Barbara Howlett and Jürgen Wendland

Abstracts for this session begin on page 49

3:00 - 3:20
Andrea Walther, Carlsberg Laboratory, Denmark
**Oxidative stress response and riboflavin production in Ashbya gossypii**

3:20 - 3:40
Jon Palmer, University of Wisconsin, Madison, WI
**Delving into the mechanism of LaeA-regulated secondary metabolism**

3:40 - 4:00
Rosie Bradshaw, Massey University, New Zealand
**Dothistromin biosynthesis in the pine-infecting fungus, Dothistroma spp**

4:00 - 4:20
Alice Churchill, Cornell University, Ithaca, NY
**Metarhizium anisopliae NPS1 synthesizes novel cyclic heptapeptide spore factors called serinocyclins**

4:20 - 4:40
Break

4:40 - 5:00
K. Andreeva, University of Kentucky, Lexington, KY
**Analysis of secondary metabolite gene clusters in the genome of Epichloë festucae**

5:00 - 5:20
Natalie D. Fedorova, J. Craig Ventner Institute, Rockville, MD
**SMURF: genomic mapping of fungal secondary metabolite pathways**

5:20 - 5:40
Erik Lysøe, Bioforsk - Norwegian Institute of Agricultural and Environmental Research, Ås, Norway
**The transcription factor FgStuA influences spore development, pathogenicity and secondary metabolite production in Fusarium graminearum.**

5:40 - 6:00
Clay C. C. Wang, University of Southern California, Los Angeles, CA
**Discovery of the emericellamide gene cluster by genomic mining in Aspergillus nidulans**
Applied genomics and industrial mycology
Co-chairs: Ken Bruno and Peter Punt

Abstracts for this session begin on page 52

3:00-3:20
Carsten Russ, Broad Institute of MIT and Harvard, Cambridge, MA
Exploiting new sequencing technologies to study fungal genome structure and variation

3:20-3:40
Mikael R. Andersen, Technical University of Denmark, Lyngby, Denmark
Genomic analysis of evolution in A. niger

3:40-4:00
Mark Styczynski, Broad Institute of MIT and Harvard, Cambridge, MA
Comparative functional genomics: Reconstructing the evolution of central carbon metabolism in 15 fungal species

4:00-4:20
Axel Brakhage, HKI and Friedrich-Schiller-University, Jena, Germany
Functional Genomics in polyketide biosynthesis of Aspergillus nidulans

4:20-4:40
Break

4:40-5:00
Debby Yaver, Novozymes, Inc., Davis CA
An archeological exploration of fungal production strains: Analysis of Aspergillus niger AMG Producing Strains Using Comparative Genome Hybridization (CGH) and Quantitative Real-Time PCR (qPCR)

5:00-5:20
Peter Punt, TNO Quality of Life, Zeist, Netherlands
A systems biology approach towards improvement of itaconic acid production in Aspergillus sp.

5:20-5:40
Hideaki Koike, National Institute of Advanced Industrial Science and Technology (AIST), Japan.
Engineering intracellular metabolites by altering gene expression of Aspergillus oryzae

5:40-6:00
Hans Visser, Dyadic Nederland BV, Wageningen, Netherlands
Development of Chrysosporium lucknowense C1 as a commercial protein production platform: Exploration and exploitation of its genome
Wednesday, March 18

**Architecture and tip growth**

Co-chairs: Meritxell Riquelme and Rosa R. Mouriño-Pérez

Abstracts for this session begin on page 55

3:00 - 3:20
Peter Sudbery, Sheffield University, Sheffield, United Kingdom.
*Phosphorylation of Sec2 by Cdc28-Hgc1 is required for transport of secretory vesicles to the Spitzenkörper during the hyphal growth of Candida albicans*

3:20 - 3:40
Alejandro Beltrán, Center for Scientific Research and Higher Education of Ensenada, CICESE. Ensenada, BC, México.
*The exocyst in Neurospora crassa: a tale of vesicles, fusions and apical growth*

3:40 - 4:00
Norio Takeshita. University of Karlsruhe, Karlsruhe, Germany.
*Interaction between microtubule plus ends and the hyphal tip cortex in Aspergillus nidulans*

4:00 - 4:20
Robert W. Roberson, Arizona State University, Tempe, AZ USA.
*Spitzenkörper distribution and diversity among the fungi*

4:20
Break

4:40 - 5:00
Timo Schuerg. Technische Universitaet Braunschweig, Braunschweig, Germany.
*BEM-1 is required for directed but not for general polar growth in Neurospora crassa*

5:00 - 5:20
Barry Bowman. University of California, Santa Cruz, CA USA.
*The structure of organelles and the distribution of calcium transporters in Neurospora crassa*

5:20 - 5:40
Sara Gremillion. Rhodes College, Memphis, TN, USA.
*Two Golgi apparatus COG proteins are important to polarity establishment and maintenance in Aspergillus nidulans*

5:40 - 6:00
Rosa R. Mouriño-Pérez, Center for Scientific Research and Higher Education of Ensenada, CICESE. Ensenada, BC, México.
*Actin binding proteins and endocytosis during tip growth of Neurospora crassa*
Wednesday, March 18

Circadian rhythms and photobiology  Kiln
Co-chairs: Sue Crosthwaite and Christian Heintzen

Abstracts for this session begin on page 58

3:00- 3:20
Brian Crane, Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY
Coupling photochemistry to conformational change in fungal light sensors

3:20- 3:40
Reinhardt Fischer, Department of Applied Microbiology, University of Karlsruhe, Karlsruhe, Germany.
Light regulation in Aspergillus nidulans

3:40- 4:00
VG Tagua, C Sanz, Julio Rodriguez-Romero, A Idnurm, JM Christie, J Heitman, AP Eslava and LM Corrochano
Photoreceptor genes in Phycomyces

4:00 - 4:20
Deborah Bell-Pedersen, Center for Biological Clocks Research, Program for the Biology of Filamentous Fungi, and Department of Biology, Texas A&M University, Texas
Circadian Clock Output Pathways in Neurospora crassa

4:20
Break

4:40 - 5:00
Bill Belden, Dartmouth Medical School, Genetics Department, Hanover, New Hampshire
Chromatin-remodeling and epigenetics assist circadian clock-regulated gene expression

5:00 - 5:20
Ernestina Castro-Longoria, Michael Ferry, Salomón Bartnicki-García and Stuart Brody
Dynamics of nuclear localization in vivo of the frq gene product in Neurospora crassa during the circadian rhythm

5:20 - 5:40
Jinhu Guo, Ping Cheng, Yi Liu. Department of Physiology, The University of Texas Southwestern Medical Center, Dallas, TX
Posttranscriptional regulation of the Neurospora circadian clock

5:40 - 6:00
Steven B. Haase. Department of Biology, Duke University, Durham, North Carolina
Cycling without cyclins: a transcription network oscillator
Wednesday, March 18

Basidiomycete biology and genomics
Co-chairs: Sarah Watkinson and Dan Cullen

Abstracts for this session begin on page 61

3:00-3:20
Ursula Kuës, Georg-August-University Göttingen
Laccase and other multi-copper oxidase genes in Agaricomycotina

3:20-3:40
Randy Berka, Novozymes, Inc.
Analysis of the Postia placenta genome reveals a novel paradigm for lignocellulose depolymerization

3:40-4:00
Sebastien Duplessis, INRA, Nancy
Recent updates on the genome project of the mycorrhizal basidiomycete Laccaria bicolor

4:00-4:20
Dan Eastwood, University of Warwick
Environmental regulation and transcript profiling of the reproductive phase change in Agaricus bisporus

4:20-4:40
Break

4:40-5:00
Heather Hallen, Michigan State University
Ribosomal synthesis of amatoxins in Amanita and Galerina

5:00-5:20
Walt Lilly, Southeast Missouri State University
Comparative genomics of basidiomycete peptidases

5:20-5:40
Mikael Brandstrøm, Swedish University of Agricultural Sciences
Population genomics in the forest pathogen Heterobasidion annosum.

5:40-6:00
David Hibbett, Clark University
Phylogenetics and comparative genomics of brown-rot basidiomycetes
Concurrent session schedules

Thursday, March 19

RNA function, epigenetics and chromosome biology

Fred Farr Forum
Co-chairs: Yi Liu and Hitoshi Nakayashiki
Abstracts for this session begin on page 64

3:00-3:20
Nguyen Bao Quoc
How is RNA silencing invoked against the retrotransposon MAGGY in *Magnaporthe oryzae*?

3:20-3:40
Shwu-Shin Chang
qiRNA, a novel type of small RNA induced by DNA damage

3:40-4:00
Rosa M. Ruiz-Vázquez
The gene silencing mechanism in *Mucor*: consensus and dissent

4:00-4:20
Stephanie Bollman
Small RNA Pathways in the Oomycetes *Phytophthora sojae*, *Phytophthora ramorum*, and *Phytophthora infestans*

4:20-4:40
Break

4:40-5:00
Nancy Keller
Chromosomal landscapes and secondary metabolite cluster expression

5:00-5:20
Michiyoshi Wakabayashi
DNA damage checkpoint genes of *Neurospora crassa* are required for normal cell growth and maintenance of chromosome integrity

5:20-5:40
Kristina M. Smith *Perkins Award Winner*
Centromeric regions of *Neurospora crassa* are composed of heterochromatin

5:40-6:00
Keyur K. Adhvaryu *Perkins Award Winner*
Substitutions in amino terminal tail of histone H3 cause dominant loss of DNA methylation in Neurospora
Thursday, March 19

**Associations with Plants**

Co-chairs: Erika Kothe and Martijn Rep

Abstracts for this session begin on page 67

3:00-3:20
Paul Tudzynski
*B. cinerea; special aspects of a necrotrophic life style*

3:20-3:40
Linda J. Johnson
*A novel extracellular siderophore from *Epichloë festucae* is essential for grass mutualism*

3:40-4:00
Sarah Gurr
*On full blast: signals, sensors and stress*

4:00-4:20
Brett Tyler
*How oomycete and fungal effectors enter host cells*

4:20
Break

4:40-5:00
Patrick Berndt
*Physical-chemical plant-derived signals induce differentiation in *Ustilago maydis*

5:00-5:20
Claire Veneault-Fourrey
*What makes a biotrophic fungus a plant-pathogen or a symbiont? Insights from transportome analysis*

5:20-5:40
Claire Gachon
*The immune response of brown algae against the basal oomycete pathogen *Eurychasma dicksonii*

5:40-6:00
Chang Hyun Khang
*The biotrophic interfacial complex and the secretion of effector proteins into host cells during rice blast disease*
Thursday, March 19

Natural products and small molecules
Co-chairs: Vera Meyer and Ben Horwitz

Abstracts for this session begin on page 70

3:00-3:20
Gillian Turgeon
Nonribosomal peptide synthetase metabolites and fungal development

3:20-3:40
Massimo Reverberi
Aflatoxin biosynthesis is correlated to peroxisome functionality, lipid metabolism and oxidative stress in *Aspergillus flavus*

3:40-4:00
Donald Gardiner
Potent inducers of deoxynivalenol production by *Fusarium graminearum*

4:00-4:20
Timothy Friesen
*Stagonospora nodorum* utilizes multiple host-selective toxins which act as effectors of pathogenicity to induce disease on wheat

4:20
Break

4:40-5:00
Alma Rodriguez
Screening of secondary metabolites important in fungal interactions: the challenge of data mining

5:00-5:20
Bruce Campbell
Natural phenolic compounds as anti-aflatoxicogenic and anti-fungal chemosensitizing agents

5:20-5:40
Ulrike Binder
Pathways involved in resistance to the antifungal protein PAF of *Penicillium chrysogenum*

5:40-6:00
Gustavo Goldman
Farnesol induces the transcriptional accumulation of the *Aspergillus nidulans* Apoptosis-Inducing Factor (AIF)-like mitochondrial oxidoreductase
Thursday, March 19

Evolutionary Genetics and Genomics
Co-chairs: Linda Kohn and Jason Stajich

Abstracts for this session begin on page 73

3:00-3:20
Christina Cuomo
Comparative genomic analysis of pathogenic Candida species.

3:20-3:40
Darren M. Soanes
Insights into the evolution of fungal pathogenicity using comparative genomics

3:40-4:00
Paul F. Morris
Multiple horizontal gene transfer events and domain fusions have created novel regulatory and metabolic networks in the oomycete genome

4:00-4:20
Kathryn E. Bushley
Evolution of nonribosomal peptide synthetases: generating chemical diversity

4:20
Break

4:40-5:00
Richard Oliver
Mesosynteny between fungal chromosomes; a newly recognised type of sequence conservation found between fungal species

5:00-5:20
Illan Wapinski
Cross-species comparison of ribosomal protein transcriptional responses under environmental stress

5:20-5:40
Jeremy Dettman
Genome-wide investigation of reproductive isolation in Neurospora: Candidate regions identified by microarray-based genotyping and mapping

5:40-6:00
Jason Stajich
Evolutionary dynamics and transcriptional landscape of Neurospora crassa revealed through RNA sequencing and comparative genomics
Thursday, March 19

**Dimorphic transitions and morphogenesis**

*Co-chairs: Alex Andrianopoulos and Takashi Kamada*

Abstracts for this session begin on page 76

3:00-3:20
*Anita Sil*

**Regulation of Histoplasma capsulatum morphology and virulence in response to temperature**

3:20-3:40
*Joachim Morschhaeuser*

**Control of white-opaque switching in Candida albicans**

3:40-4:00
*Anne Jeziorowski*

**The role of TOS9 domain proteins during growth and morphogenesis in the dimorphic human pathogen Penicillium marneffei**

3:40-4:00
*Anne Dranginis*

**Mechanisms of Flo11-dependent adhesion and morphogenesis in Saccharomyces cerevisiae.**

3:40-4:00
*Anne Dranginis*

4:00-4:20

4:20
*Break*

4:40-5:00
*Dong-Min Han*

**A homeoprotein, NrsA represses sexual development of Aspergillus nidulans**

5:00-5:20
*Ulrich Kück*

**A molecular network of conserved signaling components and novel proteins controls cellular development in Sordaria macrospora**

5:20-5:40
*Takashi Kamada*

**Mutational analysis of sexual development in the mushroom Coprinopsis cinerea**

5:40-6:00
*Hoi Shan Kwan*

**Towards a better understanding of fruiting body development in basidiomycetous mushrooms**
Thursday, March 19

Biofuels and biomass disassembly
Co-chairs: Johnathan Walton and Scott Baker

Abstracts for this session begin on page 79

3:00- 3:20
Sandy Merino, Novozymes
Development of a recombinant Trichoderma strain for improved hydrolysis of pretreated corn stover

3:20 - 3:40
Dan Cullen, USDA/Univ. Wisconsin
Mechanisms of lignocellulose degradation inferred from transcriptome and secretome analysis of the wood decay fungi Phanerochaete chrysosporium and Postia placenta.

3:40 - 4:00
Ronald de Vries, Utrecht University
Genome mining to improve bio-ethanol pre-treatments

4:00- 4:20
Bill Adney, NREL
Approaches to understanding processive cellulases

4:20
Break

4:40 - 5:00
Merja Pentilla, VTT Technical Research Centre of Finland
Trichoderma reesei as a production organism for enzymes for biomass hydrolysis

5:00 - 5:20
William Throntset, Genencor, a Danisco Division
Strain Improvement of Trichoderma using Green Fluorescent Protein and Fluorescence Activated Cell Sorting

5:20 - 5:40
Yuji Noguchi, Nagoya University, Nagoya, Japan.
Post translational modification of AoXlnR, a key transcriptional regulator of biomass-degrading enzymes in Aspergillus oryzae.

5:40 - 6:00
Verena Seidl, Institute of Chemical Engineering, Vienna University of Technology, Austria.
Sex and the Trichoderma: New perspectives for industrial strain improvement.
Concurrent session schedules

Friday, March 20

**Fungal and Oomycete effectors**
Co-chairs: Paul Birch and Thierry Rouxel

Abstracts for this session begin on page 81

3:00-3:20
Martijn Rep, University of Amsterdam, the Netherlands
*Effectors of a xylem colonizing fungus*

3:20-3:40
Pieter van West, University of Aberdeen, Scotland
*Unraveling the mechanism of RxLR mediated translocation of Oomycete effector proteins*

3:40-4:00
Regine Kahmann, Max-Planck-Institute, Marburg, Germany
*The effectors of smut fungi: from comparative genomics to function*

4:00-4:20
Eleanor Gilroy, SCRI, Scotland
*Functional analysis of Phytophthora infestans RXLR effectors Avr2 and Avr3a*

4:20
Break

4:40-5:00
Thierry Rouxel, INRA-Bioger, Versailles France
*AT-rich isochores as ecological niches for effectors in the genome of Leptosphaeria maculans*

5:00-5:20
Sophien Kamoun, The Sainsbury Laboratory, UK
*Crinklers: A second class of host translocated effectors from oomycete plant pathogens*

5:20-5:40
Bart Thomma, Wageningen University, The Netherlands
*Secreted effectors of the tomato leaf mould fungus Cladosporium fulvum are virulence factors that target host defense*

5:40-6:00
Francine Govers, Wageningen University, The Netherlands
*Recognition of Phytophthora infestans RXLR-dEER effectors by resistance proteins is triggered by C-terminal domains comprising W motifs*
Friday, March 20  

Phylogenomics  
Co-chairs: Joey Spatafora and David Geiser  

Abstracts for this session begin on page 84  

3:00-3:20  
Barbara Robbertse  
**Phylogenetic informativeness and the fungal tree of life**  

3:20-3:40  
Magnus Karlsson  
**Functional differentiation of fungal chitinases**  

3:40-4:00  
Bernard Henrissat  
**Carbohydrate-active enzymes in fungal genomes**  

4:00-4:20  
Jason Slot  
**Excavating the adaptive palimpsest: acquisition and evolution of ecological function in fungal genome**  

4:20  
Break  

4:40-5:00  
Emily Whiston  
**SNPs of information: Inferring evolutionary history in Coccidioides**  

5:00-5:20  
Tatiana Giraud  
**Assessing the performance of single-copy genes for recovering robust phylogenies**  

5:20-5:40  
Pari Skamnioti  
**Regulatory subfunctionalization and neofunctionalization account for the preservation of the ancient and extended cutinase family in Magnaporthe oryzae**  

5:40-6:00  
Joelle Amselem  
**Comparative analysis of transposable elements in several fungal genomes**
ROS in development and pathogenesis
Co-chairs: Paul Tudzynski and Wilhelm Hansberg

Abstracts for this session begin on page 87

3:00 - 3:20
Wilhelm Hansberg, Universidad Nacional Autónoma de México, Mexico
**ROS, RAS-1, growth and development**

3:20 - 3:40
Philippe Silar, Universite Paris sud 11, Paris, France
**Role and regulation of the Nox family in the filamentous fungus Podospora anserine**

3:40 - 4:00
Nicholas J Talbot, University of Exeter, Exeter EX4 4QD, UK
**Determining the role of reactive oxygen species generation in Magnaporthe grisea**

4:00 - 4:20
Barry Scott, Massey University, Palmerston North, New Zealand
**Bem1 and Cdc24: additional components of the Epichloe festucae NADPH oxidase complex? Coffee break**

4:20
Break

4:40 - 5:00
Benjamin A. Horwitz, Technion, Haifa, Israel
**Role of reactive oxygen species and stress signaling pathways in development and virulence of Cochliobolus heterostrophus**

5:00 - 5:20
Nora Temme, Westfaelische Wilhelms Universitaet Muenster, Muenster, Germany
**Reactive oxygen species: Botrytis cinerea 's friends or foes during host infection?**

5:20 - 5:40
Kwang Hyung Kim, Virginia Bioinformatics Institute, Blacksburg, VA, USA.
**A novel transmembrane protein is required for oxidative stress homeostasis and virulence in plant and animal fungal pathogens**

5:40 - 6:00
Aurélie Deveau, Dartmouth Medical School, Hanover, NH
**Integration of farnesol signaling in Candida albicans: importance of heterogeneous response in population for the promotion of level fitness in the face of oxidative stress.**
**Friday, March 20**

**Cytoskeleton and motors**

Fred Farr Forum

Co-chairs: Mike Plamann and Gero Steinberg

Abstracts for this session begin on page 90

3:00-3:20
Nadine Zekert, University of Karlsruhe, Germany

**The Aspergillus nidulans kinesin-3 UncA motor moves vesicles along a subpopulation of microtubules**

3:20-3:40
Gero Steinberg, University of Exeter, United Kingdom

**Single dynein motors drive long-distance endosome transport in Ustilago maydis**

3:40-4:00
Berl Oakley, University of Kansas, USA

**Functional analysis of the myosin II and myosin V homologs of Aspergillus nidulans**

4:00-4:20
Tetsuya Horio, University of Kansas, USA

**Whole genome analysis of the Aspergillus nidulans kinesins**

4:20
Break

4:40-5:00 pm
Ryan Elsenpeter, University of Missouri, USA

**Exploring the Role of the C-terminal domains of cytoplasmic Dynein heavy chain in Neurospora crassa**

5:00-5:20
Sandrine Grava, University of Basel, Switzerland

**Microtubule cytoskeleton in the filamentous fungus Ashbya gossypii: organization and role in nuclear migration**

5:20-5:40 pm
Christian Böhmer, University of Marburg, Germany

**Disassembly of septin filaments during transition from collar to ring-like structures**

5:40-6:00 pm
Michael Kemper, University of Osnabrueck, Germany

**A novel, microtubule dependent role for a formin in the filamentous fungus Ashbya gossypii**
Friday, March 20

**Education and public outreach**

Co-chairs: Pat Pukkila and Pietro Spanu

Abstracts for this session begin on page 93

3:00 - 3:20
Mimi Zolan, Indiana University
**How do we prepare future faculty?**

3:20 - 3:40
Scott Gold, U. Georgia
**DelsGate, a robust deletion method used as a tool for undergraduate teaching in fungal genomics**

3:40 - 4:20
Roundtable discussion led by Pietro Spanu, Imperial College
**Innovations in Education and Public Outreach**

4:20
Break

4:40 - 5:00
Joan Bennett, Rutgers University
**Lessons learned from building a program for women in science**

5:00 - 5:20
Gloria Turner, U. California at Los Angeles
**Neurospora genetics and genomics summer research institute: An introduction to research**

5:20 - 5:40
Pat Pukkila, U. North Carolina at Chapel Hill
**Undergraduate research in the state capital: Helping your State Legislators understand and appreciate higher education**

5:40 - 6:00
Tom Volk, U. Wisconsin-LaCrosse
**Plant pathology vs. medical mycology: Battle of the fungi**
Friday, March 20

Sex and development
Co-chairs: Yin-Won Lee and Frances Trail

Abstracts for this session begin on page 95

3:00 - 3:20
Gerhard Braus
Coordination of fruit body formation and secondary metabolism in *Aspergillus nidulans*

3:20 - 3:40
Robert Debuchy
Microarray identification of genes differentially transcribed in strains of opposite mating types in *Podospora anserina*

3:40 - 4:00
Steve Horton
B-regulated sexual development and the sugar transporter Sts1 in *Schizophyllum commune*

4:00 - 4:20
Johannes Wostemeyer
Regulation of sex pheromone synthesis in Mucor-like fungi

4:20
Break

4:40 - 5:00
Christina Hull
Gene regulation and dikaryon formation during sexual development of *Cryptococcus neoformans*

5:00 - 5:20
Katherine Borkovich
Regulation of growth and development by the guanine nucleotide exchange factor RIC8 in *Neurospora*

5:20 - 5:40
Mohamed Hijri
Live-cell imaging reveals that arbuscular mycorrhizal fungi inherit and require hundreds of nuclei to survive

5:40 - 6:00
William Alexander *Perkins Award Winner*.
DCL-1 colocalizes with other components of the MSUD machinery and is required for silencing
Friday, March 20

**Analysis and regulation of carbon metabolism**

Co-chairs: Bernhard Seiboth and Ronald P. De Vries

Abstracts for this session begin on page 97

3:00 - 3:20
Margaret Katz
**Genes involved in controlling the response to carbon starvation in Aspergillus nidulans**

3:20 - 3:40
Bernhard Seiboth
**Role of hexokinases in carbon catabolite repression and induction in Hypocrea jecorina**

3:40 - 4:00
Géraldine Mey
**Mechanisms of regulation of amino acid transport and metabolism in phytopathogenic fungi**

4:00 - 4:20
Michael S. Price
**Carbon metabolism and Cryptococcus neoformans virulence**

4:20
Break

4:40 - 5:00
Evy Battaglia
**Analysis of Magnaporthe grisea XlnR reveals significant differences in pentose catabolism from Aspergillus niger**

5:00 - 5:20
Carmen Limon
**Effect of phosphoglucoisomerase deletion on cellulase production in Trichoderma reesei**

5:20 - 5:40
Claudia Maerker
**Aconitase AcoA of Aspergillus nidulans, regulation at the atomic level?**

5:40 - 6:00
Andrea Prynych
**Mechanisms of action of transcriptional regulators involved in fatty acid catabolism**
Concurrent session schedules

Saturday, March 21

Concurrent sessions start one hour earlier on Saturday.

**Zygomycetes and Chytrids**

Co-chairs: Santiago Torres and Mat Fisher

Abstracts for this session begin on page 100

2:00-2:20
Soo-Chan Lee
**Sex locus and virulence of zygomycetes and microsporidia, the basal fungi**

2:20-2:40
Igor Grigoriev
**Annotation and analysis of zygomycetes: Phycomyces blakesleeanus and Mucor circinelloides**

2:40-3:00
Tim James
**Rapid expansion of the emerging fungal disease chytridiomycosis into declining and healthy amphibian populations**

3:00-3:20
Mat Fisher
**Mapping evolving Batrachochytrium lineages**

3:20
Break

3:40-4:00
Li-Jun Ma
**Genomic analysis of the basal lineage fungus Rhizopus oryzae reveals a whole-genome duplication**

4:00-4:20
Victoriano Garre
**Regulation of photocarotenogenesis via proteolysis-independent ubiquitylation in the zygomycete Mucor circinelloides**

4:20-4:40
Meredith D. M. Jones
**Environmental DNA combined with fluorescent in situ hybridisation reveals a missing link in the fungal tree of life**

4:40-5:00
Satoshi Sekimoto
**Elongation factor 2 phylogeny of Olpidium and its implications for early fungal evolution**
Saturday, March 21

**Cool tools for fungal biology**

Co-chairs: Gary Foster and Steve Osmani

Abstracts for this session begin on page 103

2:00 - 2:20

Andy Bailey

**Transforming Mushroom Biology**

2:20 - 2:40

Luis Larrondo

Novel tools for gene manipulations and a luciferase-based reporter system in *Neurospora crassa* reveal detailed real-time dynamics of frq /FRQ oscillations and uncovers new period mutants

2:40 - 3:00

Nick Reed

**Manipulating living fungal cells with light**

3:00 - 3:20

Steve Osmani.

Comprehensive methods to inactivate, visualize and purify all fungal proteins.

3:20

Break

3:40 - 4:00

Susan Kaminskyj

**Exploring fungal biology using light-, electron- and spectro-microscopy.**

4:00 - 4:20

Martha Arnaud

_The Aspergillus Genome Database (AspGD), a curated database of Aspergillus gene, protein, and genomic sequence information for the fungal research community._

4:20 - 4:40

Hye-Seon Kim

**Development of fluorescent protein-based biosensors for Ca2+ and pH to monitor physiological changes during Arabidopsis thaliana-Fusarium oxysporum interactions**

4:40 - 5:00

Mia Champion.

**Progress under the Fungal Genome Initiative : Sequencing and comparative analysis of fungal genomes**
Saturday, March 21

Nitrogen regulation networks
Co-chairs: Bettina Tudzynski and Meryl Davis

Abstracts for this session begin on page 106

2:00-2:20
Mark Caddick, The University of Liverpool, Liverpool, UK.
The coordinated cellular response to nitrogen availability in Aspergillus nidulans

2:20-2:40
Richard Todd, Kansas State University, Manhattan K.S USA.
Deletion of the Aspergillus nidulans nitrogen regulatory gene areB reveals pleiotropic phenotypes

2:40-3:00
Joseph Strauss, BOKU-University, Vienna, Austria.
Integration of nitrate assimilation into the nitrogen metabolic network of Aspergillus nidulans

3:00-3:20
Jinny Paul, University of Louisville, Louisville, KY
Exploring interactions among ammonium transporters of fungi

3:20
Break

3:40-4:00
Bettina Tudzynski, Universität Münster, Münster, Germany.
Highly conserved key players of nitrogen regulation can play different roles in different filamentous fungi

4:00-4:20
Richard Wilson, University of Nebraska, Lincoln, USA.
Trehalose-6-phosphate synthase integrates metabolic control and fungal virulence in Magnaporthe oryzae via a novel NADP(H)-dependent genetic switch

4:20-4:40
Manuel Sánchez López-Berges, Universidad de Córdoba, Spain.
Nitrogen controls invasive growth and plant pathogenicity in Fusarium oxysporum via the Ser/Thr kinase TOR and the bZIP transcription factor MeaB
Saturday, March 21

Metabolomics and proteomics
Co-chairs: Peter Solomon and Kim Hammond-Kosack

Abstracts for this session begin on page 109

2:00- 2:20
Rohan G.T. Lowe
DON mycotoxin biosynthesis by Fusarium species, a metabolomics perspective

2:20 - 2:40
Romaine Huget
Comparative proteomic analysis of infection-related development in the rice blast fungus Magnaporthe oryzae

2:40 - 3:00
Martin Vödisch
Proteome maps of total cell, mitochondrial and secreted proteins of Aspergillus fumigatus

3:00 - 3:20
Philippe Tanguay
Peptide-assisted annotation of the Melampsora larici-populina genome

3:20
Break

3:20 - 3:40
Kar-Chun Tan
An ‘omics approach to characterise heterotrimeric G-protein signalling in Stagonospora nodorum

3:40 - 4:00
Bret Cooper
Quantitative proteomic analysis of an obligate bean rust fungus and its host

4:00- 4:40
Pietro Spanu
The genome of Blumeria graminis: massive size expansion in an obligate biotroph

4:40 - 5:00
Delphine Vincent
High resolution analysis of fungal secreted proteins
Saturday, March 21

**Associations with microbes and insects**
Alfredo Herrera-Estrella and Pieter van West

Abstracts for this session begin on page 112

2:00 - 2:20
David P. Hughes
Crazy ants: the fine detailed manipulation and exploitation of ants by the fungus Ophiocordyceps (=Cordyceps) unilateralis

2:20 - 2:40
Prasun Mukherjee
The mechanism of action of Trichoderma during biocontrol of phytopathogenic fungi

2:40 - 3:00
Suzanne Joneson
Upregulated fungal genes in the early developmental stages of lichen symbiosis

3:00 - 3:20
Morten Nedergaard Grell
Proteins involved in attack and defence in Zygomycte-aphid interactions

3:20
Break

3:20 - 3:40
Harold J.G. Meijer
Cellular responses of Phytophthora infestans to cyclic lipopeptide surfactants produced by Pseudomonas species

3:40 - 4:00
S. Bleuler-Martinez
A lectin-mediated defense of fungi against predators and parasites

4:00 - 4:20
Nrupali Patel
Intracellular pathogenesis of filamentous fungi by the biocontrol bacterium Lysobacter enzymogenes

4:40 - 5:00
Alfredo Herrera-Estrella
Analysis of gene expression and antibiotic production in biocontrol by Trichoderma spp
Saturday, March 21

Dothideomycete comparative genomics

Chapel

Co-chairs: Steve Goodwin and Gert H.J. Kema

Abstracts for this session begin on page 115

2:00-2:20
Shaobin Zhong
Development of genomic resources and tools for Cochliobolus sativus

2:20-2:40
Bourras Salim
A systematic analysis of T-DNA insertion patterns in the genome of Leptosphaeria maculans

2:40-3:00
Carrie A. Smith
Morphogenetic mutants of Phoma medicaginis

3:00-3:20
Andrea Aerts
Comparative genomics tools for analysis of six Dothideomycete genomes

3:20
Break

3:40-4:00
Sarrah Ben M’Barek
Outstanding: the dispensable chromosomes of Mycosphaerella graminicola

4:00-4:20
Braham Dhillon
Absence of cytosine methylation in Mycosphaerella graminicola correlates with Repeat Induced Point mutation signatures in its Dim-2 homologue

4:20-4:40
Ioannis Stergiopoulos
Homologues of the Cladosporium fulvum effector proteins are present in Mycosphaerella species

4:40-5:00
Eva H. Stukenbrock
Deciphering the genetic basis of speciation of a fungal plant pathogen through comparative genomics
Saturday, March 21

Speciation and evolution
Co-chairs: Tatiana Giraud and Jan Schirawski

Abstracts for this session begin on page 118

2:00 - 2:20
Hanna Johannesson, Uppsala Sweden
Mating-type chromosome evolution in the filamentous ascomycete Neurospora tetrasperma

2:20 - 2:40
Edmond J. Byrnes, Durham NC USA
Evidence that the Vancouver island Cryptococcus gattii outbreak has expanded into the United States Pacific North West

2:40 - 3:00
Ronny Kellner, Bochum Germany
Genetic variability of mating genes and virulence factors of phytopathogenic fungi

3:00 - 3:20
Daniel Henk, London UK
Speciation and recombination in the globally distributed penicillin producing fungus Penicillium chrysogenum

3:20
Break

3:40 - 4:00
Linda Kohn, Toronto Canada
Speciation genes in fungi

4:00 - 4:20
Pierre Gladieux, Orsay France
Inferring the history of speciation from multilocus sequence and microsatellite data: the case of the Microbotryum violaceum species complex

4:20 - 4:40
Bridget Barker, Arizona Tucson USA
Evidence for hybridization and introgression between Coccidioides immitis and C. posadasii

4:40 - 5:00
Jan Schirawski, Marburg, Germany
Host adaptation as mechanism of speciation? Comparative analysis of Sporisoriumreilianum isolates with different host preference