



31<sup>st</sup>

# Fungal

Genetics Conference

March 15–20, 2022

## PROGRAM BOOK

GENETICS

 **GSA**

**G3**  
Genes | Genomes | Genetics

## Table of Contents

Genetics Society of America .....	3
Fungal Policy Committee and Conference Organizers .....	5
Sponsors .....	7
General Information .....	9
Registration Desk and Badges .....	10
Registration Desk Schedule .....	10
Conference App .....	10
Oral Presenters .....	11
Poster Presentations .....	11
Viewing Sessions Online .....	12
Exhibitor and Sponsor Information .....	13
Event Sponsors .....	14
Safety Protocols .....	14
COVID-19 Testing .....	15
Meals .....	15
Internet Access .....	15
Job and Meeting Postings .....	15
Presenting Author Index .....	16
Slack Chat Channels .....	16
Security/Lost and Found .....	16
Quiet Space .....	16
Parking .....	16
Conference Policies .....	17
Code of Conduct .....	18
Accessibility .....	19
Diversity and Inclusion .....	19
Social Media/Photo/Video Policy .....	19
Schedule of Events .....	20
Oral Presentation and Workshop Session Listings .....	27
Poster Session Listings .....	46
Sponsor Ads .....	79
Asilomar Map .....	82

The background of the entire page is a light cream color, densely populated with small, faint, reddish-brown line drawings. These drawings represent various biological structures, including what appear to be pollen grains, cross-sections of plant cells, and other microscopic organisms. They are scattered across the entire surface, creating a textured, scientific aesthetic.

# Genetics Society of America





GSA is an international scientific society representing more than 5,000 researchers and educators around the world. As well as connecting researchers through conferences and career programs, we publish two peer-edited scholarly journals, GENETICS and G3: Genes|Genomes|Genetics. We encourage you to join GSA so you can make use of exclusive member benefits and get involved in the Society's many programs, including professional development training, awards, advocacy, and more. Join us as we work to advance the field and serve our community. Visit [genetics-gsa.org](https://genetics-gsa.org) for more information.

GENETICS

GENETICS has been innovating since 1916, publishing high quality original research across the breadth of the field.



G3: Genes|Genomes|Genetics is an open access journal that publishes high quality, useful results regardless of perceived impact.

## 2022 GSA Board of Directors

### Officers

E. Jane Hubbard, *President*

Tracy Johnson, *Vice President*

Hugo Bellen, *Immediate Past President*

Swathi Arur, *Secretary*

Michael Buszczak, *Treasurer*

### Directors

Maitreya Dunham

Oliver Hobert

Folami Ideraabdullah

Amanda Larracuenta

Irene Miguel-Aliaga

Steven Munger

C. Brandon Ogbunu

Duoja (DJ) Pan

Martha Soto

Noah Whiteman

Patricia J. Wittkopp

### Journal Editors

Brenda J. Andrews, Editor in Chief,  
G3: Genes|Genomes|Genetics

Howard Lipshitz, Editor in Chief,  
GENETICS

### Early Career Representative

Jacob Ortega

Nicole Torosin

### Executive Director

Tracey DePellegrin

# Fungal Policy Committee and Conference Organizers



## Fungal Policy Committee and Conference Organizers

---

Natalia Requena, Karlsruhe Institute of Technology – KIT, FPC Chair (2019–2022)

Deborah Bell-Pedersen, Texas A&M University (2017–2023)

Antonio Di Pietro, University of Córdoba (2015–2022)

Amy Gladfelter, University of North Carolina (2017–2023)

Erika Kothe, Friedrich Schiller University Jena (2017–2023)

Luis Larrondo, Pontificia Universidad Católica de Chile (2019–2025)

Xiaorong Lin, University of Georgia (2019–2025)

Vera Meyer, Technical University of Berlin (2019–2025)

Gero Steinberg, University of Exeter (2015–2022)

*Ex Officio*

John Leslie, Fungal Genetics Stock Center

Marc Orbach, University of Arizona

## Scientific Organizers

---

Jennifer Lodge, Duke University

Oded Yarden, Hebrew University

## GSA Fungal Conference Poster Award Organizer

---

Deborah Bell-Pedersen, Texas A&M University



# Sponsors

## Conference Sponsors

Genetics Society of America and the organizers gratefully acknowledge the following sponsors:

### Gold Sponsors

---



### Silver Sponsors

---



### Bronze Sponsors

---



### Supporters

---





The background of the entire page is covered with a repeating pattern of small, stylized botanical line drawings. These drawings are rendered in two shades of orange: a vibrant orange and a lighter, peach-like orange. The motifs include various types of seeds, fruits, and plant structures, such as round berries with stems, elongated pods, and clusters of small flowers or fruits. The drawings are scattered across the page, creating a dense, textured effect.

# General Information

### Registration Desk and Badges

---

You should have received your registration badge in advance via email and printed it out. Badges will not be printed onsite. In the registration area in Surf and Sand, you will need to show your green check mark obtained from 42Chat (indicating you uploaded your vaccination verification and negative test results) and you will be given a badge cover and lanyard. For admission to the sessions, posters, exhibits, and receptions, you must have your official conference badge.

You can download the Program and Abstract Books on the conference website or access all the information in the Conference App. Certificates of Attendance and Participation are available online.

### Registration Desk Schedule

---

Tuesday, March 15	4:30 p.m. – 9:30 p.m.
Wednesday, March 16	8:00 a.m. – 5:00 p.m.
Thursday, March 17	8:30 a.m. – 2:00 p.m.
Friday, March 18	8:30 a.m. – 1:00 p.m.
Saturday, March 19	8:30 a.m. – 11:00 a.m.

### Conference App

---

In-person participants: Download the GSA Meetings app to your smartphone (available on both iOS and Android platforms) to have meeting information at your fingertips. Once you download the App, you will not need an internet connection to access previously downloaded information. You will only need an internet connection to download updates. Blackberry users and Windows Mobile Device users can access the App through the web version available on the conference website.

Virtual participants: Virtual attendees will use the App to participate in the conference. Sign into the App using your registration badge ID number and last name. The App is available in two formats: Desktop App (for desktop and laptop computers), or Mobile App (for Apple iOS and Android mobile devices).

You can find your registration badge ID in your conference registration confirmation email, which was sent from the address NoReply@Convention-Mail.com.

## Oral Presenters

**NEW PROCEDURES THIS YEAR** - All speakers must go to the Speaker Check-In located in Triton 24 hours before the start of your session to upload and review your presentation and become familiar with the equipment that will be in the session room. You will NOT be able to use your own computer or upload your presentation in the session room. The day of your presentation, arrive 30 minutes before the start of your session (not your talk) and let the session chair know that you are there.

## Poster Presentations

All posters are available from March 14 to April 8 as a PDF with an (optional) 2-minute audio overview in the Conference App. Be sure to view all the posters in the app and leave feedback. To view a poster, look for the “Virtual Poster” link near the bottom of each poster’s entry in the App.

Poster presenters who are attending the conference in person have been assigned a presentation time according to the schedule below. All three poster sessions will be in the Fireside Pavillion, which is located under Fred Farr Forum. Two posters will share a 4’ high x 8’ wide poster board. Each author will have a net usable space of 3’ 10” (111.8 cm) high x 3’ 10” (111.8 cm) wide.

All in-person posters will be up for one day. Presenters should remove their posters at the end of their poster session. If you do not remove your poster, it may be lost or thrown away. The meeting does not take responsibility for posters that are not removed on time. Set up your poster after 8:00 a.m. the day of your presentation.

<b>Tuesday, March 15</b>	View all the virtual posters while traveling to the meeting	
<b>Wednesday, March 16</b>	All “W”ednesday posters must be displayed 7:00 p.m. – 10:30 p.m.	
	7:30 p.m. – 8:30 p.m.	Odd-numbered posters
	8:30 p.m. – 9:30 p.m.	Even-numbered posters
	9:30 p.m. – 10:30 p.m.	Open Viewing
<b>Thursday, March 17</b>	All “T”hursday posters must be displayed 7:00 p.m. – 10:30 p.m.	
	7:30 p.m. – 8:30 p.m.	Odd-numbered posters
	8:30 p.m. – 9:30 p.m.	Even-numbered posters
	9:30 p.m. – 10:30 p.m.	Open Viewing
<b>Friday, March 18</b>	All “F”riday posters must be displayed 7:00 p.m. – 10:30 p.m.	
	7:30 p.m. – 8:30 p.m.	Odd-numbered posters
	8:30 p.m. – 9:30 p.m.	Even-numbered posters
	9:30 p.m. – 10:30 p.m.	Open Viewing

### Viewing Sessions Online

---

Remote attendees can view sessions via the App:

**Plenary Sessions** - Registrants access live plenary sessions through the App. Five minutes before a plenary session starts, log in using your registration badge ID number and last name. Tap the “Join Webinar” button on the session. The Join Webinar button will be visible 10 minutes before the start of the session.

**Concurrent Sessions** - A recording of each session will be available in the session listings on the App within 24 hours after the session ends. The recordings will be available until April 8.

**Poster Sessions** - PDFs and audio overviews of all of the posters will be available via the App March 14 through April 8.

## Exhibitor and Sponsor Information

Please be sure to visit with the company representatives during the poster sessions.



[www.biosensesolutions.dk](http://www.biosensesolutions.dk)

**oCelloScope™ Live-Cell Imaging** – Automated Microbial Growth Kinetics and Morphology Analysis The oCelloScope™ platform is used by microbiologists all over the world to study growth and morphology. We use image analysis and machine learning to provide a time-lapse technology 250 times more sensitive than using OD (plate readers).



[www.fungidb.org](http://www.fungidb.org)

FungiDB integrates whole genome sequence and annotation, experimental and environmental isolate sequence data and includes comparative genomics, analysis of gene expression, bioinformatics tools and automated analysis, user comment system capturing community expertise, the genome annotation editor Apollo, Galaxy platform for private data analysis, and a web interface for data mining. In addition, we will be available Wednesday through Friday, 7:30 a.m. – 8:45 a.m. via a recurring zoom meeting. Please log in to ask us any questions:

<https://liverpool-ac-uk.zoom.us/j/99758022770>

Meeting ID: 997 5802 2770,

Passcode: fLr=@x%6



[www.ginkgobioworks.com](http://www.ginkgobioworks.com)

Headquartered in Boston, Ginkgo Bioworks uses the most advanced technology on the planet – biology – to grow products instead of manufacturing them. We design custom microbes for customers across multiple markets, and build our foundries to scale the process of organism engineering using software and hardware automation.



<https://www.mdpi.com/journal/jof>

The Journal of Fungi (ISSN 2309-608X, IF 5.816) is an international, peer-reviewed, scientific, open access journal providing an advanced forum for studies related to pathogenic fungi, fungal biology, and all other aspects of fungal research. All articles published in JoF are included in PubMed, SCIE (WoS), Scopus, and many others.



[www.mycoworks.com](http://www.mycoworks.com)

In 2013, co-founders Philip Ross and Sophia Wang formed MycoWorks, a San Francisco-based biomaterials company dedicated to bringing new mycelium materials to the world. MycoWorks' patented Fine Mycelium technology, an advanced manufacturing platform and breakthrough in materials science, engineers mycelium during growth to form proprietary, interlocking cellular structures for unparalleled strength and durability.



[www.scientifcbio.com](http://www.scientifcbio.com)

SBI is a collective of scientists, engineers and business people committed to making intelligent, dynamic sensors and instruments that monitor biomass, pH, and dissolved oxygen easily accessible and available to the thousands of cell scientists and bioprocessing engineers who are on the cutting edge of scientific and medical breakthroughs. Our job is to power your scientific audacity. For every experiment, every day.



[www.unionbio.com](http://www.unionbio.com)

Union Biometrika provides flow cytometry for objects that are too large for traditional cytometers, such as fungal pellets, and offers an alternative to manual sorting. These instruments analyze and dispense objects based on size and fluorescent parameters. Automating this process offers increased speed, sensitivity, quantification, and repeatability of experiments.



### Event Sponsors

---

**Ginkgo BioWorks** is sponsoring the Opening Mixer, Tuesday, March 15, 7:30 p.m. – 9:00 p.m. PST Please be sure to visit their table during the poster sessions Wednesday through Friday.

**The Better Meat Co.** is sponsoring the Career Exploration Workshop, Thursday, March 10, 2:00 p.m. – 3:00 p.m. PST

This event will showcase the broad options available to those with a PhD by hosting a panel of individuals from multiple career paths. Career sectors highlighted may include academic research, industry research, biotech, science writing, science teaching, and academic administration.

**Publishing Workshop**, Wednesday, March 9, 8:30 a.m. – 10:00 a.m. PST

Curious about the peer review process? Join us for an overview of peer review presented by the Executive Editor of the GSA Journals GENETICS and G3: Genes|Genomes|Genetics. Editors from Fungal Biology and Biotechnology and Fungal Genetics and Biology along with other journal editors will participate in a panel discussion answering attendee questions about the entire process—from submission to review to publication. Students and postdocs are invited to attend. All questions welcome!

### Safety Protocols

---

In-person attendees are required to wear the most protective masks they can access, ideally N95s or KN95s, while attending the conference. If you do not have access to a high-quality mask, a limited supply of complimentary masks are available in Surf and Sand.

All rooms will be set with maximum seating so that attendees can sit at the spacing with which they are comfortable.

Hand sanitizers will be available in all the meeting rooms and public space.

Coffee breaks will be available outside each meeting room. Please keep your mask on while in line and only remove to drink your coffee.

Daily self monitoring: If you experience any of the listed symptoms, do not enter the meeting space. Contact Asilomar Guest Services and [gsaconferences@genetics-gsa.org](mailto:gsaconferences@genetics-gsa.org) to have a rapid test brought to you. Symptoms requiring a rapid test: fever or chills, cough, shortness of breath, fatigue, muscle or body aches, headache, new loss of taste or smell, sore throat, congestion or runny nose, nausea or vomiting or diarrhea.

## COVID-19 Testing

---

Onsite rapid antigen and PCR COVID tests are available for a fee and by appointment for attendees who need or want to be tested (e.g. to comply with international travel regulations). The testing site will be in Marlin and open during the times listed below. Registrants are responsible for signing up and paying for any testing they require. Please make appointments for a test using the QR code below:



Thursday, March 17	1:00 p.m. – 3:00 p.m.
Friday, March 18	10:30 a.m. – 2:30 p.m.
Saturday, March 19	10:30 a.m. – 2:30 p.m.

Complimentary rapid antigen tests will be available to attendees who feel unwell or experience symptoms outside of the hours posted above.

## Meals

---

Meals are not included in the conference registration fee. Guests staying at Asilomar and those who purchased a meal plan are invited to eat at Crocker Dining Hall. If you prefer to not to eat inside the Dining Hall, you can pick up a to-go meal in Crocker Dining Hall and then sit at the picnic tables available in the Meadow outside or bring your meal back to your room. Meals are offered at the following times:

Breakfast	7:30 a.m. – 8:30 a.m.
Lunch	12:00 p.m. – 1:00 p.m.
Dinner	6:00 p.m. – 7:30 p.m.

Unfortunately, due to COVID restrictions, Asilomar is not selling individual meal tickets for purchase at the front desk as they have done in the past.

## Internet Access

---

Complimentary Wi-Fi is available in the meeting rooms and Fireside Pavillion.

Network: Asilomar Conference

Password: conference (all lower case).

## Job and Meeting Postings

---

Individuals and institutions offering or seeking employment and organizers of meetings may post notices and resumes on the “Community Notices” bulletin board in the Poster Sessions. Employers are also welcome to post listings in the #jobs channel in the #Fungal22 Slack workspace.

### Presenting Author Index

---

To search for specific oral and poster presenters, use the search function in the Conference App.

### Slack Chat Channels

---

The #Fungal22 Slack workspace is the place to meet other attendees online during the conference. You can join and create chat channels based on your interests. There are channels for getting technical help, discussing new papers and preprints, sharing job ads, and connecting with other attendees around shared interests.

### Security/Lost and Found

---

For all emergencies and lost and found items, contact Asilomar security by dialing 0 from any house phone. The conference registration desk will be able to assist you as well.

### Quiet Space

---

There are living rooms available in Lodge, Afterglow, Pirates Den, and Stuck Up Inn if you want to disconnect for a few minutes during a session.

### Parking

---

Parking is complimentary on the Asilomar grounds.

The background of the entire page is a repeating pattern of stylized botanical illustrations. These include various shapes of seeds, fruits, and plant structures, rendered in a light orange color against a white background. The illustrations are scattered across the page, creating a textured, organic feel. A solid orange rectangle is positioned in the upper right corner, containing the title text.

# Conference Policies

### Code of Conduct

---

The Genetics Society of America Conferences foster an international community of geneticists and provide an opportunity to discuss scientific advances and form new collaborations.

GSA values your attendance and wants to make your experience productive and inspiring by fostering an open exchange of ideas in a professional setting. Our Code of Conduct was established to communicate a transparent set of standards and guidelines for acceptable behavior at GSA Conferences and to provide a positive, safe, and welcoming environment for all attendees, vendors, volunteers, and staff.

All conference participants (regardless of their role) are expected to follow the Code of Conduct while attending any portion of the meeting, including but not limited to meeting rooms, the exhibit/poster hall, meeting areas in the official conference venue, and social events provided by the meeting or vendors.

### Unacceptable Behaviors

---

Unacceptable behaviors include, but are not limited to:

- Intimidating, harassing, abusive, discriminatory, derogatory, or demeaning speech or actions by any participant and at all related events
- Harmful or prejudicial verbal or written comments or visual images related to gender, gender expression, gender identity, marital status, sexual orientation, race, religion, political orientation, socioeconomic, disability or ability status, or other personal characteristics, including those protected by law
- Inappropriate use of nudity and/or sexual images in public spaces (including presentation slides and posters)
- Deliberate intimidation, stalking, or following
- Violating the rules and regulations of the conference hotel
- Sustained disruption of scientific sessions or other events
- Unwelcome and uninvited attention or contact
- Physical assault (including unwelcome touching or groping)
- Real or implied threat of physical harm
- Real or implied threat of professional or financial damage or harm
- Harassing or unwanted photography
- Photographing slides of oral presentations and posters without permission
- Recording of scientific and other sessions without permission



### Taking action or making a report

---

Need to file a complaint? For instructions on how to confidentially report a Code of Conduct violation, please visit [genetics-gsa.ethicspoint.com](https://genetics-gsa.ethicspoint.com). In addition, GSA staff is available to assist participants in contacting our Ethics Committee to make a report. Please email Tracey DePellegrin, GSA Executive Director, at [tracey.depellegrin@genetics-gsa.org](mailto:tracey.depellegrin@genetics-gsa.org).

### Consequences of non-compliance

---

Anyone asked by GSA staff, a Session Chair, Workshop Leader, Moderator, Presenter, or Zoom representative to stop unacceptable behavior is expected to comply immediately. Retaliation toward GSA or toward someone reporting an incident or after experiencing any of the following consequences will not be tolerated and may result in additional sanctions.

The consequences of non-compliance with GSA's Code of Conduct may include:

- Immediate removal from accessing the online meeting and Slack channels without warning
- Restrictions from future GSA meeting attendance
- Termination of GSA membership or positions on GSA Boards or Committees
- Incidents may be reported to the proper authorities

### Accessibility

---

GSA is committed to assisting attendees with special needs. If you have accessibility questions or requests, please email [gsaconferences@genetics-gsa.org](mailto:gsaconferences@genetics-gsa.org).

### Diversity and Inclusion

---

GSA is committed to promoting equality, diversity, and inclusion to create greater opportunity for any individual to fulfill their scientific potential, irrespective of their background, gender, or circumstances. This diversity leads to innovation by attracting the widest possible talent to the community and fostering a greater diversity of ideas, approaches, and perspectives. The Organizing Committee aims to select speakers and session chairs that represent the breadth and diversity of the discipline and conference participants. GSA especially encourages the Committee to select excellent speakers from groups traditionally underrepresented in science.

### Social Media/Photo/Video Policy

---

Live tweeting of presentations is allowed unless the speaker explicitly opts out by stating so at the start of their talk. Taking or sharing photos or videos of posters is permitted only with the presenter's consent during the assigned poster session. Taking photos of posters while the presenter is not present is strictly prohibited. By attending a GSA conference, you grant GSA the right to use your photograph, name, and likeness for use in GSA educational, news, or promotional materials.

The background of the entire page is covered with a repeating pattern of small, stylized botanical illustrations in a light orange color. These illustrations include various shapes such as round fruits with stems, elongated seed pods, and branching structures resembling coral or small plants. The pattern is dense and covers the entire area except for the title box and the right margin.

# Schedule of Events

## Schedule of Events

All times are listed in Pacific Standard Time (PST).

### THURSDAY, March 10

11:00 a.m. – 11:30 a.m.	Getting Involved in GSA's Early Career Professional Development	Virtual
12:00 p.m. – 1:00 p.m.	Conference Success Tips and Welcome from the Early Career Leadership Program	Virtual
2:00 p.m. – 3:00 p.m.	Career Exploration Panel	Virtual
3:30 p.m. – 4:30 p.m.	Multilingual Networking	Virtual

### MONDAY, March 14

3:00 p.m. – 11:00 p.m.	<b>Asperfest 18</b> <i>In-person only</i>	Chapel
5:00 p.m. – 7:00 p.m.	Workshop Registration	Surf and Sand
6:00 p.m. – 7:00 p.m.	<b>Dinner</b> ( <i>for those staying at Asilomar</i> )	Crocker Hall

### TUESDAY, March 15

8:30 a.m. – 3:00 p.m.	<b>Asperfest 18</b> <i>In-person only</i>	Chapel
9:00 a.m. – 5:00 p.m.	<b>Fusarium Workshop</b> <i>In-person only</i>	Fred Farr Forum
9:00 a.m. – 5:00 p.m.	<b>Magnafest</b> <i>In-person only</i>	Kiln
4:00 p.m. – 7:00 p.m.	<b>Speaker Check-In</b> <i>Speakers must check in 24 hours before their session to upload their presentation and review the equipment.</i>	Triton
4:30 p.m. – 9:30 p.m.	<b>Registration</b> <i>Be sure and have your green check mark ready, showing your vaccination verification and negative test results have been uploaded.</i>	Surf and Sand
5:00 p.m. – 7:00 p.m.	<b>Review Virtual Posters</b> <i>PDF and audio overview of posters</i>	
6:00 p.m. – 7:00 p.m.	Dinner	Crocker Hall
7:30 p.m. – 9:00 p.m.	<b>Opening Welcome Social</b> <a href="#"><i>Sponsored by Ginkgo BioWorks</i></a>	Merrill Hall
8:00 p.m. – 9:00 p.m.	Networking Hotspots	Merrill Hall

All times are listed in Pacific Standard Time (PST).

## WEDNESDAY, March 16

7:30 a.m. – 8:30 a.m.	Breakfast	Crocker Hall
7:30 a.m. – 8:45 a.m.	<b>FungiDB Help Desk</b> ( <i>see Conference app for zoom link</i> )	Virtual
7:30 a.m. – 5:00 p.m.	<b>Speaker Check-In</b> <i>Speakers must check in 24 hours before their session to upload their presentation and review the equipment.</i>	Triton
8:00 a.m. – 5:00 p.m.	<b>Registration</b> <i>Be sure and have your green check mark ready showing your vaccination verification and negative test results have been uploaded.</i>	Surf and Sand
8:45 a.m. – 9:00 a.m.	<b>Welcome and Opening Remarks</b>	Merrill Hall and Chapel
9:00 a.m. – 12:00 p.m.	<b>Plenary Session I: Cell Biology and Morphology</b>	Merrill Hall and Chapel
12:00 p.m. – 1:00 p.m.	<b>Lunch</b> <i>For those staying at Asilomar, or those who have bought meal tickets</i>	Crocker Hall
12:30 p.m. – 1:45 p.m.	JGI Workshop	Merrill Hall
12:30 p.m. – 1:45 p.m.	Multilingual Networking	Fireside Pavilion
12:30 p.m. – 1:45 p.m.	Oomycete Community Discussion Forum	Scripps
3:00 p.m. – 6:00 p.m.	<b>Concurrent Platform Sessions</b>	
	<i>Circadian Rhythms and photobiology</i>	Kiln
	<i>Extreme environments</i>	Scripps
	<i>Human fungal pathogens</i>	Merrill Hall
	<i>Interactions with prokaryotes and viruses</i>	Nautilus
	<i>Morphological transitions and cell walls</i>	Chapel
	<i>RNA and RNAi biology</i>	Fred Farr Forum
	<i>Symbionts and endophytes</i>	Heather

## Schedule of Events

All times are listed in Pacific Standard Time (PST).

### WEDNESDAY, March 16 (continued)

3:00 p.m. – 4:00 p.m.	Virtual Networking Meet Ups	Virtual
6:00 p.m. – 7:30 p.m.	Dinner	Crocker Hall
7:30 p.m. – 9:00 p.m.	North Central Coordinating Committee, Genetics and Biochemistry of Plant-Fungal Interactions	Kiln
7:30 p.m. – 10:30 p.m.	<b>Poster Session I and Exhibits</b> <i>Odd number W posters 7:30 p.m. – 8:30 p.m.</i> <i>Even numbered W posters 8:30 p.m. – 9:30 p.m.</i> <i>Open Viewing W posters 9:30 p.m. – 10:30 p.m.</i>	Fireside Pavilion
9:30 p.m. – 10:30 p.m.	Networking Hotspots	Fireside Pavilion

### THURSDAY, March 17

7:30 a.m. – 8:30 a.m.	Breakfast	Crocker Hall
7:30 a.m. – 8:45 a.m.	<b>FungiDB Help Desk</b> (see Conference app for Zoom link)	Virtual
7:30 a.m. – 5:00 p.m.	<b>Speaker Check-In</b> <i>Speakers must check in 24 hours before their session to upload their presentation and review the equipment.</i>	Triton
8:00 a.m. – 9:00 a.m.	Virtual Networking Meet Ups	Virtual
8:30 a.m. – 2:00 p.m.	Registration	Surf and Sand
9:00 a.m. – 12:00 p.m.	Plenary Session II: Cross species interactions	Merrill Hall and Chapel
12:00 p.m. – 1:00 p.m.	<b>Lunch</b> <i>For those staying at Asilomar and those who bought meal tickets</i>	Crocker Hall
1:00 p.m. – 3:00 p.m.	Covid Test Site	Marlin



All times are listed in Pacific Standard Time (PST).

## THURSDAY, March 17 (continued)

3:00 p.m. – 6:00 p.m.	Concurrent Platform Sessions	
	<i>Chromatin, heterochromatin, and epigenetics</i>	Fred Farr Forum
	<i>Lipid metabolism and signaling</i>	Scripps
	<i>Natural and experimental diversity, evolution and populations</i>	Kiln
	<i>Plant pathogens</i>	Merrill Hall
	<i>Secondary metabolism and production of useful metabolites</i>	Chapel
	<i>Spore development, dormancy and germination</i>	Heather
	<i>Stress</i>	Nautilus
6:00 p.m. – 7:00 p.m.	Dinner	Crocker Hall
7:30 p.m. – 10:30 p.m.	<b>Poster Session II and Exhibits</b> <i>Odd number T posters 7:30 p.m. – 8:30 p.m.</i> <i>Even numbered T posters 8:30 p.m. – 9:30 p.m.</i> <i>Open Viewing of T posters 9:30 p.m. – 10:30 p.m.</i>	Fireside Pavilion
9:30 p.m. – 10:30 p.m.	Networking Hotspots	Fireside Pavilion

## FRIDAY, March 18

7:30 a.m. – 8:30 a.m.	Breakfast	Crocker Hall
7:30 a.m. – 8:45 a.m.	<b>FungiDB Help Desk</b> (see Conference app for zoom link)	Virtual
7:30 a.m. – 5:00 p.m.	<b>Speaker Check-In</b> <i>Speakers must check in 24 hours before their session to upload their presentation and review the equipment.</i>	Triton
8:30 a.m. – 2:00 p.m.	Registration	Surf and Sand
9:00 a.m. – 12:00 p.m.	Plenary Session III: Evolution and Development	Merrill Hall and Chapel
10:30 a.m. – 2:30 p.m.	Covid Test Site	Marlin

## Schedule of Events

All times are listed in Pacific Standard Time (PST).

### FRIDAY, March 18 (continued)

12:00 p.m. – 1:00 p.m.	<b>Lunch</b> <i>For those staying at Asilomar and those that bought meal tickets, lunch is available in Crocker Hall and box lunches are available on the Main Lodge deck.</i>	Crocker Hall
12:45 p.m. – 1:45 p.m.	Careers in Academia	Virtual
3:00 p.m. – 6:00 p.m.	<b>Concurrent Platform Sessions</b>	
	<i>Interactions with other non-human/plant eukaryotic species</i>	Fred Farr Forum
	<i>Mating and sexual development</i>	Merrill Hall
	<i>Molecular basis of biotrophy</i>	Heather
	<i>Mycobiomes and their implications</i>	Nautilus
	<i>Natural and applied bioconversion and biodegradation</i>	Kiln
	<i>Small molecules in communication</i>	Scripps
	<i>Speciation, diversity and evolution</i>	Chapel
6:00 p.m. – 7:00 p.m.	Dinner	Crocker Hall
7:30 p.m. – 10:30 p.m.	<b>Poster Session III and Exhibits</b> <i>Odd numbered F posters 7:30 p.m. – 8:30 p.m.</i> <i>Even numbered F posters 8:30 p.m. – 9:30 p.m.</i> <i>Open Viewing of F posters 9:30 p.m. – 10:30 p.m.</i>	Fireside Pavilion
9:30 p.m. – 10:30 p.m.	Networking Hotspots	Fireside Pavilion

### SATURDAY, March 19

7:30 a.m. – 8:30 a.m.	Breakfast	Crocker Hall
7:30 a.m. – 5:00 p.m.	<b>Speaker Check-In</b> <i>Speakers must check in 24 hours before their session to upload their presentation and review the equipment.</i>	Triton
8:30 a.m. – 2:30 p.m.	Covid Test Site	Marlin
8:30 a.m. – 11:00 a.m.	Registration	Surf and Sand

## Schedule of Events

All times are listed in Pacific Standard Time (PST)

### SATURDAY, March 19 (continued)

8:45 a.m. – 9:00 a.m.	Fungal Community Meeting and election of FGPC members	Merrill Hall and Chapel
9:00 a.m. – 12:00 p.m.	Plenary Session IV: Signaling and Metabolism	Merrill Hall and Chapel
12:00 p.m. – 1:00 p.m.	<b>Lunch</b> <i>For those staying at Asilomar and those who bought meal tickets</i>	Crocker Hall
12:15 p.m. – 1:45 p.m.	Fungal Genetics Policy Committee Meeting	Surf and Sand
2:00 p.m. – 5:00 p.m.	<b>Concurrent Platform Sessions</b>	
	<i>Coollest tools for fungal biology</i>	Chapel
	<i>Emerging and re-emerging fungi in a changing world</i>	Heather
	<i>From genome to pangenome</i>	Kiln
	<i>Fungal determinants of host response</i>	Fred Farr Forum
	<i>Fungal recognition (self and non-self)</i>	Scripps
	<i>Fungicides and antifungals</i>	Merrill Hall
	<i>Systems biology and biomaterials</i>	Nautilus
5:30 p.m. – 5:45 p.m.	Fungal Conference and GSA Poster Award Presentations	Merrill Hall and Chapel
5:45 p.m. – 6:30 p.m.	<b>Perkins/Metzenberg Lecture presented by B. Gillian Turgeon, Cornell University, USA</b>	Merrill Hall and Chapel
6:30 p.m. – 7:30 p.m.	Dinner	Crocker Hall
8:30 p.m. – 11:00 p.m.	<b>Closing Party</b> <i>Refreshments will be served outside so be sure and bring a jacket</i>	Merrill Hall

### SUNDAY, March 20

7:30 a.m. – 8:30 a.m.	Breakfast	Crocker Hall
-----------------------	-----------	--------------

### WEDNESDAY, March 30

8:30 a.m. – 10:00 a.m.	Publishing Workshop	Virtual
------------------------	---------------------	---------

The background of the entire page is a repeating pattern of stylized botanical illustrations. These include various shapes of fruits, seeds, and plant structures, rendered in a light orange color against a white background. The illustrations are scattered across the page, creating a textured, organic feel. A large, solid orange rectangle is positioned in the upper right quadrant, containing the title text in white.

# Oral Presentation and Workshop Session Listings

## Oral Presentation and Workshop Session Listings

Wednesday, March 16  
8:45 a.m. – 9:00 a.m.  
Merrill Hall and Chapel

### Welcome and Opening Remarks

*Conference Organizers*

Jennifer Lodge and Oded Yarden,

Jessica Velez, GSA Welcome

---

Wednesday, March 16  
9:00 a.m. – 12:00 p.m.  
Merrill Hall and Chapel

### Plenary Session I: Cell Biology and Morphology

*Session Chairs:*

**Louise Glass**, University of California, Berkeley

**Steve Harris**, University of Manitoba, Canada

**1** 9:00 am Trade-off between Plasticity and Velocity in Mycelial Growth. **Norio Takeshita**, University of Tsukuba

**2** 9:30 The exocytic RAB11 pathway. **Miguel Penalva**, CSIC Centro de Investigaciones Biológicas 'Margarita Salas'

**3** 10:00 A little key will open a large door: unexpected pleiotropic roles of fungal surface-active proteins in fungal cells. **Irina Druzhinina**, Nanjing Agricultural University

10:30 Break

**4** 11:00 Role of the fission yeast NDR kinase Orb6 in the response to environmental stress. **Fulvia Verde**, University of Miami Miller School of Medicine

**5** 11:30 Temperature adaptation of biological phase separation. **Amy Gladfelter**, UNC Chapel Hill

---



# Oral Presentation and Workshop Session Listings

Wednesday, March 16

12:30 p.m. – 1:45 p.m.

## Workshops

Multilingual Networking, Fireside Pavilion

Oomycete Community Discussion Forum, Scripps

JGI Workshop, Merrill Hall

---

Wednesday, March 16

3:00 p.m. – 6:00 p.m.

Merrill Hall

## Human fungal pathogens

*Session Chairs:*

**Neil Gow**, University of Exeter, UK

**Xiaorong Lin**, University of Georgia, USA

**6 3:00** Immune recognition of fungi: deciphering the writing on the wall. **Neil Gow**, University of Exeter

**7 3:20** Unmasking chitin in *C. neoformans*: Panic or protection? **Rajendra Upadhy**, Washington University, St. Louis

**8 3:40** *Candida albicans* and IL-17A stimulate cytokine production by oral epithelial cells via different mechanisms. **Jianfeng LIN**, The Lundquist Institute

**9 4:00** The ephrin tyrosine kinase receptor, EphA2, serves as a gateway for *Cryptococcus neoformans* into the central nervous system. **Amelia Bennett**, University of California

4:20 Break

**10 4:40** A ricin-like toxin derives tissue necrosis during invasive mucormycosis. **Ashraf Ibrahim**, The Lundquist Institute at Harbor-UCLA Medical Center

**11 5:00** Roles of *Candida albicans* chromosome instability in the host. **Huijuan Yan**, UCSF

**12 5:20** Roles for microglia in *Cryptococcus* meningoencephalitis. **J Muse Davis**, University of Iowa

**13 5:40** Leveraging machine learning essentiality predictions and chemogenomic interactions to identify antifungal targets. **Ci Fu**, University of Toronto

---

## Oral Presentation and Workshop Session Listings

Wednesday, March 16  
3:00 p.m. – 6:00 p.m.  
Fred Farr Forum

### RNA and RNAi biology

*Session Chairs:*

**Michael Feldbrugge**, Heinrich Heine University, Germany

**Jin-Rong Xu**, Purdue University, USA

**14** 3:00 Alternative Transcription start sites in *Cryptococcus*. **Guilhem Janbon**, Institut Pasteur

**15** 3:20 Endosomal mRNA transport. **Michael Feldbrugge**, Heinrich-Heine University

**16** 3:40 The ribonucleoprotein complex components JSN-1 and GUL-1 are involved in asexual development in *Neurospora crassa*. **Anne Yenewodage**, Hebrew University of Jerusalem

**17** 4:00 An RNA-binding protein that evolved a change in function to control fungal growth: the surprising history, structure, and function of Ssd1. **Edward W. J. Wallace**, The University of Edinburgh

4:20 Break

**18** 4:40 Extracellular vesicle-mediated cross-kingdom transport of plant mRNAs into fungal cells to suppress pathogenicity. **Hailing Jin**, University of California

**19** 5:00 Exclusively RNAi-based antimicrobial drug resistance is inherited after meiosis in the mucormycosis pathogen *Mucor circinelloides*. **Carlos Pérez-Arques**, Duke University School of Medicine

**20** 5:20 How important is cross-kingdom RNA interference in nature? **Arne Weiberg**, Ludwig-Maximilians University - LMU

**21** 5:40 Identification of a stage-specific co-factor required for A-to-I mRNA editing during sexual reproduction in fungi. **Huiquan Liu**, Northwest A&F University

Wednesday, March 16  
3:00 p.m. – 6:00 p.m.  
Heather

### Symbionts and endophytes

*Session Chairs:*

**Natalia Requena**, Karlsruhe Institute of Technology, Germany

**Carolyn Young**, Oklahoma State University, USA

**22** 3:00 Endohyphal bacteria modulate tissue colonization, saprotrophy, and thermotolerance by endophytic fungi *in vitro* and under field conditions. **A. Elizabeth Arnold**, The University of Arizona

**23** 3:20 How do plants deploy smRNAs to engage with beneficial microorganisms while fighting pathogens? **Maitree Pradhan**, Karlsruhe Institute of Technology - KIT

**24** 3:40 Mycangial colonization in the laurel wilt (*Raffaelea lauricola*)-Ambrosia beetle symbiosis. **Ross Joseph**, University of Florida

**25** 4:00 Testing the role of the transcription factor TvSom1 in adhesion of *Trichoderma virens* germings. **Benjamin Horwitz**, Technion - IIT

4:20 Break

**26** 4:40 The combined activity of two secreted fungal enzymes is implicated in fungal accommodation in the roots and triggers cell death in different host species. **Alga Zuccaro**, University of Cologne

**27** 5:00 Deciphering the potential niche of novel black yeast fungal isolates in a biological soil crust based on genomes, phenotyping, and melanin regulation. **Erin Carr**, University of Nebraska-Lincoln

**28** 5:20 Establishment of functional symbioses between *Epichloë* endophytes and the modern cereals rye (*Secale cereale*) and hexaploid wheat (*Triticum aestivum*). **Richard Johnson**, Agresearch Grasslands

**29** 5:40 Genetic determinants of endophytism in the *Arabidopsis* root mycobiome. **Fantin Mesny**, Max Planck Institute for Plant Breeding Research

## Oral Presentation and Workshop Session Listings

Wednesday, March 16  
3:00 p.m. – 6:00 p.m.  
Chapel

### Morphological transitions and cell walls

*Session Chairs:*

**Steve Free**, SUNY University at Buffalo, USA

**Anita Sil**, University of California San Francisco, USA

**30** 3:00 *Candida* biofilms: importance, regulation, and evolution. **Clarissa Nobile**, University of California, Merced

**31** 3:20 Targeting the fungal cell wall. **Carol Munro**, University of Aberdeen

**32** 3:40 Multi-omics Profiling Reveals New Pathways Regulating Hyphal Morphogenesis in *Candida albicans*. **Kyunghun Min**, Stony Brook University

**33** 4:00 Nanoscale imaging of dynamic cell wall formation in fission yeast. **Fred Chang**, UCSF

4:20 Break

**34** 4:40 A myosin light chain, linking fungal morphology and filament extension, is critical for *Candida albicans* growth robustness. **Robert Arkowitz**, University Cote d'Azur/CNRS/INSERM

**35** 5:00 Structural base of the cell wall diversity of *Candida glabrata*. **Lars-Oliver Essen**, Philipps University

**36** 5:20 Study of the physiological role of amyloid structures in the pathogenic yeast *Candida albicans*. **Thierry Mourer**, Institut Pasteur

**37** 5:40 Defining the septin interactome and its role in appressorium-mediated plant infection by the rice blast fungus *Magnaporthe oryzae*. **Iris Eisermann**, The Sainsbury Laboratory

Wednesday, March 16  
3:00 p.m. – 6:00 p.m.  
Scripps

### Extreme environments

*Session Chairs:*

**Nina Gunde-Cimerman**, University of Ljubljana, Slovenia

**Julia Schumacher**, Federal Institute for Materials Research and Testing, Germany

**38** 3:00 Stable parasexuality – a novel fungal reproductive strategy uncovered by population genomics. **Cene Gostinčar**, University of Ljubljana, Biotechnical Faculty

**39** 3:20 A cystic fibrosis patient lung environment allowed for coexistence of multiple *Exophiala dermatitidis* clades over time. **Tania Kurbessoian**, University of California, Riverside

**40** 3:40 Surviving in the brine: a multi-omics approach for understanding the physiology of the halophile fungus *Aspergillus sydowii*. **Ramon Alberto Batista Garcia**, Universidad Autónoma del Estado de Morelos (RFC UAE671122G49)

**41** 4:00 The Ess1 prolyl isomerase and its target, the CTD of RNA polymerase II, in cold-adapted fungi. **Steven Hanes**, SUNY-Upstate Medical University

4:20 Break

**42** 4:40 Developing genetic tools to unlock the biotechnological potential of anaerobic gut fungi. **Radwa Hanafy**, University of Delaware

**43** 5:00 *Knufia petricola* – a model for exploring the biology of black rock-inhabiting fungi. **Julia Schumacher**, BAM

**44** 5:20 Diversity of genomic adaptations to post-fire environment in higher fungi points to a crosstalk between charcoal tolerance and sexual development. **Andrei Stecca Steindorff**, Lawrence Berkeley National Laboratory

**45** 5:40 Resistance and adaptation of the melanized yeast *Exophiala dermatitidis* to ionizing radiation exposure. **Zheng Wang**, US Naval Research Laboratory

## Oral Presentation and Workshop Session Listings

Wednesday, March 16  
3:00 p.m. – 6:00 p.m.  
Nautilus

### Interactions with prokaryotes and viruses

*Session Chairs:*

**Nancy Keller**, University of Wisconsin-Madison, USA  
**Ioly Kotta-Loizou**, Imperial College London, UK

**46** 3:00 Antifungal Potential of the Skin Microbiome. **Lindsay Kalan**, University of Wisconsin-Madison

**47** 3:20 Horizontal transmission and loss-driven evolution in *Mycoavidus*, a *Mortierella*-associated endohyphal bacterium. **Kevin Amses**, Oregon State University

**48** 3:40 A shelter from the elements: understanding requirements for fungal chlamydospore formation and bacterial invasion. **Isabelle Ludwikoski**, University of Wisconsin – Madison

**49** 4:00 From iron to antibiotics: Bacterial-fungal interactions revealed by genome-wide mutational analyses. **Emily Pierce**, University of California San Diego

4:20 Break

**50** 4:40 Elucidating Fungal Immune Receptors and Testing the Potential Role of Nucleotide-binding Domain Leucine-rich Repeat-like Proteins (NLR-like) Against Bacterial Antagonists. **Frances Stark**, University of California, Berkeley

**51** 5:00 Characterization of internal ribosomal entry sites in fungal RNA viruses and their potential use in multiple gene expression in filamentous fungi. **Sotaro Chiba**, Nagoya University

**52** 5:20 A GPI-anchored protein gene from the chestnut blight fungus *Cryphonectria parasitica* is a hypovirus-specific virulence factor and a tolerance factor against hypovirus infection. **Dae-Hyuk Kim**, Chonbuk National University

**53** 5:40 Deciphering the mycovirome of *Botrytis cinerea*. **Ana Ruiz-Padilla**, Universidad Politécnica de Madrid. CBGP (UPM-INIA)

Wednesday, March 16  
3:00 p.m. – 6:00 p.m.  
Kiln

### Circadian Rhythms and photobiology

*Session Chairs:*

**Luis Corrochano**, University of Seville, Spain  
**Jennifer Hurley**, Rensselaer Polytechnic Institute, USA

**54** 3:00 Circadian Clock Control of mRNA Translation. **Deborah Bell-Pedersen**, Texas A&M University

**55** 3:20 Insights into biological responses to light from baker's yeast *S. cerevisiae*, an organism lacking established photoreceptors. **Mikael Molin**, Chalmers University of Technology

**56** 3:40 A role for gene expression and mRNA stability in the mechanism underlying circadian nutritional compensation in *Neurospora crassa*. **Christina Kelliher**, Geisel School of Medicine at Dartmouth

**57** 4:00 Dark stipe mutants in fruiting body development of *Coprinopsis cinerea*. **Shanta Subba**, University of Goettingen

4:20 Break

**58** 4:40 Conformational Changes in the Circadian Negative Arm Correlate with Dynamic Interactomes Involved in Diverse Biological Processes. **Jacqueline Pelham**, Rensselaer Polytechnic Institute

**59** 5:00 Casein kinase 1 and disordered clock proteins form functionally equivalent phospho-based circadian modules in fungi and mammals. **Axel Diernfellner**, Heidelberg University Biochemistry Center

**60** 5:20 Genome wide insights into signal integration by the G-protein pathway for regulation of carbon- and secondary metabolism. **Miriam Schalamun**, Austrian Institute of Technology

**61** 5:40 The evolution of DNA repair: how a cryptochrome photoreceptor became a CPD photolyase in mucoral fungi. **Luis Corrochano**, Universidad de Sevilla

# Oral Presentation and Workshop Session Listings

Thursday, March 17  
9:00 a.m. – 12:00 p.m.  
Merrill Hall and Chapel

## Plenary Session II: Cross species interactions

*Session Chairs:*

**Elaine Bignell**, University of Exeter, UK

**Frances Trail**, Michigan State University, USA

**62** 9:00 am Cross-kingdom interactions in arbuscular mycorrhizal symbiosis. **Maria Harrison**, Boyce Thompson Institute

**63** 9:30 *Metarhizium*: jack of all trades, master of many. **Raymond St. Leger**, University of Maryland

**64** 10:00 Chemical interactions between fungi and nematodes. **Reinhard Fischer**, Karlsruhe Institute of Technology (KIT)

10:30 Break

**65** 11:00 A structure for effector delivery in smut fungi? **Regine Kahmann**, Max Planck Institute for Terrestrial Microbiology

**66** 11:30 A *Ralstonia pickettii* endosymbiont allows *Rhizopus microsporus* to evade amoeba and cause opportunistic virulence in animals. **Elizabeth Ballou**, University of Exeter, Centre for Medical Mycology

---

Thursday, March 17  
3:00 p.m. – 6:00 p.m.  
Merrill Hall

## Plant Pathogens

*Session Chairs:*

**Matthias Hahn**, University of Kaiserslautern, Germany

**Barbara Valent**, Kansas State University, USA

**67** 3:00 Functional diversification of effectors in smut fungi. **Gunther Doehlemann**, University of Cologne

**68** 3:20 Fungal Pathogens Utilize Extracellular Vesicles for Transport of Effector Proteins into Plant Host Cells. **Claire Whitaker**, UC Riverside

**69** 3:40 Multiple mutagenesis of *Botrytis cinerea* by an improved CRISPR/Cas9 protocol reveals high redundancy of phytotoxic proteins for necrotrophic infection. **Matthias Hahn**, Kaiserslautern Univ

**70** 4:00 Pyricularia HAG effector family interactions with rice candidate target proteins. **Nicholas Farmer**, Texas A&M University

4:20 Break

**71** 4:40 Appressorium-mediated plant infection by *Magnaporthe oryzae* is regulated by a Pmk1-dependent hierarchical transcriptional network. **Miriam Oses-Ruiz**, Public University of Navarre

**72** 5:00 Alternative sulfur scavenging and host colonization by the plant pathogen *Raffaelea lauricola*. **Joshua Konkol**, University of Florida

**73** 5:20 Oomycete RXLR effectors enter plant cells by clathrin-mediated endocytosis. **Paul Birch**, University of Dundee

**74** 5:40 Pathotypes of *Fusarium oxysporum* f. sp. *fragariae* express discrete repertoires of accessory genes and induce distinct host transcriptional responses during root infection. **Peter Henry**, United States Department of Agriculture

---

## Oral Presentation and Workshop Session Listings

Thursday, March 17  
3:00 p.m. – 6:00 p.m.  
Chapel

### Secondary metabolism and production of useful metabolites

*Session Chairs:*

**Jens Frisvad**, Technical University of Denmark, Denmark

**Jae-Hyuk Yu**, University of Wisconsin-Madison, USA

**75** 3:00 Honor by association, leveraging global gene co-expression networks for specialized metabolic pathway discovery. **Jennifer Wisecaver**, Purdue University

**76** 3:20 Lichen-like consortia and multicellular structures protect algae against bacterial toxins. **Mario Krespach**, Leibniz Institute for Natural Product Research and Infection Biology - Hans Knöll Institute

**77** 3:40 CRISPR-based transcriptional activation tool for silent genes in filamentous fungi. **Laszlo Mozsik**, University Leiden

**78** 4:00 The fungal battery: A redox flow battery containing the biosynthesised quinone phenicin from *Penicillium astrosanguineum*. **Jens Laurids Sørensen**, Aalborg University

4:20 Break

**79** 4:40 No genes left behind: Associating phenotypes with genes in *Neurospora crassa*. **Scott Baker**, Pacific Northwest National Laboratory

**80** 5:00 Culturing *Aspergillus nidulans* in soil microcosm elucidates its ecological behavior and interaction with soil microbiota. **Daisuke Hagiwara**, University of Tsukuba

**81** 5:20 Deciphering lichen secondary metabolism by genetic dereplication, transcriptome analysis, and heterologous expression. **Wonyong Kim**, Sunchon National University

**82** 5:40 Novel secondary metabolites and their biosynthesis from new *Aspergilli* of Australia. **Yit-Heng Chooi**, University of Western Australia

Thursday, March 17  
3:00 p.m. – 6:00 p.m.  
Nautilus

### Stress

*Session Chairs:*

**Jesús Aguirre**, Universidad Nacional Autónoma de México, Mexico

**Deborah Bell-Pedersen**, Texas A&M University, USA

**83** 3:00 Pathogenic fungi at the crossroads of metal starvation and oxidative stress. **Valeria Culotta**, Johns Hopkins University Bloomberg School of Public Health

**84** 3:20 ROS regulate mitochondrial dynamics in *Aspergillus nidulans*. **Jesús Aguirre**, Instituto de Fisiología Celular-UNAM

**85** 3:40 Phosphorylation/dephosphorylation of the *Cochliobolus heterostrophus* stress-activated MAPK Hog1 in response to plant phenolic acids. **Rina Zuchman**, Technion

**86** 4:00 Signaling Pathway Loss-of-Function Alleles and Evolutionary Hotspots in the Fungi. **Paul Magwene**, Duke University

4:20 Break

**87** 4:40 Regulation of cell shape and virulence factor expression in response to temperature in the fungal pathogen *Histoplasma capsulatum*. **Anita Sil**, Univ California, San Francisco

**88** 5:00 Circadian Clock-Controlled Translation of Specific *Neurospora crassa* mRNAs Requires Rhythmic eIF2 $\alpha$  Activity and P-bodies. **Kathrina Castillo**, Texas A&M University

**89** 5:20 Ccr4 and Gcn2 contribute differentially to stress-specific translational repression in *C. neoformans*. **Corey Knowles**, SUNY Buffalo

**90** 5:40 A Tor1 N-terminal region required for *Candida albicans* anabolic- and stress regulation. **Wanjuan Qi**, Boston Children's Hospital/Harvard Medical School



## Oral Presentation and Workshop Session Listings

Thursday, March 17  
3:00 p.m. – 6:00 p.m.  
Fred Farr Forum

### Chromatin, heterochromatin, and epigenetics

*Session Chairs:*

**Alessia Buscaino**, University of Kent, UK  
**David Cook**, Kansas State University, USA

**91** 3:00 Control and function of facultative heterochromatin in *Neurospora crassa*. **Zachary Lewis**, University of Georgia

**92** 3:20 Heterochromatin marks perturb transcriptional robustness and underpin dispensability of genes across evolutionary timescales in fungi. **Sabina Tralamazza**, University of Neuchâtel

**93** 3:40 Methylation of H4 controls gene expression in facultative heterochromatin. **Mareike Moeller**, Oregon State University

**94** 4:00 RNAi and heterochromatin independently control gene expression and transposable elements in Mucorales. **María Isabel Navarro-Mendoza**, Duke University

4:20 Break

**95** 4:40 A prion accelerates proliferation at the expense of lifespan. **David Garcia**, University of Oregon, Institute of Molecular Biology

**96** 5:00 Probing the role of N6-methyladenine DNA modification within the *Rhizopus microsporus* and *Mycetohabitans* symbiosis. **Margaret Branine**, Cornell University

**97** 5:20 Periodic DNA patterns associated with chromatin regulation in Fungi. **Stephen Mondo**, DOE Joint Genome Institute

**98** 5:40 Chromatin remodeling is required for the expression of small interfering RNAs from repetitive DNA loci in *Neurospora crassa*. **Eugene Gladyshev**, Institut Pasteur

Thursday, March 17  
3:00 p.m. – 6:00 p.m.  
Heather

### Spore development, dormancy and germination

*Session Chairs:*

**Michelle Momany**, University of Georgia, USA  
**Chris Koon Ho Wong**, University of Macau, China

**99** 3:00 The conidial coin toss: asymmetric spore adhesion in *Colletotrichum graminicola*. **Brian Shaw**, Texas A&M University

**100** 3:20 Differences in spore size and atmospheric survival shape stark contrasts in the dispersal dynamics of two closely related fungal pathogens. **Anne Pringle**, UWisconsin-Madison

**101** 3:40 RNA Editing Controls Toxicity of a *Neurospora* Spore Killer. **Nicholas Rhoades**, Illinois State University

**102** 4:00 The HMG Domain-Containing Transcription Factors Hgr1 and Hgr2 are Putative Dormancy Factors of *Cryptococcus* Spores. **Megan McKeon**, University of Wisconsin-Madison

4:20 Break

**103** 4:40 *Aspergillus niger* conidial germination: 3D live cell exploration. **Susanne Fritsche**, Austrian Centre of Industrial Biotechnology (ACIB GmbH), Technical University of Vienna

**104** 5:00 Developmental genetics of host invasion initiated by fungal conidia. **Soumya Moonjely**, Michigan State University

**105** 5:20 Sporulation environment drives variation in genetically-identical conidia. **Michelle Momany**, Univ Georgia

**106** 5:40 Transcription activity before dormancy in fungal conidia modulates phenotypic variation and affects the fitness and capabilities of fungal cells after germination. **Koon Ho Wong**, University of Macau



## Oral Presentation and Workshop Session Listings

Thursday, March 17  
3:00 p.m. – 6:00 p.m.  
Scripps

### Lipid metabolism and signaling

*Session Chairs:*

**James Konopka**, University of California, Los Angeles, USA

**Naweed Naqvi**, Temasek Life Sciences Laboratory, Singapore

**107** 3:00 Two distinct lipid transporters together regulate invasive filamentous growth in *Candida albicans*. **Martine Bassilana**, University Cote d'Azur/CNRS/INSERM

**108** 3:20 Lipid flippase mediated Cryptococcus-host interaction during pulmonary cryptococcosis. **Siddhi Pawar**, Rutgers University

**109** 3:40 Role of Arv1 protein in sterol metabolism and pathogenicity of the chestnut blight fungus *Cryphonectria parasitica*. **Soumyadip Kundu**, Mississippi State University

**110** 4:00 Sterol homeostasis is critical for surface structure organization and virulence in *Cryptococcus neoformans*. **Hau Lam Choy**, Washington University in St. Louis

4:20 Break

**111** 4:40 Oxylin Signals Affecting Host and Pathogen Interactions. **Nancy Keller**, Univ Wisconsin, Madison

**112** 5:00 Eisosomes mediate a novel pathway for regulating PI(4,5)P<sub>2</sub> in *Candida albicans* that is critical for cell wall morphogenesis and virulence. **Carla Lanze**, Stony Brook University

**113** 5:20 Role of the *Malassezia* lipidome in human skin health. **Thomas Dawson**, Agency for Science, Technology and Research

**114** 5:40 Lipid peroxidation and mitochondrial metabolism enable regulated cell death in Rice Blast. **Qing Shen**, Temasek Life Sciences Laboratory

Thursday, March 17  
3:00 p.m. – 6:00 p.m.  
Kiln

### Natural and experimental diversity, evolution and populations

*Session Chairs:*

**Christina Cuomo**, Broad Institute, USA

**Jianping Xu**, McMaster University, Canada

**115** 3:00 Metal tolerance in the mycorrhizal fungus *Suillus luteus*. **Sara Branco**, University of Colorado Denver

**116** 3:20 Using machine learning to gain insight on how environment and diet influence the evolution of galactose metabolism across the budding yeast subphylum. **Marie-Claire Harrison**, Pomona College

**117** 3:40 The extrachromosomal circular DNAs of the rice blast pathogen *Magnaporthe oryzae* contain a wide variety of LTR retrotransposons, genes, and effectors. **Pierre M Joubert**, University of California, Berkeley

**118** 4:00 Clonality and recombination in natural populations of *Candida auris*. **Jianping Xu**, McMaster University

4:20 Break

**119** 4:40 Genomic variation across a clinical *Cryptococcus* population linked to disease outcome. **Poppy Sephton-Clark**, Broad Institute of MIT and Harvard

**120** 5:00 Genetic and epigenetic variants underpinning within-species transcriptional polymorphism in a major fungal pathogen. **Leen Abraham**, University of Neuchatel

**121** 5:20 Giant *Starship* elements mobilize accessory genes in fungal genomes. **Emile Gluck-Thaler**, University of Neuchatel

**122** 5:40 Evolution of *Aspergillus fumigatus* Biofilm Morphotypes in Host Microenvironments, **Robert Cramer**, Dartmouth University

## Plenary Session III: Evolution and Development

### Session Chairs:

**Joe Heitman**, Duke University, USA

**Eva Stukenbrock**, Kiel Evolution Center, Germany

**123** 9:00 am Evolution repeats itself in fungal morphogenetic transitions - in search of mechanisms of convergent evolution. **Laszlo Nagy**, Biological Research Center, HAS

**124** 10:00 The genetics and genome biology of multinucleate arbuscular mycorrhizal fungi. **Nicolas Corradi**, University of Ottawa

10:30 Break

**125** 11:00 Genomics, species limits, and evolution of the shiitake genus *Lentinula*. **David Hibbett**, Clark University

**126** 11:30 Deep tissue infection by an invasive human fungal pathogen requires novel lipid-based suppression of the IL-17 response. **Suzanne Noble**, UCSF School of Medicine

**127** 9:30 Rise and fate of mutations in the fairy ring mushroom *Marasmius oreades*. **Hanna Johannesson**, Uppsala University

Friday, March 18

3:00 p.m. – 6:00 p.m.

Fred Farr Forum

## Interactions with other non-human/plant eukaryotic species

### Session Chairs:

**Monika Schmoll**, Austrian Institute of Technology, Austria

**Chengshu Wang**, Chinese Academy of Sciences, China

**128** 3:00 Talking to your inner self – on the interaction between *Trichoderma reesei* QM6a and its endohyphal *Methylobacterium*. **Monika Schmoll**, University of Vienna

**129** 3:20 Human mediated contact between amphibian-killing chytrid variants results in repeated recombination. **Thomas Jenkinson**, California State University, East Bay

**130** 3:40 Characterizing variation within the European *Batrachochytrium salamandrivorans* epidemic. **Moira Kelly**, Ghent University

**131** 4:00 Deciphering the molecular mechanisms involved with plant-insect-fungal interactions. **Marcio Silva-Filho**, University of São Paulo

4:20 Break

**132** 4:40 Genes for an extended phenotype: Biosynthesis of volatile sesquiterpenes in a pathogenic fungus is used to entice male flies into fatal mating's with infected female cadavers. **Henrik De Fine Licht**, University of Copenhagen

**133** 5:00 Repeat-driven genome expansion and two-speed genome architecture of amphibian-infecting chytrids. **Theresa Wacker**, University of Exeter

**134** 5:20 Regulation of infection of insects by the fungus *Metarhizium robertsii*. **Weiguo Fang**, Zhejiang University

**135** 5:40 Unraveling the biology of Nematophagy During a Fungal-Nematode Predator-Prey Interaction Using Time-Course Transcriptomic analysis. **Hung-Che Lin**, Institute of Molecular Biology, Academia Sinica

## Oral Presentation and Workshop Session Listings

Friday, March 18  
3:00 p.m. – 6:00 p.m.  
Kiln

### Natural and applied bioconversion and biodegradation

*Session Chairs:*

**Yitzhak Hadar**, The Hebrew University of Jerusalem, Israel

**Taina Lundell**, University of Helsinki, Finland

**136** 3:00 Integrating multifaceted genetic tools to gear up the discovery of fungal mechanisms of wood decay. **Jiwei Zhang**, University of Minnesota

**137** 3:20 Characterization and engineering of non-model microorganisms for biotechnological applications. **Hugh Purdy**, University of California, Santa Barbara

**138** 3:40 Chance favours the prepared spore – how to jumpstart cellulase production. **Wolfgang Hinterdobler**, AIT Austrian Institute Of Technology

**139** 4:00 The active microbial communities of oil degradation – exploring bioremediation of mine waste water, **Petter Madsen**

4:20 Break

**140** 4:40 The transcription factor Roc1 is a regulator of cellulose degradation in the wood-decaying mushroom *Schizophyllum commune*. **Peter Jan Vonk**, Utrecht University

**141** 5:00 Prevalence of aromatic lignin monomer metabolism phenotypes in a collection of wood-inhabiting fungi and characterization of putative metabolic pathways, **Leon Rogers**

**142** 5:20 Lignocelluloses and solid waste substrates transformed by wood-decay fungi for production of natural compounds. **Taina Lundell**, University of Helsinki

**143** 5:40 Degradation strategy of wood extractives by conifer-degrading wood decay fungus. **Chiaki Hori**, Hokkaido University

Friday, March 18  
3:00 p.m. – 6:00 p.m.  
Nautilus

### Mycobiomes and their implications

*Session Chairs:*

**Teresa E. Pawlowska**, Cornell University, USA

**Julia Segre**, National Human Genome Research Institute, USA

**144** 3:00 Human skin microbiome: trans-kingdom characterization and investigating an emerging fungal pathogen. **Julia Segre**, National Human Genome Research Institute, NIH

**145** 3:20 Intestinal mycobiome in allogeneic hematopoietic cell transplantation. **Bing Zhai**, Shenzhen Institute of Advanced Technology

**146** 3:40 Adaptive immunity induces mutually beneficial interactions with gut fungi. **Kyla Ost**, University of Utah

**147** 4:00 Characterizing the role of anaerobic fungi in lignocellulolytic microbial communities and the gut mycobiome of herbivorous non-human primates. **Katharine Dickson**, University of California, Santa Barbara

4:20 Break

**148** 4:40 When and how do fungi impact the evolution of bacteria? **Benjamin Wolfe**, Tufts University - Biology

**149** 5:00 Interrogating the poplar fungal microbiome interactions using meta-transcriptomics and constructed communities. **Jake Nash**, Duke University

**150** 5:20 Metabarcoding as a tool for investigating the influence of endosymbiotic bacteria on Mucoromycota fungal host community structure in the Sonoran Desert. **Nicole Reynolds**, Cornell University

**151** 5:40 Global evolutionary patterns and drug resistance acquisition in the human pathogen *Aspergillus fumigatus*. **Johanna Rhodes**, Imperial College London

## Oral Presentation and Workshop Session Listings

Friday, March 18  
3:00 p.m. – 6:00 p.m.  
Merrill Hall

### Mating and sexual development

*Session Chairs:*

**Fabienne Malagnac**, University Paris Saclay  
**Brenda Wingfield**, University of Pretoria, South Africa

**152** 3:00 Identifying novel sexual reproduction defects by TN-seq in *Schizosaccharomyces pombe*. **Caroline Craig**, Stowers Institute for Medical Research

**153** 3:20 Obligate sexual reproduction of a homothallic fungus closely related to the *Cryptococcus* pathogenic species complex. **Marco A. Coelho**, Duke University Medical Center

**154** 3:40 Agaricomycete multicellular development and biomolecule formation with focus on the model system *Cyclocybe aegerita* and its relatives. **Florian Hennicke**, Ruhr-Universität Bochum (RUB)

**155** 4:00 Role of A-to-I RNA editing in *Sordaria macrospora* sexual development. **Ines Teichert**, Allgemeine und Molekulare Botanik

4:20 Break

**156** 4:40 Systematic deletions of histone methyltransferase and demethylase genes reveal their role in RIP and sexual development. **Pierre Grognet**, Universite Paris-Saclay, CNRS

**157** 5:00 Live-Cell Imaging of Sexual Reproduction in *Podospira anserina*: the foreplay. **Sylvain Brun**, Universite de Paris

**158** 5:20 Diverse sexual strategies underpinned by the mating-type locus in the non-model fungal family *Ceratocystidaceae*. **Markus Wilken**, University of Pretoria

**159** 5:40 Functional analyses of putative target genes of Argonaute-like protein (FgAGO2) required for sexual development in *Fusarium graminearum*. **Sung-Hwan Yun**, Soonchunhyang Univ

Friday, March 18  
3:00 p.m. – 6:00 p.m.  
Heather

### Molecular basis of biotrophy

*Session Chairs:*

**Armin Djamei**, University of Bonn, Germany  
**Alga Zuccaro**, University of Cologne, Germany

**160** 3:00 A common FOLD among plant symbiotic and pathogenic fungi. **Sebastian Schornack**, University of Cambridge

**161** 3:20 Conserved secreted effectors determine endophytic growth and multi-host plant compatibility in a vascular wilt fungus. **Antonio Di Pietro**, Universidad de Cordoba

**162** 3:40 *Blumeria graminis* effector proteins target a conserved host cell polarity pathway for establishment of biotrophic infection structures. **Ralph Hückelhoven**, Technical University of Munich

**163** 4:00 Co-repressor Topless, a central effector hub for the *Ustilago maydis*/maize interaction. **Armin Djamei**, University of Bonn, INRES

4:20 Break

**164** 4:40 Cytoplasmic effector translocation during early biotrophic invasion by the rice blast fungus. **Ely Oliveira-Garcia**, Louisiana State University

**165** 5:00 Deletion of the killer kinase *KIL1* abolishes penetration peg formation in the predator yeast *Saccharomycopsis schoenii*. **Mareike Rij**, Hochschule Geisenheim University

**166** 5:20 Conditional role of a signal peptidase component in the establishment of biotrophy by the maize anthracnose pathogen *Colletotrichum graminicola*. **Renata Belisario**, University of Kentucky

**167** 5:40 Impairment of the cellulose degradation machinery enhances *Fusarium oxysporum* virulence but limits its reproductive fitness. **Clara Sanchez-Rodriguez**, Department of Biology, ETH Zurich

## Oral Presentation and Workshop Session Listings

Friday, March 18  
3:00 p.m. – 6:00 p.m.  
Chapel

### Speciation, diversity and evolution

*Session Chairs:*

**A. Elizabeth Arnold**, University of Arizona, USA  
**Toni Gabaldón**, Catalan Institution for Research and  
Advanced Studies, Spain

**168** 3:00 Ecological generalism drives hyperdiversity  
of secondary metabolite gene clusters in xylarialean  
endophytes. **Jana M. U'Ren**, University of Arizona

**169** 3:20 Fungal digestive enzyme profile: Essential  
for fitness and integrated part of speciation and  
evolution. **Lene Lange**, BioEconomy, Research &  
Advisory

**170** 3:40 Genomic diversity across 17 clinical isolates  
of *Candida auris* shapes *in vitro* evolution and rapid  
development of fluconazole resistance. **Laura Burrack**,  
Gustavus Adolphus College

**171** 4:00 Genome-scale phylogeny of the fungal order  
Sordariales. **Noah Lisa Hensen**, Uppsala University

4:20 Break

**172** 4:40 Allele specific expression during fruiting  
body formation in *Pleurotus ostreatus*. **Zsolt Merényi**,  
Biological Research Centre

**173** 5:00 Understanding the nature of the  
reproductive barriers within the wood decay species  
*Trichaptum abietinum*. **Dabao Sun Lu**, University of  
Oslo

**174** 5:20 Host specificity determines a new fungal  
plant pathogen population. **Wagner Calegari  
Fagundes**, Max Planck Institute for Evolutionary  
Biology & Christian-Albrechts University Kiel

**175** 5:40 Three-dimensional chromatin organization  
determines the evolution of adaptive genomic regions  
in the plant pathogen *Verticillium dahliae*. **David E  
Torres**, Wageningen University and Research

Friday, March 18  
3:00 p.m. – 6:00 p.m.  
Scripps

### Small molecules in communication

*Session Chairs:*

**Francine Govers**, Wageningen University, The  
Netherlands

**Benjamin Horwitz**, Israel Institute of Technology,  
Israel

**176** 3:00 The diversity in fungal volatile organic  
compound profiles. **Maaria Rosenkranz**, Helmholtz  
Zentrum Munich

**177** 3:20 Using random barcoded transposon-  
site sequencing (Rb-TnSeq) bacterial libraries to  
explore the effects of volatiles from *Trichoderma  
atroviride*. **Catharine Adams**, UC Berkeley

**178** 3:40 MERLIN unlocks the secrets to chitin  
signaling: Using gene-network inference to  
predict mediators of fungal response to lipo-  
chitooligosaccharides. **Cristobal Carrera Carriel**,  
University of Wisconsin-Madison

**179** 4:00 Copper homeostasis and *Cryptococcus  
neoformans* cell surface architecture. **Corinna Probst**,  
Duke University

4:20 Break

**180** 4:40 Connecting fungal genomes with the  
behavioral phenomes of ants, manipulated  
by *Ophiocordyceps*. **Charissa de Bekker**, University of  
Central Florida

**181** 5:00 *Phytophthora* zoospores display klinokinetic  
behaviour in response to a chemoattractant. **Michiel  
Kasteel**, Wageningen University

**182** 5:20 RNA interference affects fungus-fungus  
interactions in the biocontrol agent *Clonostachys  
rosea*. **Edoardo Piombo**, Swedish University of  
Agricultural Sciences

**183** 5:40 *Lactobacillus*-secreted Yak1 inhibitor,  
1-acetyl-beta-carboline, blocks *Candida  
albicans* morphogenesis and biofilm formation. **Jessie  
MacAlpine**, University of Toronto

## Oral Presentation and Workshop Session Listings

Saturday, March 19  
8:45 a.m. – 9:00 a.m.  
Merrill Hall and Chapel

### Fungal Community Meeting and election of FGPC members

---

Saturday, March 19  
9:00 a.m. – 12:00 p.m.  
Merrill Hall and Chapel

### Plenary Session IV: Signaling and Metabolism

*Session Chairs:*

**Axel Brakhage**, International Leibniz Research School, Germany

**Vera Meyer**, Technical University of Berlin, Germany

**184** 9:00 am Unlocking the biotech potential of the anaerobic fungi (Neocallimastigomycetes). **Michelle O'Malley**, University of California, Santa Barbara

**185** 9:30 The complexity of Sweet – Competing carbon perception pathways in filamentous fungi. **J. Philipp Benz**, Technical University of Munich

**186** 10:00 The diets of biotrophs and opportunists in unhealthy hosts. **James Kronstad**, Univ British Columbia

10:30 Break

**187** 11:00 Materialize fungi. **Han Wosten**, Utrecht University

**188** 11:30 How a fungus protects itself when producing a secondary toxic metabolite. **Gustavo H. Goldman**, FCFRP, Universidade de Sao Paulo

---



## Oral Presentation and Workshop Session Listings

Saturday, March 19  
2:00 p.m. – 5:00 p.m.  
Fred Farr Forum

### Fungal determinants of host response

*Session Chairs:*

**Andy Alspaugh**, Duke University, USA

**Bart P. H. J. Thomma**, Wageningen University, The Netherlands

**189** 2:00 Fungal pathogen effector-mediated dysbiosis to stimulate disease development in plant hosts. **Bart Thomma**, University of Cologne

**190** 2:20 *Cryptococcus neoformans* Chitin Synthase 3 (Chs3) Plays a Critical Role in Dampening Host Inflammatory Responses. **Camaron Hole**, University of Tennessee Health Science Center

**191** 2:40 *Botrytis cinerea* secretes small RNA containing extracellular vesicles that enter plant cells through clathrin-dependent endocytosis. **Baoye He**, UCR

**192** 3:00 Roles of candidalysin of *Candida albicans* in the gut permeability and brain pathology. **Courtney Smith**, UTSA

3:20 Break

**193** 3:40 Unravelling the gene networks coordinating core and host-specific infection programs in the polyphagous plant pathogenic fungus *Sclerotinia sclerotiorum*. **Sylvain Raffaele**, INRAE - LIPME

**194** 4:00 Analysis of commensal *Candida albicans* strains reveals genomic variability but conserved pathogenic potential. **Teresa O'Meara**, University of Michigan

**195** 4:20 Metabolomic profiling of behaviorally manipulated insects infected by “zombie ant fungus” (*Ophiocordyceps*). **Ian Will**, University of Central Florida

**196** 4:40 The *Venturia inaequalis* effectorome is expressed in waves, and is dominated by expanded families with predicted structural similarity to avirulence effector proteins. **Mercedes Rocafort**, Massey University

Saturday, March 19  
2:00 p.m. – 5:00 p.m.  
Heather

### Emerging and re-emerging fungi in a changing world

*Session Chairs:*

**Sarah Gurr**, University of Exeter, UK

**Nick J. Talbot**, The Sainsbury Laboratory, UK

**197** 2:00 The global movement of fungal and oomycete crop pathogens: mechanistic models, predictions and perils. **Sarah Gurr**, University of Exeter

**198** 2:20 Evolutionary Morphogenesis, Chytrids and the rise of The Fungi. **Edgar Medina**, UMass Amherst

**199** 2:40 A pandemic clonal lineage of the wheat blast fungus. **Hernán A Burbano**, University College London

**200** 3:00 Convergent recognition of the *Magnaporthe oryzae* host specificity determinant *PWL2* in divergent grass species. **Diana Gómez De La Cruz**, The Sainsbury Laboratory

3:20 Break

**201** 3:40 Emerging tree pathogen *Phellinus noxius* has a long evolutionary history in eastern Asia, Australia, and the Pacific Islands. **Olga Kozhar**, Colorado State University

**202** 4:00 Genomic diversification of the specialized parasite of the fungus-growing ant symbiosis. **Kirsten Gotting**, University of Wisconsin Madison

**203** 4:20 The maize mycobiome and implication on mycotoxin contamination in relation to climatic patterns. **Bwalya Katati**, Wageningen University and Research

**204** 4:40 Metagenomics approaches to understanding the synergistic roles of environment and chytrid infection in host extinction. **Matthew Fisher**, Imperial Col London



## Oral Presentation and Workshop Session Listings

Saturday, March 19  
2:00 p.m. – 5:00 p.m.  
Merrill Hall

### Fungicides and antifungals

*Session Chairs:*

**Judith Berman**, Tel-Aviv University, Israel

**Gabriel Scalliet**, Syngenta, UK

**205** 2:00 Paraesistance: a non-genetic mechanism of antifungal drug resistance. **Jinglin Lucy Xie**, Stanford University School of Medicine

**206** 2:20 Targeting *Aspergillus fumigatus* hypoxia response pathways to potentiate contemporary antifungal therapies. **Cecilia Gutierrez Perez**, Dartmouth College

**207** 2:40 Exploiting synergistic and antagonistic drug interactions to improve treatment of systemic fungal infections. **Jessica Brown**, University of Utah

**208** 3:00 Live cell imaging to understand fungicide mode of action. **Gero Steinberg**, Univ Exeter

3:20 Break

**209** 3:40 Predicting predictability of fungicide resistance evolution. **Nichola Hawkins**, NIAB

**210** 4:00 Methionine synthase as a target for antifungal drug development. **Jennifer Scott**, The University of Manchester

**211** 4:20 Unanticipated drug-fungal interactions and their potential to impact the outcome of infection. **Glen Palmer**, University of Tennessee Health Sciences Center

**212** 4:40 Inhibitor targeting the Prp8 intein splicing of *Cryptococcus neoformans*, **Hongmin Li**

---

Saturday, March 19  
2:00 p.m. – 5:00 p.m.  
Chapel

### Coollest tools for fungal biology

*Session Chairs:*

**Alexandra Brand**, University of Exeter, UK

**Matthew S. Sachs**, Texas A&M University, USA

**213** 2:00 DIVERSIFY - A flexible multispecies approach for construction of efficient heterologous fungal cell factories. **Uffe Mortensen**, Technical University of Denmark

**214** 2:20 4-color live-cell imaging and other novel microscopy tools reveal dynamic sub-cellular distributions of core clock components in *Neurospora crassa*. **Ziyan Wang**, Geisel School of Medicine at Dartmouth

**215** 2:40 A platform for functional analysis for *Candida albicans* strain variation. **Yinhe Mao**, University of Georgia

**216** 3:00 FungiDB: Free online informatic tools for fungal and oomycete biologists. **Omar Harb**, University of Pennsylvania

3:20 Break

**217** 3:40 Fungal Bioreporters to Monitor Outcomes of Host-Cell Interactions. **Neta Shlezinger**, The Hebrew University

**218** 4:00 Development of a rapid and reversible system for targeted protein depletion in the filamentous fungus, *Fusarium graminearum*. **John Ridenour**, Oregon State University

**219** 4:20 Genes of unknown function conserved across fungi: a call for action. **Igor Grigoriev**, US DOE Joint Genome Institute

**220** 4:40 Novel GCaMP6 imaging of cytosolic free calcium dynamics reveals stress-specific signalling responses in the fungal pathogen, *Candida albicans*. **Callum J Parkin**, University of Exeter

---

## Oral Presentation and Workshop Session Listings

Saturday, March 19  
2:00 p.m. – 5:00 p.m.  
Kiln

### From genome to pangenome

*Session Chairs:*

**Li-Jun Ma**, University of Massachusetts, Amherst, USA  
**Jason Stajich**, University of California, Riverside, USA

**221** 2:00 Combined Pan-, Population-, and Phylo-Genomic Analysis of *Aspergillus fumigatus* Reveals Population Structure and Lineage-Specific Diversity. **Lotus Lofgren**, Duke University

**222** 2:20 Fusarium effectome analysis reveals high diversity of effectors and direct relationship with the fungus lifestyle and their strategies for host colonization/infection. **Domingo Martínez-Soto**, University of Massachusetts

**223** 2:40 An orthologous gene coevolution network provides insight into eukaryotic cellular and genomic structure and function. **Jacob Steenwyk**, Vanderbilt University

**224** 3:00 Births, deaths and survival of a retrotransposon family in the face of repeat induced point mutations (RIP). **Ivar Westerberg**, Uppsala University

3:20 Break

**225** 3:40 The distributed genome of *Fusarium oxysporum*: mix and match of core and accessory chromosomes. **Like Fokkens**, Wageningen University

**226** 4:00 A Pangenomic assessment of a *Cercospora beticola* global population. **Nathan Wyatt**, USDA-ARS

**227** 4:20 Complete Genome Sequences and Genome-Wide Characterization of *Trichoderma* Biocontrol Agents Provide New Insights into their Evolution and Variation in Genome Organization, Sexual Development and Fungal-Plant Interactions. **Ting-Fang Wang**, Academia Sinica

**228** 4:40 A global pangenome analysis of tan spot (*Pyrenophora tritici-repentis*) reveals an open genome and virulence factors nested in mobile elements. **Reem Aboukhaddour**, Agriculture and Agri-Food Canada

Saturday, March 19  
2:00 p.m. – 5:00 p.m.  
Scripps

### Fungal recognition (self and non-self)

*Session Chairs:*

**Paul Dyer**, The University of Nottingham, UK  
**André Fleissner**, Technische Universität Braunschweig, Germany

**229** 2:00 Allorecognition genes drive reproductive isolation in *Podospira anserina*. **Aaron A. Vogan**, Uppsala University

**230** 2:20 An NLR-like system delimits individuals in the basidiomycete *Coprinopsis cinerea*. **Ben Auxier**, Wageningen University

**231** 2:40 Self- and non-self-recognition for cell fusion and heterokaryon incompatibility in the industrial filamentous fungus *Aspergillus oryzae*. **Jun-ichi Maruyama**, The University of Tokyo

**232** 3:00 Functional Amyloids Are Widespread in Fungal Biofilm Adhesins. **Peter Lipke**, CUNY Brooklyn College

3:20 Break

**233** 3:40 A chitin polysaccharide monooxygenase functions in trans with a plasma transmembrane protein to trigger allorecognition upon cell contact. **Adriana Rico Ramirez**, UC BERKELEY CAMPUS

**234** 4:00 Interspecies interactions of *Neurospora crassa* and *Botrytis cinerea* are mediated by a conserved cell-cell communication mechanism. **Andre Fleissner**, TU Braunschweig

**235** 4:20 Competing for cheating escalates the deleterious effects of reproductive parasitism. **Duur Aanen**, Wageningen University

**236** 4:40 Fungal Chemical Warfare: How Secondary Metabolites Influence Relationships in Maize Associated Fungi. **Tim Satterlee**, USDA/ARS

## Oral Presentation and Workshop Session Listings

Saturday, March 19  
2:00 p.m. – 5:00 p.m.  
Nautilus

### Systems biology and biomaterials

*Session Chairs:*

**Luis F. Larrondo**, Pontifical Catholic University of Chile, Chile

**Kevin McCluskey**, Bolt Threads, USA

**237** 2:00 Laccase expression in the dung fungus *Coprinopsis cinerea* with 17 natural laccase genes. **Ursula Kües**, University of Goettingen

**238** 2:20 Production of Organic Acids in Engineered *Aspergillus*. **Jon Magnuson**, Pacific Northwest National Laboratory

**239** 2:40 MY-CO SPACE: An artistic-scientific vision on how to build with fungi. **Vera Meyer**, TU Berlin

**240** 3:00 Use of a cell-free expression (CFE) to fast characterize fungal enzymes in the wood decomposer *Rhodonia placenta*. **Jesus Castano Uruena**, University of Minnesota

3:20 Break

**241** 3:40 Sustainable protein production for food applications from a microbe, *Fusarium* strain flavolapis, isolated from Yellowstone National Park. **Debbie Yaver**, Nature's Fynd

**242** 4:00 Understanding DNA Uptake by Anaerobic Fungi. **Tejas Navaratna**, UC Santa Barbara

**243** 4:20 Growing the future of biomaterials: learning from fungal genetics to tune Fine Mycelium™. **Rachel Linzer**, MycoWorks

**244** 4:40 Mycotecture off planet: fungi as a building material on the Moon and Mars. **Lynn Rothschild**, NASA Ames Research Center

---

Saturday, March 19  
5:30 p.m. – 5:45 p.m.  
Merrill Hall and Chapel

### Fungal Conference and GSA Poster Award Presentations

---

Saturday, March 19  
5:45 p.m. – 6:30 p.m.  
Merrill Hall and Chapel

### Perkins/Metzenberg Lecture presented by Gillian Turgeon, Cornell University, USA

*Session Chair:*

**Marc Orbach**, University of Arizona, USA

Gillian Turgeon is a Professor and Chair of the Section of Plant Pathology and Plant-Microbe Biology in the School of Integrative Plant Science at Cornell University. Her research concerns molecular mechanisms of fungal virulence to plant hosts (inter-organismal recognition) and filamentous ascomycete mating (intra-organismal recognition), both with a particular focus on secondary metabolite determinants.

---

The background of the entire page is a repeating pattern of various biological sketches. These sketches are rendered in a light orange color on a white background. The sketches include a wide variety of shapes: some are circular or oval with small protrusions, others are elongated and spindle-shaped, some resemble branching structures like coral or fungi, and others look like clusters of small spheres or grains. The sketches are scattered across the page, creating a textured, scientific aesthetic.

# Poster Session Listings

1. Biochemistry and Metabolism.....	245-292
2. Biotechnology.....	293-335
3. Cell Biology and Development .....	336-442
4. Comparative and Functional Genomics...	443-551
5. Fungal Diversity .....	552-586
6. Gene Regulation .....	587-676
7. Pathogenic and Mutualistic Interactions ...	677-817
8. Population and Evolutionary Genetics ....	818-872
9. Synthetic Biology .....	873-885
11. Other .....	886-905

## 1. Biochemistry and Metabolism

**245W** Casein kinase 1 and disordered clock proteins form functionally equivalent phospho-based circadian modules in fungi and mammals **Axel Diernfellner** Heidelberg University Biochemistry Center

**246T** Conformational Changes in the Circadian Negative Arm Correlate with Dynamic Interactomes Involved in Diverse Biological Processes **Jacqueline Pelham** Rensselaer Polytechnic Institute

**247F** Quantitative phosphoproteomic analysis of appressorium development by the rice blast fungus *Magnaporthe oryzae* **Frank L.H. Menke** The Sainsbury laboratory

**248W** Anaerobic fungi are an untapped source of biotechnologically relevant membrane proteins **Susanna Seppala** University of California, Santa Barbara

**249T** Pyrolyzed substrates induce aromatic compound metabolism in the post-fire fungus, *Pyronema domesticum* **Monika S. Fischer** UC Berkeley

**250F** Inhibitor targeting the Prp8 intein splicing of *Cryptococcus neoformans* **Hongmin Li** University of Arizona, Tucson

**251W** Characterization of *Phanerochaete chrysosporium* mutants resistant to *Bagassa guianensis* wood extractives **Delphine Noël** Université de Lorraine

**252T** Isolation of mutants resistant to itraconazole in the white-rot fungus *Phanerochaete chrysosporium* RP78 leads to identification of alleles in *CYP51/ERG11* **Rodney Sormani** LORRAINE UNIVERSITY

**253F** Methionine synthase as a target for antifungal drug development **Jennifer Scott** The University of Manchester

**254W** Mutation in the ribosomal protein gene eL42 results in Cycloheximide resistance in the Ophiostomatales **Brenda Wingfield** University of Pretoria

**255T** Structure of the translating *Neurospora* ribosome arrested by cycloheximide **Matthew Sachs** Texas A&M University

**256F** Sre1, a transcription factor controlling ergosterol biosynthesis, stimulates response to nickel, an important micronutrient for fungi **Amber Matha** The University of Georgia

**257W** Oxygen mediated cell-cell heterogeneity and antifungal drug susceptibility in *Aspergillus fumigatus* biofilms **Kaesi Morelli** Dartmouth College

**258T** Manganese Transporters and Virulence in *Candida albicans* **Asia Wildeman** Johns Hopkins School of Public Health

**259F** Temperature-specialized function of glycogenins in *Cryptococcus neoformans* **Liza Loza** Washington University in St. Louis

**260W** Capsule glycosylation in *Cryptococcus neoformans* **Thomas Hurtaux** Washington University in St. Louis

**261T** Analysis of Roles for CPC-2 in Degrading the Plant Cell Wall Carbohydrate Cellulose **Anthony Silva** UC Riverside

**262F** Lipid flippase mediated *Cryptococcus*-host interaction during pulmonary cryptococcosis **Siddhi Pawar** Rutgers University

**263W** Lipid flippase regulation of antifungal drug resistance and virulence in *Cryptococcus neoformans* **Chaoyang Xue** Rutgers University

**264T** Role of Arv1 protein in sterol metabolism and pathogenicity of the chestnut blight fungus *Cryphonectria parasitica* **Soumyadip Kundu** Mississippi State University

**265F** Differential effects of G-protein subunits on multiple cellulase enzymes in *Neurospora crassa* **Abel Vargas** University of California, Riverside

**266W** Lignocelluloses and solid waste substrates transformed by wood-decay fungi for production of natural compounds **Taina Lundell** University of Helsinki

**267T** A RiPPing time: Exploring a novel peptide from *Zymoseptoria tritici* **Rosie Ford** University of Bristol

**268F** Identifying unique metabolite patterns during wood decay by brown rot fungi using metabolomics **Jesus Castano Uruena** University of Minnesota

**269W** Functional characterization of the GATA-type transcription factor PaNsdD in the filamentous fungus *Podospora anserina* and its interplay with the sterigmatocystin pathway **Florence Chapeland-Leclerc** Universite de Paris

**270T** *cexA* and its regulatory processes – a closer look into the citric acid production mechanism of *Aspergillus niger* **Aline Reinfurt** Austrian Centre of Industrial Biotechnology (ACIB GmbH)

**271F** Elucidating the biosynthesis of ribosomally synthesized backbone N-methylated macrocyclic peptides **Lukas Sonderegger** ETH Zürich

**272W** Effect of *LaeA* on the secondary metabolism in the filamentous fungus *Podospora anserina* **Huijuan WANG** Universite de Paris

**273T** Primary, secondary and tertiary metabolites, proteins and carbohydrates **Jens Frisvad** Technical University of Denmark

**274F** Evolution-driven combinatorial chemistry by genetics using fungal natural product gene clusters **Pablo Cruz-Morales** Technological University of Denmark

**275W** Pathogenic fungi at the crossroads of metal starvation and oxidative stress **Valeria Culotta** Johns Hopkins University Bloomberg School of Public Health

**276T** Interaction of the bZIP-type transcription factors NapA and RsmA in the regulation of oxidative stress defence and sterigmatocystin production of *Aspergillus nidulans* **István Pócsi** University of Debrecen

**277F** Heterotrimeric G-Protein Signaling and Carbon Catabolite Repression in *Neurospora crassa* **Yagna Anandkumar Oza** University of California, Riverside

**278W** Tryptophan biosynthesis genes in the mushroom *Coprinopsis cinerea* **Ursula Kües** University of Goettingen

**279V** The Crz1 transcription factor of *Fusarium verticillioides* is required for lipid metabolism regulation and fumonisin production. **Andrea Cacciotti** Sapienza Università di Roma

**280V** Beyond the symbiosis: Novel modulating roles of lipochitooligosaccharides and chitooligosaccharides in the development of fungi and nearby microbes. **Tomas Rush** Oak Ridge National Laboratory

**281V** Electrophysiological characterization of a diverse group of sugar transporters from *Trichoderma reesei* **Sami Havukainen** VTT Technical Research Center of Finland Ltd

**282V** Functional characterization of a highly specific L-arabinose transporter from *Trichoderma reesei* **Sami Havukainen** VTT Technical Research Center of Finland Ltd

**283V** Sirtuins are involved in cell wall integrity, secondary metabolites production and virulence in *Aspergillus fumigatus* **André Damasio** Institute of Biology, University of Campinas (UNICAMP)



**284V** Four cell surface phosphate transporters in *Candida albicans* contribute to homeostasis at distinct ambient pH and phosphate concentrations **Maikel Acosta Zaldivar** Boston Children's Hospital

**285V** Endocytosis of the tetraspan eisosome-resident proteins, a developmentally regulated membrane-remodeling mechanism **Ada Biratsi** NCSR Demokritos

**286V** Functional analysis of the Cwh43p ortholog CwhA of *Fusarium fujikuroi*. **Marta Franco-Losilla** University of Seville

**287V** The emerging role of a cyclase gene in the biosynthesis of ochratoxin A: The case study of *Aspergillus carbonarius* **Massimo Ferrara** Pacific Northwest National Laboratory

**288V** A novel trichothecene toxin phenotype associated with horizontal transfer and altered gene function in the *Fusarium buharicum* species complex **Robert Proctor** USDA ARS NCAUR

**289V** Evolution of secondary metabolite gene clusters: what is the role of fungal interactions in driving metabolic diversification? **Mario Franco** The University of Arizona

**290V** The genetic basis of oligopeptide biosynthesis in the early diverging fungus *Mortierella alpina* **Jacob Martin Wurlitzer** Friedrich-Schiller-University Jena

**291V** New approaches to understand the regulation of neurosporaxanthin biosynthesis in *Fusarium fujikuroi* and its relationship with other biological processes. **Julia Marente** University of Sevilla

**292V** Unprecedented polyketide synthase genes are associated with (pre-)anthraquinone biosynthesis in *Cortinarius* mushrooms **Nikolai Löhr** Friedrich Schiller University, Department Pharmaceutical Microbiology at the Hans-Knöll-Institute

## 2. Biotechnology

**293W** Heterochromatin protein 1 (HP1) knock-out mutants exhibit cellulolytic enzyme cocktail alterations in *Trichoderma reesei* **Frederique Bidard** IFP Energies nouvelles

**294T** Quantifying fungal pellets during submerged cultivation: from 3D X-ray microtomography imaging to diffusive mass transport **Lars Barthel** Technische Universität Berlin

**295F** Synthetic tools to regulate unconventional secretion for production of heterologous proteins in *Ustilago maydis* **Kai Hussnaetter** Heinrich Heine University

**296W** Novel Technologies For Investigating Biological Rhythms In Budding Yeast **Tom Mickleburgh** North Carolina State University

**297T** Insertional mutagenesis using *TC1-mariner* transposon *impala* in the wheat fungal pathogen *Zymoseptoria tritici* **Yohann Petit** French National Institute for Agronomical Research

**298F** Identification and characterization of an intergenic "safe haven" region in human fungal pathogen *Cryptococcus gattii* **Yeqi Li** University of Georgia

**299W** Repair of CRISPR-Cas12a induced DNA double-strand breaks in *Magnaporthe oryzae* generates locus-dependent mutation profiles **Jun Huang** Kansas state University

**300T** Use of a cell-free expression (CFE) to fast characterize fungal enzymes in the wood decomposer *Rhodonia placenta* **Jesus Castano Uruena** University of Minnesota

**301F** Understanding DNA Uptake by Anaerobic Fungi **Tejas Navaratna** UC Santa Barbara

**302W** Fungi to the rescue – revolutionizing food production through biotechnology **Bastian Joehnk** Formo Bio GmbH

**303T** Development of fungal-based biomaterials using the tinder fungus *Fomes fomentarius* **Bertram Schmidt** Technische Universität Berlin

**304F** Targeting *Aspergillus fumigatus* hypoxia response pathways to potentiate contemporary antifungal therapies **Cecilia Gutierrez Perez** Dartmouth College



**305W** Discovery and characterization of a potent antifungal peptide through OBOC combinatorial library screening. **Kiem Vu** University of California

**306T** Copper bioleaching from treated wood waste and biosorption by *Phanerochaete chrysosporium* **Kevin Claudien** Université de Lorraine

**307F** Development of Broad-Spectrum Natural Antimicrobials using *Aspergillus oryzae* **Dasol Choi** University of Wisconsin-Madison

**308W** High-Throughput Screening Platform for Novel Antifungals to Address Antimicrobial Resistance **S. Earl Kang Jr** Ginkgo Bioworks

**309T** Fungal Degradation Behavior of a High-biomass Content, Mixed Pressure-Sensitive Adhesive **Jesus D. Castano** University of Minnesota

**310F** Heterologous expression of a *Trichoderma longibrachiatum* xyloglucanase GH74 in *Aspergillus nidulans* with potential applications in biotechnology **Alex Contato** Oklahoma State University

**311W** Filamentous fungal cell factory for producing 7-aminocephalosporanic acid by engineering cephalosporin C producing fungus *Acremonium chrysogenum* **Xuemei Lin** Ruhr-University Bochum

**312T** Characterization and engineering of non-model microorganisms for biotechnological applications **Hugh Purdy** University of California, Santa Barbara

**313F** Chance favours the prepared spore – how to jumpstart cellulase production **Wolfgang Hinterdobler** AIT Austrian Institute Of Technology

**314W** Heterologous expression of biosynthetic gene clusters from lichen-forming fungi **Riccardo Iacovelli** University of Groningen

**315T** The fungal battery: A redox flow battery containing the biosynthesised quinone phenolic from *Penicillium astrosanguineum* **Jens Laurids Sørensen** Aalborg University

**316F** Computer-Aided, Resistance-Gene-Assisted Genome Mining for Proteasome and HMG-CoA Reductase Inhibitors **Berl Oakley** University of Kansas

**317W** The *Aspergillus oryzae* Fermentate D-Tox Effectively Degrades Aflatoxins and Patulin **Dasol Choi** University of Wisconsin-Madison

**318T** Heterologous expression of pheichrome, a photosensitizer used for photo dynamic therapy using the co-expression system of *Saccharomyces cerevisiae* **Dae-Hyuk Kim** Chonbuk National University

**319F** MY-CO SPACE: An artistic-scientific vision on how to build with fungi **Vera Meyer** TU Berlin

**320W** Laccase expression in the dung fungus *Coprinopsis cinerea* with 17 natural laccase genes **Ursula Kües** University of Goettingen

**321T** Expression of an immunocomplex for dengue virus in *Saccharomyces cerevisiae* **Dae-Hyuk Kim** Chonbuk National University

**322V** Deciphering new compound pathways in non-engineered *Aspergilli* using a CRISPR toolbox: *Aspergillus californicus* as a starting point **Fabiano Contesini** Technical University of Denmark

**323V** Identification of transcription factors involved in *Aspergillus nidulans* adaptation to recombinant protein production **Everton Paschoal Antoniel** University of Campinas (Unicamp)

**324V** *Agrobacterium tumefaciens*-mediated transformation of *Aspergillus nidulans*: an efficient tool for targeted gene recombination using selectable nutritional markers **Virginia Casado del Castillo** University of Salamanca

**325V** Editing the *Trichoderma reesei* genome using *in-vitro* assembled MAD7/gRNA ribonucleoprotein **Sandra Merino** Archer Daniels Midland Co.

**326V** A library of *Aspergillus niger* chassis strains for morphology engineering connects strain fitness and filamentous growth with submerged macromorphology **Timothy Cairns** Technische Universität Berlin

**327V** Decaying hardwood associated lignolytic enzyme producing fungi as mediators in low density polyethylene deterioration and the draft genome sequence of *Phlebiopsis flavidolba* **Prameesha Perera** University of Kelaniya

**328V** *In vitro* polyethylene degradation ability of *Schizophyllum commune* is supported by the presence of the laccases with polyethylene binding sites as revealed by *in silico* molecular docking analysis **Hasni Dharmasiri** University of Kelaniya

**329V** Sexual crossing, chromosome-level genome sequences, and comparative genomic analyses for the medicinal mushroom *Antrodia cinnamomea* **Ting-Fang Wang** Academia Sinica

**330V** Fungal Batteries: Production Of Fungal Quinones To Be Used As Electrolytes In Redox Flow Batteries **Johan Christiansen** Technical University of Denmark

**331V** Predicting production of known, putative, and unknown microbial metabolites through network analysis **Muralikrishnan Gopalakrishnan Meena** Oak Ridge National Laboratory

**332V** A genetic platform to produce secondary metabolites of non-Dikarya fungi **Markus Gressler** Friedrich Schiller University Jena

**333V** Enhanced production of Taxol® by elicitor-induced transcription factors: Two endophytic fungi from *Taxus wallichiana* Zucc. **Kamalraj Subban** Christian-Albrechts-Universität zu Kiel

**334V** *Aspergillus niger* customized enzymatic cocktail for cello-oligosaccharide production **Fernanda Lopes de Figueiredo** University of Campinas (UNICAMP)

**335V** Polygalacturonases from *Aspergillus japonicus* and *Thermoascus aurantiacus*: Enzyme production using low-cost carbon source, biochemical properties and applications in clarification of fruit juices **Nelciele Cavalieri de Alencar Guimarães Oliveira** Oklahoma State University

## 3. Cell Biology and Development

**336T** Structural Insights of the Blue-Light Photosensor BcLOV4 from the Plant Pathogenic Fungi *Botrytis cinerea* **Matthew Cleere** CUNY

**337F** FBAR proteins anchor the fission yeast contractile ring **Blake Commer** North Carolina State University

**338W** Protein Secretion Requires Extracellular Vesicles **Rebekkah Friske** Oklahoma State University

**339T** Phosphorylation-mediated Ccp1-Ndc80 switch at the N-terminus of CENP-T regulates kinetochore assembly in fission yeast **Fei Li** New York University

**340F** Investigating heterochromatin-mediated anti-fungal resistance in *Cryptococcus neoformans* isolated from HIV patients in Tanzania **Becky Yeboah** University of Edinburgh

**341W** Localization of frequency mRNA by PERIOD-2 contributes to period length determination in the *Neurospora crassa* circadian clock. **Bradley Bartholomai** Geisel School of Medicine at Dartmouth

**342T** Circadian Oscillations in *Trichoderma atroviride* and the Role of Core Clock Components in Secondary Metabolism, Development, and Mycoparasitism Against the Phytopathogen *Botrytis cinerea* **Luis Larrondo** Pontificia Universidad Catolica de Chile

**343F** A versatile set of protein tags to improve purification of nuclei **Shan Hays** Western Colorado University

**344W** 4-color live-cell imaging and other novel microscopy tools reveal dynamic sub-cellular distributions of core clock components in *Neurospora crassa* **Ziyan Wang** Geisel School of Medicine at Dartmouth

**345T** Novel GCaMP6 imaging of cytosolic free calcium dynamics reveals stress-specific signalling responses in the fungal pathogen, *Candida albicans* **Callum J Parkin** University of Exeter

**346F** Hyphal growth rate correlates to the spatial distribution of the endocytic collar in three ascomycete species **Joseph Vasselli** Texas A&M University

**347W** Interspecies interactions of *Neurospora crassa* and *Botrytis cinerea* are mediated by a conserved cell-cell communication mechanism **Andre Fleissner** TU Braunschweig

**348T** Functional Amyloids Are Widespread in Fungal Biofilm Adhesins **Peter Lipke** CUNY Brooklyn College

**349F** Nuclear Competition and Coordination in *Neurospora crassa* Syncytia **Alexander Mela** The University of California, Berkeley Campus

**350W** Live cell imaging to understand fungicide mode of action **Gero Steinberg** Univ Exeter

**351T** Antifungal Screening of 54 Single Plant Essential Oils Against *Aspergillus fumigatus* **Yainitza Hernandez-Rodriguez** Florida Gulf Coast University

**352F** Identification of a protein-protein interaction site essential for mitotic entry to guide antifungal drug design in *Aspergillus fumigatus* **Isabelle Storer** University of Manchester

**353W** Membrane integrity contributes to resistance of *Cryptococcus neoformans* to the cell wall inhibitor caspofungin **Maureen Donlin** Saint Louis University

**354T** The *Aspergillus fumigatus* morphogenesis-related kinase, CotA, orchestrates hyphal growth in response to carbon source quality **Adela Martin-Vicente** University of Tennessee Health Science Center

**355F** The phosphatase Sac1 mediates capsule secretion in *Cryptococcus neoformans* **Elizabeth Gaylord** Washington University in St. Louis

**356W** Investigating temperature-induced transcriptional changes that underlie fungal morphogenesis in *Histoplasma capsulatum* **Anna Morrison** UCSF

**357T** Hyphal branch formation in the opportunistic human pathogen *Candida albicans* **Antonio Serrano** University Cote d'Azur/CNRS/INSERM

**358F** The RAM signaling pathway links morphology, thermotolerance, and CO<sub>2</sub> tolerance in human fungal pathogen *Cryptococcus neoformans* **Benjamin Chadwick** University of Georgia

**359W** A role for the Rsp5 ubiquitin ligase and its interactome in the pathogenesis of *Cryptococcus neoformans* **Lukas du Plooy** Duke University

**360T** The role of cytochrome c in leukocyte induced *Aspergillus fumigatus* cell death. **Matthew James Geisel** School of Medicine at Dartmouth College

**361F** The *Cryptococcus neoformans* Flc1 homologue controls calcium homeostasis and survival in the infected host **Lukasz Kozubowski** Clemson University

**362W** Elucidating a Novel Role for Septins During High Temperature Stress Response in *Cryptococcus neoformans* **Stephani Martinez Barrera** Clemson University

**363T** Determining the role of the spore-enriched protein Isp2 in the maintenance of dormancy **Anna Frerichs** University of Wisconsin Madison

**364F** Sterol homeostasis is critical for surface structure organization and virulence in *Cryptococcus neoformans* **Hau Lam Choy** Washington University in St. Louis

**365W** Two distinct lipid transporters together regulate invasive filamentous growth in *Candida albicans* **Martine Bassilana** University Cote d'Azur/CNRS/INSERM

**366T** Live-Cell Imaging of Sexual Reproduction in *Podospora anserina*: the foreplay **Sylvain Brun** Universite de Paris

**367F** Regulatory role of VE-1 in transcription during sexual development in the fungus *Neurospora crassa* **Sara Cea-Sánchez** University of Seville

**368W** The fungal sexual revolution continues: indications of sexuality in the citric acid producing fungus *Aspergillus niger*. **Valeria Ellena** TU Wien

**369T** The Mating Transcriptome of *Phycomyces blakesleeanus* **Jesús F. Peña** University of California, Riverside

- 370F** Diverse sexual strategies underpinned by the mating-type locus in the non-model fungal family *Ceratocystidaceae* **Markus Wilken** University of Pretoria
- 371W** MATch Maker: A curated web-portal and database for fungal mating-type sequences **Markus Wilken** University of Pretoria
- 372T** Identifying novel sexual reproduction defects by TN-seq in *Schizosaccharomyces pombe* **Caroline Craig** Stowers Institute for Medical Research
- 373F** Epistatic genetic interactions govern morphogenesis during sexual reproduction and infection in a global human fungal pathogen **Sheng Sun** Duke University Medical Center
- 374W** Widespread tissue-specific gene expression during fruiting body development of *Coprinopsis cinerea* revealed by laser-capture microscopy coupled single-cell RNA sequencing **Torda Varga** Biological Research Center, Eötvös Loránd Research Network (ELKH)
- 375T** Role of a septin duplication in fruiting body development of a complex multicellular model fungus **Máté Virágh** Biological Research Center, Szeged, Hungary
- 376F** Functional characterization of regulatory genes in *Schizophyllum commune* identifies nine new genes related to mushroom development **Peter Jan Vonk** Utrecht University
- 377W** Characterisation of sexual reproduction mechanisms of *Pyricularia oryzae* to determine genetic bases of male and female fertility. **Alexandre Lassagne** Cirad
- 378T** The *ndrC* gene, which is regulated by *nsdD*, controls sexual development in *Aspergillus nidulans* **Yu Kyung Kim** Woosuk University
- 379F** Dark stipe mutants in fruiting body development of *Coprinopsis cinerea* **Shanta Subba** University of Goettingen
- 380W** DFG-5 plays a key role in the extracellular targeting of *Neurospora crassa* glycoproteins for incorporation into the cell wall and secretion into the growth medium **Stephen Free** University at Buffalo
- 381T** Defects on endocytosis cause alterations in actin and produce aberrant hyphal morphology of *Neurospora crassa* **Marisela Garduño-Rosales** CICESE
- 382F** Functional characterization of DENN domain proteins in *Aspergillus nidulans* **Steven Harris** Iowa State University
- 383W** Trade-off between Plasticity and Velocity in Mycelial Growth **Norio Takeshita** University of Tsukuba
- 384T** Evidence that the Vesicle Supply Center function of the Spitzenkörper resides in the Actin Cytoskeleton **Salomon Bartnicki-Garcia** CICESE
- 385F** Nanoscale imaging of dynamic cell wall formation in fission yeast **Fred Chang** UCSF
- 386W** *Aspergillus niger* conidial germination: 3D live cell exploration **Susanne Fritsche** Austrian Centre of Industrial Biotechnology (ACIB GmbH), Technical University of Vienna
- 387T** Investigating molecular mechanisms that underlie thermal dimorphism and pathogenesis of *Histoplasma capsulatum* **Sarah Heater** University of California, San Francisco
- 388F** Study of the physiological role of amyloid structures in the pathogenic yeast *Candida albicans*. **Thierry Mourer** Institut Pasteur
- 389W** Putative oxidoreductase Cip1 is critical for pheromone-independent unisexual development in *Cryptococcus neoformans* **Nathan Glueck** University of Georgia
- 390T** Temperature adaptation of biological phase separation **Amy Gladfelter** UNC Chapel Hill
- 391F** Investigating the role of Hsp90 in the regulation of *Histoplasma capsulatum* morphology and transcriptional response **Jillian Freese** J. Craig Venter Institute

**392W** Multi-omics Profiling Reveals New Pathways Regulating Hyphal Morphogenesis in *Candida albicans* **Kyunghun Min** Stony Brook University

**393T** Investigating How the Septin Cytoskeleton Controls Morphogenesis in Marine Fungi **Ellysa Vogt** University of North Carolina at Chapel Hill

**394F** Probing the unconventional lifestyle of the multi-budding yeast, *Aureobasidium pullulans* **Claudia Petrucco** Duke University

**395W** The Nma1 protein promotes long distance transport mediated by early endosomes in *Ustilago maydis* **Jörg Kämper** Karlsruhe Institute of Technology

**396T** Live cell imaging and changes to effector composition elucidate adaptations of *Magnaporthe oryzae* pathotypes to different plant genera **Tyler Suelter** Kansas State University

**397F** Molecular characterization of Pex5b-dependent import of soluble cargo into peroxisomes of *Ustilago maydis* **Michael Bölker** Univ Marburg

**398W** Biofilm formation in the filamentous fungus *Fusarium graminearum* **Rebecca Shay** Michigan State University

**399T** Plant ATG8 as a Possible Extracellular Vesicle Marker **Huitong Wu** University of California at Riverside

**400F** Role of the plasma membrane H<sup>+</sup>-ATPase Pma1 in pH homeostasis, development and virulence of the fungal pathogen *Fusarium oxysporum* **Melani Mariscal** UNIVERSIDAD DE CORDOBA

**401W** The ribonucleoprotein complex components JSN-1 and GUL-1 are involved in asexual development in *Neurospora crassa* **Anne Yenewodage** Hebrew University of Jerusalem

**402T** Transcriptome investigation of *mpkB-mkkB* mutants related to secondary metabolism and sexual development of *Aspergillus nidulans* **Kap-Hoon Han** Woosuk University

**403F** Local Translation and Nuclear Autonomy in a Multinucleate Fungus *Ashbya gossypii* **Ameya Jalihal** UNC Chapel Hill

**404W** Evolutionary Morphogenesis, Chytrids and the rise of The Fungi **Edgar Medina** UMass Amherst

**405T** Distribution of non-canonical septins in fungi **Brent Shuman** University of Georgia

**406F** Phosphorylation / dephosphorylation of the *Cochliobolus heterostrophus* stress-activated MAPK Hog1 in response to plant phenolic acids **Rina Zuchman** Technion

**407W** Assessing the impact of regulator of G protein signaling proteins in *Neurospora crassa* using conventional phenotypic assays and a quantitative image analysis algorithm **Katherine Borkovich** University of California

**408T** *Aspergillus nidulans* septa appear to be indispensable for surviving cell-wall stress **Mark Marten** Univ Maryland, Baltimore County

**409F** Investigating germination initiation in the pathogenic fungus *Aspergillus fumigatus* **Justina Stanislaw** University of Georgia

**410W** The conidial coin toss: asymmetric spore adhesion in *Colletotrichum graminicola* **Brian Shaw** Texas A&M University

**411T** *Aspergillus fumigatus* hexameric septin complex is involved in spore cell wall organization and immune evasion **José Vargas-Muñiz** Southern Illinois University at Carbondale

**412F** Developmental genetics of host invasion initiated by fungal conidia **Soumya Moonjely** Michigan State University

**413W** Developmental genetics of spore germination in *Epichloë festucae* **Esteban Valverde Bogantes** Michigan State University

**414V** The 14-3-3 homologs (Bmh1 and Bmh2) individually contribute to the proper integrity of the budding yeast kinetochore **Guhan kaliyaperumal Anbalagan** Indian Institute of Technology Bombay

**415V** Cell wall dynamics in fast growing fungal hyphal cells **Louis Chevalier** Institut Jacques Monod, CNRS, Paris, France



- 416V** Trehalose metabolism is differentially modulated during cold stress response of postharvest pathogenic fungi **Carmit Ziv** Agricultural Research Organisation
- 417V** Centromere Evolution during Fungal Pathogens *Pneumocystis* Adaption to Mammals **Ousmane H. Cisse** National Institutes of Health
- 418V** Investigating Gene-dependent cell death in *Cryptococcus neoformans* **Madhura Kulkarni** Johns Hopkins University, Bloomberg School of Public Health
- 419V** Novel putative seven-transmembrane receptors may underlie complex multicellularity in mushroom-forming fungi **Csenge Földi** Biological Research Centre
- 420V** The annexin ANXC4 plays a substituting role for ANX14 during  $\text{Ca}^{2+}$ -mediated membrane damage responses in *Neurospora crassa* **Linda Matz** Technische Universität Braunschweig
- 421V** Characterization of Bud3 domains sufficient for bud neck targeting in *S. cerevisiae* **Yao Yan** Kansas State University
- 422V** Tools for *Knufia petricola*: new techniques for CRISPR/Cas9-based genome editing **Eileen Erdmann** Federal Institute for Materials Research and Testing (BAM)
- 423V** *Schizophyllum commune* in radioactive/metal contaminated environments **Erika Kothe** FSU
- 424V** BRO1 localizes to a specific subpopulation of vesicular structures which mediate cell-cell fusion in *N. crassa*. **Hamzeh Haj Hammadeh** Technische Universität Braunschweig
- 425V** COT-1 kinase activity is required for proper conidial germination and directed hyphal growth in *Neurospora crassa* **Lucas Well** Technische Universität Braunschweig
- 426V** The dual roles of Pef1, a penta-EF-hand protein, in plasma membrane integrity and polarized growth in *Candida albicans* **Martin Weichert** University of Braunschweig
- 427V** The role of the *A. niger* antimicrobial peptide AnAFP in the cell's homeostasis of life and death **Stephan Starke** TU Berlin
- 428V** Swe1 homologs in *Cryptococcus neoformans*: Roles in stress response, virulence, and the  $\text{G}_2/\text{M}$  Checkpoint **Rodney Colón-Reyes** Clemson University
- 429V** Unraveling the Essential Transcription Factors in *Cryptococcus neoformans* **Seung-Heon Lee** Yonsei University
- 430V** GAG, a polysaccharide cytotoxin? **Caitlin Zacharias** Research Institute of the McGill University Health Centre
- 431V** Understanding the impact of the combination of *hapE* and *hmg1* mutations in *A. fumigatus* clinical triazole drug resistance **Ana C O Souza** St Jude Children's Research Hospital
- 432V** Establishing minimal conditions sufficient for titanization in *Cryptococcus neoformans/gattii* species complex **Mariusz Dylag** Clemson University
- 433V** Unraveling the biology of Nematophagy During a Fungal-Nematode Predator-Prey Interaction Using Time-Course Transcriptomic analysis **Hung-Che Lin** Institute of Molecular Biology, Academia Sinica
- 434V** A model of the bud emergence 46 (BEM46) protein mode of action based on transcriptomics data in *Neurospora crassa* **Krisztina Kollath-Leiss** Christian-Albrechts-Universität zu Kiel
- 435V** Uniparental nuclear inheritance following bisexual mating in fungi **Vikas Yadav** Duke University Medical Center
- 436V** Role of microtubules and actin in the intracellular organization in the entomopathogenic fungus *Metarhizium brunneum* **Olga A. Callejas-Negrete** CICESE
- 437V** From a Cap to a Collar, ontogeny of the subapical endocytic collar in filamentous fungi **Rosa R. Mouriño-Pérez** CICESE
- 438V** Investigating the cell biology of plant infection by the rice blast fungus *Magnaporthe oryzae* **Berlaine Quime** The Sainsbury Laboratory

**439V** Chemical inhibition of nuclear division and migration during appressorium development in the rice blast fungus, *Magnaporthe oryzae* **Brandon Mangum** University of Georgia

**440V** Identification and functional characterization of the putative cyclin FlpA as a regulator of the metula-to-phialide transition during conidiophore development of *Aspergillus nidulans* **Oier Etxebeste** Faculty of Chemistry, University of the Basque Country

**441V** A Tor1 N-terminal region required for *Candida albicans* anabolic- and stress regulation **Wanjun Qi** Boston Children's Hospital/Harvard Medical School

**442V** Cell wall and turgor pressure affect the release of extracellular membrane vesicles in filamentous fungi **Shyun-ichi Urayama** University of Tsukuba

### 4. Comparative and Functional Genomics

**443W** Karyotype evolution via chromosome fusion-inversion in *Kwoniella*, the sister genus to *Cryptococcus* **Marcia David-Palma** Duke University

**444T** Periodic DNA patterns associated with chromatin regulation in Fungi **Stephen Mondo** DOE Joint Genome Institute

**445F** Long transposon-rich regional centromeres in the oomycete *Phytophthora sojae* reveal divergence of centromere features in the Stramenopila-Alveolata-Rhizaria (SAR) lineages **Yufeng "Francis" Fang** GreenLight Biosciences

**446W** Stable genome transformation via zoospore electroporation in the Chytridomycota **Andrea Vu** North Carolina State University

**447T** Genes of unknown function conserved across fungi: a call for action **Igor Grigoriev** US DOE Joint Genome Institute

**448F** Diversity of genomic adaptations to post-fire environment in higher fungi points to a crosstalk between charcoal tolerance and sexual development **Andrei Stecca Steindorff** Lawrence Berkeley National Laboratory

**449W** A Pangenomic assessment of a *Cercospora beticola* global population **Nathan Wyatt** USDA-ARS

**450T** Analysing the Pangenome of *Aspergillus fumigatus* to Uncover Accessory Genes Involved in Azole Resistance **Harry Chown** University of Manchester

**451F** *Aspergillus fumigatus* pan-genome analysis identifies genetic variants associated with human infection **Amelia Barber** Leibniz-HKI

**452W** Giant *Starship* elements mobilize accessory genes in fungal genomes **Emile Gluck-Thaler** University of Neuchatel

**453T** Within-species variability of the insect-pathogenic fungus *Metarhizium acridum* revealed by pangenomic analysis **Dinah Parker** University of Copenhagen

**454F** Comparison of long-read sequencing platforms for de novo genome assemblies of the fungal cereal pathogen *Bipolaris sorokiniana* **Shaobin Zhong** North Dakota State University

**455W** Pangenome analyses of *Fusarium* isolates infecting banana reveals evolutionary dynamics of the adaptive genome **Anouk van Westerhoven** Wageningen University and Research

**456T** Seeing red: investigations of spatial expression in hyphae indicate horizontally acquired bikaverin production in *Monosporascus* limits fungal-fungal interactions **Aaron Robinson** Los Alamos National Laboratory

**457F** Comparative genomics in *Coccidioides* **Kelsey Aadland** University of California, Riverside

**458W** Domestication history and its relation to clonal heterogeneity and microevolution of *Saccharomyces cerevisiae* in the human host **Walter Pfliegler** University of Debrecen



**459T** High-throughput genetics and essential gene discovery in *Cryptococcus neoformans* **Blake Billmyre** Stowers Institute for Medical Research

**460F** Genetic interaction mapping via pooled CRISPR-Cas9 insertional mutagenesis in the human fungal meningitis pathogen *Cryptococcus neoformans* **Manning Huang** University of California, San Francisco

**461W** A versatile selection free CRISPR-Cas9 transformation system for *A. fumigatus* **Norman van Rhijn** University of Manchester

**462T** The narrow footprint of ancient balancing selection surrounding nonself recognition genes in *Aspergillus fumigatus* **Ben Auxier** Wageningen University

**463F** Meiosis in the human pathogenic fungus *Aspergillus fumigatus* produces the highest known number of crossovers **Eveline Snelders** Wageningen University

**464W** Global analysis of circuitry governing *Candida albicans* morphogenesis within host immune cells **Nicola Case** University of Toronto

**465T** Systematic genetic analysis of *Candida albicans* filamentation in response to elevated temperature **Emma Lash** University of Toronto

**466F** A New Genetic Toolset Reveals Regulators of *Candida auris* Morphogenesis **Darian Santana** University of Michigan

**467W** tRNA-ome of the human fungal pathogen *Aspergillus fumigatus*: high-throughput functional analysis reveals a valine tRNA isodecoder involved in Azole sensitivity **Lauren Dineen** University of Manchester

**468T** Characterizing genomic and phenotypic traits of the human pathogen *Aspergillus flavus* and its non-pathogenic close relatives **E. Anne Hatmaker** Vanderbilt University

**469F** COFUN: Final report on the construction of the genome wide-knockout library in *A. fumigatus* **Michael Bromley** The University of Manchester

**470W** QTL Mapping and Bulk Segregant Analysis to determine natural polymorphisms associated with CO<sub>2</sub> tolerance in *Cryptococcus neoformans* **Benjamin Chadwick** University of Georgia

**471T** Transcriptome Analysis of the Entomopathogenic Fungus *Culicinomyces clavisporus* **Dana Foresman** Nova Southeastern University

**472F** Conservation, expansion and functional adaptation of Transcriptional Factor Repertoire in the *Fusarium oxysporum* Species Complex **Houlin Yu** University of Massachusetts Amherst

**473W** *Comparative QTL Mapping of Predation Resistance in a Microbial Predator-Prey System* **Thomas Sauters** Duke University

**474T** Genome-wide identification of sexual-reproduction genes in fission yeast via transposon-insertion sequencing **Blake Billmyre** Stowers Institute for Medical Research

**475F** Segmental duplication, repeat-induced point mutation, and chromosome relocation in *Neurospora crassa*: non-coding regions are junkyards for de novo elements and factories for evolution **Rudy Diaz** Yale School of Public Health

**476W** The C<sub>2</sub>H<sub>2</sub> transcription factor SltA is involved in conidial germination and hyphal elongation in *Aspergillus fumigatus* **Tim Baltussen** Radboudumc

**477T** Characterizing the role of anaerobic fungi in lignocellulolytic microbial communities and the gut mycobiome of herbivorous non-human primates **Katharine Dickson** University of California, Santa Barbara

**478F** Transcriptomic analysis of *Schizophyllum commune* in response to the lignin treatment **Jaehyuk Choi** Incheon National University

**479W** The active microbial communities of oil degradation – exploring bioremediation of mine waste water **Petter Madsen** Uppsala University

**480T** Integrating multifaceted genetic tools to gear up the discovery of fungal mechanisms of wood decay **Jiwei Zhang** University of Minnesota

**481F** Prevalence of aromatic lignin monomer metabolism phenotypes in a collection of wood-inhabiting fungi and characterization of putative metabolic pathways **Leon Rogers** Oregon State University

**482W** The extrachromosomal circular DNAs of the rice blast pathogen *Magnaporthe oryzae* contain a wide variety of LTR retrotransposons, genes, and effectors **Pierre M Joubert** University of California, Berkeley

**483T** Heat adaptation in *Fusarium oxysporum* **Dilay Hazal Ayhan** University of Massachusetts Amherst

**484F** Exploring the genomes of *Phyllosticta*, a genus with multiple lifestyles **Valerie Buijs** Westerdijk Fungal Biodiversity Institute

**485W** Factors driving genome evolution of *Anisogramma anomala*, the Eastern Filbert Blight fungus, reveal lifestyle and pathogen biology **Alanna Cohen** Rutgers The State University of New Jersey

**486T** Has *Cercospora kikuchii* vanished in the U.S.? Comparative genomics provides new clues **Burton Bluhm** University of Arkansas System Division of Agriculture

**487F** Complete Genome Sequence of Newly Reported *Fusarium solani* Sugarbeet Pathogen **Abbeah Mae Navasca** North Dakota State University

**488W** Mini-chromosomes as drivers of genetic diversity and host-adaptation in the blast fungus *Magnaporthe oryzae* **Thorsten Langner** The Sainsbury Laboratory

**489T** A putative transcriptional activator from the *PEP* cluster in *Fusarium vanettenii* contributes to virulence on pea **Ambika Pokhrel** Auburn University

**490F** Transcriptome analysis of *ras2* knockout mutant and wild type *Fusarium circinatum* strains: molecular insights into growth, development and virulence **Emma Steenkamp** University of Pretoria

**491W** Elucidating the obligate biotroph lifestyle of *Phyllachora maydis* **Emily Roggenkamp** Michigan State University

**492T** Comparative analyses of effector and CAZyme profiles in *Rhizoctonia* species **Juanita Gil** University of Arkansas

**493F** Signatures of necrotrophy in genomes of the Eurotiales **Tristan Wang** Cornell University

**494W** A near-complete genome assembly of the tomato pathogen *Cladosporium fulvum* reveals a compartmentalized genome architecture and the presence of a dispensable chromosome **Alex Zaccaron** University of California, Davis

**495T** Assembly and annotation of the mitochondrial genomes of four powdery mildew pathogens reveals remarkable variation in size and nucleotide composition **Alex Zaccaron** University of California, Davis

**496F** Exploring the Carbohydrate-active enzyme profiles of Ophiostomatoid fungi **Kamaldeep Bansal** UNIVERSITY OF FLORIDA

**497W** The latent pine pathogen *Diplodia sapinea* contains two dispensable chromosomes with distinct genomic characteristics **Tuan A. Duong** University of Pretoria

**498T** Study of the transcriptional regulation of the host-pathogen interaction between *Ulmus americana* and *Ophiostoma* spp **Thais Campos de Oliveira** Université Laval

**499F** Decoding wood decay mechanisms in *Armillaria* species using new genomes **Neha Sahu** Biological Research Centre

**500W** Uncovering long non-coding RNA associated with drug response in *Aspergillus fumigatus* **Harry Chown** University of Manchester

**501T** Sifting noncanonical Basidiomycete biosynthetic gene clusters from shared genomic regions **Zachary Konkell** The Ohio State University

**502F** Telomere-to-telomere genome assemblies for *Fusarium circinatum* **Lieschen De Vos** Forestry and Agricultural Biotechnology Institute (FABI), University of Pretoria

**503W** A reciprocal chromosome translocation within the American clade of the *Fusarium fujikuroi* species complex (FFSC) **Lieschen De Vos** Forestry and Agricultural Biotechnology Institute (FABI), University of Pretoria

**504T** *Aspergillus* as model for analyzing the fungal digestive enzyme profile -to be included in species description and classification? **Lene Lange** BioEconomy, Research & Advisory

**505F** Fungal digestive enzyme profile: Essential for fitness and integrated part of speciation and evolution **Lene Lange** BioEconomy, Research & Advisory

**506W** A diversified metabolic toolkit in budding yeasts linked to ecological adaptation **Carla Gonçalves** Vanderbilt University

**507T** Three-dimensional chromatin organization determines the evolution of adaptive genomic regions in the plant pathogen *Verticillium dahliae* **David E Torres** Wageningen University and Research

**508F** The GATA transcription factor NsdD governs development and metabolism via species-specific gene regulatory networks in *Aspergillus nidulans* and *Aspergillus flavus* **Heungyun Moon** University of Wisconsin-Madison

**509W** Comparative transcriptomics to study stress induced morphological changes in fungi **Arpad Csernetics** Biological Research Centre, Szeged

**510T** Chromosomal responses to telomere dysfunction in *Pyricularia oryzae* are determined by subterminal sequence composition **Mostafa Rahnama** University of Kentucky

**511F** High-throughput functional profiling of *Trichoderma atroviride* by RbTDNA-seq **Jose Manuel Villalobos Escobedo** University of California, Berkeley

**512W** Functional analysis of the bZIP transcription factors AtfA and AtfB in *Aspergillus nidulans* **Istvan Pócsi** University of Debrecen

**513T** Genome-wide analysis of AtfA/AtfB-mediated menadione stress response in *Aspergillus nidulans* **István Pócsi** University of Debrecen

**514V** Characterizing Genetic Mechanisms for Measuring Day-Length in *Neurospora crassa* **Sienna Casciato** Rutgers University

**515V** Derivative Profiling to Determine Differential Analysis in -omic Datasets **Harley Edwards** University of Maryland, Baltimore County

**516V** Generation of Synthetic Time-Course Omics Data using Long Short Term Memory Networks **Joseph Zavorskas** University of Connecticut

**517V** Revealing the effector repertoire of the sweetpotato black rot fungal pathogen *Ceratocystis fimbriata* **Camilo H. Parada-Rojas** NC State University

**518V** Fungal mitochondrial genomics - insights and challenges **Steven Ahrendt** DOE Joint Genome Institute

**519V** Identification of structural protein orthologs using predicted protein structures **Fred Dietrich** Duke University

**520V** No genes left behind: Associating phenotypes with genes in *Neurospora crassa* **Scott Baker** Pacific Northwest National Laboratory

**521V** REPAINT – an artificial intelligence algorithm for the comprehensive phenotyping of conidial fungi **Irina S. Druzhinina** Nanjing Agricultural University

**522V** Uncovering the fungal pangenome of *Penicillium* **Celine Petersen** Aalborg University

**523V** Comprehensive high-throughput phenotypic microarrays analysis of clinical diversity in *Aspergillus fumigatus* **Renad Aljohani** Imperial College London

**524V** Exploring Pan-Genomes At MycoCosm **Richard D. Hayes** DOE Joint Genome Institute, Lawrence Berkeley National Laboratory

**525V** Complete Genome Sequences and Genome-Wide Characterization of *Trichoderma* Biocontrol Agents Provide New Insights into their Evolution and Variation in Genome Organization, Sexual Development and Fungal-Plant Interactions **Ting-Fang Wang** Academia Sinica

**526V** *Metarhizium robertsii* is a multifunctional insect pathogen and plant growth promoter **Huiyu Sheng** University of Maryland, College Park

**527V** Genomic and transcriptomic differences between maize- and sorghum-specific *Exserohilum turcicum* isolates **Santiago Mideros** University of Illinois at Urbana-Champaign

**528V** Asymmetrical dose-responses shape the evolutionary trade-off between antifungal resistance and nutrient use **Philippe C Després** Institut de biologie intégrative et des systèmes, Université Laval

**529V** Quantifying the path to resistance to one of the oldest antifungal drugs **Romain Durand** Université Laval

**530V** Genome-wide Functional Analysis of WD40 Repeat-containing Proteins in *Cryptococcus neoformans* **Jin-Tae Choi** Yonsei University

**531V** Balancing positive and negative selection: metabolic consequences of antifungal resistance via constitutive Mrr1 activity in *Candida lusitanae* **Elora Demers** Geisel School of Medicine at Dartmouth

**532V** Evolution of mycorrhizal symbiosis in Inocybaceae **Faheema Khan** Uppsala University

**533V** Biocontrol activity and genomic analyses of the antagonistic, yeast-like fungus *Aureobasidium pullulans* **Florian Freimoser** Agroscope

**534V** Identification of key genes of the defense response of the mushroom-forming fungus *Schizophyllum commune* against fungal and bacterial antagonists **Erik Beijen** Utrecht University

**535V** Revisiting Meiotic Mutants in *Coprinopsis cinerea* using a Genomic Approach **Abigail Burke** Roanoke College

**536V** *Trichoderma reesei* Rad51 tolerates mismatches in hybrid meiosis with diverse genome

sequences **Ting-Fang Wang** Academia Sinica

**537V** Kingdom-wide analysis of fungal transcriptomes and tRNAs reveals conserved patterns of adaptive evolution **Rhondene Wint** University of California - Merced

**538V** Comparative genome analysis of *Fusarium culmorum* and *F. graminearum* reveals a different type of chromosomal organization but a common gene repertoire linked to virulence on wheat **Martin Urban** Rothamsted Research

**539V** Genome of the ginger pathogen *Pythium myriotylum* uncovers the most extensive arsenal of virulence-related genes amongst *Pythium* plant pathogens **Paul Daly** Jiangsu Academy of Agricultural Sciences

**540V** Comparative pathogen-host interaction phenotype analysis in human and plant microbial pathogens using PHI-base **Martin Urban** Rothamsted Research

**541V** Full genome sequence of onion black mold causing *Aspergillus welwitschiae* reveals the presence of putative mycotoxin gene clusters **Jagath Ranasinghe** University of Kelaniya

**542V** Genome Wide Association Mapping to characterize a virulent sexual population of wheat stem rust (*Puccinia graminis* f. sp. *tritici*) from the Pacific Northwest using barley and wheat differentials **Arjun Upadhyaya** Washington State University

**543V** A Pyrenophora resource to identify protein structural homologues **Paula Moolhuijzen** Curtin University

**544V** Genus-wide analysis of *Fusarium* polyketide synthases reveals broad chemical potential **Daren Brown** USDA

**545V** Analysis of 22 *Apiospora* genome assemblies uncovers a great biosynthetic potential for secondary metabolites **Trine Sørensen** Aalborg University

**546V** Evolution-driven discovery of new bioactive fungal molecules **Olga Mosunova** Westerdijk Fungal Biodiversity Institute

**547V** Nonribosomal peptide synthetase gene clusters and characteristics of NRPS-dependent siderophore synthetases in *Armillaria* and other species in the Physalacriaceae **Martin Coetzee** University of Pretoria

**548V** Transposons activate during monokaryosis in a mushroom-forming fungus **Markus Hiltunen** Uppsala University

**549V** Comparative genomics highlights the importance of drug efflux transporters during evolution of mycoparasitism in *Clonostachys* subgenus *Bionectria* **Magnus Karlsson** Swedish University of Agricultural Sciences

**550V** Loss of *SAF1* and *RRM3* together leads to Growth Defects and Compromise in Genome Stability in *Saccharomyces cerevisiae* **NARENDRA BAIRWA** Shri Mata Vaishno Devi University

**551V** Genome comparison of 45 fungal endophytes from Rubiaceae **Kelsey Scott** The Ohio State University

## 5. Fungal Diversity

**552T** Regulation of fungal gene expression in ectomycorrhizal roots underlying heavy metal soil stress **Haihua Wang** University of Florida

**553F** Pathogenic fungi in Norwegian barns - first survey of *Aspergillus fumigatus* azole resistance in Norway **Erik Magnus Nedland Henriksen** Norwegian Veterinary Institute

**554W** Analysis of Wood-Decay Fungal Communities Associated with Contrasting Zones of the American Wood Protection Association Decay Hazard Map **Jed Cappellazzi** Oregon State University

**555T** Genetic determinants of azole stress in *Aspergillus fumigatus* **Shivani Ror** University of Iowa

**556F** Categorizing Filamentation Phenotypes Across Divergent *C. albicans* Strains *in vitro* and *in vivo* **Nichole Brandquist** University of Nebraska at Omaha

**557W** RNAseq analysis identifying a core gene set of *Linnemannia elongata* involved in the chitin process **Kaile Zhang** University of Florida

**558T** The impact of dietary *Debaryomyces hansenii* yeast on the human gut mycobiome **Justin Tran** University of Nebraska-Lincoln

**559F** The air mycobiome is decoupled from the soil mycobiome in the California San Joaquin Valley **John Taylor** University of California, Berkeley

**560W** Metabarcoding as a tool for investigating the influence of endosymbiotic bacteria on Mucoromycota fungal host community structure in the Sonoran Desert **Nicole Reynolds** Cornell University

**561T** Impact of fungal pigment from *Chlorociboria* spp. on community composition and decay **Ray Van Court** Oregon State University

**562F** Fungi adaptation to actinide contamination : accumulation of europium in the filamentous fungus *Podospora anserina* **Eva Cabet** Université de Paris/ Unite LIED/Equipe B2C

**563W** Septins in the unconventional cell divisions of the extremophilic black fungus *Knufia petricola*. **Grace Hamilton** University of North Carolina

**564T** Small-spored *Alternaria* species associated with potato leaf spot across the US for nearly two decades **Ipsita Mallik** North Dakota State University

**565F** *Fusarium* in Nebraska Corn **Yuchu Ma** University of Nebraska-Lincoln

**566W** Genetic diversity of *Fusarium oxysporum* f. sp. *vasinfectum* California race 4 isolates and Alabama field isolates **Miranda Otero** Auburn University

**567T** Genetic diversity and pathogenicity of *Botryosphaeriaceae* and *Diaporthaceae* causing defects of hazelnut nuts from Italy. **Muhammad Waqas** University of Turin

**568F** The Systematics of North American *Rhizopogon* Using Modern Molecular Techniques **Thelmalyn Montenegro** California State University, Fresno



**569W** Genomic diversification of the specialized parasite of the fungus-growing ant symbiosis **Kirsten Gotting** University of Wisconsin Madison

**570T** Interrogating the poplar fungal microbiome interactions using meta-transcriptomics and constructed communities **Jake Nash** Duke University

**571V** Program number not assigned.

**572V** Dissecting Ascochyta blight disease of Field pea using genomics and population genetics approaches **Yvonne Ogaji** Department of Jobs, Precincts and Regions. AgriBio, Centre for AgriBioscience

**573V** Genome diversity in *F. musae* isolated from banana and human host. **Luca Degradi** University of Milan

**574V** Interspecies interactions between a mycoparasite and its prey are mediated by a conserved cell-cell communication mechanism. **Natascha Stomberg** Institut fuer Genetik

**575V** Measuring the mutagenic properties of antifungal drugs within *Aspergillus fumigatus* **Michael Bottery** University of Manchester

**576V** The maize mycobiome and implication on mycotoxin contamination in relation to climatic patterns **Bwalya Katati** Wageningen University and Research

**577V** *Fusarium* spp. associated with wheat nodes and grain in representative sites across the western Canadian Prairies **Mohamed Hafez** Agriculture and Agri-Food Canada

**578V** *Pyrenophora tritici-repentis* in Japan: first report on race structure and a novel *ToxA* haplotype **Mohamed Hafez** Agriculture and Agri-Food Canada

**579V** An updated checklist of wood decay fungi in the Maltese Islands. **Marco Iannaccone** University of Malta

**580V** The novel 15-keto NX-2 and 15-keto NX-3 *Fusarium* trichothecenes: pathway, phytotoxicity, and pathogenicity **Imane Laraba** ARS, USDA, NCAUR, MPM

**581V** Genetic diversity of banana infecting *Fusarium* spp. strains in Cuba **Einar Martinez de la Parte** Wageningen University and Research

**582V** *Fusarium musae* diversity from a mitochondrial comparative perspective **Valeria Tava** University of Milan

**583V** Tandem-approach of direct-infusion HRMS and LC-QTOF-MS for the evaluation of food safety and useful secondary metabolites in *Aspergillus oryzae* **Sharon Marie Bahena-Garrido** National Research Institute of Brewing

**584V** Can the quality of ITS regions in genome assemblies be trusted? **Barbara Robbertse** NCBI

**585V** Selection controls genetic diversity among nuclei populating strains of arbuscular mycorrhizal fungi **David Manyara** Uppsala University

**586V** 1000 lichen MAGs: a reference-free census of lichen symbionts **Gulnara Tagirdzhanova** University of Alberta

---

## 6. Gene Regulation

**587W** Investigating heterologous expression in *N. crassa* **James Mierendorf** Illinois State University

**588T** Complex and critical roles for the AtrR transcription factor in control of *cyp51A* expression in *Aspergillus fumigatus* **Sanjoy Paul** The University of Iowa

**589F** Duplication, Redundancy, and Divergence: roles of the *Aspergillus nidulans* paralogous transcription factors LeuR and LeuB in leucine biosynthesis, nitrogen assimilation, and transcriptome regulation **Joel T. Steyer** Kansas State University

**590W** Analysis of defective in silencing (*dis*) mutants of *Fusarium graminearum* to understand the formation and maintenance of facultative heterochromatin **Michael Freitag** Oregon State University

**591T** A reverse genetics approach to identify genes affecting H3K27 methylation levels in *Fusarium graminearum* **Elizabeth Milford** Oregon State University

**592F** Methylation of H4 controls gene expression in facultative heterochromatin **Mareike Moeller** Oregon State University

**593W** Development of genetics and molecular tools to study DNA N<sup>6</sup>-adenine methylation in early-diverging fungi **Carlos Lax** Universidad de Murcia (Q3018001B)

**594T** Systematic deletions of histone methyltransferase and demethylase genes reveal their role in RIP and sexual development. **Pierre Grognet** Universite Paris-Saclay, CNRS

**595F** Loss of EZH2-like or SU(VAR)3-9-like proteins causes simultaneous perturbations in H3K27 and H3K9 tri-methylation and associated developmental defects in the fungus *Podospora anserina* **Fabienne MALAGNAC** University Paris Saclay

**596W** The histone variant H2A.Z in *Fusarium graminearum*, its genomic location and its environment **Aurelie Etier** MycSA

**597T** The ATP-dependent chromatin remodeling factor, Isw1, governs development in *Fusarium graminearum*, partially through regulation of facultative heterochromatin **John Ridenour** Oregon State University

**598F** Gene expression divergence correlates with histone modifications in the fungal plant pathogen *Verticillium dahliae* **David E Torres Sanchez** Wageningen University and Research

**599W** A prion accelerates proliferation at the expense of lifespan **David Garcia** University of Oregon, Institute of Molecular Biology

**600T** RNAi and heterochromatin independently control gene expression and transposable elements in Mucorales **María Isabel Navarro-Mendoza** Duke University

**601F** Regulation and product identification of FmPKS8, a so far cryptic PKS in *F. mangiferae* **Anna Atanasoff-Kardjaleff** University of Natural Resources and Life Sciences, Vienna

**602W** Heterochromatin marks perturb transcriptional robustness and underpin dispensability of genes across evolutionary timescales in fungi **Sabina Tralamazza** University of Neuchâtel

**603T** A new role in G2-M control revealed by a reciprocal translocation involving the *snxA* shuttling mRNA-binding protein and a GYF-domain protein in *Aspergillus nidulans* **Steven James** Gettysburg College

**604F** Data-driven modelling captures dynamics of the circadian clock of *Neurospora crassa* **Michael Brunner** Heidelberg University Biochemistry Center

**605W** FREQUENCY Phosphosite Mutations Perturb Temperature Compensation of the *Neurospora* Circadian Clock **Elizabeth-Lauren Stevenson** Geisel School of Medicine at Dartmouth

**606T** Novel NuA4 subunits reveal a crucial role of dynamic expression of the negative arm of the circadian clock **Bin Wang** Geisel School at Dartmouth

**607F** *carP*, a long non-coding RNA with broad effects on *Fusarium fujikuroi* transcriptome. **Javier Pardo-Medina** Universidad de Sevilla

**608W** Circadian Clock-Controlled Translation of Specific *Neurospora crassa* mRNAs Requires Rhythmic eIF2 $\alpha$  Activity and P-bodies **Kathrina Castillo** Texas A&M University

**609T** A platform for functional analysis for *Candida albicans* strain variation **Yinhe Mao** University of Georgia

**610F** *In vivo* analysis of hyphal morphogenesis in *C. albicans*. **Rohan Wakade** University of Iowa

**611W** The Ess1 prolyl isomerase and its target, the CTD of RNA polymerase II, in cold-adapted fungi. **Steven Hanes** SUNY-Upstate Medical University

**612T** Regulatory conservation of *EFG1* indirect target genes by *WOR3* **Max Cravener** University of Georgia



- 613F** Characterization of a *Candida albicans* transcription factor family **Amelia White** University of Georgia
- 614W** The effect of Hxk1 and Hxk2 on open chromatin regions and gene expression in *Candida albicans* **Stefanie Wijnants** KULeuven
- 615T** Dss1 and Cap60 are required for capsule formation, stress response, and virulence in *Cryptococcus neoformans* **Olumuyiwa Igbalajobi** University of British Columbia
- 616F** Analysis of pre-filamentous *Candida albicans* cells identifies differing requirements for filamentation in *in vitro* models and defines the pre-filamentation transcriptome **Jill Blankenship** University of Nebraska at Omaha
- 617W** The HMG Domain-Containing Transcription Factors Hgr1 and Hgr2 are Putative Dormancy Factors of *Cryptococcus* Spores **Megan McKeon** University of Wisconsin-Madison
- 618T** Natural variation by collaboration between antagonistic morphotype master regulators **Eunsoo Do** University of Georgia
- 619F** Natural variation in *Candida albicans* glycolytic regulator activities **Minju Kim** University of Georgia
- 620W** Reaching across the aisle: Sculpting of *C. albicans* biofilm/hyphal gene expression network through collaboration among antagonistic cell type regulators **Aaron Mitchell** University of Georgia
- 621T** The role of *C. neoformans* casein kinase Yck2 in translational reprogramming during host temperature adaptation **Amanda Bloom** SUNY University at Buffalo
- 622F** Gcn2 compensates for the absence of Hog1 in *Cryptococcus neoformans* **David Goich** University at Buffalo
- 623W** Translational suppression by ribonuclear protein (RNP) granules: a mechanism for post-transcriptional regulation of *Candida albicans* filamentation **Melissa Tosiano** Carnegie Mellon University
- 624T** Functional characterization of basic helix-loop-helix transcription factor family in *Cryptococcus neoformans* **Mona Pokharel** Rutgers University
- 625F** Truncation of *MAT1-2-7* gene leads to changes in the pheromone response pathway of *Huntia omanensis* **Brenda Wingfield** University of Pretoria
- 626W** Reconstructing transcriptional networks governing fungal fruiting body development **Xiao-Bin Liu** Institute of Biochemistry, Biological Research Center, Szeged, Hungary
- 627T** Investigating the regulatory networks governing morphology and virulence in *Histoplasma capsulatum* **Nebat Ali** University of California, San Francisco
- 628F** Transcriptional profiling of the dbcAMP response of the human pathogen *Histoplasma capsulatum* identifies the WOPR-family transcription factor PAC2 as a regulator of cell morphology. **Dror Assa** University of California, San Francisco
- 629W** The transcription factor Roc1 is a regulator of cellulose degradation in the wood-decaying mushroom *Schizophyllum commune* **Peter Jan Vonk** Utrecht University
- 630T** Genome wide insights into signal integration by the G-protein pathway for regulation of carbon- and secondary metabolism **Miriam Schalamun** Austrian Institute of Technology
- 631F** Genetic and epigenetic variants underpinning within-species transcriptional polymorphism in a major fungal pathogen **Leen Abraham** University of Neuchatel
- 632W** GWAS for investigating laccase expression in *Ceratocystis albifundus* **Magriet van der Nest** University of Pretoria
- 633T** Overexpression of *BnNAC19* in *Brassica napus* enhances resistance to *Leptosphaeria maculans*, the blackleg pathogen of canola **Zhongwei Zou** University of Manitoba
- 634F** Relevance of copper homeostasis in *Fusarium oxysporum* pathogenicity **Rafael Palos Fernández** Universidad de Córdoba

**635W** Exclusively RNAi-based antimicrobial drug resistance is inherited after meiosis in the mucormycosis pathogen *Mucor circinelloides* **Carlos Pérez-Arques** Duke University School of Medicine

**636T** Identification and deep analysis of the target genes of an RNAi mechanism involved in virulence of *Mucor lusitanicus*. **Ghizlane Tahiri** Murcia University ESQ3018001B

**637F** The development of siRNA-mediated mRNA knockdown in *Batrachochytrium dendrobatidis* **Rebecca Webb** James Cook University

**638W** Arginine Methylation of RNA Binding Proteins in Cryptococcal Virulence and Antifungal Resistance **Murat Can Kalem** SUNY University at Buffalo

**639T** The multi-KH domain RNA binding protein Khd4 orchestrates membrane trafficking to promote polar growth of infectious hyphae **Srimeenakshi Sankaranarayanan** Institute of Microbiology, Heinrich Heine University of Duesseldorf

**640F** An RNA-binding protein that evolved a change in function to control fungal growth: the surprising history, structure, and function of Ssd1 **Edward W. J. Wallace** The University of Edinburgh

**641W** A-to-I mRNA editing is catalyzed by FgTad2 and FgTad3 ADAT in *Fusarium graminearum* **Zhuyun Bian** Purdue University

**642T** The role of R3B2 in the RNAi mechanisms of *Mucor lusitanicus* is driven by both double-stranded RNA binding domains **José Tomás Cánovas-Márquez** University of Murcia

**643F** MERLIN unlocks the secrets to chitin signaling: Using gene-network inference to predict mediators of fungal response to lipo-chitooligosaccharides **Cristobal Carrera Carriel** University of Wisconsin–Madison

**644W** Ccr4 and Gcn2 contribute differentially to stress-specific translational repression in *C. neoformans* **Corey Knowles** SUNY Buffalo

**645T** White-opaque switching in *Candida albicans* as a model system for the quantitative and molecular analysis of stochastic cell fate switching **Naomi Ziv** University of California, San Francisco

**646F** Identifying global regulators of effector gene expression in the rice blast fungus *Magnaporthe oryzae* **Camilla Molinari** The Sainsbury Laboratory

**647V** Elucidating the composition and functions of the Remodels the Structure of Chromatin (RSC) complex in *Candida albicans* **Santanu Ghosh** Indian Institute of Technology Bombay

**648V** Functional analysis of the conserved chromatin modifier ASF1 in the filamentous ascomycete *Sordaria macrospora* **Jan Breuer** Ruhr-Universität Bochum

**649V** A fungal ING protein regulates H3 acetylation and H4 deacetylation by interacting with two distinct histone modifying complexes **Cong Jiang** Northwest A&F University

**650V** Understanding the histone dynamics and regulatory role of lysine methyltransferases Set2, Ash1, and PRC2 in *Magnaporthe oryzae* **David Rowe** Kansas State University

**651V** The histone code of the fungal genus *Aspergillus* uncovered by evolutionary and proteomic analyses **Xin Zhang** Utrecht University

**652V** Sirtuins in the control of virulence in the plant pathogen fungus *Ustilago maydis*. **Blanca Navarrete** Pablo de Olavide University (UPO)

**653V** The epigenetic regulatory mechanisms of effector genes in the wheat pathogen *Zymoseptoria tritici* **Marta Suárez Fernández** Universidad Politecnica de Madrid

**654V** The Eip3 GNAT superfamily protein modulates development, cell cycle progression and virulence in the fungal insect pathogen, *Beauveria bassiana* **Qing Cai** University of Florida

**655V** Functional analyses of predicted G-protein-coupled receptors in nematode-trapping fungus, *Arthrobotrys oligospora* **Chih-Yen Kuo** Institute of Molecular Biology

**656V** Systematic Analysis of Host-derived Cues for the Regulation of Pathogenicity-associated Transcription factors in *Cryptococcus neoformans* **Seong-Ryong Yu** Yonsei university

**657V** Unveiling the Roles of the Casein Kinase 2 Complex in the Growth, Differentiation, Stress Responses, and Pathogenicity of *Cryptococcus neoformans* **Yeseul Choi** Yonsei University

**658V** Cpk1, Mpk1, and Hog1, MAPK Pathways Coordinately Regulate the Growth, Thermotolerance, and Cell Wall Integrity of *Cryptococcus neoformans* **Yu-Byeong Jang** Yonsei University

**659V** Identification of novel transcription factors involved in *Aspergillus fumigatus* adherence **Francois Le Mauff** McGill University

**660V** Transcriptional and strain-dependent impact of *C. Albicans* *HGC1*, the hyphal-specific G1 cyclin **Anupam Mahto** University of Georgia

**661V** Role of calcineurin signaling components in cryptococcal Titan cell formation **Julia Reuwsaat** Universidade Federal do Rio Grande do Sul

**662V** Natural variation in the control of *Candida albicans* iron acquisition **Liping Xiong** University of Georgia

**663V** Leveraging machine learning essentiality predictions and chemogenomic interactions to identify antifungal targets **Ci Fu** University of Toronto

**664V** Fungal A-to-I mRNA editing controls lethality of a fungal meiotic drive gene in homologous and heterologous expression systems **Jessica Lohmar** USDA-ARS

**665V** Blue Mold's Clues: Comparative transcriptomics of blue mold fungi clue into biochemical processes associated with fungal aggressiveness and conidial germination in *Penicillium* spp. **Holly Bartholomew** USDA-ARS

**666V** The role of RNA helicases during *Ustilago maydis* teliospore dormancy and germination **Amanda Seto** Trent University

**667V** Role of Nuclear mRNA Degradation Pathway in the Regulation of Telomere Length in *Saccharomyces*

*cerevisiae* **Mayukh Banerjea** Jadavpur University

**668V** Characterization of N6-methyladenosine RNA methylation factors in *Fusarium graminearum* **Wonyong Kim** Suncheon National University

**669V** Identification of a stage-specific co-factor required for A-to-I mRNA editing during sexual reproduction in fungi **Huiquan Liu** Northwest A&F University

**670V** Exploring the role of natural antisense transcripts in the stress response of *Ustilago maydis* **Monique Lariviere** Trent University

**671V** Gad1 functions as a negative regulator of A-to-I mRNA editing during sexual reproduction **Zeyi Wang** Purdue University

**672V** The role of COP9 signalosome complex in secondary metabolism in *Fusarium* **Massimo Ferrara** National Research Council

**673V** Culturing *Aspergillus nidulans* in soil microcosm elucidates its ecological behavior and interaction with soil microbiota **Daisuke Hagiwara** University of Tsukuba

**674V** Identification of co-culture responsive biosynthetic gene cluster in *Aspergillus niger* and *Penicillium* species **Daisuke Hagiwara** University of Tsukuba

**675V** Characterization of conidia-specific transcription factor CsgA in *Aspergillus* spp. **He jin Cho** Kyungpook National University

**676V** Transcriptome-based functional analysis of spore-specific transcription factors in *Aspergillus* species **Ye-Eun Son** Kyungpook National University

---

## 7. Pathogenic and Mutualistic Interactions

**677W** Probing the role of N6-methyladenine DNA modification within the *Rhizopus microsporus* and *Mycetohabitans* symbiosis **Margaret Branine** Cornell University

**678T** Hijacking time: How *Ophiocordyceps* fungi could be using ant host clocks to manipulate behavior **Charissa de Bekker** University of Central Florida

**679F** Characterizing variation within the European *Batrachochytrium salamandrivorans* epidemic **Moira Kelly** Ghent University

**680W** Deciphering the potential niche of novel black yeast fungal isolates in a biological soil crust based on genomes, phenotyping, and melanin regulation **Erin Carr** University of Nebraska-Lincoln

**681T** Human p11-mediated re-direction of phagosomes to the recycling endosome-expulsion pathway induced by fungal pathogen **Leijie Jia** Leibniz Institute for Natural Product Research and Infection Biology - Hans Knöll Institute

**682F** *Cryptococcus neoformans* transcytosis of human brain endothelial cells likely begins with macropinocytosis. **Dylan Lanser** University of California

**683W** Unmasking chitin in *C. neoformans*: Panic or protection? **Rajendra Upadhy** Washington University, St. Louis

**684T** Connecting fungal genomes with the behavioral phenomes of ants, manipulated by *Ophiocordyceps* **Charissa de Bekker** University of Central Florida

**685F** Pyricularia HAG effector family interactions with rice candidate target proteins **Nicholas Farmer** Texas A&M University

**686W** Validation and characterization of *Pyrenophora teres* f. *teres* effectors VR1 and VR2 conferring virulence on Rika barley **jinling li** North Dakota State University

**687T** Unravelling the role of CRZ1 dependent F-BAR protein in mediating virulence of *Ascochyta rabiei* **Ankita Shree** National Institute of Plant Genome Research

**688F** Calcineurin regulates  $\beta(1,3)$ -glucan exposure in *Candida albicans* **Andrew Wagner** University of Tennessee, Knoxville

**689W** Elucidating Fungal Immune Receptors and Testing the Potential Role of Nucleotide-binding Domain Leucine-rich Repeat-like Proteins (NLR-like) Against Bacterial Antagonists. **Frances Stark** University of California, Berkeley

**690T** Targeted delivery of antifungal liposomes to *Rhizopus delemar* **Quanita Choudhury** University of Georgia

**691F** Dectisomes Target Antifungal Drugs for Fungal Cells **Zachary Lewis** University of Georgia

**692W** *Saccharomyces cerevisiae* var. 'boulardii' host interactions and the virulence-related gene heme oxygenase-1 (*HMX1*) **Alexandra Imre** University of Debrecen

**693T** Pathogen carbon metabolism influences host immune response during infection by *Cryptococcus neoformans* **Hannah Berguson** Liberty University College of Osteopathic Medicine

**694F** Linkage analysis of clinical isolates in the *Cryptococcus neoformans* ST93 clade reveals two non-recombining populations with different *in vivo* disease manifestations **Katrina Jackson** University of Minnesota

**695W** Roles of candidalysin of *Candida albicans* in the gut permeability and brain pathology **Courtney Smith** The University of Texas at San Antonio

**696T** Elucidating key interactions between *Coccidioides* and macrophages **Jane Symington** University of California, San Francisco

**697F** Roles of *Candida albicans* chromosome instability in the host **Huijuan Yan** University of California, San Francisco

**698W** Identification of the genetic basis of novel azole resistance mechanisms in *Aspergillus fumigatus* **Asmaa Alghamdi** University of Nottingham

**699T** A longitudinal study investigating patient acquisition of azole resistant *Aspergillus fumigatus* (ARAF) **Amelie Brackin** Imperial College London



**700F** Involvement of kinase genes in antifungal tolerance in the pathogenic yeast *Candida glabrata* **Colin Clairet** Institut Pasteur

**701W** Elucidation of Intrinsic Echinocandin Drug Resistance Mechanisms in Mucorales Fungi **Alexis Garcia** The University of Texas at San Antonio

**702T** Immunoprotection against cryptococcosis offered by Znf2 depends on capsule and the hyphal morphology **Nhu Pham** University of Georgia

**703F** Copper homeostasis and *Cryptococcus neoformans* cell surface architecture **Corinna Probst** Duke University

**704W** The Fungal Granuloma: Mechanisms of Fungal Containment and Persistence **Calla L. Telzrow** Duke University

**705T** Unfolded protein response is critical for the corneal pathogenesis of *Aspergillus fumigatus* **Manali Kamath** University of Oklahoma Health Sciences Center

**706F** Fungal hypoxia adaptation is critical for the establishment of keratitis **Jorge Lightfoot** University of Oklahoma Health Sciences Center

**707W** The *Aspergillus fumigatus* Spindle Assembly Checkpoint components, *sldA* and *sldB*, play roles in maintenance of triazole susceptibility **Ashley Nywening** The University of Tennessee Health Science Center

**708T** Extracellular vesicles and biofilms of the pine tree pathogen *Fusarium circinatum* **Thabiso Motaung** University of Pretoria

**709F** Identification of a gene cluster encoding at least two effector proteins involved in host-specificity of *Sporisorium reilianum* **Jan Schirawski** Friedrich-Schiller-Universität Jena

**710W** Chemical interactions between fungi and nematodes **Reinhard Fischer** Karlsruhe Institute of Technology (KIT)

**711T** Identification and functional characterization of a putative alternative oxidase (AOX) in the smut fungus *Sporisorium reilianum* f. sp. *zeae*. **Emma Lamb** University of Louisville

**712F** Metabolomic profiling of behaviorally manipulated insects infected by “zombie ant fungus” (*Ophiocordyceps*) **Ian Will** University of Central Florida

**713W** Genes for an extended phenotype: Biosynthesis of volatile sesquiterpenes in a pathogenic fungus is used to entice male flies into fatal mating’s with infected female cadavers **Henrik De Fine Licht** University of Copenhagen

**714T** Genetic systems and pH stress in the laurel wilt-Ambrosia beetle symbiotic interaction **Ross Joseph** University of Florida

**715F** A shelter from the elements: understanding requirements for fungal chlamydospore formation and bacterial invasion **Isabelle Ludwikoski** University of Wisconsin–Madison

**716W** From iron to antibiotics: Bacterial-fungal interactions revealed by genome-wide mutational analyses **Emily Pierce** University of California, San Diego

**717T** Using random barcoded transposon-site sequencing (Rb-TnSeq) bacterial libraries to explore the effects of volatiles from *Trichoderma atroviride* **Catharine Adams** UC Berkeley

**718F** Heterothallic mutants of *Fusarium graminearum* and their use for Genetic Analysis of Fungal Pathogenicity and Toxigenicity **Gabdiel Yulfo-Soto** University of Kentucky

**719W** Deletion of the killer kinase *KIL1* abolishes penetration peg formation in the predator yeast *Saccharomycopsis schoenii* **Mareike Rij** Hochschule Geisenheim University

**720T** Conditional role of a signal peptidase component in the establishment of biotrophy by the maize anthracnose pathogen *Colletotrichum graminicola* **Renata Belisario** University of Kentucky

**721F** Cytoplasmic effector translocation during early biotrophic invasion by the rice blast fungus **Ely Oliveira-Garcia** Louisiana State University

**722W** Defining the septin interactome and its role in appressorium-mediated plant infection by the rice blast fungus *Magnaporthe oryzae* **Iris Eisermann** The Sainsbury Laboratory

**723T** Genotype and Fusarium head blight selection for microbiomes across barley spikes **Brooke Benz** North Dakota State University

**724F** Unraveling the role of effectors from *Fusarium* spp. in Fusarium wilt of banana **Carolina Aguilera Galvez** Wageningen University and Research

**725W** Transcriptome analysis and effector prediction in *Fusarium* spp. causing Fusarium wilt of banana **Jelmer Dijkstra** Wageningen University

**726T** Alternative sulfur scavenging and host colonization by the plant pathogen *Raffaelea lauricola* **Joshua Konkol** University of Florida

**727F** Fighting fungi with fungi: the biocontrol potential of *Trichoderma* against *Armillaria* root rot **M Millen** University of Bristol

**728W** Characterisation of novel effectors from the wheat pathogen, *Zymoseptoria tritici* **Eli Thynne** Christian-Albrechts University

**729T** Fungal Pathogens Utilize Extracellular Vesicles for Transport of Effector Proteins into Plant Host Cells **Claire Whitaker** UC Riverside

**730F** GWAS for identifying genes associated with virulence in *F. circinatum* **Emma Steenkamp** University of Pretoria

**731W** A new pathosystem to study the plant-fungal interactions underlying Cercospora leaf blight of soybean **Kona Swift** University of Arkansas

**732T** Convergent recognition of the *Magnaporthe oryzae* host specificity determinant *PWL2* in divergent grass species **Diana Gómez De La Cruz** The Sainsbury Laboratory

**733F** Secreted in xylem (SIX) 6 mediates *Fusarium oxysporum* f. sp. *fragariae* race 1 avirulence to strawberry cultivars with *FW1* resistance **Christine Jade Dilla-Ermita** University of California, Davis

**734W** Pathotypes of *Fusarium oxysporum* f. sp. *fragariae* express discrete repertoires of accessory genes and induce distinct host transcriptional responses during root infection. **Peter Henry** United States Department of Agriculture

**735T** Differences in fungal aggressiveness and host susceptibility revealed key drivers of Fusarium Head Blight infection in wheat **Florian Rocher** INRAE

**736F** Analysis of Superoxide Dismutase Activity in *Fusarium oxysporum* **Manuel Sánchez López-Berges** Universidad de Córdoba

**737W** Effector proteins of *Botrytis elliptica* as tools for resistance breeding in lily against fire blight disease **Michele Malvestiti** Wageningen University and Research

**738T** Extracellular vesicles of and biofilm formation in a maize fungal pathogen *Fusarium verticillioides* **Thabiso Motaung** University of Pretoria

**739F** A GPI-anchored protein gene from the chestnut blight fungus *Cryphonectria parasitica* is a hypovirus-specific virulence factor and a tolerance factor against hypovirus infection **Dae-Hyuk Kim** Chonbuk National University

**740W** Functional analysis of Heat Shock Protein 90 co-Chaperon p23, *CpCo23*, of chestnut blight fungus *Cryphonectria parasitica* in variety of stress **Yo-Han Ko** Jeonbuk National University

**741T** Unconventional suppression of plant defence responses by the signal peptide peptidase Spp1 in the *Ustilago maydis* - maize interaction **Kai Heimel** Georg-August-University

**742F** Identification and characterisation of an expanded family of effector from Asian soybean rust, *Phakopsora pachyrhizi* **Kelly Robinson** The Sainsbury Lab

**743W** Fungal alcohol oxidase (AOX): a broadly conserved protein facilitating ascomycete invasion of plants **Nathaniel Westrick** University of Wisconsin-Madison



**744T** Extracellular vesicle-mediated transfer of plant mRNA into fungal cells to suppress pathogenicity **shumei wang** University of California, Riverside

**745F** Functional analyses of genes involved in disease development in rice caused by both pathotypes of *Fusarium fujikuroi* **Sang-Won Lee** Soonchunhyang University

**746W** The monothiol glutaredoxin Grx4 is a key regulator of secondary metabolism, iron homeostasis, nitrogen sensing and virulence in *Ustilago maydis* **Sean McCotter** Michael Smith Laboratories, University of British Columbia

**747T** Co-transcriptomic time course analysis for mechanistic understanding of the *Arabidopsis-Botrytis* pathosystem **Anna Muhich** University of California, Davis

**748F** *Botrytis cinerea* secretes small RNA containing extracellular vesicles that enter plant cells through clathrin-dependent endocytosis **Baoye He** University of California, Riverside

**749W** Characterising an effector from the fungal pathogen of wheat, *Zymoseptoria tritici* **Nikolaos Mastrodimos** University College Dublin

**750T** Unexpected fitness advantage from hydrophobin loss in *Penicillium expansum* upon apple co-inoculation **Dianiris Luciano-Rosario** University of Wisconsin-Madison

**751F** The *Zymoseptoria tritici* effector Zt-11 is involved in the switch to necrotrophy and contributes to virulence in wheat **Paola Pilo** University College Dublin

**752W** RNA interference affects fungus-fungus interactions in the biocontrol agent *Clonostachys rosea* **Edoardo Piombo** Swedish University of Agricultural Sciences

**753T** Mycangial colonization in the laurel wilt (*Raffaelea lauricola*)-Ambrosia beetle symbiosis **Ross Joseph** University of Florida

**754F** The fungal root endophyte *Serendipita vermifera* displays inter-kingdom synergistic beneficial effects with the microbiota in *Arabidopsis thaliana* and barley **Gregor Langen** University of Cologne

**755W** The combined activity of two secreted fungal enzymes is implicated in fungal accommodation in the roots and triggers cell death in different host species **Alga Zuccaro** University of Cologne

**756T** Decoding the nuances of fungal symbiosis using ambrosia beetles-*Raffaelea lauricola* as a model system **Kamaldeep Bansal** University of Florida

**757F** *Systems Biology of the Symbiosis of Arbuscular Mycorrhizal Fungi (AMF) in Sorghum* **Shufan Zhang** University of Georgia

**758W** Testing the role of the transcription factor TvSom1 in adhesion of *Trichoderma virens* germlings **Benjamin Horwitz** Technion - IIT

**759V** The puzzle of mini-chromosomes and Fumonisin in *Fusarium verticillioides* **Luigi Faino** University of Rome "Sapienza"

**760V** Isolate specific effects of *Botrytis cinerea* on the expression of biosynthetic enzymes and stimulation of Jasmonic and Salicylic acid signaling in *Arabidopsis thaliana*. **Jordan Dowell** University of California, Davis

**761V** Transcriptomic approach to unveil the interaction between a biocontrol yeast and a postharvest fungal pathogen on the host fruit **Giuseppe Ianiri** University of Molise

**762V** Accessory chromosome loss contributes to increased symbiotic effectiveness of a tree root fungus **Zhilin Yuan** Research Institute of Subtropical Forestry, Chinese Academy of Forestry.

**763V** Comparative Genomics of Four Mollicutes-Related Endobacteria from the Mortierellaceae **Reid Longley** Michigan State University

**764V** Investigating microbial reservoirs for antivirulence compounds that attenuates dimorphism in the fungal pathogen *Candida albicans*. **Jehoshua Sharma** University of Guelph

**765V** Identification of novel effector proteins in *Cercospora beticola* **Olivia Hamilton** United States Department of Agriculture

**766V** Seasonal dynamics in the bacterial microbiome of field grown CLS-resistant and -susceptible sugar beet varieties **Lorena Rangel** United States Department of Agriculture

**767V** Impact of the mycoparasite *Pythium oligandrum* on mutualistic interactions and disease resistance as well as growth induction in *Medicago truncatula* **Maryam Hashemi** Laboratoire de Recherche en Sciences Végétales, Université de Toulouse, CNRS, Université Toulouse II

**768V** Breakdown and maintenance of tree-fungal mutualism: why the nitrogen form matters? **Long Peng** State Key Laboratory of Tree Genetics and Breeding

**769V** *Fusarium oxysporum* induces the expression of the gene encoding the plant specific tissue protein 6 (ST6) involved in root and plant vasculature development **Virginia Casado del Castillo** University of Salamanca

**770V** *Fusarium oxysporum* FOSP1G\_05432, the orthologous of *B. cinerea* Bcin04g03490, is involved in growth, sporulation and virulence **Virginia Casado del Castillo** University of Salamanca

**771V** Deep learning-based quantification of fungi in plant roots **Edouard Evangelisti** University of Cambridge

**772V** Genomic and associated soil microbial community comparisons of two *Armillaria* species with different ecological behaviors **Jane Stewart** Colorado State University

**773V** Genetic mapping of new QTL conferring virulence in *Pyrenophora tritici-repentis* **Jingwei Guo** North Dakota State University

**774V** *Marchantia polymorpha* model reveals conserved mechanisms governing infection by the vascular wilt fungal pathogen *Fusarium oxysporum* **Amey Redkar** Universidad de Cordoba

**775V** Screening of small secreted proteins of *Epichloë bromicola* for Hypersensitive Response–Associated effectors in *Nicotiana spp.* **Pranav Chettri** AgResearch (Grasslands Research Centre)

**776V** Discovery and selection of fungal endophytes for disease resistance of barley **Olga Lastovetsky** University College Dublin

**777V** Characterization of urease in *Aspergillus fumigatus*: Biochemistry and implications for virulence **Daniel Scharf** School of Basic Medical Sciences, Zhejiang University

**778V** The pathogen-host interaction database in 2022: Providing FAIR data to explore human, animal and plant infecting filamentous pathogens **Kim Hammond-Kosack** Rothamsted Research

**779V** The diversity of mold warfare: a taxonomically wide investigation of *Trichoderma* - *Pythium* antagonism **Siqiao Chen** Nanjing Agriculture University

**780V** Heterologous expression of *Hanseniaspora sp.* transporters in *Saccharomyces cerevisiae* confirms their activity as pantothenate symporters, used by the yeast to obtain this vitamin from other organisms. **Maria P. Rueda-Mejia** Agroscope

**781V** Secreted proteins during interaction of mushroom-forming fungi against their competitors **Marieke H. van Maanen** Utrecht University

**782V** Ensembl Fungi: Melding data sets to explore species interactions **Manuel Carbajo Martinez** EMBL - EBI

**783V** Deciphering the mycovirome of *Botrytis cinerea* **Ana Ruiz-Padilla** Universidad Politécnica de Madrid. CBGP (UPM-INIA)

**784V** Exploring the Divergence of Interactions between Fungi and Bacteria **Gayan Abeyasinghe** Graduate School of Science and Technology, University of Tsukuba

**785V** Mycovirus influences secondary metabolite production in *Aspergillus flavus* **Misa Kuroki** University of Tsukuba

**786V** *Lactobacillus*-secreted Yak1 inhibitor, 1-acetyl-beta-carboline, blocks *Candida albicans* morphogenesis and biofilm formation **Jessie MacAlpine** University of Toronto

**787V** The phospholipase VIPLA<sub>2</sub> from the plant pathogen *Verticillium longisporum* is a virulence factor targeting host nuclei and suppressing PTI-related hypersensitive response **Georgios Tzelepis** Swedish University of Agricultural Sciences

**788V** Dog9, a fungal protein involved in effectors secretion during plant infection **María Dolores Pejenaute Ochoa** Andalusian Centre for Developmental Biology, Pablo Olavide University, Seville, Spain.

**789V** Phosphoproteomic analysis of the Pmk1 MAP kinase pathway reveals novel phosphorylated virulence determinants in *Magnaporthe oryzae* **Neftaly Cruz Mireles** Norwich Research Park

**790V** Interactions Between the Diet and Mycobiome of Long-tailed Macaques (*Macaca fascicularis*) Vary Across Islands with Evidence of a Role for Antifungal Plants **Benjamin Gombash** University of Notre Dame

**791V** A major effect gene, *Bcin04g03490*, controls development and pathogenicity in *Botrytis cinerea* **Ernesto Pérez Benito** University of Salamanca

**792V** Impairment of the cellulose degradation machinery enhances *Fusarium oxysporum* virulence but limits its reproductive fitness **Clara Sanchez-Rodriguez** Department of Biology, ETH Zurich

**793V** Effector proteins of *Pseudocercospora fijiensis* as tools in resistance breeding of banana **Maikel Steentjes** Wageningen University

**794V** Identification of the *Avr9B* avirulence effector gene from the tomato leaf mould pathogen *Cladosporium fulvum* **Silvia de la Rosa** Massey University

**795V** Understanding the virulence molecular mechanisms of *Neovectria ditissima*, a necrotrophic fungal pathogen of apple. **Liz Florez** University of Auckland/Plant and Food Research

**796V** Functional characterisation of candidate *Fusarium graminearum* effectors **Claire Kanja** Rothamsted Research

**797V** Characterization of the role of the *Parastagonospora nodorum* effector SnTox267 in virulence on wheat using confocal microscopy **Ashley Nelson** North Dakota State University

**798V** Understanding the Molecular Bases of Adaptation of the Fungal Pathogen *Zymoseptoria* to Specific Host Species **Andrea Sánchez-Vallet** Universidad Politecnica de Madrid

**799V** Disruption of a *Dothistroma septosporum* cell death elicitor through CRISPR-Cas9 **Mariana Tarallo** Massey University

**800V** Functional characterization of *Fusarium graminearum* effectors inducing cell death **Martin Darino** Rothamsted Research

**801V** The conserved trichothecene biosynthetic cluster gene *TRI14* is required for growth of *Fusarium graminearum* in wheat but not for trichothecene production **Guixia Hao** USDA, ARS

**802V** The *Venturia inaequalis* effectorome is expressed in waves, and is dominated by expanded families with predicted structural similarity to avirulence effector proteins **Mercedes Rocafort** Massey University

**803V** Spore-type specific chemotropic growth to maize roots determines root infection by the hemibiotrophic pathogen *Colletotrichum graminicola* **Daniela Nordzieke** Georg-August University Göttingen, Germany

**804V** Cross-kingdom RNA interference in early phases of the *Botrytis cinerea* - tomato interaction **Si Qin** Wageningen University

**805V** A novel RNA binding protein in table beet fungal pathogen, *Cercospora beticola*, regulates growth, secondary metabolism, and virulence. **Sandeep Sharma Khatiwada** Cornell University

**806V** Understanding the Molecular Bases of Adaptation of the Fungal Pathogen *Zymoseptoria* to Specific Host Species **Coraline Praz** Universidad Politecnica Madrid

**807V** Analysis of the microbial war between the Bioeffector *Pythium oligandrum* and the Pythium Soft-Rot of Ginger Pathogen *Pythium myriotylum* **Taha Majid Mahmood Sheikh** Jiangsu Academy of Agricultural Sciences

**808V** Functional analysis of putative protein glycosylation related genes in the plant pathogenic fungus *Fusarium graminearum* **Heeji Moon** Agriculture and Life Science

**809V** A spot type net blotch susceptibility locus in barley. **Mariano Jordi Muria Gonzalez** Curtin University

**810V** Spray-induced gene silencing (SIGS) against fungal and oomycete diseases in forest system **Irene Teresa Bocos Asenjo** Universidad de Valladolid

**811V** Differential physiological prerequisites and gene expression profiles of conidial anastomosis tube fusion and germ tube formation in *Colletotrichum gloeosporioides* **Nikita Mehta** Agharkar Research Institute

**812V** Spray-induced gene silencing (SIGS) using organic and inorganic based-nanoparticles ensures a steady RNAi effect against *Botrytis cinerea* infection on plant material **Jonatan Niño Sanchez** University of California, Riverside

**813V** Fungal Chemical Warfare: How Secondary Metabolites Influence Relationships in Maize Associated Fungi **Tim Satterlee** USDA/ARS

**814V** Establishment of functional symbioses between *Epichloë* endophytes and the modern cereals rye (*Secale cereale*) and hexaploid wheat (*Triticum aestivum*). **Richard Johnson** Agresearch Grasslands

**815V** Going Green: Evidence for acquisition and persistence of plant and algal plastomes in diverse fungi **Julia Kelliher** Los Alamos National Laboratory

**816V** Interactions between algal cells and

the dimorphic lichenized fungus *Umbilicaria muhlenbergii* **Yuting Hu** Purdue University

**817V** Genetic determinants of endophytism in the *Arabidopsis* root mycobiome **Fantin Mesny** Max Planck Institute for Plant Breeding Research

---

## 8. Population and Evolutionary Genetics

**818W** Long reads and Hi-C sequencing illuminate the two-compartment genome of the model arbuscular mycorrhizal symbiont *Rhizophagus irregularis* **Gokalp Yildirim** University of Ottawa

**819T** Emerging tree pathogen *Phellinus noxius* has a long evolutionary history in eastern Asia, Australia, and the Pacific Islands **Olga Kozhar** Colorado State University

**820F** Repeat-driven genome expansion and two-speed genome architecture of amphibian-infecting chytrids **Theresa Wacker** University of Exeter

**821W** Pangenomics of the ‘death cap’ mushroom, *Amanita phalloides*, and of *Agaricales* reveal dynamic evolution of toxin-related gene family in an invasive range. **Milton Drott** University of Wisconsin–Madison

**822T** Births, deaths and survival of a retrotransposon family in the face of repeat induced point mutations (RIP) **Ivar Westerberg** Uppsala University

**823F** Evolution of a Large Effector Family in *Pyricularia* **Daniel Ebbole** Texas A&M University

**824W** Molecular evolution of virulence effectors of the rice blast fungus *Magnaporthe oryzae* **Pierre Gladioux** INRAE

**825T** An NLR-like system delimits individuals in the basidiomycete *Coprinopsis cinerea* **Ben Auxier** Wageningen University

**826F** Pararesistance: a non-genetic mechanism of antifungal drug resistance **Jinglin Lucy Xie** Stanford University School of Medicine



**827W** The molecular resistance mechanisms and population structure of azole-resistant *Aspergillus fumigatus* present on commercial agricultural products in the United States **Caroline Burks** University of Georgia

**828T** Identifying genes involved in the temperature-dependent morphological transition in *Coccidioides posadasii* **Keith Walcott** University of California, San Francisco

**829F** Population genetics and microevolution of clinical *Candida glabrata* reveals recombinant sequence types and hyper-variation within mitochondrial genomes, virulence genes and drug-targets **Nicolas Helmstetter** University of Exeter

**830W** A cystic fibrosis patient lung environment allowed for coexistence of multiple *Exophiala dermatitidis* clades over time **Tania Kurbessoian** University of California, Riverside

**831T** Global evolutionary patterns and drug resistance acquisition in the human pathogen *Aspergillus fumigatus* **Johanna Rhodes** Imperial College London

**832F** Parasexual recombination enables *Aspergillus fumigatus* to persist in cystic fibrosis **Eveline Snelders** Wageningen University

**833W** Transposon mobilization elevated by heat stress causes genome-wide mutations in the human fungal pathogen *Cryptococcus deneoformans* **Asiya Gusa** Duke University

**834T** Plants vs Botrytis: a model for quantitative interactions? **Celine Caseys** University of California Davis

**835F** Human mediated contact between amphibian-killing chytrid variants results in repeated recombination **Thomas Jenkinson** California State University, East Bay

**836W** Mushrooms without mating: the discovery haploid sporocarps in the invasive habitat of the heterothallic death cap, *Amanita phalloides* **Yen-Wen Wang** University of Wisconsin-Madison

**837T** Analysis of mitochondrial diversity in the smut fungus *Sporisorium reilianum* f. sp. *zeae* reveals

potential recombination events that alter predicted patterns of uniparental inheritance. **Hector Mendoza** University of Louisville

**838F** Extensive parasexual recombination promotes genetic diversity in *Candida albicans* progeny **Matthew Anderson** The Ohio State University

**839W** *In-silico* cross-contamination affects inference of genetic relationships in *Saccharomyces cerevisiae* **Audrey Ward** University of Georgia

**840T** Genomic and genetic analyses of antifungal drug resistance in *Aspergillus fumigatus* **Jianping Xu** McMaster University

**841F** Lineage structure of the *Fusarium oxysporum* Species Complex (FOSC) based on a dataset of 41 full-length genes from the core genomes of 545 isolates: its implications in taxonomy and diagnostics **David Geiser** Penn State University

**842W** Genetic diversity of the pea root pathogen *Aphanomyces euteiches* in Europe **Carol Kälén** Swedish University of Agricultural Sciences SLU

**843T** The *Parastagonospora nodorum* necrotrophic effector SnTox3 likely evolved from a duplication event of SnTox5 **Gayan Kariyawasam** North Dakota State University

**844F** Genome-wide association studies for the genetic basis of saprophytic fitness traits in samples of isolates of *Fusarium graminearum* from the Americas **Christopher Toomajian** Kansas State University

**845W** Using machine learning to gain insight on how environment and diet influence the evolution of galactose metabolism across the budding yeast subphylum **Marie-Claire Harrison** Pomona College

**846T** The role of DNA methylation in the evolution of two truffle-forming ectomycorrhizal sister species **Emeline E. Pano** California State University Fresno

**847F** Signaling Pathway Loss-of-Function Alleles and Evolutionary Hotspots in the Fungi **Paul Magwene** Duke University

**848W** Characterisation of the mating type loci in *Elsinoe* including the *Eucalyptus* pathogen *Elsinoe necatrix* **Mike Wingfield** University of Pretoria

**849T** Population genomics analysis of *Fusarium graminearum* isolates from the Americas **Upasana Dhakal** Kansas State University

**850F** Computational advances in the discovery of a new class of fungal natural products **Grant Nickles** University of Wisconsin-Madison

**851W** Genome-scale phylogeny of the fungal order Sordariales **Noah Lisa Hensen** Uppsala University

**852T** Analysis of 439 Cyp51 protein sequences shows 5 major Cyp51 gene family groups across Fungi **Brandi Celia** University of Georgia

**853F** Comparative genomics and population structure of South African *Histoplasma* isolates **Rutendo Eugenia Mapengo** National Institute for Communicable Diseases

**854W** Understanding the nature of the reproductive barriers within the wood decay species *Trichaptum abietinum* **Dabao Sun Lu** University of Oslo

**855T** Synonymous codon usage as a lens into the metabolic ecology of budding yeasts **Abigail LaBella** Vanderbilt University

**856F** The story behind the strains: using genomes to define wild yeast lineages from woodlands **Jacqueline Peña** University of Georgia

**857W** Contrasting continental patterns of adaptive population divergence in a holarctic ectomycorrhizal fungus **Keaton Tremble** University of Utah

**858T** Molecular Characterisation of *Candida auris* Clinical Isolates at a Large Tertiary Academic Hospital in South Africa, 2016-2020 **Dikeledi Kekana** The National Institute for Communicable Diseases

**859V** Southwestern US-associated population of *Cryptococcus* isolates fills gaps in the family tree of molecular type VG-VI **Juan Monroy-Nieto** TGen North

**860V** Global introduction patterns of the pine ectomycorrhizal fungus *Suillus luteus* **Yi-Hong Ke** Duke University

**861V** Population Structure and Genomic Analysis of *Aspergillus sojae* and *Aspergillus parasiticus* **Kimberly Acevedo** University of Massachusetts at Amherst

**862V** Early divergent lineages of Ascomycota: A new hope **David Diaz Escandon** University of Alberta

**863V** Comparative genomics of *Aspergillus oryzae* genomes from different clades reveals signatures of artificial selection in primary and secondary metabolism in domesticated environments **Katherine Chacon-Vargas** University of Massachusetts

**864V** A global pangenome analysis of tan spot (*Pyrenophora tritici-repentis*) reveals an open genome and virulence factors nested in mobile elements **Reem Aboukhaddour** Agriculture and Agri-Food Canada

**865V** Analysis of pathogenicity genes in *Batrachochytrium dendrobatidis* Pangenome **Mark Yacoub** UC Riverside

**866V** The evolutionary analysis of *hac* BGC suggests the composite regulatory complex and the broad distribution of harzianic acid among metabolites of plant-associated ascomycetes **Guan Pang** Nanjing Agricultural University

**867V** Independent Expansion of the Hyr/Iff-like (Hil) Adhesin Family in *C. auris* and other *Candida* Yeast Pathogens **Bin He** University of Iowa

**868V** A Spot of Bother, transcontinental genetic diversity of *Pyrenophora teres* f. *maculata*. **Kealan Hassett** Curtin University

**869V** Ancient introgression between highly divergent fungal sister species **Vilde Bruhn Kinneberg** University of Oslo

**870V** Dynamics of *Verticillium dahliae* race 1 population under managed agricultural ecosystems **Steven Klosterman** USDA



**871V** Molecular determinants of host adaptation in a recombining population of *Pyricularia oryzae* infecting rice **Marie Leys** French National Research Institute for Agriculture, Food and Environment

**872V** An exploration into the differences in noncoding regions between *Aspergillus fumigatus* and close relatives and how these differences may influence virulence. **Alec Brown** Vanderbilt University

---

## 9. Synthetic Biology

**873T** The formation of a fuzzy negative arm protein complex is important for clock robustness in *Neurospora crassa* **Meaghan Jankowski** Rensselaer Polytechnic Institute

**874F** Program the Future with Ginkgo's Cell Development Kit **Jesse Dill** Ginkgo Bioworks

**875W** CRISPR/Cas9-based engineering of *Aspergillus oryzae* mycelium for meat-like flavor and appearance **Vayu Maini Rekda** UC Berkeley

**876T** Use of CRISPR/Cas9 editing to generate mutations in *erg27* gene of *Botrytis cinerea* associated with resistance to hydroxylanilides **Anastasios Samaras** UC Davis

**877F** Detection and engineering of rapidly evolving genomic regions in anaerobic microbes **Amy Eisenberg** UC Santa Barbara

**878W** Heterologous production of the fungal quinone polyketide bostrycoidin in *Yarrowia lipolytica* **Mihaela Bejenari** Aalborg University

**879T** Nature's Silent Pharmacy: Mining fungal genomes in the discovery of novel antibiotics. **Sarah Dodd** University of Bristol

**880F** Structural characterization of secondary metabolites from filamentous fungi. **Clay C. C. Wang** University of Southern California

**881W** CRISPR-based transcriptional activation tool for silent genes in filamentous fungi **Laszlo Mozsik** University Leiden

**882V** Modular Synthetic Biology Toolkit for Filamentous Fungi **Carsten Pohl** Technische Universität Berlin

**883V** Development of CRISPR-Cas editing tools in *Sphaerulina musiva* towards controlling its establishment and pathogenicity in the model ecosystem, *Populus* **Joanna Tannous** Oak Ridge National Laboratory

**884V** Elucidation of pyranone pigment biosynthesis in fungi **Yanfang Guo** Westerdijk Fungal Biodiversity Institute

**885V** Secondary Metabolite Production in *Aspergillus niger*: methyltransferase specificity **Susannah Selber-Hnatiw** Concordia University

---

## 11. Other

**886F** *Aspergillus nidulans* Inhibitor of Apoptosis-like protein, AnBir1, is essential for survival and regulates fungal development **Meareg Amare** University of Wisconsin–Madison

**887W** Circadian Clock Control tRNA Synthetases in *Neurospora crassa* **Griffin Best** Texas A&M University

**888T** Spatio-temporal dynamics of the *Podospira anserina* fungus using a geomatic-based approach **Cecilia Bobee** Universite de Paris

**889F** Genetic and genomic analysis of *Malassezia* reveals pseudobipolar-tetrapolar mating-type locus transitions and early steps in sexual reproduction **Marco A. Coelho** Duke University Medical Center

**890W** Determining the carbohydrate profile of the *Cryptococcus* spore coat **Eddie Dominguez** University of Wisconsin–Madison

**891T** Developing genetic tools to unlock the biotechnological potential of anaerobic gut fungi **Radwa Hanafy** University of Delaware

**892F** Dynamic expanding fungal networks: characterization of the spatio-temporal hyphal growth in the filamentous fungus *Podospora anserina* **Clara Ledoux** Universite de Paris

**893W** *Candida albicans* and IL-17A stimulate cytokine production by oral epithelial cells via different mechanisms **Jianfeng LIN** The Lundquist Institute

**894T** Nanoparticles and pathogenic fungi: a non-uptake delivery **Thomas Orasch** Leibniz Institute for Natural Product Research and Infection Biology - Hans-Knöll-Institute

**895F** Mechanisms of circadian clock control of CPC-3 activity in *Neurospora crassa* **Ebimobowei Preh** Texas A&M University

**896W** Validating pantothenate kinase as a novel target for antifungal development **Jessica Regan** University of Tennessee Health Science Center

**897T** The role of ABC transporters in resistance to SDHI fungicides in the obligate fungal pathogen *Erysiphe necator* **Anastasios Samaras** UC Davis

**898F** Import and export of mannosylerythritol lipids by *Ustilago maydis* **Björn Sandrock** Philipps-University Marburg

**899W** The story of a sentinel tree, and the story of its fungal demise **Jonathan Schilling** University of Minnesota

**900T** Flotillin-dependent membrane microdomains are required for functional phagolysosomes against fungal infections **Franziska Schmidt** Leibniz Institute for Natural Product Research and Infection Biology Hans Knöll Institute

**901F** Signaling through the STRIPAK complex: Functional analysis of putative phosphorylation/dephosphorylation targets **Maria Shariatnasery** Ruhr-University Bochum

**902W** *Aspergillus fumigatus* Septation Initiation Network (SIN) kinases contribute to fungal pathogenesis, cell wall construction, and rRNA metabolism. **Xabier Guruceaga** University of Tennessee Health Science Center

**903V** Structure-activity predictions from computational mining of protein databases to assist modular design of antimicrobial peptides **Sascha Jung** TU Berlin

**904V** Multiple tolerance mechanisms to the plant saponin  $\alpha$ -tomatine in *Botrytis cinerea* **Yaohua You** Wageningen university and Research

**905V** Flower bulb waste material is a natural niche for the sexual cycle in *Aspergillus fumigatus* **Jianhua Zhang** Wageningen University



 Genetics Society of America

# TAGC 2024

The Allied Genetics Conference



[genetics-gsa.org/tagc](https://genetics-gsa.org/tagc)

**SAVE THE DATE**  
**#TAGC24**

National Harbor  
Washington, DC Metro Area  
**March 5–10, 2024**







# Dream Big. Be Brave & Passionate. Deliver in Extraordinary Ways.

Through exploiting the unparalleled ability of fungi to produce powerful drugs optimized through billions of years of evolution, we are discovering and deploying new molecules for the treatment of intractable human diseases via novel biological mechanisms.

## READY TO JOIN THE EXPEDITION?

[www.lifeminetx.com/opportunities-at-lifemine/](http://www.lifeminetx.com/opportunities-at-lifemine/)



BOOTH #101

@MYCOWORKS



GROW THE FUTURE  
OF MATERIALS

A vertically integrated biotechnology company that both innovates and manufactures biomaterials.

Our patented technology, Fine Mycelium,<sup>™</sup> is a one-of-a-kind materials science platform to custom grow natural materials with superior strength, durability and hand-feel.

Join our journey to Grow the Future of Materials.  
[www.mycoworks.com/careers](http://www.mycoworks.com/careers)



# **USBiological** Life Sciences

***"Committed to reducing the cost of research with value, integrity,  
and a truly personal buying experience"***

***Dear GSA Members,***

***United States Biological wants to thank you for the support over the past 25 years!***

***We started as a sourcing group under your early management team and soon became a valuable supplier to the GSA.***

***Starting with 5-Fluoroorotic Acid, XGal, IPTG, Bacti-Agar, YNB, Drop-out Media, we developed into a mainstream supplier to many of the GSA Labs around the world, shipping direct to all countries.***

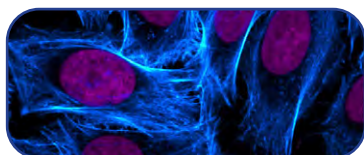
***Since those early years, we have greatly expanded and now supply over 1 Million research reagents in the categories of: Antibodies, Biochemicals, Cell Culture Media, ELISA Kits and Proteins (Native and Recombinant).***

***Our prices are specially reduced for GSA Members and we encourage suggestions where lower cost reagents are needed for common or uncommon reagents.***

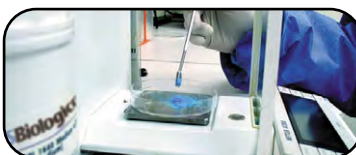
***We look forward to continuing our partnership with GSA and their members.***

***Regards,***

***Warren Shore  
President  
United States Biological***



**Antibodies**



**Biochemicals**



**Biologicals**



**Cell Culture Media**



**Molecular Biology**



**Kits & Assays**

**More information available at [www.usbio.net](http://www.usbio.net) or email us at [service@usbio.net](mailto:service@usbio.net)**





LODGING			MEETING ROOMS		
Afterglow	F2	Acacia	B4		
Rooms 1501-1512		Chapel Auditorium	D5		
Breakers East	C5	Crocker Dining Hall	D4		
Rooms 821-832		Dolphin	C5		
Breakers West	C5	Evergreen	F1		
Rooms 833-840		Fred Farr Forum	E2		
Cypress	H5	Heather	C4		
Rooms 717-724		Klin	E2		
Deer Lodge	H3	Madrone	G3		
Rooms 1247-1250		Manzanita I & II	B4		
Director's Cottage	C3	Marlin	D4		
Rooms 313-324		Merrill Hall	G4		
Embers	F2	Nauticus	H4		
Engineer's Cottage	G3	Oak Knoll I & II	C4		
Forest Lodge	F1	Oak Shelter	F1		
Rooms 1202-1211		Sanderling	C6		
Guest Inn	F2	Scripts	D4		
Rooms 901-903		Surf & Sand	G5		
Heath	F1	Toyon	B4		
Rooms 9325-9336		Trifon	H4		
Live Oak	G3	Willow I & II	B4		
Rooms 1011-1100		Whitehead	G3		
Lodge	D4				
Rooms 201-218					
Long View North	A3				
Rooms 101-110					
Long View Middle	A3				
Rooms 11-20					
Long View South	A3				
Rooms 21-30					
Manzanita	B4				
Rooms 1001-1012					
Oak Knoll	C4				
Rooms 1013-1024					
Pirates' Den	G5				
Rooms 501-510					
Sand	G6				
Rooms 605-610					
Scripts	D4				
Rooms 301-323					
Shores	H5				
Rooms 709-716					
Spindrift North	C5				
Rooms 849-856					
Spindrift South	G6				
Rooms 841-848					
Stick-up Inn	F4				
Rooms 401-414					
Surf	H6				
Rooms 601-604					
Tree Tops	H3				
Rooms 111-120					
Whitcaps North	C5				
Rooms 809-820					
Whitcaps South	D5				
Rooms 801-808					
Willow Inn	B4				
Rooms 1023-1036					
Windward	H5				
Rooms 701-708					
Woodside	G1				
Rooms 1212-1223					