# Counting Down to IMC 11

INTERNATIONAL MYCOLOGICAL CONGRESS
July 16-21, 2018 | San Juan, PR

*"Mycological Discoveries for a Better World"*

IMC 11 in San Juan is calling! Now it is just a few weeks away. Plenary Lectures, Symposia, Workshops, Special Interest Groups and all sorts of events are lined up for the mycologists of the world.

Review all the activities at http://imc11.com. The Program at a Glance posted there gives the full array of events. The Congress provides a week of activities that span the fungal world from symposia on food to fungi in the home to industrial applications and discovery to pathogens of humans and plants and other symbioses. How fungi grow and develop, how they communicate with each other and their hosts, and how fungi detect the world are all topics to be explored. Ecology and evolution are particular strengths with symposia ranging from fungi that cannot be cultured to biogeography to advances in classification of various groups to genomics and evolution and species limits. There are posters on almost any topic you might want to know about and there will be opportunities to gather in evening meetings of special interest groups to discuss and debate taxonomy, anaerobic fungi, secondary compound discovery and characterization and more.

This is also the first ever IMC where there has been a Nomenclature Session with the authority to change any provisions of the *International Code of Nomenclature for algae, fungi, and plants* that solely relate to fungi. Proposals already made and to be voted on in this Session are available in the MycoNames section of *IMA Fungus*. A guiding mail ballot is already in progress and open until 17th June 2018.



San Juan Old Town.

Most importantly, the IMC offers a chance to meet colleagues face to face from around the world. These are the folks we may have corresponded with for years but never met. It is an opportunity to make new friends and to renew those bonds that allow this community to share and discover new ideas.

The Congress is set in tropical San Juan Puerto Rico with the old city close at hand where the forts and narrow streets of this charming city lure one to want to explore. One can venture out to see the heights of El Yunque, in the National Forest, but also to appreciate the resilience of the forests and the people in Puerto Rico.

***Don't miss out on the premier event of the mycological calendar!***



Forest hiking trail in El Yunque National forest.

# World fame: a fungus with your name

*The Westerdijk Fungal Biodiversity Institute and the University Museum Utrecht have carried out a highly successful citizen science project, whereby members of the public could send in a soil sample to identify new fungi. So far 87 new fungal species have been discovered out of 292 samples.*

2017 was the Westerdijk year to commemorate that a hundred years ago Johanna Westerdijk became the first female professor in The Netherlands. On 10 February 1917, she was appointed as professor in Phytopathology at Utrecht University. Exactly 100 years later, the CBS Fungal Biodiversity Centre was renamed as Westerdijk Fungal Biodiversity Institute to honour Johanna Westerdijk as the first director of the institute (1907–1958) and founder of the present CBS collection.




**A.** Lorenzo Lombard, surrounded by Petri dishes with soil samples. **B.** The facade of the Utrecht University Museum with "*Penicillium rubens*" growing out of the building. **C.** Proud winners of "World fame: a fungus with your name" at the Utrecht University Museum. Photograph by Lize Kraan. **D.** Piles of samples...

The Westerdijk year was celebrated in many different ways, from scientific symposia to diversity forums, from fungal art exhibition to primary school projects and spring snow festivals. The activities also included an exhibition at the University Museum Utrecht and a citizen science project. As part of the exhibition on Johanna Westerdijk and fungi, there was a laboratory where visitors could pick up a kit and instructions to collect soil from their own garden. The samples were sent to the Westerdijk Institute, to grow at least 20 fungi out of the samples, re-plate them (clonally) and sequence them. Of the 600 kits that were given out within a week, about half came back. Piles of samples came in by mail every day, from all over The Netherlands. Out of the 292 samples that were analyzed, 1820 different fungi were identified. The top five most frequently found species were *Pyrenochaeta inflorescentiae* (15.1 %), *Volutella ciliata* (14.5 %), *Paecilomyces carneus* (13.0 %), *Clonostachys rosea* (11. 1 %), and *Plectosphaerella cucumerina* (10.5 %).

People could follow the process of identification *via* a movie on the website and charts with the overall and *per* sample results. In addition, we sent e-mail updates to people who sent in soil. As advertised at the museum exhibition, new fungi were named after the person who took the soil sample: "World fame: a fungus with your name".

The project was run by Lorenzo Lombard and Alejandra Giraldo Lopez. Both were overwhelmed by the number of samples and the amount of work. The result has been extremely rewarding, both with regard to the many new species and the enthusiastic response of the participants. Over the summer the first 10 new fungi were described, including two new genera. On 28 August 2017, we handed out the first certificates to five children and three adults. The project made it to the national TV *via* the daily youth news and also got immense local publicity. These first 10 new fungi are also published in the current issue of *Persoonia*. Many more will be described and published later in 2018.

One of the key factors of success was the good collaboration between the museum and the institute. The combination of the science museum, with a lot of experience with public engagement and the research institute, formed a win-win situation. The project increased public awareness of the importance of fungi for society and has added to a positive image of science. In addition, it also gave the institute a boost and provided us with lots of experience on ow to run such a project. The Institute is currently considering how to continue this citizen science project.

# University Rankings for Mycology

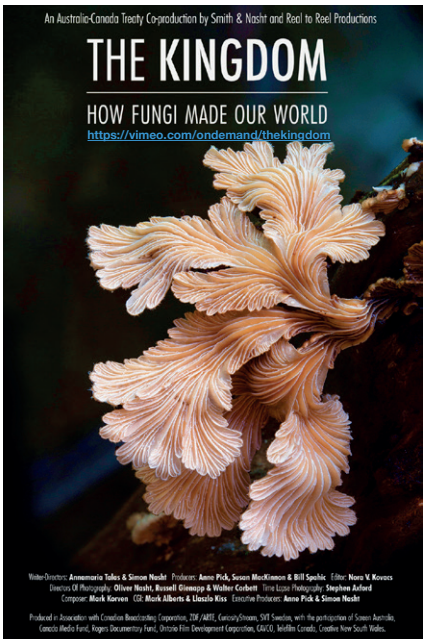
Since 2012, The Center for World University Rankings (CWUR; http://cwur.org/) has been publishing an academic ranking of world universities based on assessments of the quality of education, employment of graduates, and research output. This initiative started as a project to rate the top 100 world universities, but was soon expanded, and the target was changed in 2014 to list the top 1000 out of 18 000. This makes it the largest academic ranking of global universities.

First in the top 10 universities in the "Mycology" category for 2017 is Mae Fah Luang University in Thailand, home of the Institute of Excellence for Fungal Research (IEFR), founded and directed by Kevin D. Hyde, and which *IMA Fungus* congratulates on this achievement. The other nine are, in descending order, are the University of Pretoria, Wageningen University and

Research Centre, Duke University, Utrecht University, University of Minnesota, University of Wisconsin (Madison), Oregon State University, University of Florida, University of Arkansas (Fayetteville), and University of California (Berkeley).

As with all bibliometric indices and assessments, many factors can affect scores, not least how departments categorize their departments and subject areas. It should also be noted that this assessment is restricted to universities, and so does not cover governmental or national academy's research institutes and mycological centres that are not a part of a university, such as many botanic gardens.

# How Fungi Made Our World




*"You find fungi in Antarctica and in nuclear reactors. They live inside your lungs and your skin is covered with them. Fungi are the most underappreciated and unexplained organisms, yet they could cure you from smallpox and turn cardboard boxes into forests. They could even transform Mars into Eden. There are vastly more fungi species than plants and each and every one of them play a crucial role in life's support systems. Join us on a journey into the mysterious world of Fungi to witness their beauty, unravel their mysteries and discover how this secret kingdom is essential to life on Earth, and may in fact hold the key to our future. This is the incredible story of how fungi made life on land possible. Neither plants nor animals - fungi represent a third mode of life and belong to their own kingdom. By looking at fungi in the context of evolution and natural history, scientists are making discoveries that will change our lives. Some fungi will save us, others will threaten us and we are just beginning to understand which is which."*

So reads the billing for this newly released video. Although mycologists may query some of the claims, it is definitely attention-grabbing. This 1-hour science documentary is a perfect way to enthuse those who know little to nothing about fungi or the fungal kingdom. And even for us professionals, the stunning time-lapses of growing fungi are something you just can't get enough of . . . . Writer/Director Annamaria Talas of Smith & Nasht and her team have done an impressive job.

A trailer can be viewed on: http://www.smithandnasht.com/fungi/. The whole 1-hour documentary is available on Vimeo *via* Screen impact, through https://vimeo.com/ondemand/thekingdom, where it can be rented for a mere € 2.38 for a 48-hour streaming period.

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# Mushroom–Beefburgers Launched

The US-based fast-food chain Sonic Drive-In has introduced the Signature-Slinger cheesburger in which the beef is partly replaced by a beef-mushroom blend, with up to about half the content being of mushrooms. It is launched as a way of both making people healthier, and contributing to sustainability by reducing the environmental impact of beef- farming as much less beef is then required. The much-respected World Resources Institute in Washington DC has calculated that replacing 30 % of the beef by mushrooms is equivalent to 10 billion burgers per year in the US, and the reduction in gaseous emissions from cattle wouldbe equivalent to taking two million cars off the road!

The new burgers are billed as having "all of the flavour with none of the guilt". The flavour claim was tested by two *Nature* reporters in a blind-tasting, one of whom preferred the pure beefburger and the other the blended burger (Editorial 2018). This consequently looks like being down to personal preference, and I will look forward to the chance to try one and make an assessment myself! If the blended burgers really catch on worldwide, however, this innovation will not only help reduce waistlines and so enhance human health, but also be a boost to the cultivated mushroom industry and contribute to the improvement of the global environment!

Editorial (2018) Burger *al funghi*. *Nature* **555**: 560.




SONIC Signature Slingers Cheeseburger. (Photo: Business Wire).

# State of the World's Fungi




Last year the Royal Botanic Gardens Kew published an influential and authoritative briefing paper *State of the World's Plants,* based on inputs not only from Kew staff but also many botanists from around the world. This year it is the turn of the fungi and a parallel report on the *State of the World's Fungi* is in active preparation as this issue of *IMA Fungus* goes to press. The preparation of this report is involving numerous mycologists around the world in drafting and revising different sections to ensure it properly reflects the current situation. It will not only review our current state of knowledge and the major issues affecting fungal diversity and abundance, but feature fungus–plant interactions, conservation, uses of fungi, and the fungal tree of life.

In order to mark the release of this report, a special symposium has been arranged for 13–14 September 2018 at the Royal Botanic Gardens, Kew. This two-day symposium will bring together plant and fungal scientists, ecologists, conservationists and industry and policy experts from around the world, to discuss issues raised in the report. The programme is based around seven topical questions, with each session comprising talks from invited international experts followed by a Questions and Answer panel to discuss the emerging issues: (1) Conservation of fungi: what, why, where and how? (2) Does all plant life depend on fungi? (3) And have you forgotten the lichens? (4) Do fungi provide a greater ecosystem service or disservice? (5) Fungal networking – who benefits? (6) Panning for gold in the mould: where do we find commercial value in fungi? And (7) Exploring the dark taxa: when does a molecular signature become a species?

Abstract submissions are invited from anyone wishing to present a poster accompanied by a one-minute oral presentation. Prizes will be awarded for the best student and early career researcher posters. Abstract submissions are welcome from mycologists, plant scientists, ecologists, conservationists, policy specialists, industry professionals and others – on any related subjects. The deadline for abstract submission is: **Thursday 9 August 2018**.

In order to submit an abstract or register for the symposium visit: www.kew.org/fungi-symposium.

# Fungal Biodiversity Calendar 2019

It is time again to start thinking of submitting your most beautiful fungal photos for inclusion in the 2019 Fungal Biodiversity calendar. The Westerdijk Fungal Biodiversity Institute originally launched its (12 month) fungal calendar series in April 2013, focusing on the beauty of fungal biodiversity.

The next calendar is scheduled for April 2019 and will be handed out at the "From Fungal Barcodes to (Meta) genomes" Symposium (25–26 April 2019) at the headquarters of the Royal Dutch Academy of Arts and Sciences, Trippenhuis, Amsterdam. To this end we invite all mycologists making photographs or micrographs to submit their most beautiful fungal illustrations. Photographs of fungi cultivated in the laboratory, or observed in nature will be considered. Illustrations should be identified by the species name. Images should be in landscape layout, at least 300 dpi (3600 x 2400 px) and in full colour.

The publication of the 2018 calendar is scheduled for August 2018, and submissions for the 2019 calendar are welcome until 31 July 2018. Show us your fungi!

Submissions can be sent to either p.crous@westerdijkinstitute.nl or




r.samson@ westerdijkinstitute.nl. For larger files we recommend using www.wetransfer.com, dropbox, or any other service that will allow you to share large files.