

Editorial: ICOM12 (Manchester, UK) approaching!

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As ICOM12 is approaching, in this Editorial of the 13th issue of the International Mycorrhiza Society (IMS) Newsletter, we want to reiterate some of the ICOM12 and IMS-related news that we announced in our last Editorial (Vol. 4, Issue 3; December 2023).

ICOM12 News – Registration is Open:

The 12th International Conference on Mycorrhiza (ICOM12) will take place in Manchester, United Kingdom, 4-9 August 2024. Please visit the ICOM12 website: <https://icom12.org/>. ICOM12 is being organized by Prof. David Johnson and his team. The ICOM12 Plenary Speakers are: Bala Chaudhary (Dartmouth College, United States), Giles Oldroyd (University of Cambridge, United Kingdom), Lingli Liu (Institute of Botany, Chinese Academy of Sciences, China), and Uta Paszkowski (University of Cambridge, United Kingdom). Please find the full list of speakers by theme, including plenary talks, keynote speakers, and rising stars here: <https://icom12.org/invited-speakers/>

Abstract submission is open until 11 April 2024:

<https://icom12.org/abstract-submission/>.

On this occasion, ICOM has many topics under which you can submit your Abstract: Mycorrhizas as Drivers of Interaction Networks, Managing Mycorrhizas for Sustainability & Food Security, Regulation and Transport in Mycorrhizal Networks, Functional Consequences of Mycorrhizal Diversity, Ecosystem Functioning, Omics

and Ecology, Environmental Change, Physiology, Evolution & Taxonomy, and Management & Applications.

Please remember to review our [Diversity and Inclusivity Statement](#) (page 12).

Call for award nominations to be given during ICOM12

The International Mycorrhiza Society offers four prestigious awards at the next meeting in Manchester, United Kingdom. These are the: 1) **Student Award for Excellence in Mycorrhiza Research Publication**, 2) the **Early Career Award for Excellence in Mycorrhiza Research Publication**, 3) the **Mid-Career Mycorrhiza Research Excellence Award** and 4) the **Eminent Mycorrhiza Researcher Award**. If you know a person which you feel deserves an award or if you like to nominate yourself because you feel you made a ground breaking discover, please check out the terms of reference here (bottom of the page):

<https://mycorrhizas.org/icom/icom-12/>

The deadline for nomination is 30 June 2024.

IMS News

Two elected board positions to be filled: After ICOM12, Justine Karst will become the new President of the International Mycorrhiza Society and Marcel van der Heijden will move to Past President. After four years of service, Ian

Dickie will leave the Board of Directors – we are very thankful to Ian for his great contributions to our Society. As such, at ICOM12 two positions need to be filled:

- New Vice President of the IMS (it can be someone from the current Board or from outside).

- New member of the Board of Directors.

If you are interested in filling/apply to any of these positions, please send your picture and a short bio-sketch to Justine Karst, IMS Vice President (karst@ualberta.ca), until 30 June of 2024. We will give further information about the voting procedure. The New Vice President and the new Board Members will be presented on the last day of ICOM12 in Manchester, United Kingdom.

IMS Seminars: Starting on April 2024, we will organize online regular seminars from an eminent researcher and from a rising star in mycorrhizal research. More information soon! The IMS seminars are also announced at our website:

<https://mycorrhizas.org/>

Call for ICOM14 proposals in 2028: If you are interested in organizing ICOM14 in 2028, please write to:

- Katerina Zachariasova,

zachariasova@associationhouse.cz

- IMS President Marcel van der Heijden,

marcel.vanderheijden@agroscope.admin.ch, &

- IMS Vice-President Justine Karst,

karst@ualberta.ca

So your proposal can be presented during ICOM12 in Manchester, United Kingdom, please submit your bid by June 30 of 2024. For the terms of reference, see p. 24 and/or the following link:

<https://mycorrhizas.org/wp-content/uploads/2024/02/ICOM14-bid.pdf>

IMS Newsletter news

IMS Newsletter indexed!

Our Newsletter has been indexed in the [database Latindex](#), and we are very happy about it! In practical terms this means that the short articles published in our Newsletter can be now deemed as “Indexed publications”.

Articles/interviews welcomed: If you want to highlight your recent mycorrhizal research/publications formally or informally, to give your expert opinion on any mycorrhizal topic of interest, or to present the 'behind-the-scenes' stories often not shown in publications, please reach out to us. There are two ways you can do this. First, you can write a short article (800-1200 words), which our Editorial Team will review (check all the articles over the last four years here: <https://southmycorrhizas.org/ims-newsletter/>). Second, we can program a YouTube interview through the South American Mycorrhizal Research Network channel (see our interviews here: <https://southmycorrhizas.org/reading/>).

Please get in touch with IMS Newsletter Editor-in-Chief César Marín (cmarind@santotomas.cl) if interested!

Managing Editor position: We are looking for a Managing Editor of the IMS Newsletter who helps the Editor-in-Chief and Topic Editors produce the Newsletter every four months. Your tasks would include helping with the format design and graphic layout of the Newsletter, updating a list of events and job opportunities, checking reference formats of the articles, and sharing the Newsletter through social media. PhD students, postdocs, early career, and established mycorrhizal researchers are welcome to apply. Previous similar expertise helps your application, as well as a demonstration of editing, graphic, web design, and social media skills. Please contact IMS Newsletter Editor-in-Chief César Marín (cmarind@santotomas.cl) before 30 April 2024 if you are interested!

In this issue...

The Top 10 mycorrhizal research papers of the last four months (papers published between September and December 2023) include a *Nature Microbiology* article by Jana Sperschneider and co-authors (Rank 1). Using PacBio high-fidelity and Hi-C sequencing, the authors find that two co-existing genomes of arbuscular

mycorrhizal fungi heterokaryons, which are phylogenetically related but different in structure, content, and importantly, epigenetics. Interestingly, they found signatures of genetic exchanges indicative of past sexual reproduction in both types of genomes. The second-best paper – also published in *Nature Microbiology* – was by Stefanie Lutz and co-authors whom report an outstanding trial across 54 northern Switzerland corn fields. They found that the main predictors of a positive mycorrhizal growth response on corn were the initial soil fungal microbiome (particularly plant pathogens) and soil nutrients. Such positive responses were found in about a quarter of the fields, with the remaining 75% being not significantly different from the non-inoculated control, or even negative in some cases. This goes to show that soil microbe and nutrient context matter a lot when predicting plants' response to mycorrhizal inoculation! Please find a short article in our Newsletter describing the results and future research perspectives of this trial. The third rank corresponds to a *New Phytologist* article by Ziliang Zhang and co-authors, who found that ectomycorrhizal hyphae increased soil phosphorous bio-availability under nitrogen addition by stimulating mineralization of organic phosphorous and desorption/solubilization of secondary mineral phosphorous. Ectomycorrhizal hyphae increased phosphatase activity in the soil and the abundance of microbial genes involved with these processes (phosphorous mineralization and solubilization).

This 13th IMS Newsletter issue includes three short articles and three YouTube interviews. In addition to the above-mentioned article related to a large-scale inoculation trial in northern Switzerland, please find another short article by Cat Adams, who reports about her and co-authors recent *New Phytologist* article, exploring how large and old, genets of *Amanita phalloides* can be in their native European ecosystems, and as invasive

fungi in North America. At some places (California), a genet of this fungi can spread up to 10 m within the forest and live up to 10 years! Another short article by Chihiro Miura and co-authors *Plant Physiology* explores the molecular mechanisms of mycoheterotrophic germination in orchids, showing that orchids simultaneously coordinate seed germination and mycorrhizal symbiosis establishment, by co-opting signaling pathways of the arbuscular mycorrhizal symbiosis.

YouTube interviews ranged in varied topics, from core, functional (phosphorous cycling) microbiomes in the hyphosphere of arbuscular mycorrhizal fungi (Gu Feng interviewed by César Marín and Nancy Collins Johnson) to the (no) relationship between soil nutrients and the distribution of ectomycorrhizal tropical trees (José A. Medina-Vega interviewed by Justine Karst). Camille Delavaux became the first researcher to be interviewed twice in our YouTube channel, as C. Guillermo Bueno interviewed her about how mycorrhizal feedbacks influence global forest structure and diversity at a global scale. This work has just been published in *Communications Biology*. Please also find an appealing Webinar entitled “Threats to mycorrhizae” in the Global Soil Biodiversity Initiative seminar series (“GSBI Speaks”), moderated by Katie J. Field and with the interventions of César Marín, Nhu Nguyen, and Matthias Rillig (https://youtu.be/0uUAFy7T_ps?si=zAlZjDI2uoZ09qS7). As always, please find our Tools and Events sections at the end of our Newsletter.

