

IMS Newsletter

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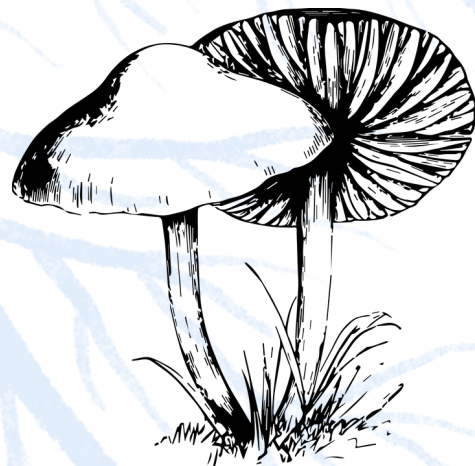


The International Mycorrhiza Society quarterly e-newsletter
Editor-in-Chief: César Marín

Photo: *Gigaspora albida*, by Clara Peña-Venegas

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The International Mycorrhiza Society (IMS) unites scientists, researchers, educators, and businesses to share advancements in mycorrhizal research worldwide.

Further information at: <https://mycorrhizas.org/>

Check all IMS Newsletter issues at: <https://mycorrhizas.org/news/>

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**INTERNATIONAL
MYCORRHIZA
SOCIETY**



Message from the President's Desk

Justine Karst¹ *

¹ University of Alberta, Canada.

*E-mail: karst@ualberta.ca

Greetings members and those curious about the IMS. We had our annual members meeting on September 17, 2025. In the past, we have held this meeting at ICOM but to align with our Bylaw and to provide more opportunities for members to engage with the IMS, we decided to try this out. I was delighted to announce many new initiatives, and I would like to thank the Board for their enthusiasm, engagement, and hard work in getting this all done!

To watch a recording of the meeting:
[Zoom link](#) (Passcode: TV15+ebv)

The IMS has a new logo and website (<https://mycorrhizas.org/>). These were big changes for us, and I hope you will notice the improvements. On the website, we now showcase recent ICOM award winners, provide up-to-date information on ICOM2026, archive (searchable) program abstracts of past ICOMs, and post newsletters. Here you can renew your membership and subscribe to the IMS newsletter. Please note that current members are automatically subscribed to the newsletter but once your membership expires, you must sign up.

Thank you to those who shared their pictures for posting on the website—they are beautiful!

At the members' meeting, we went over the financial report from 2024, and announced the plenary speakers for ICOM2026. I was especially pleased to announce that, through the generous sponsorship of the New Phytologist Foundation, we have offered six awards to partially offset travel costs for early-career researchers to attend ICOM2026 (deadline has now closed).

Bids are now open to host ICOM15. More information is available at:
[IMS website bid links](#)

Very soon, we will post details on nominating student, early, mid-career, and eminent researchers for IMS awards. Please start thinking about your nominations. In addition to nominations, we will also be electing two new members to the IMS Board at ICOM2026: Vice President and Communications Director. More details to follow and I hope you may consider running for the Board.

Some sad news to share. Krzysztof Andrzej Pirozynski (Kris) passed away September 5, 2025. In 1975, Kris Pirozynski along with David Malloch hypothesized that mycorrhizas mediated the colonization of land by plants (Pirozynski & Malloch, 1975). This was a highly influential idea on mycorrhizal research. Perhaps this is good time for someone to review the support for and against this hypothesis? What is the strength of evidence? What lines of evidence are used? Where are the uncertainties? What's next in the research?

The obituary is here: [link](#).

Please enjoy the newsletter that César Marín puts so much work into to keep us all up-to-date on current activities and ideas in mycorrhizal research. As always, feel free to contact me with any concerns or ideas you may have related to the IMS.

Thank you and see you in the new year!

References

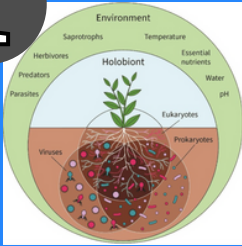
- Pirozynski, K. A., & Malloch, D. W. (1975). The origin of land plants: a matter of mycotrophism. *Biosystems*, 6(3), 153-164. doi: [10.1016/0303-2647\(75\)90023-4](https://doi.org/10.1016/0303-2647(75)90023-4)



TOP 10 Mycorrhizal Research Papers*

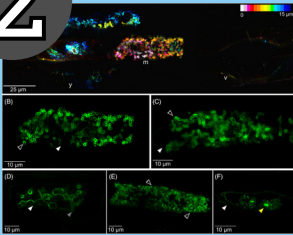
Images from study figures

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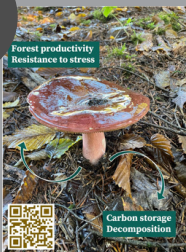
Johnson, N. C., & Marín, C. (2025). **Functional team selection as a framework for local adaptation in plants and their belowground microbiomes.** *The ISME Journal*, 19(1), wraf137. doi: [10.1093/ismejo/wraf137](https://doi.org/10.1093/ismejo/wraf137)

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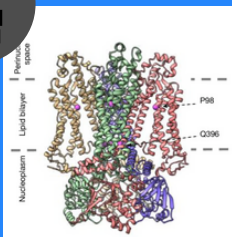
McGaley, J., Schneider, B., & Paszkowski, U. (2025). **The AMSlide for noninvasive time-lapse imaging of arbuscular mycorrhizal symbiosis.** *Journal of Microscopy*, 297(3), 289-303. doi: [10.1111/jmi.13313](https://doi.org/10.1111/jmi.13313)

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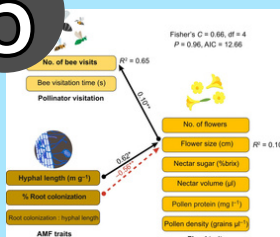
Anthony, M. A. (2025). **Does ectomycorrhizal fungal biodiversity affect tree growth?.** *Fungal Ecology*, 74, 101413. doi: [10.1016/j.funeco.2025.101413](https://doi.org/10.1016/j.funeco.2025.101413)

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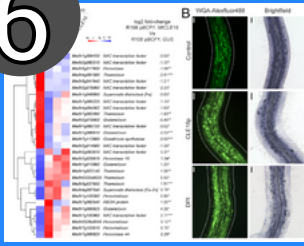
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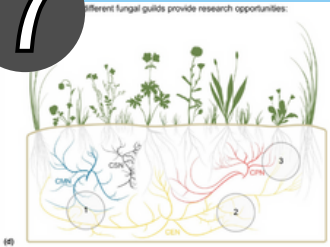
Guzman, A., Montes, M., Lamie, N., Bañuelos, M., DeLaCerde, G., Soria-Gilman, I., ... & Kremen, C. (2025). **Arbuscular mycorrhizal interactions and nutrient supply mediate floral trait variation and pollinator visitation.** *New Phytologist*, 245(1), 406-419. doi: [10.1111/nph.20219](https://doi.org/10.1111/nph.20219)

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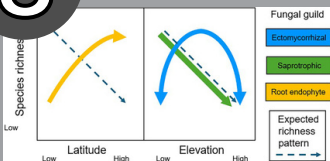
Bashyal, S., Everett, H., Matsuura, S., & Müller, L. M. (2025). **A plant CLE peptide and its fungal mimic promote arbuscular mycorrhizal symbiosis via CRN-mediated ROS suppression.** *Proceedings of the National Academy of Sciences*, 122(16), e2422215122. doi: [10.1073/pnas.2422215122](https://doi.org/10.1073/pnas.2422215122)

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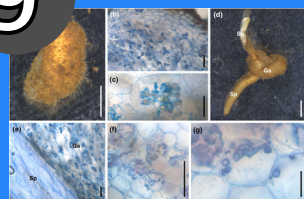
Rillig, M. C., Lehmann, A., Mounts, I. R., & Bock, B. M. (2025). **Concurrent common fungal networks formed by different guilds of fungi.** *New Phytologist*, 246(1), 33-38. doi: [10.1111/nph.20418](https://doi.org/10.1111/nph.20418)

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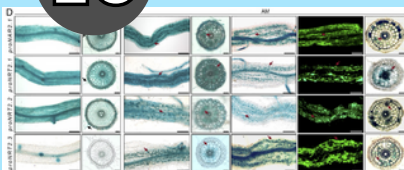
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Suetsugu, K., Okada, H., Hirota, S. K., Yamasaki, M., Imaichi, R., & Ebihara, A. (2025). **Drastic mycorrhizal community shifts in *Sceptridium* ferns during the generation transition from fully mycoheterotrophic gametophytes to photosynthetic sporophytes.** *New Phytologist*, 245(4), 1705-1717. doi: [10.1111/nph.20330](https://doi.org/10.1111/nph.20330)

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Wang, S., Ye, H., Yang, C., Zhang, Y., Pu, J., Ren, Y., ... & Chen, A. (2025). **OsNLP3 and OsPHR2 orchestrate direct and mycorrhizal pathways for nitrate uptake by regulating NAR2. 1-NRT2s complexes in rice.** *Proceedings of the National Academy of Sciences*, 122(8), e2416345122. doi: [10.1073/pnas.2416345122](https://doi.org/10.1073/pnas.2416345122)



Climate-linked biogeography of mycorrhizal fungal spore traits - Smriti Pehim Limbu

César Marín (Full Professor, Universidad Santo Tomás, Chile) interviews **Smriti Pehim Limbu PhD**, Postdoctoral fellow at the Chaudhary Lab (Dartmouth College) about how climate affects five spore traits of arbuscular mycorrhizal fungi, at a global scale.



Interview: <https://southmycorrhizas.org/reading/october-2025/>

Study: Pehim Limbu, S., Stürmer, S. L., Zahn, G., Aguilar-Trigueros, C. A., Rogers, N., & Chaudhary, V. B. (2025). **Climate-linked biogeography of mycorrhizal fungal spore traits.** *Proceedings of the National Academy of Sciences*, 122(29), e2505059122. doi: [10.1073/pnas.2505059122](https://doi.org/10.1073/pnas.2505059122)

Common fungal networks formed by a dark septate endophyte - Beatrice M. Bock

César Marín (Universidad Santo Tomás, Chile) interviews PhD candidate **Beatrice M. Bock** (Northern Arizona University) about their study showing first lab-based evidence that common non-mycorrhizal networks can occur.



Interview: <https://southmycorrhizas.org/reading/september-2025/>

Study: Bock, B. M., Hoeksema, J. D., Johnson, N. C., & Gehring, C. A. (2025). **Evidence for common fungal networks among plants formed by a dark septate endophyte in *Sorghum bicolor*.** *Communications Biology*, 8(1), 996. doi: [10.1038/s42003-025-08432-x](https://doi.org/10.1038/s42003-025-08432-x)



Fostering creativity in research labs - Matthias C. Rillig

César Marín (Universidad Santo Tomás, Chile) interviews Prof. **Matthias C. Rillig** (Freie Universität Berlin, Germany) about his ten tips for enabling and enhancing creativity in the lab.



Interview: <https://southmycorrhizas.org/reading/august-2025/>

Study: Rillig, M. C. (2025). **Ten simple rules for fostering creativity in research labs.** *PLoS Computational Biology*, 21(2), e1012788. doi: [10.1371/journal.pcbi.1012788](https://doi.org/10.1371/journal.pcbi.1012788)

WHAT
WE ARE
READING



Interested in being interviewed or know someone who would be? We would love to hear from you!

Contact Prof. César Marín for more information (cmarind@santotomas.cl)



Thanks for watching!

AMF LSU database and pipeline: updated taxonomy and genus level clade extraction

Camille Delavaux, Robert Ramos, Sidney Stürmer, and James D. Bever have expanded and updated the AMF LSU database and pipeline ([Delavaux et al., 2021](#) - *New Phytol*; [Delavaux et al., 2022](#) - *Mycorrhiza*; [Delavaux et al., 2024](#) - *Mycorrhiza*). This updated database and backbone tree includes more than 400 tips with updated taxonomy. The pipeline also now contains code to extract genus-level clades, resulting in one AMF ASV (or OTU) table with taxonomic information.

Updated database and pipeline: <https://github.com/c383d893/AMF-LSU-Database-and-Pipeline2>

AMF Analysis Tutorial for QIIME 2 Users

A new tutorial has been developed to guide researchers and students through the process of analyzing arbuscular mycorrhizal fungi (AMF) diversity using the QIIME 2 platform. This instructional resource provides a clear, step-by-step walkthrough of amplicon metabarcoding workflows, focusing on the analysis of 18S rRNA gene sequences from Glomeromycota using QIIME 2. Taxonomic assignment is performed with the *MaarjAM* database, a curated reference for AMF. The workflow is demonstrated using a curated dataset of rice rhizosphere samples from [Parvin et al. \(2021\)](#), optimized for quick processing on a personal computer.

The tutorial was developed as part of a Spring 2025 seminar course (BIO 698-063 and BIO 498-008) at Northern Arizona University by **Manju M. Gupta, Nancy C. Johnson, and Catherine Gehring**. A guest lecture by **Greg Caporaso**, the creator of QIIME, is included as part of the resource. Instructional videos and supporting links are provided throughout to support both independent study and structured classroom use.

Global initiatives such as GlobalAMFungi, SPUN, and AusAMF have highlighted the importance of reproducible, accessible pipelines in mycorrhizal bioinformatics. This tutorial serves this purpose by supporting community-level training and helping build technical capacity in this expanding field. It is especially useful for students and researchers beginning to apply high-throughput sequencing to AMF ecology.

Key features of the tutorial include:

- Open-access and reproducible workflow hosted on Read the Docs.
- Lightweight dataset (~3.1 MB), suitable for local analysis.
- Amplicon metabarcoding using 18S rRNA sequencing with AMV4.5NF and AMDGR primers.
- Taxonomic assignment based on the *MaarjAM* database.
- Coverage of quality filtering, diversity analysis, and community structure metrics using QIIME 2.

This resource is recommended for early-career scientists, educators, mycorrhizal ecologists, and students seeking hands-on training in AMF-focused bioinformatics and molecular ecology.

Link: <https://amf-tutorial.readthedocs.io/en/latest>

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EVENTS

ICOM13: <https://icom2026.org/>

The 13th International Conference on Mycorrhiza (ICOM13) will take place in the Cairns Convention Centre, Cairns, Queensland, Australia, July 12-17, 2026.

The theme for ICOM2026 is: “Mycorrhizas in a changing world: challenges, opportunities and solutions.”



ICOM
2026
Cairns
Australia

EVENTS

IV International Symposium of the Mycorrhizal Symbiosis in South America

Date: 24-28 August, 2026.

Place: Quito, Ecuador.

Soon more information at: <https://southmycorrhizas.org/>

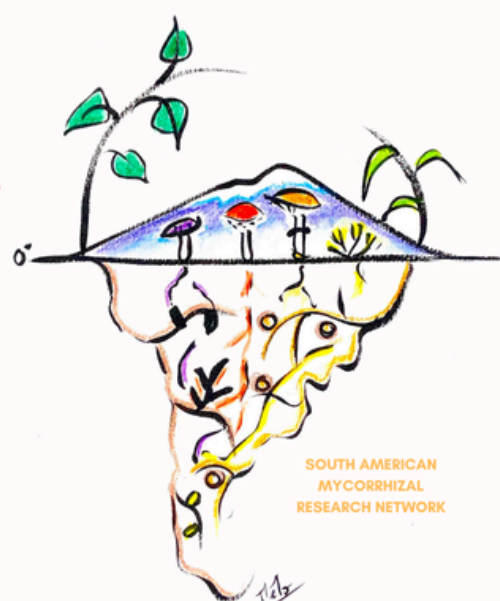
Artwork (logo): Mélanie Roy.

IV INTERNATIONAL SYMPOSIUM OF THE MYCORRHIZAL SYMBIOSIS IN SOUTH AMERICA

facets and assets of mycorrhizal symbiosis for future ecologies

QUITO, ECUADOR

AUGUST 24-28, 2026



THEMATIC SESSIONS

1. Taxonomy: Back to roots - renewed and grounded interest in mycorrhizae.
2. Biogeography: From pieces to puzzle fungal diversity and distribution in South America.
3. Mycorrhizal physiology and molecular biology: Illuminating the mechanisms.
4. Mycorrhizal Outreach: Expanding the Mycelium, Bridging Scientists and Society.
5. Mycorrhizas for sustainable agriculture and forestry: Building on mycorrhizal assets.
6. Mycorrhizal ecology across scales, from individuals to ecosystems.
7. Global change and mycorrhizas: invasions, pollution, warming, and beyond, looking up!
8. Involving mycorrhizae, for real: from the field to scientific diplomacy and policy.
9. Mycorrhizal Biotechnology: bioformulation, restoration, bioremediation, and other applications.
10. Mycorrhizal Frontiers and others.

SYMPOSIUM ORGANIZATION

Chair

Ing. Jessica Duchicela PhD.
Universidad de las Fuerzas Armadas - ESPE, Ecuador

Organizing Committee

Dr. Cesar Marin, Universidad Santo Tomas, Chile
Dr. Melany Roy, IRL IFAECI - Instituto Franco-Argentino sobre el Estudio del Clima y sus Impactos, Argentina
Dr. Adriana Corrales, Society for the Protection of the Underground Network (SPUN)
Dr. Clara Pena, Instituto Sinchi, Colombia

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Dr. Guillermo Bueno, Instituto Pirenaico de Ecología - CSIC, España.
Dr. Patricia Silva-Flores, CIEAM - Universidad Católica del Maule, Chile.
Dr. María Isabel Mujica, Universidad Austral, Chile.
Dr. Francisco Flores, Universidad de las Fuerzas Armadas ESPE, Ecuador.

EVENTS

The 4th Global Soil Biodiversity Conference

Place: Victoria, British Columbia, Canada

Date: 12-15 April, 2026.

Website: <https://globalsoilbiodiversity2026.org/>

European Geosciences Union (EGU) General Assembly 2026

Place: Vienna, Austria & Online.

Date: 3-8 May, 2026.

Website: <https://www.egu26.eu/>

2026 Mycological Society of America (MSA) Annual Meeting

Place: Portland, Oregon, United States.

Date: 11-15 July, 2026.

Website: <https://msafungi.org/>

Ecological Society of America (ESA) 2026 Annual Meeting

Place: Salt Lake City, Utah, United States.

Date: 26-31 July, 2026.

Website: <https://esa.org/saltlake2026/>

20th International Symposium on Microbial Ecology (ISME20)

Place: Auckland, New Zealand

Date: 16-21 August, 2026.

Website: <https://isme-microbes.org/events/isme20-in-auckland/>

XII Latin American Congress of Mycology

Place: Quito, Ecuador.

Date: 1-4 September, 2026.

For more information, follow this Instagram account: [@alatmicologia](#)

International Mycorrhiza Society

Executive

- **President:** Justine Karst, University of Alberta, Canada (karst@ualberta.ca)
- **Vice-President:** Jan Jansa, Institute of Microbiology, Czech Academy of Sciences, Czechia (jansa@biomed.cas.cz)
- **Past President:** Marcel G.A. van der Heijden, Agroscope & University of Zurich, Switzerland (marcel.vanderheijden@agroscope.admin.ch).

Board

- **César Marín** – IMS Newsletter Editor-in-Chief, Santo Tomás University, Chile (cmarind@santotomas.cl)
- **Pedro M. Antunes**, Algoma University, Canada (pedro.antunes@algonau.ca)
- **Jonathan Plett** – ICOM13 Lead Organizer, Western Sydney University, Australia (J.Plett@westernsydney.edu.au)
- **Franck Stefani** – Treasurer, Agriculture and Agri-Food Canada, Canada (franck.stefani@agr.gc.ca)
- **Patricia Silva-Flores** – Director of Communications, Catholic University of Maule, Chile (psilva@ucm.cl)
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