



GERLACH Alice

The scope of my research interests covers different areas of Fungal Biology: fungal diversity, evolution and more recently, metabarcoding in the museomics approach. The discovery of a complex microbiome (including bacteria and yeasts) in Lichens made me even more interested in the microbiology domain. I am also interested in lichen chemistry due to my recent discoveries of several unrecognized patterns of steroids and terpenes in the genus *Usnea*. Because botanical collections are a key component of a taxonomist's work, I have experience in curating and managing herbarium specimens. Moreover, I genuinely believe that it is essential to combine traditional taxonomy with molecular phylogenetics and advance microscopy techniques to really understand the diversity and evolution of this important biological group, the Fungi. I am passionate about cryptogams collections, research and teaching on fungal systematics and outreach.

I am currently associate researcher at the Botanical Research Institute of Texas (Texas) where I collaborate in the Project Lichen diversity from the the Southern Philippines.

Personal

Name

GERLACH Alice

Address

74130 FRANCE

Phone number

0610251967

Email

alice_gerlach@yahoo.com.br

Languages

Portugais	Native
Français	Fluent
Anglais	Advanced
Espagnol	Advanced
Allemand	Beginner

Interests

- Grupo Brasileiro de Líquenólogos (GBL). Since 2011
International Association for Lichenology (IAL). Since 2016
British Lichen Society (BLS). Since 2016
American Bryological and Lichenological Society (ABLS). Since 2018

Education and Qualifications

PhD: Fungal Biology (Botany)

Apr 2013 - Nov 2017

Federal University of Rio Grande do Sul and Conservatoire et Jardin botaniques de la Ville de Genève, Brazil and Switzerland

PhD Title: Systematics of the lichen genus *Usnea* Adans (Fungi, Ascomycota, Parmeliaceae) in southern Brazil

Advisors: Rosa Mara Borges da Silveira, Ph.D. and Philippe Clerc, Ph.D.

Funded by: Conselho Nacional de Desenvolvimento Científico e Tecnológico (Cnpq), Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) and a grant from the Swiss Government Excellence Scholarship. My PhD thesis with 6 papers (of which 5 are published) was defended Dec 1st 2004, and rated with high distinction.

Master: Fungal Biology (Botany)

Apr 2010 - Apr 2012

Federal University of Paraná, Brazil

Title: Species of Parmelioid lichen-forming fungi (Parmeliaceae, Ascomycota) from rocky shores in the costal plains of Paraná and Santa Catarina (Brazil). Advisor: Sionara Eliasaro, Ph.D. Funded by: CAPES.

Bachelor degree and license in Biological Sciences

Mar 2005 - Dec 2009

Federal University of Santa Catarina, Brazil

Term paper: Diversity of wood-decaying Basidiomycetes (Fungi) in the Reserva Rio das Furnas, Alfredo Wagner, Santa Catarina, Brazil. Advisor: Clarice Loguerio Leite, Ph.D.

Awards

- Post doc research: BRIT (March to Mai 2023) - National Science Foundation/USA
- Swiss Government Excellence Scholarship: academic year 2016/2017.
- IAPT Research Improvement Grants for Plant Systematics 2016.
- Bourse Augustin Lombard – Société de Physique et D'Histoire Naturelle de Genève. Printemps 2017.
- Support from Josef Hafellner (Acharius medal) for work in herbarium GZU (Institute of plant sciences of Karl Franzens University Graz, Austria) – October 2017.
- Best paper published by the Post-graduate Program in Botany (year: 2019), Universidade Federal do Rio Grande do Sul (Brazil)
- IAL9 free registration Award (year 2021), International Association for Lichenology.
- Transnational Access (TA Call 3) award (year 2021). SYNTHESYS consortium collections.

Skills

Computer: Word, Excel, Photoshop, Adobe in Design, Adobe Illustrator, software R studio, Bash language

Molecular Biology: DNA extraction, Polymerase Chain Reaction (PCR), gel electrophoresis, DNA purification Software Proficiency: sequence editors (Geneious, MEGA, Bioedit) and alignment (MAFFT), Inferring phylogenies and molecular clocks (jModeltest, MrBayes, BEAUTI/BEAST, Tracer, RAxML)

Teaching experience

- 2018:** Workshop Quebrando o tabu: como reconhecer espécies de *Usnea* no Brasil?
Brazil, IX Encontro do Grupo Brasileiro de Lichenólogos (IX EGBL, UFMS) (8 hours)
- 2013:** Course Biodiversidad de Hongos Superiores de las Áreas Protegidas de Itaipu Binacional (**invited course**).
Paraguay, ITAIPU Binacional (30 hours)
- 2014:** Botany Systematics (teaching assistant) Federal University of Rio Grande do Sul, Brazil. Mars – July
- 2013:** Mycology (teaching assistant). Federal University of Rio Grande do Sul, Brazil. August – December
- 2010:** Botany I (teaching assistant). Federal University of Parana, Brazil. Mars – July
- 2010:** Botany II (teaching assistant). Federal University of Parana, Brazil. August – December
- 2010:** School Teacher. Elementary School. Marco Inicial School, COC, Brazil
- 2009:** Field Mycology: Macromycetes (teaching assistant). Federal University of Santa Catarina, Brazil. July
- 2009:** Plant Anatomy and Embryology (teaching assistant). Federal University of Santa Catarina, Brazil. Mars – July
- 2007:** Invertebrate Zoology III (teaching assistant). Federal University of Santa Catarina, Brazil. August – December
- 2008:** Invertebrate Zoology III (teaching assistant). Federal University of Santa Catarina, Brazil. Mars – July

Publications (peer-reviewed journals)

1. **Gerlach, A.**; Clerc, P.; Lücking, R.; Moncada, B.; Cavallero Nobleza, J.; Ohmura, Y. & M. Dal Forno (2023). "The genus *Usnea* (Parmeliaceae, Ascomycota) in the southern Philippines: a first phylogenetic approach". *The Lichenologist* (in press, accepted in Juin 2023).
2. Shi-Liang Liu; [...] **A. Gerlach**; Kevin D. Hyde & Li-Wei Zhou (2023). Fungal diversity notes 1611–1713: taxonomic and phylogenetic contributions on family, genera and species of fungal taxa. *Fungal Diversity Notes* (in press).
3. Paguirigan, J.A.G., T.E.E. dela Cruz, K.A.A. Santiago, **A. Gerlach** & A. Aptroot (2020). A checklist of lichens known from the Philippines. *Current Research in Environmental & Applied Mycology (Journal of Fungal Biology)* 10(1): 319–376.
4. **Gerlach, A.**, R.M. Borges da Silveira, C. Rojas & P. Clerc (2020). Naming and describing the diversity in the *Usnea cornuta* aggregate (Parmeliaceae) focusing on Brazilian specimens. *Plant and Fungal Systematics*. 2020;65(2):272–302. doi:10.35535/pfsyst-2020-0024.
5. Lücking, R., M.R.A. Nadel, E. Araujo & **A. Gerlach** (2020). Two decades of DNA barcoding in the genus *Usnea* (Parmeliaceae): how useful and reliable is the ITS? *Plant and Fungal Systematics*. 2020;65(2):303–357. doi:10.35535/pfsyst-2020-0025.
6. **Gerlach, A.**, R.M. Borges da Silveira & P. Clerc (2019). *Usnea oreophila* (Parmeliaceae), a new saxicolous species from the mountains of Brazil. *The Bryologist* 122(1):122–129.
7. **Gerlach, A.**, Z. Toprak, Y. Naciri, E.A. Caviró, R.M. Borges da Silveira & P. Clerc 2018(2019). New insights into the *Usnea cornuta* aggregate (Parmeliaceae, lichenized Ascomycota): molecular analysis reveals a high genetic diversity correlated with chemistry. *Molecular, Phylogenetics and Evolution* 131: 125–137.
8. Gumboski, E., **A. Gerlach**, A.A. Spielmann, L. Canêz, M.P. Marcelli (2019). *Ephebe brasiliensis* (Vain.) Henssen (Ascomycota, Lichenaceae): an overlooked freshwater lichenized fungus. *Rodriguésia* 70: e02842017.
9. Zamora, J.C., M. Svensson, R. Kirschner, I. Olariaga, S. Ryman, L.A. Parra, J. Gem, A. Rosling, [+**A. Gerlach**, 300 coauthors] & S. Ekman (2018). Considerations and consequences of allowing DNA sequence data as types of fungal taxa. An open letter to the mycological community. *IMA FUNGUS* 9(1):167–175.
10. Loguerico-Leite, C., L. Trierveiler-Pereira, **A. Gerlach**, M. Campos-Santana, C.C. Carmarán & A.I. Romero (2018). Additional information on *Mycocitrus aurantium* (Bionectriaceae, Hypocreales), an unusual bamboo-inhabiting fungus found in South America. *Biotemas (Florianópolis)* 3(1): 1–9.
11. **Gerlach, A.**, A. Gadea, R.M. Borges da Silveira, P. Clerc & F. Lohézic-Le Dévéhat (2018). The Use of Anisaldehyde Sulfuric Acid as an Alternative Spray Reagent in TLC Analysis Reveals Three Classes of Compounds in the Genus *Usnea* Adans. (Parmeliaceae, lichenized Ascomycota). *Preprints* 2018020151 (doi: 10.20944/preprints201802.0151.v1). (**not peer-reviewed**)
12. Sparrius, L., A. Aptroot, H.J.M. Sipman, I. Pérez-Vargas, P. Matos, **A. Gerlach** & M. Vervoort (2017). Estimating the population size of the endemic lichens *Anzia centrifuga* (Parmeliaceae) and *Ramalina*

- species (Ramalinaceae) on Porto Santo (Madeira archipelago). *The Bryologist* 120(3): 293–301.
13. **Gerlach, A.**, P. Clerc & R.M. Borges da Silveira (2017). Taxonomy of the corticolous, shrubby, esorediate, neotropical species of *Usnea* Adans. (*Parmeliaceae*) with an emphasis on southern Brazil. *The Lichenologist* 49(3): 199–238.
 14. **Gerlach, A.** & S. Eliasaro (2014). Espécies de Parmeliaceae (Ascomycota) ciliadas e sem máculas reticulares em costões rochosos dos Estados do Paraná e de Santa Catarina, Brasil. *Hoehnea (São Paulo)* 41 (3):321–336.
 15. **Gerlach, A.** & S. Eliasaro (2014). *Parmotrema marcellii*, a new species of Parmeliaceae (lichenized Ascomycota) from Brazil. *Brazilian Journal of Botany* 37:152–156.
 16. **Gerlach, A.**, E.L. Gumboski & S. Eliasaro (2013). First record of the genus *Everniastrum* Sipman (Parmeliaceae, lichenized Ascomycota) for the state of Paraná, Brazil. *Acta Botanica Brasílica* 27:851–853.
 17. **Gerlach, A.**, M. Campos-Santana, M. Gutjahr & C. Loguerico-Leite (2013). Wood-decaying Agaricomycetes (Basidiomycota, Fungi): new records for the state of Santa Catarina, Brazil. *Acta Botanica Brasílica* 27: 452–456.
 18. **Gerlach, A.** & S. Eliasaro (2012). Liquens parmeloides eciliados (Parmeliaceae, Ascomycota) em costões rochosos dos estados do Paraná e Santa Catarina, Brasil. *Acta Botanica Brasílica* 26: 570–584.
 19. Eliasaro, S., **A. Gerlach** & E.L. Gumboski (2012). Novos registros de fungos liquenizados para o estado do Paraná, Brasil. *Biociências (Porto Alegre)* 10:507–512.
 20. **Gerlach, A.** & C. Loguerico-Leite (2011). Hydnoid basidiomycetes new to Brazil. *Mycotaxon* 116: 183–189.
 21. Loguerico-leite, C., M. Campos-Santana, **A. Gerlach**, M. Gutjahr, L. Trierveiler-Pereira, E.R. Drechsler-Santos & J.M. Baltazar (2009). Résumé of macromycetes from Santa Catarina state, Southern Brazil. *Ínsula (Florianópolis)* 38 01–14.

Articles in newspaper / magazines / books

1. **Gerlach, A.** (2022) Fritz Müller, «le meilleur observateur du monde*» dans la forêt atlantique du Brésil. *Saussurea* 51 (édition 2022, publiée en février 2023): 95 à 97.
2. **Gerlach, A.** (2022). Líquen da vez: *Usnea subparvula* A. Gerlach & P. Clerc. Boletim da Sociedade Brasileira de Micologia. (2) 4: 1-28.
3. **Gerlach, A.** (2017). Preface of História natural da Ilha de Santa Catarina – O código de Antônio José de Freitas Noronha / Marli Cristina Scomazzon, Jeff Franco, Daniel de Barcellos Falkenberg. Florianopolis: Insular, 2017. 110 p. ISBN 978-85-7474-988-4.
4. **Gerlach, A.** (2012). Os naturalistas na Ilha de Santa Catarina. Jornal do Mercado Público de Florianópolis, Florianópolis, p. 12 – 13. (available on my homepage, *outreach section*)
5. Geissler, C.T. (2008). Lamelles (édition Serpent a plumes). Translated by **A. Gerlach** & C.L. Cruz Lima (in prep.).

Book chapters published (or in prep.)

1. **Gerlach, A.** & P. Clerc. The genus *Usnea* in Brazil. In: Macrolichens from Brazil. Book chapter (in prep.)
2. da Silva Canêz, L.; N. M. Koch ; T. D. Barbosa ; M. J. Kitaura ; A. A. Spielmann ; N. K . Honda ; P. Jungbluth ; **A. Gerlach**; R. Lücking and André Aptroot (2021). Lichenized Ascomycota from the Pantanal in Mato Grosso do Sul state, Brazil. In: Damasceno-Junior, G.A., Pott, A. (eds) Flora and Vegetation of the Pantanal Wetland. Plant and Vegetation, vol 18. Springer, Cham.
3. Loguerico-Leite, C., L. Fernandes, L. Hütner-Bekai, M. Campos-Santana, J. Marcon-Baltazar, L. Trierveiler-Pereira, **A. Gerlach** & M.D 'Aquino-Rosa. Basidiomycetes (Fungi): Degradação de compostos lignocelulolíticos. In: Luiz Mauro Barbosa; Nelson Augusto sos Anjos Junior. (Org.). A Botânica no Brasil-pesquisa, ensino e políticas ambientais. São Paulo: Sociedade Botânica do Brazil, 2007, v. 1, p. 167-171
4. Loguerico-Leite, C., M. Campos-Santana, J. Marcon-Baltazar, L. Trierveiler-Pereira, L. Hütner-Bekai, **A. Gerlach**, M.D 'Aquino-Rosa & M. Gutjahr. Diagnóstico do conteúdo de Micologia em cursos de Ciências Biológicas na Região Sul, Brasil. In: Leonor Costa Maia; Elaine Malosso; Adriana Mayumi Yano-Melo. (Org.). Micologia - avanços no conhecimento. Recife: Editora Universitária da UFPE, 2007, v. 1, p. 268-278.

Presentations at meetings (selected)

1. **A. Gerlach** (2023). The genus *Usnea* in the southern Philippines: first phylogenetic approach. March 2023. Lichen week BRIT. **Invited presentation**.
2. **A. Gerlach** (2021). Workshop Breaking the stigma: characters and identification of *Usnea*. IAL9-Brazil. International Association for lichenology. July 2021. **Invited presentation**.
3. Fritsch, P., D. Penneys, D. Nickrent, M. Dal Forno, V. Amoroso, F. Coritico, J. Shevock, J. Brinda, **A. Gerlach**, J. Mancera, J.M. Galindon, D. Tandang & V. Handley (2020). Plant and lichen discovery in the southern Philippines: results from initial expeditions. Botany 2020. Virtual Botany conference. <http://2020.botanyconference.org/engine/search/635.html>. (Oral)
4. Rodrigues, D.N., Y. Naciri, **A. Gerlach** & P. Clerc (2020). Integrative taxonomy of the *Usnea flavocardia* aggregate. In: Biology 20, Fribourg: February 2020. (Poster)
5. **Gerlach, A.**(2018).Filogenia do gênero *Usnea*do Sul do Brasil. In: IX Encontro do Grupo Brasileiro de Líquenólogos (IX EGBL). Brazil, Federal University of Mato Grosso do Sul (UFMS), Campo Grande. (Oral) **Invited presentation**
6. **Gerlach, A.** (2019). A preliminary diversity assessment of the lichen family Parmeliaceae (Ascomycota, Fungi) in Brazil. Philippines, Center for Biodiversity Research and Extension in Mindanao (CEBREM), Mindanao. (Oral) **Invited presentation**
7. Ollivier, S., D. Olivier, **A. Gerlach**, L. Pellissier, M. Chollet-Krugler, F. Lohézic-Le Dévéhat, P. Clerc, J. Boustie, J-L. Wolfender & P-M. Allard (2019). Comprehensive Chemotaxonomy: Mining Data from Tandem Mass Spectrometry of Lichens. In: GA, Innsbruck: 2019. (Poster)
8. **Gerlach, A.**(2018) Sinopse do gênero *Usnea*Adans. no Brasil e perspectivas futuras. In: IX Encontro do Grupo Brasileiro de Líquenólogos (IX EGBL). Brazil, Federal University of Mato Grosso do Sul (UFMS), Campo Grande, 2018. (Oral)
9. **Gerlach, A.**, Z. Toprak, Y. Naciri, E.A. Caviró, Borges da Silveira, R.M. & P. Clerc (2018). Species delimitation in the hyper-diverse genus *Usnea* (Parmeliaceae, lichenized Ascomycota): the *Usnea cornuta* aggregate.In: 11th International Mycological Congress, San Juan, Puerto Rico. 2018. (Poster)
10. **Gerlach, A.**, Borges da Silveira, R.M. & P. Clerc (2017). Systematics of the lichen genus *Usnea* (Parmeliaceae) with emphasis on southern Brazil. In: Lichen Genomics Workshop II, Graz, Austria. 2-5 November 2017. Silke Werth & Walter Obermayer, eds. Fritschiana 85: 14-15 Institute of Plant Sciences, University of Graz, Austria. (Flash talk)
11. **Gerlach, A.**& P. Clerc (2016). The corticolous, shrubby, apotheciate species of *Usnea* Adans. of Brazil: an integrative taxonomy approach. Swiss Systematics Society-Day. (Oral)
12. Sparrius, L., A. Aptroot, H. Sipman, I. Pérez-Vargas, P. Matos, **A. Gerlach** & M. Vervoot (2016). Population size of *Anzia centrifuga* and other lichen endemics of Porto Santo (Portugal). International Lichenological Symposium. (Oral)
13. **Gerlach, A.**, P.K. Divakar, A. Crespo, Borges da Silveira, R.M. & P. Clerc (2016). Systematics of the shrubby-apotheciate corticolous species of the genus *Usnea* Adans. in Southern Brazil. International Lichenological Symposium. (Oral)
14. **Gerlach, A.**, Eliasaro, S., Clerc, P., Silveira, R.M.B. Pendulous *Usnea* species in Southern Brazil. 2014 VII Encontro do Grupo Brasileiro de Líquenólogos (EGBL). (Oral)
15. **Gerlach, A.**, Eliasaro, S., Clerc, P., Silveira, R.M.B. Preliminary report on the short, apotheciate taxa of the genus *Usnea* Adans in Southern Brazil.Congresso Latinoamericano de Micología. 2014. (Poster)
16. **Gerlach, A.**, C. Truong, S. Eliasaro & R.M. Borges da Silveira. Espécies de *Usnea* Adans. em rochas do Sul do Brasil: dados preliminares. 2013. 7º Reunião Brasileira de Estudos Líquenológicos (Oral)
17. **Gerlach, A.**& S. Eliasaro. Espécies de *Paramotrema* (Parmeliaceae) em costões rochosos dos Estados do Paraná e de Santa Catarina, Brasil. Sexto Encontro do Grupo Brasileiro de Líquenólogos (VI EGBL). 2012. (Oral)
18. **Gerlach, A.**& S. Eliasaro. Fungos líquenizados parmeloides eciliados (Parmeliaceae, Ascomycota) em costões rochosos dos Estados do Paraná e Santa Catarina, Brasil. 2011. 6º Reunião Brasileira de Estudos Líquenológicos (REBEL) (Oral)

Scientific Journal Referee

1. Brazilian Journal of Biosciences (Brazil)
2. Revista de Biologia Tropical (Brazil)
3. Associate Editor Hoehnea (Brazil) – October 2019
4. Revista CEPSUL - Biodiversidade e Conservação Marinha (Brazil)
5. Revista Eletrônica Científica da UERGS (Brazil)
6. Bulletin of the National Museum of Nature and Science, Series B (Japan)

7. Fundação de Apoio ao Desenvolvimento do Ensino, Ciência e Tecnologia do Estado de Mato Grosso do Sul (Fundect) (Brazil)
8. Associate Editor Plant and Fungal Systematics (Poland) – July 2020

Workshops and courses taken

2018: Workshop Cultivo Caseiro de Cogumelos Comestíveis (Shimeji)

Instructors: Nelson Menolli Jr. Ph.D. and Mariana de Paula Drewinski, Ph.D. student

2018: Workshop Variações da comunidade líquenica em área florestais ciliares no sul do Brasil

Instructor: Márcia Isabel Käffer, Ph.D.

2017: Course Species delimitation using BEAST and STACEY

Instructor: Bengt Oxelman, Ph.D.

2017: Course Phylogeny and Molecular Evolution

Instructor: Juan Montoya-Burgos, Ph.D.

2016: Workshop RevBayes

Instructors: Fredrik Ronquist, Ph.D. & Seraina Klopstein, Ph.D.

2015: Training Program in Molecular Biology

Supervisor: Pradeep K. Divakar, Ph.D.

2014: Phylogeny course

Instructor: Robert Lücking, Ph.D.

2014: Lobariaceae family with emphasis on genre *Sticta*

Instructor: Robert Lücking, Ph.D.

2013: Identification of Tropical Lichens

Instructor: Andre Aptroot, Ph.D.

2012: Introducción al análisis de datos moleculares

Instructor: Robert Lücking, Ph.D.

2012: Biodiversity of Macromycetes

Instructor: Rosa Mara Borges da Silveira, Ph.D

2012: Pyrenolichens corticolous

Instructor: Andre Aptroot, Ph.D.

2011: Lichens Chemotaxonomy

Instructor: Neli Kika Honda, Ph.D.

2009: Morfología, Biología Y Taxonomía de Aphyllophorales

Instructor: Mario Rajchenberg, Ph.D.

2007: Biología Celular de fungos / Cell Biology of Fungi

2006: Gasteromycetes introduction

Instructor: Iuri Goulart Baseia, Ph.D.

References

References available on request.