



Dr. Franz-Sebastian Krah

Curriculum vitae

Experience

- 05/2020- **Postdoc**, *Goethe-University Frankfurt*, Institute for Ecology, Evolution and Diversity
present - Department Biodiversity Conservation, Group of Prof. Dr. Claus Bässler.
- 11/2019 - **Research & Development Manager Artificial Intelligence**, *DFGE - Institute for*
05/20 *Energy, Ecology and Economy.*
- 08/2019- **Postdoc**, *Philipps-University Marburg*, Department Biology, Ecology, Group of Prof.
10/2019 Dr. Roland Brandl, Working in the BIOHOLZ project.
<https://www.bioholz-projekt.de>
- 11/2015 – **PhD Biology**, *Technical University of Munich (TUM)*, passed 'summa cum laude'
05/2019 (with highest distinction).
- 11/2015 – **Research assistant**, *Bavarian Forest National Park*, Department of Conservation
11/2018 and Research, Mycology.
- 03/2015 **Teaching assistant**, *Technical University of Munich (TUM)*, RG Biodiversity of
Plants.
Introduction to bryophyte ecology and evolution.
- 11/2010 – **Student assistant**, *Technical University of Munich (TUM)*, Chair for Ecophysiology
03/2013 of Plants.
e.g., teaching plant identification, various field work
- 06/2013 – **Freelancer**, *Bavarian Forest National Park*, Grafenau.
10/2013 Project BIOHOLZ, Fungal species identification based on macro- and micromorphology.
- 01/2009 – **Student assistant**, *Library Theology-Philosophy*, LMU, Munich.
09/2010

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Education

- 11/2015 – **PhD Biology**, *Technical University of Munich (TUM)*, passed 'summa cum laude'
05/2019 (with highest distinction).
Thesis: *Pattern and Processes of Fungal Community Ecology*
Supervision: Prof. Dr. Hanno Schäfer
Funding: PhD scholarship by the "Rudolf und Helene Glaser-Stiftung" (50.000 EUR, TO83/26495/2015/kg) and "Zempelin Stiftung" (7.000 EUR, T214/32357/2018/sm)
- 10/2013 – **Masters of Science - Biology**, *Technical University of Munich (TUM)*, passed
07/2015 with high distinction.
Thesis: Pattern of host associations and dynamics of substrate switching in wood decay fungi using phylogenetic comparative methods and a mega-phylogeny of the Basidiomycota;
Supervision: Prof. Dr. David S. Hibbett & Prof. Dr. Hanno Schäfer
- 10/2010 – **Bachelor of Science - Forest Science and Resource Management**, *Technical University of Munich (TUM)*, passed with merit.
09/2013 Thesis: Forest fungal α - and β -diversity: environmental factors and functional role of saprotrophic and ectomycorrhizal fungi in an unmanaged mature *Picea abies* stand
Supervision: Prof. Dr. Anton Fischer & Dr. Claus Bässler
- 10/2008 – **Magister - Philosophy**, *Ludwigs-Maximilians-Universität (LMU)*, Munich, Majors:
09/2010 Analytical philosophy and Philosophy of language.
Midterm exam passed with high distinction

Awards and Certificates

- 09/2019 Coursera: Applied AI with Deep Learning; Credential ID:W2HF3BTJEXP4
- 08/2019 Coursera: Mathematics for Machine Learning: Linear Algebra; Credential ID:QKFUWEYYXGJN
- 08/2019 Coursera: Mathematics for Machine Learning: Multivariate Calculus; Credential ID:ANVHN4A63ZX8
- 09/2016 1st prize in poster session, 23rd Symposium on 'Biodiversity and Evolutionary Biology' of the German Botanical Society in Munich

Computer skills

Biostatistics, Ecostatistics, Phylogeny Estimation, Phylogenetic comparative methods (PCM), Computational Molecular Evolution, Machine learning, Deep learning

Programming **R**, Python, **Rcpp**, C++, C#, JavaScript

Programs Microsoft Office, AffinityDesigner, Inkscape, Geneious, MAFFT, RAxML, BEAST, L^AT_EX, GitHub, SQL, ...

Software development

🐙FranzKrah rUSDA, rMyCoPortal, rSymbiota, rGUIDANCE

Conferences - Seminars - Presentations

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- 03/2019 Invited **Talk** at the Ecological and Socio-Economic Challenges and Opportunities of Climate Change in Rural Southern Europe. Zaragoza (Spain), Workshop 14th – 16th Feb 2019
- 12/2018 Invited **Talk** at the Julius-Maximilians Universität Würzburg. Invited by Peter. H. Biedermann (Department of Animal Ecology and Tropical Biology)
- 09/2018 **Talk** at the 48th Annual Meeting of the Ecological Society of Germany, Austria and Switzerland. Gesellschaft für Ökologie
- 11/2017 **Talk** at the Bayerische Akademie für Naturschutz und Landschaftspflege, Hochschule Weihenstephan-Triesdorf.
- 10/2017 **Talk** at the PhD-colloquium in Ecology. Technical University of Munich
- 06/2017 Invited **talk** at the Yale University about color in fungal fruit bodies (Invited by Michael Donoghue). New Haven, (Connecticut), USA.
- 06/2017 **Talk** at the Evolution meetings conference. Portland (Oregon), USA.
- 09/2016 **Poster** at the 23rd Symposium on 'Biodiversity and Evolutionary Biology' of the German Botanical Society. Munich.
- 09/2016 **Talk** at the Conference of the Deutsche Gesellschaft für Mykologie (DGfM) in Bernried
- 05/2016 EMBO Practical **Course** on Computational Molecular Evolution on Crete and poster presentation
- 01/2016 **Seminar**: Improving your Intercultural Skill Set. Frauenchiemsee. Germany
- 12/2015 **Seminar**: Towards Sustainable Development in Harmony With Nature in "Crocker Range Biosphere Reserve (CRBR)". Kota Kinabalu, Sabah

Research Visits

- 11/2015 – Institute for Tropical Biology and Conservation (ITBC), University Malaysia Sabah.
12/2015 Dr. Jaya Seelan Sathiya Seelan
- 02/2015 – Clark University, Massachusetts (USA). Prof. Dr. David Hibbett
05/2015
- 03/2014 Rooiklip Research Station, Namibia, Dr. Thomas Wagner

Languages

- German - Mother tongue
- English - Fluent
- French - Basic communication skills
- Bengali - Basic communication skills

Peer-review for

- Fungal Ecology
- Web Ecology
- Biological Conservations
- Forest Ecology and Management

Supervisions

- S. Lenz Research project (6 weeks)

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- E. Koc Research project (6 weeks)
- B. Ludl Research project and B.Sc. thesis (6 months)
- T. Endriß M.Sc. thesis (6 months)
- L. Schmid Research project (6 months)
- A. Zarvoc PhD student in Bavarian Forest National Park
- B. Olou PhD student from Benin, Africa (DAAD scholarship, 2017 - 2019)

Interests

Squash Movies Traveling

Publications

- 1 Maria-Barbara Winter, Claus Bässler, Markus Bernhardt-Römermann, **Franz-S. Krah**, Hanno Schäfer, Sebastian Seibold, Jörg Müller. On the structural and species diversity effects of bark beetle disturbance in forests during initial and advanced early-seral stages at different scales. *European Journal of Forest Research* 2017, 136:357-373
- 2 **Franz-S. Krah**, Sebastian Seibold, Roland Brandl, Petr Baldrian, Jörg Müller, Claus Bässler (2018). Independent effects of host and environment on the diversity of wood-inhabiting fungi. *Journal of Ecology* 2018, 106:1428-1442
- 3 **Franz-S. Krah**, Hanno Schäffer, Christoph Heibl, Claus Bässler, John Soghigian, David Hibbett. Evolutionary dynamics of host specialization in wood-decay fungi. *BMC Evolutionary Biology* 2018, 18:119-132
- 4 Sebastian Seibold, Jörg Müller, Petr Baldrian, Marc W. Cadotte, M. Štursová, Peter H. Biedermann, **Franz-S. Krah**, C. Bässler. Fungi associated with beetles dispersing from dead wood – Let's take the beetle bus! *Fungal Ecology* 2018, 39:100-108
- 5 Boris A. Olou, Nourou S. Yorou, Manuel Striegel, Claus Bässler, **Franz-S. Krah**. Effects of macroclimate and resource on the diversity of tropical wood-inhabiting fungi. *Forest Ecology and Management* 2019, 436:79-87
- 6 **Franz-S. Krah**, Andrew N. Miller and Scott T. Bates. rMyCoPortal - an R package to interface with the Mycology Collections Portal. *Biodiversity Data Journal* 2019, 7:e31511
- 7 Leonie Schmid, Claus Bässler, Hanno Schaefer, **Franz-S. Krah**. A test of camera surveys to study fungus-animal interactions. *Mycoscience* 2019, 60(5):287-292
- 8 **Franz-S. Krah** and Christoph Heibl. rGUIDANCE – alignment confidence score computation in R. *Journal of Open Source Software* 2019, 4(36):1350
- 9 **Franz-S. Krah**, Ulf Buntgen, Hanno Schaefer, Carrie Andrew, Lynne Boddy, Jeffrey Diez, Simon Egli, Robert Freckleton, Alan C. Gange, Rune Halvorsen, Einar Heegaard, Antje Heideroth, Christoph Heibl, Jacob Heilmann-Clausen, Klaus Høiland, Ritwika Kar, Håvard Kauserud, Paul M. Kirk, Thomas W. Kuyper, Irmgard Krisai-Greilhuber, Jörg Müller, Jenni Norden, Phillip Papastefanou, Leonie Schmid, Beatrice Senn-Irlt, Claus Bässler. European mushroom assemblages are darker in cold climates. *Nature Communications* 2019, 10(2890)

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- 10 Jonas Hagge, Claus Bässler, Axel Gruppe, Björn Hoppe, Harald Kellner, **Franz-S. Krah**, Jörg Müller, Sebastian Seibold, Elisa Stengel, Simon Thorn. Bark coverage shifts assembly processes of microbial decomposer communities in dead wood. *Proceedings of the Royal Society B* 2019, 286(1912)
- 11 Soyeon Bae, Shaun R. Levick, Lea Heidrich, Paul Magdon, Benjamin F. Leutner, Stephan Wöllauer, Alla Serebryanyk, Thomas Nauss, Peter Krzystek, Martin M. Gossner, Peter Schall, Christoph Heibl, Claus Bässler, Inken Doerfler, Ernst-Detlef Schulze, **Franz-S. Krah**, Heike Culmsee, Kirsten Jung, Marco Heurich, Markus Fischer, Sebastian Seibold, Simon Thorn, Tobias Gerlach, Torsten Hothorn, Wolfgang W. Weisser, Jörg Müller. Radar vision in the mapping of forest biodiversity from space. *Nature Communications* 2019, 10(4757)
- 12 Leonardo H. Teixeira, Brunno F. Oliveira, **Franz-S. Krah**, Johannes Kollmann, Gislene Ganade. Linking plant traits to multiple soil functions in semi-arid ecosystems. *Journal of Arid Environments* 2020, 172(104040)
- 13 Boris A. Olou, **Franz-S. Krah**, Meike Piepenbring, Nourou S. Yorou, Ewald Langer. Diversity of *Trametes* (Polyporales, Basidiomycota) in tropical Benin and description of new species *Trametes parvispora*. *MycoKeys* Accepted January 2020