

Employment history

- 2022-current **Lise Meitner Postdoctoral Fellow**, Dept. of Paleontology, University of Vienna, Austria
- 2019–2021 **Technical/Postdoctoral assistant**, Dept. of Biology, Univ. of Fribourg, Switzerland
- 2015–2019 **Doctoral Student**, Dept. of Systematic and Evolutionary Botany, Univ. of Zürich, Switzerland
- 2013–2015 **Research assistant**, Dept. of Biology, ETH Zürich, Switzerland

Education

- 2019 **PhD program in Evolutionary Biology**, Univ. of Zürich, Switzerland
- 2012 **MSc in Biological Sciences**, Università di Napoli "Federico II", Italy
- 2009 **BS in Agrofood Biotechnologies**, Università di Napoli "Federico II", Italy

Research Grants

- 2022 **SYNTHESYS**, Funding for the project "Conifers from the Jurassic of Yorkshire.", European Union's Horizon 2020 programme (H2020), SYNTHESYS project GB-TAF-TA4-004
- 2021 **Lise Meitner Postdoctoral Fellowship**, "The birth of the modern world: understanding the evolutionary arena of the Cretaceous Terrestrial Revolution by inferring plant dynamics in the late Mesozoic", FWF (Austrian Science Fund), 164,080 EUR for salary and research funds
- 2021 **PostDoc Mobility Grant**, "A window into the past: disentangling the geological and biological drivers of the Jurassic amber gap", SNF (Swiss National Foundation), 101,380 CHF for salary and research funds
Not redeemed
- 2015 **SYNTHESYS**, Funding for the project "Palaeobiology of the cycads: insights from fossil leaves from the Jurassic of Yorkshire.", European Union's Seventh Framework Programme (FP7/2007-2013), SYNTHESYS project GB-TAF-5763
- 2015 **SYNTHESYS**, Funding for the project "Palaeobiology of the cycads: reevaluating Florin's collection in a phylogenetic framework", European Union's Seventh Framework Programme (FP7/2007-2013), SYNTHESYS project SE-TAF-5774

Awards

- 2018 **Linnean Society Travel Grant**, *The Linnean Society*, 500 USD to attend the EPPC 2018 conference in Dublin, Ireland
- 2017 **Georges and Antoine Claraz-Donation**, 1000 CHF for research costs and attending the British Ecological Society Macro SIG Meeting
- 2015 **Vernon I. Chadle Award**, *Developmental and Structural Section, Botanical Society of America*, 500 USD to attend the Botany 2015 Conference in Edmonton, Canada

Teaching experience

Teaching assistant

- 2013–2014 *Plant Biochemistry*. ETH Zürich, 551-0359-00L
- 2015–2019 *Evolution und Biodiversität II: Wirbeltiere und Pflanzen*. University of Zürich, BIO121.
- 2015 *Evolution*. University of Zürich, BIO113
- 2016–2018 *Species and Speciation*. University of Zürich, BIO225.

Lectures or seminars

- 2018–2019 *Evolution and paleobiology of plants*. University of Zürich ,BIO265.
2019 *Tropical plant families*. University of Zürich, BIO232.

Student Supervision

- 2016 *Biology Olympiad project*, University of Zürich, Hanna Neuenschwander.
2017 *Bachelor Internship*, University of Zürich, Nicola Jelmini.
2022 *Master Thesis*, University of Vienna, Katharina Halbwidl.

Academic service

Editorial service

- 2018-current **Moderator**, *paleorXiv*
2022-current **Member of the Editorial Board**, *Open Paleontology*
2021-2022 **Topic Editor**, *Frontiers in Cell and Developmental Biology*, Managing the research topic "Reciprocal Illumination and Consilience in Plant Evolutionary-Development"

Reviewing experience

I have been invited to review for 20 international journals across multiple disciplines, including **Biology Letters**, **New Phytologist**, **Philosophical Transactions of the Royal Society B: Biological Sciences**, and **Systematic Biology**.

Institutional service

- 2017-2019 **Library Committee Member**, *Department of Systematic and Evolutionary Botany, University of Zürich, Switzerland*
2016 **Deputee representative for the student body**, *Department of Systematic and Evolutionary Botany, University of Zürich, Switzerland*

Outreach

- 2015 -2019 **Multiple talks and guided tours for the general public**, *Botanical Garden of the University of Zürich, Switzerland*
2019-current **Creation and curation of the "Extant Plant Paleobot Database" together with Nathan Jud**, https://github.com/PaleoNate/extinct_plants
2020-current **Multiple article for the general public**, *mariocoiro.blog*

Languages

- Italian Native
English C2
German A2
French A1

Full Publication list

Journal articles

29, 10 as first/corresponding* author

1. Seyfullah L.J., **Coiro M.**, Hoffmann C.C., (2023) *In situ pollen diversity in the relict conifer Wollemia nobilis*, Review of Palaeobotany and Palynology, 309: 104816.
2. Denk T., Bouchal J.M., Gruner H.T., **Coiro M.**, Butzmann R., Pigg K.B., Tiffney B.H., (2023) *Cenozoic migration of a desert plant lineage across the North Atlantic*, New Phytologist, ahead of print.
3. **Coiro M.***, Roberts E.A., Hoffmann C.C., Seyfullah L.J. (2022) *Cutting the long branches: consilience as a path to unearth the evolutionary history of Gnetales*, Frontiers in Ecology and Evolution, 1219.
4. Mellado-Mansilla D., Testo W., Sundue M. A., Zotz G., Kreft H., **Coiro M.**, Kessler M. (2022) *The relationship between chlorophyllous spores and mycorrhizal associations in ferns: Evidence from an evolutionary approach*, American Journal of Botany, 109: 2068–2081.
5. Glos R.A.E., Salzman S., Calonje M., Vovides A.P., **Coiro M.**, Gandolfo M.A., Specht C.D. (2022) *Leaflet Anatomical Diversity in Zamia (Cycadales: Zamiaceae) Shows Little Correlation with Phylogeny and Climate.*, The Botanical Review, 88: 437–452.
6. Vieira V., Zetter R., **Coiro M.**, Grimsson F. (2022) *Pliocene Lythrum (loosestrife, Lythraceae) pollen from Portugal and the Neogene establishment of European lineages.*, Review of Palaeobotany and Palynology, 296: 104548.
7. **Coiro M.***, Barone Lumaga M.R., Rudall P.J. (2021) *Stomatal development in the cycad family Zamiaceae.*, Annals of Botany, 128(5): 577-588.
8. Sampaio Mayer J.L., Scopece G., Barone Lumaga M.R., **Coiro M.**, Pinheiro F., Cozzolino S. (2021) *Ecological and phylogenetic constraints determine the stage of anthetic ovule development in orchids.*, American Journal of Botany, 108(12): 2405-2415.
9. Steinhorsdottir M., Elliot-Kingston C., **Coiro M.**, McElwain J.C. (2021) *Searching for a nearest living equivalent for Bennettitales: a promising extinct plant group for stomatal proxy reconstructions of Mesozoic pCO₂.*, GFF,1-2.
10. Grimsson F., Ulrich S., **Coiro M.**, Graham S.A., Jacob B.F., Currano E.D., Xafis A., Zetter R. (2021) *Hagenia from the early Miocene of Ethiopia: Evidence for possible niche evolution?*, Ecology and Evolution,11(10): 5164-5186.
11. Vovides A.P., Guevara R., **Coiro M.**, Galicia S., Iglesias C. (2021) *Pollen morphology of the Megamexican cycads reveals the potential of morphometrics to identify cycad genera.*, Botanical Sciences,99(1): 182-1970.
12. Koutroumpa K., Warren B.H., Theodoridis S.,**Coiro M.**, Romeiras M.M., Jiménez A., Conti E. (2021) *Geo-Climatic Changes and Apomixis as Major Drivers of Diversification in the Mediterranean Sea Lavenders (Limonium Mill.)*, Frontiers in Plant Science,11: 612258.
13. **Coiro M.***, Martinez L.C.A., Upchurch G., Doyle J.A. (2020) *Evidence for an extinct lineage of angiosperms from the Early Cretaceous of Patagonia and implications for the early radiation of flowering plants.*, New Phytologist, 228(1): 344-360.
14. **Coiro M.***, Jelmini N., Neuenschwander H., Calonje M.A., Vovides A.P., Mickle J.E., Barone Lumaga M.R. (2020) *Evolutionary signal of leaflet anatomy in the Zamiaceae*, International Journal of Plant Sciences, 181(7):697–715.
15. **Coiro M.***, Doyle J.A., Hilton J. (2019) *How deep is the conflict between molecular and fossil evidence on the age of the angiosperms?*, New Phytologist, 223(1): 83-990.
16. Karasev E., Forte G., **Coiro M.**, Kustatscher E. (2019) *Mutoviaspermum krassilovii gen. et sp. nov.: A Peculiar Compound Ovuliferous Conifer Cone from the Lopingian (Late Permian) of European Russia (Vologda Region)*, International Journal of Plant Sciences, 180(8): 779-799.
17. Erdei B., **Coiro M.**, Miller I., Johnson K.R., Griffith P.M., Murphy V. (2019) *First cycad seedling foliage from the fossil record and inferences for the Cenozoic evolution of cycads.*, Biology letters, 15(7): 20190114.
18. Grimsson F., Graham S.A., **Coiro M.**, Jacobs B.F., Xafis A., Neumann F.H., Scott L., Sakala J., Currano E.D., Zetter R. (2019) *Origin and divergence of Afro-Indian Picrodendraceae: linking pollen morphology, dispersal modes, fossil records, molecular dating and paleogeography.*, Grana 58(4): 227-275.
19. Thalmann M., **Coiro M.**, Meier T., Wicker T., Zeeman S.C., Santelia D. (2019) *The evolution of functional complexity within the -amylase gene family in land plants.*, BMC Evolutionary Biology, 19(1): 66.
20. Calonje M., Meerow A., Griffith P., Salas-Leiva D., Vovides A., **Coiro M.**, Francisco-Ortega J. (2019) *A time-calibrated species tree phylogeny of the New World cycad genus Zamia L. (Zamiaceae, Cycadales).*, International Journal of Plant Sciences, 180(4): 286-314.
21. Ehmig M., **Coiro M.**, Linder H.P. (2019) *Ecophysiological strategy switch through development in heteroblastic*

- species of mediterranean ecosystems—an example in the African Restionaceae.*, *Annals of Botany*, 123(4): 611-623.
22. **Coiro M.***, Barone Lumaga M.R. (2018) *Disentangling historical signal and pollinator selection on the micromorphology of flowers: an example from the floral epidermis of the Nymphaeaceae.*, *Plant Biology*, 20 (5): 902-915.
 23. **Coiro M.***, Chomicki G., Doyle J.A. (2018) *Experimental signal dissection and method sensitivity analyses reaffirm the potential of fossils and morphology in the resolution of the relationship of angiosperms and Gnetales.*, *Paleobiology*, 44 (3): 490-510.
 24. **Coiro M.***, Pott C. (2017) *Eobowenia gen.nov. from the Early Cretaceous of Patagonia underlines morphological stasis and niche conservatism in the evolutionary history of Bowenia*, *BMC Evolutionary Biology* 17 (1): 97.
 25. Feike D., Seung D., Graf A., Bischof S., Ellick T., **Coiro M.**, Soyk S., Eicke S., Mettler-Altman T., Lu K.J., Trick M., Zeeman S.C., Smith A.M. (2016) *A novel starch-granule-associated protein required for the control of starch degradation in Arabidopsis thaliana leaves.* *The Plant Cell*, 28: 1472-1489.
 26. Barone Lumaga M.R., **Coiro M.***, Truernit E., Erdei B., De Luca P. (2015) *Epidermal micromorphology in Dioon: did volcanism constrain Dioon evolution?*, *Botanical Journal of the Linnean Society*, 179: 236–254.
 27. Seung D., Soyk S., **Coiro M.**, Maier B.A., Eicke S., Zeeman S.C. (2015) *PROTEIN TARGETING TO STARCH Is Required for Localising GRANULE-BOUND STARCH SYNTHASE to Starch Granules and for Normal Amylose Synthesis in Arabidopsis*, *Plos Biology*, 13(2).
 28. Chomicki G., Bidet L.P.R., Ming F., **Coiro M.**, Zhang X., Wang Y., Baissac Y., Jay-Allemand C., Renner S.S., (2015) *The velamen protects photosynthetic orchid roots against UV-B damage, and a large dated phylogeny implies multiple gains and losses of this function during the Cenozoic*, *New Phytologist*, 205(3): 1330-1341.
 29. **Coiro M.**, Barone Lumaga M.R., (2013) *Aperture evolution in Nymphaeaceae: insights from an ultrastructural and micromorphological investigation*, *Grana*, 52(3): 192-201.

Preprints

30. Budd G.E., Mann R.P., Doyle J.A., **Coiro M.**, Hilton J. (2021) *Fossil data do not support a long Pre-Cretaceous history of flowering plants*, *BioRxiv*, 431478
31. Klopstein S., Ryser R., **Coiro M.**, Spasejovic T. (2019) *Mismatch of the morphology model is mostly unproblematic in total-evidence dating: insights from an extensive simulation study.*, *BioRxiv*, 679084

Book chapters

32. **Coiro M.**, Truernit E. (2017) *Modified pseudo-Schiff propidium iodide staining for xylem characterization using confocal laser-scanning microscopy on whole-mount samples*, in Lucas and Etchells(eds.) *Xylem*, *Methods in Molecular Biology*, Springer

Conference Talks and Seminars

- 2022 **"Leaflet anatomy and the evolutionary history of the Cycadales"**, *EPPC 2022*, Stockholm, Sweden, Conference talk
- 2020 **"Molecular timetrees and the macroevolution of plants: open questions and potential solutions"**, *1 Meeting of Systematics, Biogeography and Evolution (SBE)*, online, Invited speaker
- 2019 **"Seeing with new eyes: historical collections and novel hypotheses"**, *Palaeobotany and Palynology Specialist Group Meeting, the Linnean Society*, London, UK, Invited speaker
- 2019 **"The importance of fossil data in inferring the macroevolutionary history of plants"**, *Biology19*, Zurich, Switzerland, Conference talk
- 2018 **"Much more than "living fossils": a new phylogenetic hypothesis of the Cycadales"**, *EPPC 2018*, Dublin, Ireland, Conference talk
- 2017 **"Untangling diversity and disparity in the macroevolutionary history of the Cycadales"**, *British Ecological Society Macro SIG Meeting*, London, UK, Conference talk
- 2015 **"Much more lively than most fossils: the evolutionary history of cycads."**, *Montgomery Botanical Center*, Coral Gables, USA, Invited talk
- 2012 **Talk: "Morphology and Seed plant Phylogeny - Exploring LBA in a morphological dataset"**, *San Michele Institute - Edmund Mach Foundation*, San Michele all'Adige, Italy, Invited speaker