



LUDWIG-
MAXIMILIANS-
UNIVERSITÄT
MÜNCHEN



Systematic Botany and Mycology, Menzinger Strasse 67, 80638 Munich

The evolution of Osmundaceae: Combining phylogenetics with fieldwork, genomics, cytogenetics, palaeobotany, and niche modeling

A postdoctoral position is open for application, starting immediately and until filled. Starting date is 1 October 2018, and the salary scale is A13. The research will combine phylogenetics with fieldwork, genomics, cytogenetics, palaeobotany, and niche modeling. Expertise and relevant unpublished data are available in our team, which includes two experts in the systematics and evolution of ferns, an expert in the palaeobotany of Osmundaceae, and expertise in chromosomal studies and molecular clock calibration. We have access to greenhouses, a large herbarium, relevant microscopes, 3D tomography, and funding. The postdoc will benefit not only from the broad range of methods and expertise available in the biology faculty of the University of Munich (LMU, Germany's top-ranking university, The Times World University Ranking 2018) but in addition will spend time at the University of Münster and the Tropical Botanical Garden of the Chinese Academy of Sciences in Xishuangbanna. Our team consists of Harald Schneider, Macro-Evolution Group and Center of Integrative Conservation, Xishuangbanna, Benjamin Bomfleur, Institute of Geology and Palaeontology, University of Münster, and Susanne S. Renner, University of Munich.

Papers on Osmundaceae from our team that this project will build on are:

Bomfleur B., McLoughlin S., Vajda V. 2014a. Fossilized nuclei and chromosomes reveal 180 million years of genomic stasis in royal ferns. *Science* 343:1376–1377.

Bomfleur, B., Grimm, G.W., and McLoughlin, S. 2017. The fossil Osmundales (Royal Ferns)—a phylogenetic network analysis, revised taxonomy, and evolutionary classification for anatomically preserved trunks and rhizomes. <https://doi.org/10.7717/peerj.3433>

Clark, J., Hidalgo, O., Pellicer, J., Liu, H., Marquardt, J., Robert, Y., Christenhusz, M., Zhang, S., Gibby, M., Leitch, I., **Schneider, H.** 2016. Genome evolution of ferns: evidence for relative stasis of genome size across the fern phylogeny. *New Phytologist* 210:1072-1082

Grimm, G. W., P. Kapli, B. **Bomfleur**, S. McLoughlin, and **S. S. Renner**. 2015. Using more than the oldest fossils: Dating Osmundaceae with three Bayesian clock approaches. *Systematic Biology* 64: 396-405.

Schneider, H., Liu H., Clark J., Hidalgo O., Pellicer J., Zhang S., Kelly L.J., Fay M.F., Leitch I.J. 2015. Are the genomes of royal ferns really frozen in time? Evidence for coinciding genome stability and limited evolvability in the royal ferns. *New Phytologist* 207: 10–13.

Participation in basic botany courses taught in German is desired.

To apply, please send your letter of motivation, CV, and the names of two referees to renner@lmu.de

For more details on our research:

<https://scholar.google.com/citations?user=uzOGmTgAAAAJ&hl=de>

<https://scholar.google.de/citations?user=5WLsy4IAAAAJ&hl=ja>

<https://scholar.google.de/citations?user=BkOLAKoAAAAJ&hl=de>

<https://scholar.google.de/citations?user=vEvoCaMAAAAJ&hl=en>