



## Open PhD position

# **Modular and integrative skull and neck biomechanics of extinct marine reptiles with a focus on non-plesiosaurian Sauropterygia**

The Evolutionary Morphology and Palaeobiology of Vertebrates group at the Palaeontological Institute of the University of Zurich invites applications for a PhD position. The successful candidate will work in a Swiss National Science Foundation supported research project under the supervision of Adjunct Prof. Dr. Torsten Scheyer. The PhD project will build upon an existing research program (see lab web page: <https://www.scheyer.net>) and relies heavily on 3D lab-based work. Those interested should consult our website for publications and current research projects.

The offered PhD project will focus on reptile anatomy in general and the anatomy of marine reptiles specifically, as well as the methods of CT- and surface scanning. The PhD candidate will: 1) perform 3D virtual model generating, incl. bone re-modelling and retro-deformation approaches, of heads and necks of the studied fossils; 2) identify osteological correlates for soft-tissue reconstruction; and 3) perform range of motion studies.

The focus group will be sauropterygian reptiles, one of the main lineages of Mesozoic marine reptiles; many of which are stored in the collections of the Department of Paleontology of the University of Zurich. Among sauropterygian taxa, the animals have diverse body shapes, proportions, locomotory capabilities and lifestyles, long and short necks, as well as different sized head sizes and proportions. Selected taxa representing several trait combinations will be studied in a comparative approach. Furthermore, the PhD candidate will also be involved with additional biomechanical analyses that will be performed at a later stage in the project.

The ideal candidate will be a highly motivated student of Life- or Earth Sciences with a biological, biomechanical, or palaeontological background. Excellent writing skills in English are required. Knowledge in working with CT scan data and respective software packages (e.g., MIMICS, VG STUDIO, etc.), as well as BLENDER is desired, as is knowledge on fossil vertebrate/reptile anatomy and statistics. German language skills are an asset in daily life business in and around the university. The prospective student is expected to have received a Master's degree or equivalent by the start of the PhD.

The University of Zurich is one of the top research institutions in Europe. The city, in close proximity to the Alps, offers conditions for an excellent quality of life. With researchers working in Palaeontology and Evolutionary Biology, the University of Zurich offers an exceptional academic environment for research and study. The Department of Palaeontology and the newly opened



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exhibits of the Natural History Museum of the University of Zurich further offer state-of-the-art research facilities in an international and stimulating academic environment.

To apply, please send a letter of motivation including information on previous scientific work and publications if available (maximum of 2 pages), a CV (maximum of 2 pages), and contact details of two referees. Please ensure that all those parts are combined into a single PDF-file.

Together with an electronic copy of the Masters-thesis, please send your application to:

Prof. Dr. Torsten Scheyer (tscheyer@pim.uzh.ch).

Review of applications starts end of May 2024, but applications will be considered until the position is filled. Applicants should be prepared to be interviewed by beginning or middle of June 2024.

EARLIEST STARTING DATE OF PROJECT: JUNE 2024 (negotiable).

<https://www.pim.uzh.ch/en.html>

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