University of Zurich[UZH]

Open PhD position on Biomechanics and Anatomy of the Ape and Hominin Organ of Hearing

We invite applications for a PhD position at the Evolutionary Morphology and Palaeobiology of Vertebrates group (www.msanchezlab.net) in the Department of Paleontology of the University of Zurich. The PhD candidate will work in the context of an Ambizione Swiss National Science Foundation, a project led by Dr. Alessandro Urciuoli.

The PhD candidate will explore the evolutionary trajectory of the organ of hearing in extant and extinct hominids from a morphological and functional perspective. The project will involve the anatomical description of the cochlear system in ape species, the adaptation of human-based computational simulations (finite element models) of the organ of hearing to that of extant apes, and the reconstruction of the hearing sensitivity to sound frequencies in fossil hominins. The candidate will rely on digital images of the cochlear membranous system of apes and humans obtained with the most advanced synchrotron-based computed tomography technology and housed at the Comparative Ear Bank digital repository. The PhD student will be part of an international network devoted to the holistic analysis of inner ear structures and will have the opportunity to perform research stays at European institutions.

We are looking for a highly motivated student of Life, Biomedical, or Engineering Sciences with a background in bioengineering, paleoanthropology, or otorhinolaryngology. Proficient English writing skills are essential. Due to the multidisciplinary nature of the project, knowledge in one or more of the following fields is desirable: finite element modelling and theory, fluid dynamics, auditory physiology, biomechanics, and/or ear anatomy. Skills in Python and MATLAB programming, CAD software, and/or digital image handling and processing will also be positively evaluated. The prospective student is expected to have received a master's degree or equivalent by the start of the PhD and will hopefully have published or are preparing to publish on her/his Masters. The student is to enroll in the evolutionary biology graduate program (www.evobio.uzh.ch/en.html).

The University of Zurich is one of the top research institutions in Europe and offers an exceptional academic environment for research and study. The Department of Paleontology has state-of-the-art research facilities in an international and stimulating academic environment. The ongoing collaborations with the Evolutionary Anthropology Department, the Institute of Evolutionary Medicine, and the Department of Otorhinolaryngology, Head and Neck Surgery will provide a unique opportunity for knowledge interchange and development. The Natural History Museum of the University is closely tied to our department, offering opportunities to participate in and develop skills in scientific outreach activities. The city of Zurich, in close proximity to the Alps, with a lake and river in which to swim in the summer, offers conditions for an excellent quality of life. We offer a vibrant, collaborative work environment and high-quality supervision. All former PhD students of the Sánchez-Villagra group graduated with excellent publication records and almost all have consecutively moved on to postdoc positions at renowned academic institutions. Our group represents an international environment and has been hosting PhD students from many countries across the world.

To apply, please send a letter of motivation including information on previous scientific work and publications if available (maximum of 2 pages), a CV, 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 Alexandra Wegmann (alexandra.wegmann@uzh.ch).

The deadline for applications is 20th of April 2025. Applications received after the deadline may be considered if the position is not yet filled. Applicants should be prepared to be interviewed in the first half of May 2025 and ideally start on September 1st of 2025 (starting date may be discussed). The planned duration for the PhD project is four years and compensation follows the standards set by the University of Zurich's salary guidelines. If you have further questions, do not hesitate to contact us (alessandro.urciuoli@pim.uzh.ch).