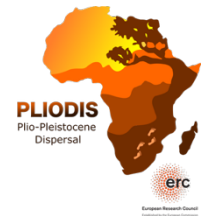




## Fully funded PhD Opportunity at the University of the Witwatersrand, South Africa.



### *South African Plio-Pleistocene suid diversity and its significance for reconstructing palaeoecological and palaeoclimatic change*

Pigs are well-known for their habitat and dietary diversity, their social/behavioural flexibility, their sensitivity to climate and for the fast rates at which their morphological traits, e.g. teeth, evolve; the fast evolutionary rates are related to the extremely high reproductive rates of pigs compared to other ungulates. Importantly, pigs are generally abundant at Plio-Pleistocene hominin fossil sites. These facts combine that suids are ideal ecological proxies for hominin landscapes.

South African climate changes during the Plio-Pleistocene transition are poorly understood owing to the complex interplay between global (e.g., aridification) and more regional (e.g., shift of the Intertropical Convergence Zone, onset of the Walker circulation etc.) trends. An appraisal of ecological changes is further complicated by the insecure dating of South African sites, which makes it impossible to temporally constrain the hominin fossil record. Detailed analyses of the functional adaptations of pigs and an assessment of how they exploited -and partitioned- their habitat(s) promises to overcome some of these problems. This is the aim of this project: to throw light on the ecological conditions in South Africa during the Plio-Pleistocene and to reconstruct hominin environments through the lens of pig ecology.

This PhD project will be based at the University of the Witwatersrand, Evolutionary Studies Institute under the directorship of Prof. Marion Bamford (<https://www.wits.ac.za/esi/>) with input from partners in Europe. In particular, the project is part of and is funded by ERC\_101141770\_PLIODIS (<https://pliodis.github.io>). The student will therefore also interact with Prof. Gabriele Macho at AMGC-VUB (<https://amgc.research.vub.be>), a PhD student working on a related topic at VUB, and with other members of the team.

The project involves the following:

- document the diversity of suid fossils from various South African Plio-Pleistocene sites and record basic morphological traits, such as body mass, brain size etc. (i.e., help build a database in collaboration with a PhD student at VUB)
- carry out detailed functional analyses of cranial and dental remains with a view to ascertain the dietary adaptations of the various taxa and their diversity
- carry out functional analyses of the forelimb to determine the extent to which the pigs dug out underground storage organs
- supplement the functional analyses listed above with targeted isotope analyses in order to further determine dietary adaptations, mobility and climate conditions.
- carry out multivariate statistical analyses
- integrate the results into the broader findings of *PLIODIS*

The PhD candidate is expected:

- to have a degree in biological/natural sciences, anatomy, palaeontology or related subject
- a working knowledge of functional analyses and/or (bio)mechanics
- good communication skills
- be computer literate and knowledgeable in *R*
- meet deadlines
- be prepared to spend time in the field and/or in Europe

To be considered for the position submit your full cv, names and addresses of two potential referees and a short motivation statement. If you require further information, please contact [Marion.Bamford@wits.ac.uk](mailto:Marion.Bamford@wits.ac.uk) or [Gabriele.Macho@vub.be](mailto:Gabriele.Macho@vub.be).

Applications will be accepted until the position has been filled.