



## PhD fellowship in Palaeoproteomics at the Earth Sciences Department (DST) of the University of Florence

We are recruiting candidates for a PhD position in Palaeoproteomics, starting September 1<sup>st</sup>, 2020 or as soon as possible thereafter.

The position is part of the European Training Network “PUSHH: Palaeoproteomics to Unleash Studies on Human History” [www.pushh-etn.eu](http://www.pushh-etn.eu), funded by the European Union’s Horizon 2020 Research and Innovation Programme under the Marie Skłodowska-Curie grant agreement No 861389.

### About PUSHH

The PUSHH ETN builds on the recent exciting advances in “palaeoproteomics”, i.e. mass spectrometrybased ancient protein sequencing. PUSHH will develop new proteomic methods, optimised for ancient protein analysis, that will be applied to address outstanding evolutionary questions in human and hominoid evolution. Currently, there are very few specialists that have been trained to analyse ancient proteins, but the growing demand for information provided by palaeoproteomics will require highly qualified profiles with backgrounds in analytical chemistry, bioinformatics, palaeoanthropology and palaeontology. PUSHH will fill this advanced training gap by providing international, and intersectoral doctoral (PhD) training, for 14 Early Stage Researchers (ESRs) in seven different EU countries. PUSHH will guide the ESRs to develop the advanced interdisciplinary competence they need to achieve seamless integration of palaeoproteomics with the established research approaches currently used in palaeoanthropology and archaeology. Read more about the network at: [www.pushh-etn.eu](http://www.pushh-etn.eu).

### Our group and research

The successful applicant will be part of the Vertebrate Paleontology Group (Paleo[Fab]Lab) at the Earth Sciences Department (DST) of the University of Florence (UniFI). The Vertebrate Paleontology Group is a major international player in Neogene and Quaternary vertebrate Paleontology, and recently contributed to the characterization of the paleo proteomics of and extinct rhino (*Stehanolrhinus*) from the celebrated paleoanthropologic site of Dmanisi, being able to reconstruct their phylogeny in comparison to other extant and fossil rhinoceroses (<https://www.nature.com/articles/s41586-019-1555-y>). In the last few years, the research activity pursued by the DST Vertebrate Paleontology Group significantly contributed to the understanding evolutionary history of the extinct Late Miocene endemic ape *Oreopithecus*, which will be the focus of the candidate research. The successful applicant will also be affiliated to the Paleobiodiversity & Phylogeny Research Group at the Institut Català de Paleontologia Miquel Crusafont (ICP; [www.icp.cat](http://www.icp.cat)), which is a partner organization of the PUSHH consortium, and will perform the secondment there. The ICP hosts an important collection of Miocene primates from NE Iberia, including the holotypes of multiple hominoid genera described by its researchers, such as *Pierolapithecus catalaunicus* and *Pliobates cataloniae*.

### Project description

#### Molecular-Based Phylogeny of *Oreopithecus bambolii* (ESR1)

Since the time of its first description, the taxonomic and phylogenetic status of the large-bodied hominoid *Oreopithecus bambolii*, have represented some of the most controversial issues in palaeoprimatology. *Oreopithecus* evolved under insularity conditions on the Tusco-Sardinian paleobioprovince, surviving there until 7.0–6.5 Ma and being the last European ape to become extinct. Although today *Oreopithecus* is broadly accepted as a hominoid, its unique mosaic of modern hominid derived features with apparently more primitive features and evolutionary convergences with both bipedal hominins and cercopithecoid



monkeys make its phylogenetic position most uncertain. As a result of this unique combination of morphological features, *Oreopithecus* is still considered an “enigmatic anthropoid”, with some researchers arguing that it represents a derived great ape that originated from European dryopithecines, and others arguing that it is a late survivor of the African nyanzapithecine lineage. Clarifying the phylogenetic position of *O. bambolii* and its relations with the Dryopithecinae from Spain will provide an extremely innovative contribution to the reconstruction of the evolutionary history of hominoids during the Late Miocene in Southern Europe and further contribute to resolving the evolutionary history of the group as a whole.

**Principal supervisor** is Full Professor Lorenzo Rook, UPF, [lorenzo.rook@unifi.it](mailto:lorenzo.rook@unifi.it) **Co- supervisors** are Dr. Luca Pandolfi (DST-UniFI) and Dr. David M.Alba, ICP

**Start:** September 1<sup>st</sup> 2020, or as soon as possible thereafter

**Duration:** 3 years (36 months) as a PhD candidate

### Job description

Your key tasks as a PhD student at DST UniFI are:

- Carry through an independent research project under supervision
- Complete PhD courses corresponding to approx. 30 ECTS points
- Participate in active research environments including a stay at another research team
- Obtain experience with dissemination activities related to your PhD project
- Teach and disseminate your knowledge
- Write a PhD thesis on the grounds of your project

As an Early Stage Researcher within the PUSHH network you are also expected to:

- Actively attend all the mandatory network-wide PUSHH activities, which will take place in multiple locations in and outside Europe
- Travel for a mandatory secondment period (research stay) at another institution within the PUSHH consortium
- Actively take part in the research projects involving multiple institutions and ESRs within the PUSHH network
- Deliver scientific articles and/or book chapters in collaboration with other PUSHH ESRs and supervisors
- Communicate your scientific activity to a broad audience, for example through outreach activities, public lectures, podcasts, and social media
- Comply with the highest standards of research integrity, as set out in the European Code of Conduct for Research Integrity  
[https://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics\\_code-ofconduct\\_en.pdf](https://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-ofconduct_en.pdf).

### Eligibility criteria

To be eligible for a PhD position in PUSHH, on 1<sup>st</sup> September 2020, you must:

- have not resided or carried out your main activity (work, studies, etc.) in Italy for more than 12 months since 1<sup>st</sup> August 2017. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account
- be in the first four years (full-time equivalent research experience) of your research career, and have not been awarded a doctoral degree. Full-time equivalent research experience is measured from the date when you obtained the first degree entitling you to embark on a doctorate (either in



the country in which the degree was obtained or in the country in which the researcher is recruited), even if a doctorate was never started or envisaged

### **Key criteria for the assessment of applicants**

Applicants must have qualifications corresponding to a master's degree related to the subject area of the project, e.g. molecular biology, evolutionary biology, computer science, palaeontology or similar discipline.

#### **Other important criteria are:**

- The grade point average achieved
- Professional qualifications relevant to the PhD project
- Previous publications
- Relevant work experience
- Other professional activities
- Curious mind-set with a strong interest in primate evolution, proteomics, ancient biomolecules and bioinformatics
- Demonstrated proficiency in both written and spoken English
- Demonstrated knowledge on basic evolutionary paleontology
- Demonstrated knowledge on processing and interpreting morphological and/or genomic data for phylogenetic reconstructions
- Ability to write, with a high level of independence, scientific manuscripts, reporting the original results generated, for publication on the most prestigious peer-reviewed journals
- Ability to comfortably work, both independently and as a team member, in a highly interdisciplinary environment with colleagues with different scientific backgrounds

#### **Desirable criteria are:**

- Experience in Vertebrate paleontology, with emphasis on Primates evolutionary history, is a valued plus
- Demonstrated experience in development and delivery of public outreach initiatives is a valued plus
- Advanced computational skills for command line-based manipulation and statistical analysis of large phylogenetic / genomic / proteomic datasets on large computational infrastructures is a valued plus

### **Place of employment**

The place of employment is at the Earth Sciences Department ([dst.unifi.it](http://dst.unifi.it)), of the University of Florence, Italy. The DST is the natural descendant of the "Istituto di Studi Superiori e Pratici di Perfezionamento" in which Iginio Cocchi held the Chair of Mineralogy, Geology and Palaeontology from 1860 to 1873. Cocchi was the main proponent of the need to straighten out Italy to Europe with a modern geological knowledge of the territory and its natural resources, a main goal to be achieved through the geological survey of the peninsula and islands. The Department of Earth Sciences of University of Florence is still a national excellence in scientific research and international relations within the field of Geosciences. DST Researchers of are engaged in numerous research projects and technological development in different areas of the world, with a long tradition of research in the Mediterranean Basin, East Africa and Latin America. The main research activities cover a broad spectrum of disciplines including (in a non-exhaustive list) the prediction and prevention of geological hazards (volcanic eruptions, earthquakes, landslides, floods), the exploitation and protection of natural resources (hydrocarbons, mineral deposits, water resources), the study of the palaeoclimate and palaeoecology, the paleontological study of Neogene and Quaternary faunas, the interpretation of the genesis of the Apennines and other peri-Mediterranean mountain chains, as well as the conservation and restoration of cultural and geo-environmental heritage



### **Terms of employment**

The employment as PhD fellow is full time and for 3 years

It is conditioned upon the applicant's successful enrolment as a PhD student at the Department of Earth Sciences, University of Florence. This requires submission and acceptance of an application for the specific project formulated by the applicant

### **Questions**

For specific information about the PhD fellowship, please contact the principal supervisor.

General information about PhD study at the DST-UNIFI is available at the Florence University website:

<https://www.unifi.it/vp-10285-phd-programmes.html>

### **Application procedure**

Your application must be submitted sending an email to [Lorenzo.rook@unifi.it](mailto:Lorenzo.rook@unifi.it) (see <https://sites.google.com/palaeoproteomics.org/pushh/recruitment>). The application must include the following documents in PDF format:

1. Motivated letter of application (max. one page)
2. CV incl. education, experience, language skills and other skills relevant for the position
3. Master of Science diploma and transcript of records. If not completed, a certified/signed copy of a recent transcript of records or a written statement from the institution or supervisor will do

### **Application deadline: [July 10, 2020]**

We reserve the right not to consider material received after the deadline, and not to consider applications that do not live up to the abovementioned requirements

### **The further process**

After the expiry of the deadline for applications, the authorized recruitment manager selects applicants for assessment on the advice of the hiring committee. All applicants are then immediately notified whether their application has been passed for assessment by an unbiased assessor. Interviews are expected to be held. The assessor makes a non-prioritized assessment of the academic qualifications and experience with respect to the above-mentioned area of research, techniques, skills and other requirements listed in the advertisement