

CENIEH

Centro Nacional de Investigación
sobre la Evolución Humana

REF: PhD Position ETN 03/2020

One PhD fellowship in Palaeoproteomics at CENIEH and the Universitat Pompeu Fabra (UPF)

We are recruiting candidates for one PhD position, starting September 1st 2020 or as soon as possible thereafter and for a duration of 36 months since the starting date. The fellowships are part of the European Training Network “PUSHH: Palaeoproteomics to Unleash Studies on Human History” 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 spectrometry-based 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.

Job description (*applies to all positions*)

Your key tasks as a PhD student at PUSHH are:

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



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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-of-conduct_en.pdf.

Eligibility criteria (*applies to all positions*)

To be eligible for a PhD position in PUSHH on 1st September 2020 you must:

- Have not resided or carried out your main activity (work, studies, etc.) in Spain for more than 12 months since 1st 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.

Criteria for the assessment of applicants (*applies to all positions*)

- The grade point average achieved
- Professional qualifications relevant to the PhD project
- Previous publications
- Relevant work experience



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- Other professional activities
- Curious mind-set with a strong interest in human evolution, proteomics, ancient biomolecules and bioinformatics
- Demonstrated proficiency in both written and spoken English

Detailed information about this fellowship

MOLECULAR-BASED PHYLOGENY OF MAMMALS AND HOMININS FROM Sierra de Atapuerca (Burgos, Spain)- ESR5, Supervisor, María Martín-Torres (CENIEH), co-Supervisor Tomas Marques-Bonet (UPF)

Our group and research

The successful applicant will be part of the Palaeobiology Programme at National Research Center on Human Evolution (CENIEH) at Burgos, Spain and the Comparative Genomics (CG) Group at the Universitat Pompeu Fabra. He/she will be also member of the Atapuerca project's work team.

The CENIEH is a research centre belonging to the national network of Unique Scientific & Technical Infrastructures (ICTS). It is open to scientific and technological use by the international scientific and technological community. Its research activities are mainly on human evolution during the Late Neogene and Quaternary, and include collaborative projects at excavations and deposits of these periods worldwide. In addition, the CENIEH is responsible for the conservation, restoration, management and the recording of archaeological and paleontological collections, in particular from Atapuerca. The Palaeobiology programme represents an international point of reference in terms of scientific contributions regarding the evolutionary scenario of the Pleistocene European populations by analysing the original collections from Atapuerca and other localities worldwide, including the Pleistocene human samples from Asia.

The successful applicant will be part of the Comparative Genomics (CG) Group at the Universitat Pompeu Fabra. The CG Group is a major international player in the use of genomics to retrieve population characteristics of primates (<https://www.nature.com/articles/nature12228>; <https://science.sciencemag.org/content/354/6311/477>). We also characterized the palaeoproteomics of the extinct *Gigantopithecus* being able to reconstruct their phylogeny in comparison to other apes (<https://www.nature.com/articles/s41586-019-1728-8>). In the last few years, the research activity pursued in the CG Group significantly contributed to the understanding



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of genomics in evolution and conservation and he is granted an ERC Consolidator Grant starting on 2020. The CG Group is located at the Evolutionary Biology Unit of the Pompeu Fabra University (<http://www.upf.edu>) and is part of the Barcelona Biomedical Research Park (<http://www.prbb.org>), a renowned centre for Biomedical research that hosts, besides the University, other institutions such as the CRG (Centre for Genomic Regulation) or the EMBL Barcelona. All these organizations share a thrilling and dynamic scientific atmosphere, driven by leading groups in fields such as bioinformatics, molecular biology and evolution. The PRBB is located close to Barcelona's City Centre.

Project description

Moving back to Europe, the Atapuerca sites (Burgos, Spain) have become a reference place to explore the evolution and palaeocology of the hominins that inhabited Europe during the Pleistocene. Among the ground-breaking discoveries from these localities, the finding of over 150 human fossils assigned to a new hominin species, *H. antecessor*, dated to ca. 860 ka represents a change of paradigm in our understanding of the first hominin settlement of the continent. Recently, the recovery and analysis of *H. antecessor* proteins (Welker et al., 2020 Nature) has opened a new venue of research in palaeoanthropology. The dental proteome of *H. antecessor* has helped to refine the phylogenetic assessment of this species, reinforcing the proposal of its close relationship with the origins of modern humans, Neanderthals and Denisovans. This PhD project aims to study the proteome of the emblematic cave bear lineage by analysing the species represented at the Early (*Ursus dolinensis*), Middle (*U. deningeri*) and Late Pleistocene (*U. spelaeus*) sites from Atapuerca and compare them to other ursids from Europe. The Atapuerca cave bears have been recovered from the same levels where human presence (hominins and/or lithics) was documented such as Sima del Elefante (ca. 1.2 Ma), Gran Dolina (ca. 860 ka) and Sima de los Huesos and Galería (ca. 400 ka). If the analysis of the *Ursus* paleoproteins proves successful, the project will extend its scope to the hominin groups and investigate the taxonomy and phylogeny of other Eurasian Pleistocene hominins.

Specific requirements

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 or similar discipline.

Other important criteria for the assessment of applicants to this specific position are:

- Demonstrated knowledge on programming and/or basic evolutionary biology.



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- Experience in processing and interpreting genomic data for phylogenetic inference and/or population genomics 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 for the assessment of applicants to this specific position are:

- Advanced experience in implementing, and optimizing palaeoproteomics methods is a valued plus.
- Experience in human and/or mammalian population genomic inferences 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 genomic/proteomic datasets on large computational infrastructures is a valued plus.

Principal supervisor is Prof. María Martín-Torres, (CENIEH) maria.martinon@cenieh.es

Second supervisor is Full Professor Tomas Marques Bonet, UPF, tomas.marques@upf.edu

Third supervisor is Dr. Elena Santos, Centro Mixto UCM-ISCIII de Evolución y Comportamiento Humanos, Madrid

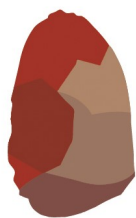
Start: September 1st 2020, or immediately thereafter

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

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 "Human Evolution, Paleoecology of the Quaternary and Geophysical Techniques Applied to Investigation (Interuniversity)" of the University of Burgos. This requires submission and acceptance of an application for the specific project formulated by the applicant.



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The employer will be the CENIEH. All the salary costs generated by this contract (the gross salary, other allowances and the employer's Social Security contribution) shall be borne by the aforementioned EU Project. The salary will be the one stated in the European Training Network Grant, which includes monthly living allowance, mobility allowances and family allowance if applies. This position falls within the Scientific Functional Area, Professional Group II, at least Level B.2, professional category of Research Trainee, in accordance with the professional classification and salary tables in force in the First Collective Agreement of the Consorcio CENIEH published in the Boletín de la Provincia de Burgos, No. 8, on 12 January 2012.

Questions

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

Application procedure

The application must be submitted electronically by clicking '**Apply now**' below. 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.
4. Publication list (if possible).

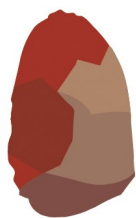
For purposes of the evaluation process, only the information included in the curriculum vitae or in the others documents on the closing date of the deadline for submitting applications will be taken into account.

Application deadline: 30th of June, 14:00h

We reserve the right not to consider material received after the deadline, and not to consider applications that do not live up to the above-mentioned requirements.

Selection process

The Selection Committee will be composed of the following members:



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1. Chairman: Prof. María Martín-Torres (CENIEH)
2. Members: Prof. Tomas Marques Bonet (UPF) and Prof. José M^a Bermudez de Castro (CENIEH)
3. Secretary: Carmen Gutiérrez Díez

The Selection Committee will examine the applications received to determine whether they comply with the specific requirements and documentation required, both detailed above, formalizing for this purpose a list of admitted and excluded candidates. All applicants are then immediately notified whether their application has been admitted or not. The evaluation process consists of two phases; i) Evaluation of CV and ii) Personal Interview. For the first phase, Evaluation of CV, the Committee will consider the important and desirable criteria specified in the "Specific requirements" section. The Evaluation of CV will have a maximum score of 10 points. Applicants must obtain a minimum of 6 points in the curricular evaluation to pass to the next phase. If no candidate achieves the minimum required score, the position will remain vacant.

Candidates who pass this phase will be called for a personal interview, aimed at assessing more accurately their level of the required skills. The interview will have a maximum score of 10 points.

The score awarded in phase of the curricular evaluation, may be rectified, if it is subsequently verified that the information provided in the CV is inaccurate.

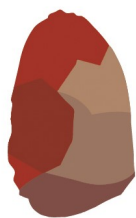
Applicants must obtain a minimum of 6 points in the interview evaluation to pass this phase. If no candidate achieves the minimum required score, the position will remain vacant.

Each member of the Committee shall score the candidates individually, and the average of each applicant's scores calculated to yield their final score for each phase.

Once the relevant selection phases have been completed, the individual evaluations obtained in each phase will be added together. The position will be awarded to the candidate who accumulates the highest score in the range between 12 and 20 points.

Within a maximum period of seven weeks from the application deadline, the Selection Committee will record its hiring proposal for the aforementioned position in the Resolution Act, which will include both the proposed candidate and two alternates, for subsequent approval by the Director.

Any discrepancies which might arise out of the interpretation or application hereof shall be settled by the Selection Committee.



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Once the selection process is finished, all documentation referring to it shall be returned to the Human Resources Department of the Consorcio CENIEH, the body responsible for its custody and control.

According to the regulations on data protection, and in particular, article 5.1.f) of the General Data Protection Regulation 2016/679/EU (the "GDPR"), members of the Selection Committee are obliged to maintain confidentiality and professional secrecy with respect to the personal data they may handle as part of their duties in this selection process.

Once the final hiring resolution has been approved by the Director, it will be published on the CENIEH website and in as many places as deemed appropriate.

A temporary employment contract (*Phd contract according to art. 21 of Science, Technology and Innovation Act 14/2011*) will be formalized with the selected candidate, who will have to pass the trial period of six months, during which the Project Leader will evaluate the proper performance of their job.

Human Resources will contact the selected candidate to obtain the necessary documentation for the formalization of the contract. A greater number of contracts may not be formalized than positions announced.

The proposed candidate must submit to a medical examination by the Prevention Service of the CENIEH and be declared "fit" to perform the duties corresponding to the position.

Should an engaged candidate decline their post or it should otherwise become vacant, it may be occupied by the candidate nominated as alternate. In the event of substitution, the period elapsed shall not be recoverable for the purposes of the duration of the contract.

In Burgos, on 15 May 2020

Firmado por 34995646L MARIA MARTINON (R: S0900008D) el día 15/05/2020 con un certificado emitido por AC Representación



President of the Committee

Director of the Consorcio CENIEH