



**NOTICE OF OPENING OF AN INTERNATIONAL CALL FOR THE SELECTION OF A PhD
HOLDER RESEARCHER UNDER DECREE-LAW NO. 57/2016**

Internal code: Bioinformatician/ERC_CenAGE /i3S/0204/2026

A call is opened for the position of a PhD holder (Bioinformatician), for an unfixed term work contract, to carry out work as a bioinformatician within the project **CenAGE** “A *centromeric view on AGEing: unveiling centromere instability in ageing*” GA 101224668, funded by the European Research Council under the topic ERC-2025-SyG - ERC SYNERGY GRANTS.

Scientific Area: Health Sciences

1. Project summary and work plan

Amongst the ageing hallmarks, genomic instability has emerged as a unifying cause of ageing, since it drives most of the other hallmarks, namely senescence and chronic inflammation. These hallmarks are all typically portrayed by the aged immune system, with compelling evidence pointing to genomic instability in immune cells as a driver of organismal ageing. Intriguingly, while the role of telomeres, mutations, transposons, etc, in age-related genomic instability has been widely investigated, the centromeres have remained largely overlooked. Emergent evidence show that centromeres are inherently unstable, and recent findings from our labs indicate that centromere instability can lead to genome instability, inflammation, and senescence, including in non-cycling immune cells. In CenAGE, we propose a multi-layer synergistic approach to deliver a ‘centromeric’ view on ageing by: i) characterizing age-associated changes in centromere features in cellular models; ii) identifying the intrinsic (genetic and epigenetic) and extrinsic (viral infection) mechanisms behind centromere-driven senescence hallmarks; iii) establishing the role of centromere dysfunction in physiological decline, focusing on the immune system; and iv) testing how geroprotective interventions that implicate centromeres impact immunosenescence and systemic ageing.

The tasks to be executed by the researcher are as follows:

- Analysis of "omics" data (genetics, transcriptomics, etc.) from humans and mice;
- Genomic analysis of long-lived individuals and/or age-related diseases datasets;
- Transcriptomic profiling using tools like DESeq2 or EdgeR to analyze RNA-seq data in specific tissues;
- Predict biological age based on DNA methylation clocks or other clocks;
- Leverage single-cell RNA sequencing (scRNA-seq) to study the heterogeneity of aging and identify specific populations of immune aged cells;
- Create automated workflows to process sequencing raw data, ensuring results are reproducible and accurate;
- Develop systems-biology models that combine multi-omics data to create "aging networks";
- Supervision of technician, MSc student and/or PhD students;



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**INSTITUTO
DE INVESTIGAÇÃO
E INOVAÇÃO
EM SAÚDE**
UNIVERSIDADE
DO PORTO

Rua Alfredo Allen, 208
4200-135 Porto
Portugal
+351 226 074 900
info@i3s.up.pt
www.i3s.up.pt

- Manuscript preparation and grant writing.

2. Applicable Portuguese legislation

Decree No. 57/2016, of August 29 – Legal Framework for Scientific Employment (RJEC)
– in its current version. Portuguese Labor Code, in its current wording.

3. Jury

Chairman: Elsa Logarinho; Other Members: Tânia Lima, José Pedro Castro; Substitutes: José Bessa; Diogo Sampaio e Castro.

4. Workplace

i3S - Rua de Alfredo Allen, 208 Porto, research group Aging and Aneuploidy.

5. Job title and monthly salary:

Bioinformatician, €2408.11 - €3576.56. Salary will be awarded according to the candidate's qualifications and experience.

6. Obligatory requirements for admission

- PhD degree with experience in computational biology, bioinformatics biomedical AI or related areas;
- Strong programming skills and background in AI;
- Proficiency in R and/or Python, especially regarding the use of libraries specific to bioinformatic analysis (e.g., DESeq2/pyDESEQ2, clusterProfiler/GSEAPy, Seurat/Scanpy) and data wrangling (e.g. tidyverse);
- Proficiency with commonly used omics analysis like Over Representation Analysis (ORA), Gene Set Enrichment Analysis (GSEA), annotation of genomic features, etc.;
- Proficiency in analyzing public datasets (e.g., SRA Toolkit) and exploring common databases (e.g., Gene Expression Omnibus, MSigDB);
- Student supervising experience;
- Contacts of two references. These will only be contacted during the interview stage;
- Fluent (writing and speaking) in English.

Preferential requirements for admission

- With previous postdoctoral experience (> 5 years) in computational analysis related to immunology or aging;
- With proficiency in Bash/Shell scripting and using the command line interface (CLI);
- With proficiency in handling complex pipelines for different kinds of high-throughput sequencing analysis, such as RNA-seq, scRNA-seq, ChIP-seq, CUT&RUN, ATAC-seq, single-cell multi-omics, etc.;
- With proficiency in using bioinformatic tools and pipelines for processing of raw omics data using the CLI. Examples include CellRanger, HISAT2, Bowtie2, Salmon, deepTools, samtools, etc.;
- With proficiency in analyzing public datasets about aging (e.g., Tabula Muris Senis);
- That provide a link to a GitHub repository (or similar) demonstrating proficiency in computational analysis and the aforementioned points;



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- g) Strong track record for career stage, including first-author publications in internationally recognized peer-reviewed journals;
- h) Demonstrable experience in supervision of students (e.g., Master's and PhD students);
- i) Participation and communication in scientific meetings (e.g., oral and poster communications).

7. Evaluation of the applications and publication of the results

The evaluation of the scientific and curricular background of the candidates should focus on the activity of the last five years that the candidate considers most relevant. The five-year period may be extended by the jury, at the candidate's request, when justified by suspension of scientific activity for socially protected reasons, namely for reasons of parental leave, prolonged serious illness, and other situations of unavailability for work that are legally protected.

Weight of the different curricular valuation criteria:

- a) Detailed Curriculum Vitae - Expertise in areas listed above on 6. (80%);
- b) Motivation Letter in English indicating detailed information on how the candidate meets the mentioned criteria (10 %);
- c) Interview - *facultative* (10%).

If the jury decides to obtain further clarifications and additional information about the curricular elements presented, the 3 (three) best candidates classified on the basis of the curriculum may be called for an interview. The final classification system for candidates is expressed on a scale from 0 to 100. Candidates who are not interviewed will be able to obtain a rating of up to 90%.

Candidates who submit their application incorrectly or fail to meet the required qualifications for this competition will be excluded from admission. The jury reserves the right to request any candidate, in case of doubt, to provide supporting documents for their statements.

False statements made by candidates will be sanctioned in accordance with the law.

The jury will draw up minutes of its meetings, which can be consulted at the candidate's request within 10 working days after the selection results are released.

The jury deliberates by means of a reasoned vote according to the evaluation criteria, with no abstentions allowed, and draws up a list of excluded and admitted candidates, ordered by respective classification.

All candidates are notified of the selection results by email. After notification, candidates have 10 working days to comment.

In the 90 days following the deadline for submission of applications, the jury's final decision is communicated to the candidates. Subsequently the institute Director, who is also responsible for the final decision of hiring, will ratify the decision of the jury.



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This call is intended exclusively to fill the indicated position on offer and may be canceled before the final ranking list of candidates is ratified by the Director. Accordingly, the position will no longer be available.

8. Submission of applications

Applications must include all the documents proving that they fulfill the admission requirements, namely:

- a) Copy of PhD degree certificate or diploma;
- b) Detailed Curriculum Vitae;
- c) Motivation Letter in English;
- d) Other documentation relevant for the evaluation of qualifications in a related scientific area;
- e) Contacts of two references. These will only be contacted during the interview stage.

The submission of applications is digital, in pdf format, from April 2 - 16, 2026, in the following link:

<https://dozer.i3s.up.pt/applicationmanagement/#/addapplications/aaa747e94a22754fbfbdefd59bc4fce>

9. Start and duration of the contract

The anticipated start date of the contract is May 16th, 2026, and is subject to budget availability. The expected duration of the contract will be 12 months, eventually extendable.

10. Non-discrimination and equal access policy

i3S actively promotes a policy of non-discrimination and equal access. No applicant shall be privileged, benefited, prejudiced, or deprived of any right or exempted from any duty on the basis of ancestry, age, gender, sexual orientation, marital status, family situation, economic situation, education, origin or social condition, genetic heritage, reduced work capacity, disability, chronic illness, nationality, ethnic origin or race, territory of origin, language, religion, political or ideological beliefs, or trade union membership.

Within the framework of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers, i3S adopts the Open, Transparent and Merit-based (OTM-R) principles for the recruitment of researchers, with the aim of conducting fair and transparent recruitment processes, bringing equal opportunities to all candidates.

11. Applicants with disabilities

Under the terms of Decree-Law 29/2001, of February 3, the candidate with a disability is given preference in equal ranking, which takes precedence over any other legal preference. Candidates must declare under oath their degree of disability, the type of disability and the means of communication/expression to be used in the selection process, under the terms of the aforementioned decree.



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