

CALL FOR APPLICATIONS FOR THE AWARD OF RESEARCH FELLOWSHIPS
Regulation on Research Fellowships pursuant to Italian Law no. 240/2010
Alma Mater Studiorum University of Bologna, issued by Rectoral Decree no. 416 of 19/04/2011

Protocol num. 5274 Rep. 157 Fascicolo 9710855 dated 23/09/2024

Art. 1 - Purpose

Applications are invited for the selection running at (structure): DIPARTIMENTO DI INGEGNERIA INDUSTRIALE of the Alma Mater Studiorum University of Bologna for the award of 1 grant research fellowship(s), for the execution of research activities within the project entitled "Research activities for the characterization of metastatic vertebrae through medical images", according to the annexed Activity Programme. The call for applications for the research fellowship is **issued pursuant to the University Regulation** issued by Rectoral Decree (D.R.) no. 416 of 19/04/2011, funded by HEU_METASTRA "Computer-aided Effective fracture risk Stratification of patients with vertebral metastases for personalised treatment through robust computational models validated in clinical settings" - GA 101080135, approved by the structure in the session of Friday, September 20, 2024.

The activities shall be carried out under the supervision of a tutor identified by the structure as Prof. LUCA CRISTOFOLINI, in a non-subordinate relationship with no set working hours.

The main place of work will be: DIPARTIMENTO DI INGEGNERIA INDUSTRIALE, VIA TERRACINI, 24 40131 BOLOGNA

Art. 2 - Requirements for candidacy

The selection is open to candidates in possession of the following qualification:

- Master Degree or equivalent title in **Biomedical Engineering, or Electronics, or Mechanics or Computer Science, or Biology, or Biotechnology, or Physics** with appropriate scientific and professional curriculum.
- Competences/requirements laid down for candidates: **Publications in peer-reviewed scientific journals published within the last two years on topics relevant to the research project in question will be assessed. Preference will be given to candidates with proven experience in the following areas - Musculoskeletal biomechanics - Anatomy of the spine - Spinal pathologies - Primary tumours and metastases - Knowledge of methods and problems of digital image correlation (DIC) - Knowledge of methods and problems of digital volume correlation (DVC) - Medical image acquisition and analysis skills (e.g. microCT, qCT, MRI) - Knowledge of major imaging software (e.g. Amira, ImageJ, 3D slicer, Mimics) - Strong knowledge of inferential statistics.**

Candidates must possess the admission requirements on the deadline for submission of applications laid down in this call. Candidates who do not possess the admission requirements will not be considered.

The selection is not open to any persons who are related by blood or by marriage up to the fourth degree, to a professor working in the department or structure for which the call is issued, or to the Rector, Director General or a member of the Board of Governors of the University.

The selection is also not open to anyone who has held research fellowship contracts with any institution, pursuant to Italian Law no. 240/2010, for a period which, summed to the foreseen duration of this contract, exceeds a total of 6 years, excluding any period in which the contract coincided with a PhD without scholarship, for the maximum limit of the legal duration of the PhD programme.

Furthermore the selection is not open to anyone who has had research fellowship or fixed-term researcher contracts at the University of Bologna or any other state-funded, private-funded or distance-learning Italian university pursuant to articles 22 and 24 of Italian Law 240/2010, or with any other body listed in paragraph 1 of Art. 22 of Italian Law 240/2010 for a period which, summed to the foreseen duration of this contract, exceeds a total of 12 years, even if not consecutive. For the purposes of the duration of the above-described periods, in compliance with the laws in force any periods of maternity or sick leave shall not be calculated.

Art. 3 - Application

Applications may only be submitted online by accessing the website: <https://concorsi.unibo.it>, after completing the registration process, following the web procedure instructions. **The last day available to submit the application is Thursday, October 17, 2024 at 23:59 - Europe/Brussels;** applications submitted after this time will not be considered. The date shown on the receipt sent electronically to the candidate is deemed to be the date of the application submission.

Any communications will be sent to candidates exclusively via email, to the address provided in the application.

In the online application, following the web procedure instructions, candidates must indicate, under their own responsibility:

- surname and name;
- date and place of birth;
- nationality;

- residence and chosen address for correspondence for the purposes of this selection;
- that they do not have a criminal record and are not involved in any current criminal proceedings (or if so, state which);
- that they have the qualification required by art. 2 of the call for applications, specifying the University and year in which it was obtained;

or

- that they possess an academic qualification obtained abroad, which is deemed equivalent.

The candidates in possession of a qualification obtained abroad must annex to their applications a translation into Italian or in English of their foreign qualification, accompanied by a sworn statement that it is a faithful translation of the original certificate.

The foreign qualification may be declared admissible by the Evaluation Board, solely for the purposes of admission to the selection procedure.

In case of award, the winning candidates having obtained their qualification in a country outside of the European Union, must provide the Structure, in the same manner as laid down for the presentation of applications, the official translation with a declaration of value of the foreign qualification issued by the competent diplomatic representation or Italian consulate in their home country, in accordance with the applicable laws, **within 30 days from the notification of official approval of the selection procedure reports.** If the documents are not received by the Structure within the stated deadline, the candidate will not be awarded the contract.

Candidates must also enclose the following with their applications:

- copy of a valid identity document;
- their scientific and professional curriculum vitae also containing scientific productivity;
-

Candidates are admitted to the selection procedure with reserve.

At any time, even after participation in any tests, the Administration may, with justification, exclude them from the selection procedure. The concerned candidate will be notified of such exclusion.

Art. 4 - Comparative assessment of the candidates and the Evaluation Board

The candidates will be assessed comparatively by an Evaluation Board appointed by the Board of the Structure, and formed by the following members:

- 1) Prof. Luca Cristofolini
- 2) Dott. Marco Palanca
- 3) Dott. Giorgio Davico

Membro supplente: Prof. Marco Viceconti

The selection procedure focuses on the examination of the selection criteria laid down in advance by the evaluation board, the candidates' scientific-professional curriculum containing also the scientific work and publications as well as an interview, aiming to verify the suitability of the candidate for carrying out the research programme.

During the interview, the Board will also verify the candidates' knowledge of the foreign language(s) English on relevant sectoral topics.

The list of candidates admitted to interview will be published on the site for calls, tenders and competitions <https://bandi.unibo.it/ricerca/assegni-ricerca> on (date) **Monday, October 21, 2024**

For information contact the phone number 0512082702 (from 9:00 to 12:00 Europe/Brussels).

The interview will be held on Wednesday, October 23, 2024, time: 17:00 Europe/Brussels at DIPARTIMENTO DI INGEGNERIA INDUSTRIALE, Via Terracini 28 Bologna
in the office of Prof. Luca Cristofolini.

The interview is in public form, so as to ensure maximum participation.

The maximum score available to the Commission is 100 points. Candidates who have obtained at least 60 points will be considered eligible.

The points will be allocated as follows

- maximum 40 points to qualifications
- maximum 60 points for the interview.

Candidates who have obtained at least 21 of the 40 points for the qualifications will be admitted to the interview.

Candidates who have obtained 31 of the 60 points for the oral test will be deemed to have passed the interview.

The following will be assessed as qualifications

- (a) PhD in bioengineering or related fields, in the field of orthopaedic biomechanics (max 5 points)
- (b) Publications in peer-reviewed scientific journals published in the last 2 years on topics related to the research project in question (up to 4 points for each publication, up to a maximum of 10 points in total)
- (c) Proven experience in the following areas (max. 25 points)
 - Musculoskeletal biomechanics
 - Anatomy of the spine
 - Spinal pathologies
 - Primary tumours and metastases
 - Knowledge of methods and problems of digital image correlation (DIC)
 - Knowledge of methods and problems of digital volume correlation (DVC)
 - Medical image acquisition and analysis skills (e.g. microCT, qCT, MRI)

- Knowledge of major imaging software (e.g. Amira, ImageJ, 3D slicer, Mimics)
- Strong knowledge of inferential statistics

The interview, in English, will focus on the topics of the Research Project covered by this grant and on the discussion of the qualifications presented.

At the end of the selection procedure, the Board will draw up a list of candidates with relative scores, valid for a period of 1 mese .

Candidates will preferably have a PhD or medical specialisation school diploma.

If two candidates receive the same scores, preference will be given to the younger candidate.

The Head of the Structure shall confirm in writing his/her approval of the list drawn up by the Board which will be published on <https://bandi.unibo.it/ricerca/assegni-ricerca>.

The list of candidates may be used to award other research contracts within the same research project, also of a lesser duration than that indicated in the call for applications and in any case no less than one year.

Art. 5 - Duration and amount of the contract

The contract has a duration of **12 months** and may be renewed and/or extended in the terms laid down in the University Regulation concerning research fellowships, as issued by D.R. no. 416 of 19/04/2011.

The gross amount of the research fellowship contract is € **22.697,00** per annum. The amount is exempt of withholding tax and includes all statutory social security charges the Research Fellow is subject to.

The amount will be paid in deferred monthly payments.

The Research Fellow is provided with accident insurance, against payment of the required contribution which will be withheld from the first monthly instalment.

Art. 6 – Contract signature

The winning candidate will be invited to sign a research contract with the Structure within Friday, January 31, 2025.

The non-acceptance within the deadline notified by the structure shall lead to the forfeiture of the right to sign the contract.

Art. 7 - Rights and Duties

a) The contract is governed by the following regulations concerning leave: for obligatory maternity leave, the provisions laid down in the Decree of the Ministry of Labour and Social Welfare of 12 July 2007, published in the Official Journal no. 247 of 23 October 2007, and, for sick leave, article 1, paragraph 788, of Italian law no. 296 of 27 December 2006 and amendments.

b) The research activities are carried out under the supervision of the tutor, in a non-subordinate relationship with no fixed working hours. The research fellow shall personally carry out the required activities laid down in the Activity Programme without any substitution.

c) Research Fellows assigned to medical and clinical subject areas: the Research Fellow may carry out care activities exclusively for the purposes and needs of the research project, in the methods and limits laid down in the contract, or, in the case of activities carried out in healthcare structures, as laid down in specific agreements between the university and the health board.

d) The Research Fellow may spend a period of study abroad, in line with a programme agreed with the department and with expenses borne by the department, without prejudice to the possibility to obtain specific funding.

Art. 8 - Regulations concerning Intellectual Property

Industrial Property rights over the results achieved by the Research Fellow in the execution of activities undertaken on behalf of the University, including but not limited to industrial inventions, models, drawings, plant varieties, as well as the intellectual and industrial property rights deriving from the production of software or databases (“Results”), belong exclusively to the University, which may freely use them also within agreements made by the departments with third parties, without prejudice to the moral rights of the Research Fellow who shall be acknowledged as the author or inventor.

The Research Fellow has the right to publish the Results of his/her research activities, provided that the publication does not prejudice the rights of the University over the protection of the Results.

The Research Fellow therefore undertakes to promptly notify the achievement of the results to the tutor, who shall verify the existence of any such prejudice.

In any case the Research Fellow undertakes to sign a specific Undertaking of Confidentiality with the referred Structure, which will be annexed to the contract.

Art. 9 - Non-accumulation, incompatibility, leave

1. The position of research fellow is incompatible with the following positions:

a) fixed-term and full-time staff employed by the bodies listed in art. 22 para. 1 of Italian Law no. 240/2010;

b) persons employed by any private bodies, on a fixed term, permanent or part-time basis; For staff of any Public Administration other than those listed in letter a) refer to the provisions of point 2 below;

c) persons with fixed-term research contracts with any university;

- d) adjunct professors with official teaching responsibilities in degree programmes or specialisation schools in any university;
- e) persons enrolled in any first, second or single cycle degree programmes, PhD programmes with scholarships or specialisation school. Self-funded research contracts are compatible with enrolments in non-medical specialisation schools, for which no study grant or contract is foreseen or master's degree only where authorised in advance by the structure Director, and having sought the opinion of the tutor.
- f) persons awarded research fellowships at any other body.
2. Employees of public administrations other than those listed in point a) with a fixed-term, permanent or part-time contract shall take unpaid leave of absence for the whole period of the research contract.
 3. Freelance professional activities are compatible with the research fellowship contract where authorised in advance by the Board of the structure, with the motivated opinion of the tutor and having verified that the activities in addition to the research fellowship do not prejudice the regular execution of the contract.
 4. The accumulation of the research fellowship contract with study grants awarded for any purpose is not permitted, with the exception of those granted by national or foreign institutions for the purposes of integrating the research activities with study periods abroad.
 5. The above requirements must be possessed from the moment of entry into force of the contract. The winning candidate shall sign a specific affidavit undertaking to notify the department of any variations in the declared situations as soon as they occur.

Art. 10 – Forfeiture

Any candidate who within the deadline notified by the structure does not sign the contract, unless for promptly and duly demonstrated reasons of health or force majeure, shall forfeit the right to sign the contract.

Art. 11 - Reference norms

For any matters not laid down in this call for applications, refer to the Regulation on Research Fellows issued by the University of Bologna by Rectoral Decree no. 416 dated 19.04.2011 and other statutory regulations in force.

The personal data provided by the candidates in their applications, pursuant to General Data Protection Regulation- Regulation (EU) 2016/679, shall be processed for the purposes of managing the selection procedure and the contract.

The structure reserves the right to revoke this call for applications due to supervening reasons of public interest or in the event of a change in the factual situation not foreseeable at the time of the adoption of the provision.

Selection procedure manager Dott.ssa Ilaria Pagliarini.

For information of an administrative nature on this announcement please contact Dott.ssa Ilenia Zanetti, ilenia.zanetti@unibo.it, 051 2082702.

This call for applications will be published on the University Portal, the MIUR website and the European Mobility Portal.

Date, Monday, September 23, 2024

THE HEAD OF DEPARTMENT

Prof. Ing. Gian Marco Bianchi

Document signed with digital signature pursuant to Legislative Decree 7 March 2005, n. 82 and of the D.P.C.M. 22 February 2013 and subsequent amendments