Finanziato dall'Unione europea NextGenerationEU

MUR Ministero dell'Università e della Ricerca

ALMA MATER STUDIORUM UNIVERSITÀ DI BOLOGNA

Purpose: Public comparative procedure for the recruitment of 47 researchers with a full-time fixed-terms employment contract for three years, pursuant to art. 24 paragraph 3 letter a) (junior) of Law no. 240/2010, as part of the National Recovery and Resilience Plan (PNRR), Mission 4 "Education and Research" - Component 2 "From Research to Business.

THE DIRECTOR

WITH REFERENCE TO the Regolamento UE of February 12th, 2021, no. 2021/241, which established the Dispositivo per la Ripresa e la Resilienza;

WITH REFERENCE TO the National Recovery and Resilience Plan (PNRR), presented to the European Commission on April 30th 2021 pursuant to art. 18 of Regulation (EU) no. 2021/241 and approved by decision of the ECOFIN Council of July 13th 2021 notified to Italy by the General Secretariat of the Council with note LT161 / 21 of July 14th 2021, which plan consists of 6 missions and 16 components, and in particular considering the Mission 4 Component 2 (M4C2) "From Research to Business" which aims to support investments in research and development, to promote innovation and the diffusion of technologies, to strengthen skills by promoting the transition to a knowledge-based economy , covering the entire supply chain of the research and innovation process, from basic research to technology transfer;

WITH REFERENCE TO the Projects approved under the PNRR and related to the following notices:
«Public notice for the presentation of intervention proposals for the creation of “Partnerships extended to universities, research centers, companies for the financing of basic research projects”», announced with Directorial Decree no. 341 of 15th March 2022, here in after "Extended Partnership Call";

WITH REFERENCE TO the notice published in the Official Gazette - 4th special series of 18th November 2022 with which the University of Bologna has published a selection notice for the assignment of fixed-term research contracts of type a), pursuant to law no. 240, art. 24, paragraph 3, letter a) (RTDA) to be applied to PNRR resources;

WITH REFERENCE TO the rules referred to in Article 13 of the present call for application;

WITH REFERENCE TO the resolutions and decrees issued in September and October 2022 by the Departments for which the positions are activated;

WITH REFERENCE TO the resolutions of Board of Governors of 27th September 2022 and 24th October 2022;

ORDERS

Art. 1 – Purpose

Procedures of comparative evaluation by qualifications and public discussion are called for the recruitment of 47 researchers with a full-time fixed-term employment contract for three-year pursuant to art. 24 paragraph 3 letter a) (junior) of Law no. 240/2010.

An annual gross salary equal to € 36.840,00 will be corresponded. The annual increase in this amount will be calculated according to the existing procedure for non-contracted personnel.

The contracts are activated with resources from the National Recovery and Resilience Plan (PNRR).

The specific elements of each position are defined in the relative attachment. In the case of procedures for the selection of several positions, the specific elements of each of them will be specified in the relative attachment.

In the following articles, where there are specific elements of each selection, reference is made to the attachments.

Art. 2 – Activities to be performed

The researchers will have to carry out 350 hours of supplementary teaching and assistance to students, for each academic year covered by the contract.

The hours of frontal teaching on annual basis are indicated in each attachment.

If required by each attachment, the researchers will perform medical care services, moderate or conventioned, in line with the methods defined by the hospital for all contracted university research staff.

In this regard, Articles 5 and 6 of Italian Legislative Decree 517/99 and amendments are applied, as well as regional laws and local agreements.

The medical activity will be related to the research projects described in this call for applications.

Concerning the provisions of art. 10 of the Reg. regarding fixed term researchers, issued by Rectoral Decree no. 344 of March 29th 2011 and amendments, the project that each winner will have to develop and the scientific productivity objectives are explained in the relative attachment.

Art. 3 – Admission requirements

The selection is also open to those who come from non-EU countries.

Each attachment specifies the necessary requirement to be able to participate in the relative selection.

In particular, either the possession of the PhD or, for the sectors concerned, of a medical specialization diploma may be required.
In any case, applicants must be in possession of qualification at the date of the deadline for the submission of applications to the present selection.
In case of PhD obtained abroad, please include a statement of equipollence with the Italian PhD title pursuant to art. 74 of D.P.R. 382/1980 or the statement of equivalence with the Italian PhD title pursuant to art. 38 of Legislative Decree. N. 165/2001.
In case of High School of Specialization obtained abroad, please include a statement of equivalence with the Italian title pursuant to art. 38 of Legislative Decree. N. 165/2001, or art. 74 of D.P.R. 382/1980.
In both cases, pending the release of the only result of equivalence by the designated offices, it is possible to produce the delivery receipt of the request instance of the same (for the release procedure, see page:
http://www.cimea.it/it/servizi/procedure-di-riconoscimento-dei-titoli/riconoscimento-non-accademico.aspx).
In any case the proof of the equivalence of the foreign qualification must be produced to the administration prior to beginning service.
Applications from professors, associate professors, or researchers with tenure will not be accepted, even if the applicant is not in service.
The selection is not open to any persons who are related by blood up to the fourth degree, to a professor working in the Department that proposed the activation of the single contract, or to the Rector, Director General or a member of the Board of Governors of the University.
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.
State employees may on unpaid leave for the entire duration of the contract, thus occupying a non-tenure position without pay or social security contributions, in cases where such a position is allowed by the structure of origin, likewise without pay or social security contributions.

Art. 4 – Application procedure

The submission of the applications for participation in the selections must be made exclusively via electronic procedure by accessing the following link:

https://personale.unibo.it

Regarding all procedures, the deadline is the following: 6th December 2022 at 12:00 (noon, Italian Time).

The application must be submitted at the same time with the insertion of all the attached documentation required.
The following documents shall be enclosed to the electronic application form (preferably files: PDF, other supported files: JPG, BMP, PNG):

1. identification document scanned (10MB max);
2. curriculum vitae with indication of the scientific-professional activity (10MB max);
3. reference letters, if any. Letters can be submitted directly by the candidate uploading it during the application, in case of possession (10MB max), or can be submitted by the referee. In this case candidates should provide the referee e-mail address. When the application is closed, the system will send an automatic request to the referee, referring to the candidate and the procedure. The referee must submit his letter through the link into the e-mail. At this address he/she will upload his/her letter by the application deadline in order to be considered as part of the candidate's application.
4. scientific publications (other supported files are TIFF and PS, 20MB max each document) which are already printed at the date of the call of application deadline, or scientific publications accepted for printed, together with the editor acceptance letter. While uploading each document will be asked to indicate the title, the authors' names, the editor, the year of publication. Optional information are the month, the ISBN code, the DOI code, the booklet number.
   Pursuant to Ministerial Decree 243/11, the PhD thesis is considered a publication, and thus if presented by the candidate it shall be included in the maximum number of publications indicated in each attachment.

While applying, applicants shall declare under their own responsibility:

1. surname and name;
2. place and date of birth;
3. citizenship;
4. residence address;
5. (if Italian citizens) registration to electoral rolls. If any, the reasons why he/she is not registered or cancelled from them;
6. that there have not been any criminal proceeding against them or current criminal proceedings; otherwise, applicants shall specify the proceedings against them (the date of the measure and the judicial authority that issued it) and pending penal proceedings. The existence of a previous criminal conviction is not in itself an impediment to hiring, unless it is a conviction for a crime that prevents the establishment of the employment relationship with the public administration as it derives from the interdiction from public office, o the inability to contract with the public administration, or the termination of the employment relationship (articles 28, 29, 32-ter, 32-quater, 32-quinquies of the Criminal Code, articles 3,4, 5, L . 97 of March 27, 2001). In other cases, the Administration will ascertain the gravity of the criminally relevant facts committed by the person concerned, for the purposes of access to public employment. This check is carried out with the aim of ascertaining the

existence of the fiduciary element which constitutes the fundamental prerequisite of the relationship between employer and worker, as well as for the purpose of assessing the existence of the requisites of moral suitability and aptitude to carry out activities as a public employee;

7. to have or not to have benefited of non-voluntary leave periods due to maternity/paternity compulsory abstention or for serious health reasons, indicating the periods in case
8. possession of the qualification required pursuant to Art. 3 of this call for application and the mark obtained, if any;
9. to be fit to the employment the selection refers to;
10. that they are not, nor have been, professors, associate professors or researchers with tenure, even if not in service;
11. that they are not related by blood up to the fourth degree, to any professor working in the Department that proposed the activation of the single contract, or to the Rector, Director General or a member of the Board of Governors of the University of Bologna;
12. elected e-mail address for the purpose of the participation in this contest;
13. Foreign citizens shall also declare to have a proper knowledge of Italian and to enjoy civil and political rights also in their origin countries or the reasons for loss of enjoyment.

Any modification shall be timely communicated to the Ufficio Ricercatori a tempo determinato.
In case of technical problems, contact the support: assistenza.cesia@unibo.it .

Art. 5 – Applicants' obligations

The penalty of exclusion from the selection shall apply in the following cases:

- Non compliance with the terms and procedures for submitting the application form indicated in article 4 of this call for applications;
- Lack of the qualification required to participate in the selection indicated in each attachment.

All applicants shall be admitted to the contest and the Administration reserves the right to check that they actually are in possession of the requirements necessary to apply for the selections; the Administration may, at any time and even after the exams, order the exclusion from the selection hereto.

Art. 6 – Selection Board

With regard to each procedure, the Selection Board will be appointed upon administration resolution and is composed of three full or associate professors belonging to the competition Scientific sector or, alternatively, to the same competition macro-sector for which the procedure is announced or of equivalent role in the case of components not coming from national universities, identified by the Department that proposed the activation of the contract.

Two of the members, external to the University, are drawn with the methods provided by the art. 8-bis of the “Regolamento per la disciplina delle chiamate dei Professori di Prima e Seconda fascia" in application of articles 18 and 24 of the Law 240/2010 issued with DR 977/2013 and s.m. A third component is identified by the Department Council among the professors inside or outside the University. As envisaged by art. 57 of Legislative Decree 165/2001, in order to guarantee equal opportunities between men and women for the access to work and work treatment, generally, at least one member is female.
The Commission appoints a president and a recording secretary between their members.
Notice of the appointment of each Commission will be published on Alma Mater Studiorum - University of Bologna website.

Art. 7 – Selection procedure

With regard to each procedure, the selection procedure is carried out by the Board after a preliminary evaluation of each candidate’s qualifications, curriculum and scientific production, including the doctoral thesis, according to the criterion identified by the MUIR in D.M. 243/2011.
The candidates chosen in the preliminary evaluation based on their comparative merits - between 10 and 20% of the number of applicants and not less than 6 - will then be called for interview. The interview will consist of a discussion of the candidate’s qualifications and scientific production and may take the form of a seminar open to the public. If the total number of candidates is 6 or less all candidates will be interviewed.
Any reference letters produced by the candidates will also be considered.
The discussion will take place in the language indicated in each attachment.
With regard to each procedure, the discussion with the Commission will take place starting from 9th January 2023, and it will be carried out in public form and electronically using the audio and video teleconferencing tool via the Teams platform (the workstation from which candidates will take do the interview must be equipped with a webcam - essential for the recognition of the candidate - microphone and headphones and/or audio speakers), according with the legislative and regulatory provisions regarding the containment and management of the epidemiological emergency from COVID-19 and also considering the evolution of the health emergency.
With reference to each procedure, the notice of the day and time in which the public discussion will take place will be announced together with the publication of the list of admitted candidates on the University website at: https://bandi.unibo.it/docenti/rtd.
The publication on the University website will constitute official notification to all applicants, without any obligation for any further communication.
The publication will be communicated by e-mail to the address indicated by the candidates in the application.
The Alma Mater Studiorum - University of Bologna does not assume any responsibility for the non-receipt or the not-read of the e-mail.

It is up to candidates to keep themselves informed by consulting the University website page to find necessary information about selection.
Candidates attending the interview must bring a valid identification document with them.
EU citizens shall bring their passport or an identity document issued by their country of origin. Non-EU citizens shall bring their passport.

Art. 8 – Ranking List and recruitment

With regard to each procedure, after the exams, the Board shall prepare the general final list based on the merits.
On equal merits, priority will be allocated according to date of birth and the youngest one shall prevail.
In the event that a procedure is announced for two or more positions and for two or more research projects or separate locations are envisaged, the candidate placed first in the ranking will have the right to choose the research project to be developed or the location (in the event that the project is unique, but there are two or more locations). The second candidate in the ranking will have to choose from the remaining projects or locations, and so on up to the last candidate usefully placed in the ranking, to whom the remaining project or location will be assigned.
The list based on merits is approved pursuant to the administration resolution and will be published in Alma Mater Studiorum – University of Bologna Official Bulletin.
The terms to raise any appeal shall start from the date of publication of said notice in case the resolution has not been otherwise disclosed.
The use of the final candidate list is strictly bound to study and research needs related to the scientific sector provided for each procedure.
The Department that activated the single position will propose recruitment by a majority vote of the professors and associate professors of the Department and approved by the Board of Governors. The Department will also propose the start date of the employment relationship.

Art. 9 – Employment procedures

Following the conclusion of the recruitment procedure referred to in art. 9, the candidates will be asked to sign a fixed-term contract of full-time or defined-time employment.
The employment relationship is governed by a personal contract, statutory laws and EC regulations.
In the event that the research project is in the medical field and provides for the performance of medical activity, the latter is governed by the national collective agreement for medical staff and by the specific appointment conferred by the hospital facility where the researcher will carry out the activity.
The personal contract shall specify any reasons for which it might be terminated, as well as the relevant periods of notice. In any case the contract will be terminated immediately and without notice in the event of the cancellation of the recruitment procedure to which it is inalienably linked.

The trial period shall last three months. At the end of the period, unless the employment relationship has been terminated by either of the parties, the employee is confirmed for service and the whole period worked from the beginning of the contract shall be calculated for seniority purposes.

Art. 10 – Documentation required for the participation in the public selection and for hiring purposes

For the purposes of participation in the public selection, documents and qualifications in English, French, German and Spanish can be produced in the language of origin. Documents and qualifications written in other languages must be presented in the original language with an Italian or English translation attached. The translation must be true and correct, written by an Italian consular, a qualified diplomatic representative, or an official translator.

Regarding the documentation necessary for hiring purposes, all the documents written in any foreign language shall be accompanied by a true and correct translation into Italian, written by an Italian consular, a qualified diplomatic representative, or an official translator.

Art. 11 – Rights and duties of a researcher with a fixed-term contract of employment

In accordance with the rights and duties of public employees prescribed by the Italian civil code, on signing the contract the researcher will be expected to perform all those activities mentioned for each position in the relative attachment as well as to carry out the research periods in the company and abroad (the latter only where applicable).

In the event that medical assistance services are provided, the researcher will also assume rights and duties related to this activity.

These activities will be carried out in respect of the existing hierarchy and in coordination with existing programmes and research projects.

The researchers will perform the requested activities in person, substitution is not permitted.

Existing Italian laws concerning maternity, injury and illness will be applied.

The researcher undertakes to fulfill the obligations of conduct prescribed by the code of conduct, issued by DPR 62/2013.

Art. 12 – Processing of personal data and person in charge for the contest

Information about the processing of personal data (provided during the application process) are available at the link: www.unibo.it/privacy (Notice for participants in contests and selections published by the University).

The person in charge of the contest is Mr. Gianfranco Raffaeli, Responsabile dell'Ufficio Ricercatori a tempo determinato - Piazza Verdi n. 3 - 40126 Bologna.

For further information, please contact: Ufficio Ricercatori a tempo determinato dell'Alma Mater Studiorum - Università di Bologna – Piazza Verdi n. 3 - Tel. +39 051 2099617 – 2098958 - 2098972, Fax 051 2086163; e-mail: apos.ricercatoritempodeterminato@unibo.it.

Art. 13 – Reference Regulations

The present notice is issued based on the following regulations:

- Art. 24 of Law no. 240 dated December 30th, 2010;
- D.P.R. (Decree of the President of the Republic) no. 445 dated December 28th, 2000;
- Leg. Decree no. 165 dated March 30th, 2001;
- Law 241/1990;
- Regulation for fixed-term researchers of Alma Mater Studiorum – University of Bologna, (link: http://www.normateneo.unibo.it/NormAteneo/Regolamento_ricercatori_a_tempo_determinato.htm).

For the Director of Area del Personale
f.to digitalmente Giovanni Longo

Attached documents:

- Summary table of activated positions
- Att. 1 – SSD FIS/07, 1 position, Dep. Of Cultural Heritage - DBC
- Att. 2 – SSD GEO/08, 1 position, Dep. Of Biological, Geological, and Environmental Sciences - BiGeA
- Att. 3 – SSD GEO/10, 1 position, Dep. Of Physics and Astronomy "Augusto Righi" - DIFA
- Att. 4 – SSD ICAR/13, 2 positions, Dep. Of Architecture - DA
- Att. 5 – SSD ING-IND/09, 1 position, Dep. Of Industrial Engineering - DIN
- Att. 6 – SSD ING-IND/17, 2 positions, Dep. Of Industrial Engineering - DIN
- Att. 7 – SSD ING-IND/19, 1 position, Dep. Of Industrial Engineering - DIN
- Att. 8 – SSD ING-IND/22, 1 position, Dep. Of Civil, Chemical, Environmental, and Materials Engineering - DICAM
- Att. 9 – SSD ING-IND/22, 1 position, Dep. Of Medical and Surgical Sciences – DIMEC
- Att. 10 – SSD ING-IND/33, 1 position, Dep. Of Electrical, Electronic and Information Engineering "Guglielmo Marconi" - DEI
- Att. 11 – SSD ING-IND/34, 1 position, Dep. Of Industrial Engineering - DIN
- Att. 12 – SSD ING-IND/35, 1 position, Dep. Of Management - DiSA
- Att. 13 – SSD ING-INF/01, 2 positions, Dep. Of Electrical, Electronic and Information Engineering "Guglielmo Marconi" - DEI
- Att. 14 – SSD ING-INF/03, 5 positions, Dep. Of Electrical, Electronic and Information Engineering "Guglielmo Marconi" - DEI
- Att. 15 – SSD IUS/01, 1 position, Dep. Of Legal Studies - DSG
- Att. 16 – SSD IUS/07, 1 position, Dep. Of Legal Studies - DSG
- Att. 17 – SSD IUS/14, 1 position, Dep. Of Legal Studies - DSG
- Att. 18 – SSD L-ANT/08, 1 position, Dep. Of History and Cultures - DiSCi
- Att. 19 – SSD L-ART/06, 1 position, Dep. Of the Arts - DAR
- Att. 20 – SSD MED/25, 1 position, Dep. Of Biomedical and Neuromotor Sciences - DIBINEM
- Att. 21 – SSD MED/26, 1 position, Dep. Of Biomedical and Neuromotor Sciences - DIBINEM
- Att. 22 – SSD MED/26, 1 position, Dep. Of Biomedical and Neuromotor Sciences - DIBINEM

- Att. 23 – SSD M-PED/03, 2 positions, Dep. Of Education Studies "Giovanni Maria Bertin" - EDU
- Att. 24 – SSD M-PSI/02, 1 position, Dep. of Psychology "Renzo Canestrari" - PSI
- Att. 25 – SSD M-PSI/08, 1 position, Dep. of Psychology "Renzo Canestrari" - PSI
- Att. 26 – SSD M-PSI/08, 1 position, Dep. of Psychology "Renzo Canestrari" - PSI
- Att. 27 – SSD SECS-P/03, 1 position, Dep. of Economics - DSE
- Att. 28 – SSD SECS-P/06, 1 position, Dep. Of Political and Social Sciences - SPS
- Att. 29 – SSD SECS-P/12, 1 position, Dep. Of Life Quality Studies - QUVI
- Att. 30 – SSD SECS-S/01, 2 positions, Dep. Of Statistical Sciences "Paolo Fortunati" - STAT
- Att. 31 – SSD SECS-S/03, 2 positions, Dep. of Statistical Sciences "Paolo Fortunati" - STAT
- Att. 32 – SSD SECS-S/04, 1 position, Dep. of Statistical Sciences "Paolo Fortunati" - STAT
- Att. 33 – SSD SPS/09, 2 positions, Dep. of Political and Social Sciences - SPS
- Att. 34 – SSD SPS/12, 1 position, Dep. of Legal Studies - DSG
- Att. 35 – SSD VET/01, 1 position, Dep. of Pharmacy and Biotechnology - FaBiT
- Att. 36 – SSD VET/04, 1 position, Dep. Of Agricultural and Food Sciences - DISTAL

SUMMARY TABLE OF ACTIVATED POSITION

Department	Call	CUP	Project	Project Code	Academic Recruitment Field	Academic Discipline	nr. Positions	Campus
Cultural Heritage - DBC	PE	J33C22002850006	PE5 - CHANGES	PE0000020	02/D1 - Applied Physics, Physics Teaching and History of Physics	FIS/07 - Applied Physics	1	Ravenna
Biological, Geological, and Environmental Sciences - BiGeA	PE	J33C22002840002	PE3 - RETURN	PE00000005	04/A1 - Geochemistry, Mineralogy, Petrology, Volcanology, Earth Resources and Applications	GEO/08 - Geochemistry and Volcanology	1	Bologna
Physics and Astronomy "Augusto Righi" - DIFA	PE	J33C22002840002	PE3 - RETURN	PE00000005	04/A4 - Geophysics	GEO/10 - Solid Earth Geophysics	1	Bologna
Architecture - DA	PE	J33C22002950001	PE11 - 3A-ITALY	PE0000004	08/C1 - Design and Technological Planning of Architecture	ICAR/13 - Design	2	Bologna
Industrial Engineering - DIN	PE	J33C22002890007	PE2 - NEST	PE0000021	09/C1 - Fluid Machinery, Energy Systems and Power Generation	ING-IND/09 - Energy Systems and Power Generation	1	Bologna
Industrial Engineering - DIN	PE	J33C22002950001 J33C22002890007	PE11 - 3A-ITALY PE2 - NEST	PE0000004 PE0000021	09/B2 - Industrial Mechanical Systems Engineering	ING-IND/17 - Industrial Mechanical Systems Engineering	2	Bologna
Industrial Engineering - DIN	PE	J33C22002860001	PE10 - ONFOOD	PE0000003	09/C2 - Thermal Sciences, Energy Technology, Building Physics and Nuclear Engineering	ING-IND/19 - Nuclear Power Plants	1	Bologna
Civil, Chemical, Environmental, and Materials Engineering - DICAM	PE	J33C22002950001	PE11 - 3A-ITALY	PE0000004	09/D1 - Materials Science and Technology	ING-IND/22 - Materials Science and Technology	1	Bologna
Medical and Surgical Sciences - DIMEC	PE	J33C22002840002	PE3 - RETURN	PE00000005	09/D1 - Materials Science and Technology	ING-IND/22 - Materials Science and Technology	1	Bologna
Electrical, Electronic and Information Engineering "Guglielmo Marconi" - DEI	PE	J33C22002890007	PE2 - NEST	PE0000021	09/E2 - Electrical Energy Engineering	ING-IND/33 - Electrical Power Systems	1	Bologna
Industrial Engineering - DIN	PE	J33C22002920006	PE6 - HEAL ITALIA	PE0000019	09/G2 - Bioengineering	ING-IND/34 - Industrial Bioengineering	1	Bologna
Management -DiSA	PE	J33C22002910001	PE9 - GRINS	PE0000018	09/B3 - Business and Management Engineering	ING-IND/35 - Business and Management Engineering	1	Bologna

Electrical, Electronic and Information Engineering "Guglielmo Marconi" - DEI	PE	J33C22002830006	PE1 - FAIR	PE0000013	09/E3 - Electronics	ING-INF/01 - Electronic Engineering	2	Bologna
Electrical, Electronic and Information Engineering "Guglielmo Marconi" - DEI	PE	J33C22002880001	PE14 - RESTART	PE0000001	09/F2 - Telecommunications	ING-INF/03 - Telecommunications	5	Bologna (3 posizioni); Cesena (2 posizioni)
Legal Studies -DSG	PE	J33C22002830006	PE1 - FAIR	PE0000013	12/A1 - Private Law	IUS/01 - Private Law	1	Bologna
Legal Studies -DSG	PE	J33C22002830006	PE1 - FAIR	PE0000013	12/B2 - Labour Law	IUS/07 - Labour Law	1	Bologna
Legal Studies -DSG	PE	J33C22002830006	PE1 - FAIR	PE0000013	12/E4 - European Union Law	IUS/14 - European Union Law	1	Bologna
History and Cultures - DiSCi	PE	J33C22002850006	PE5 - CHANGES	PE0000020	10/A1 - Archaeology	L-ANT/08 - Christian and Medieval Archaeology	1	Bologna
the Arts -DAR	PE	J33C22002850006	PE5 - CHANGES	PE0000020	10/C1 - Cinema, Music, Performing Arts, Television and Media Studies	L-ART/06 - Cinema, Photography and Television	1	Bologna
Biomedical and Neuromotor Sciences - DIBINEM	PE	J33C22002970002	PE12 - MNESYS	PE000006	06/D5 - Psychiatry	MED/25 - Psychiatry	1	Bologna
Biomedical and Neuromotor Sciences - DIBINEM	PE	J33C22002970002	PE12 - MNESYS	PE000006	06/D6 - Neurology	MED/26 - Neurology	1	Bologna
Biomedical and Neuromotor Sciences - DIBINEM	PE	J33C22002970002	PE12 - MNESYS	PE000006	06/D6 - Neurology	MED/26 - Neurology	1	Bologna
Education Studies "Giovanni Maria Bertin" - EDU	PE	J33C22002830006 J33C22002860001	PE1 - FAIR PE10 - ONFOOD	PE0000013 PE0000003	11/D2 - Methodologies of Teaching, Special Education and Educational Research	M-PED/03 - Methodologies of Teaching and Special Education	2	Bologna
Psychology "Renzo Canestrari" - PSI	PE	J33C22002970002	PE12 - MNESYS	PE000006	11/E1 - General Psychology, Psychobiology and Psychometrics	M-PSI/02 - Psychobiology and Physiological Psychology	1	Cesena
Psychology "Renzo Canestrari" - PSI	PE	J33C22002900006	PE8 - AGE-IT	PE0000015	11/E4 - Clinical and Dynamic Psychology	M-PSI/08 - Clinical Psychology	1	Bologna
Psychology "Renzo Canestrari" - PSI	PE	J33C22002860001	PE10 - ONFOOD	PE0000003	11/E4 - Clinical and Dynamic Psychology	M-PSI/08 - Clinical Psychology	1	Bologna
Economics -DSE	PE	J33C22002900006	PE8 - AGE-IT	PE0000015	13/A3 - Public Economics	SECS-P/03 - Public Economics	1	Bologna

Political and Social Sciences - SPS	PE	J33C22002910001	PE9 - GRINS	PE0000018	13/A4 - Applied Economics	SECS-P/06 - Applied Economics	1	Bologna
Life Quality Studies - QUVI	PE	J33C22002850006	PE5 - CHANGES	PE0000020	13/C1 - Economic History	SECS-P/12 - Economic History	1	Rimini
Statistical Sciences "Paolo Fortunati" -STAT	PE	J33C22002830006 J33C22002910001	PE1 - FAIR PE9 - GRINS	PE0000013 PE0000018	13/D1 - Statistics	SECS-S/01 - Statistics	2	Bologna, Rimini
Statistical Sciences "Paolo Fortunati" -STAT	PE	J33C22002910001 J33C22002860001	PE9 - GRINS PE10 - ONFOOD	PE0000018 PE0000003	13/D2 - Economic Statistics	SECS-S/03 - Economic Statistics	2	Bologna
Statistical Sciences "Paolo Fortunati" -STAT	PE	J33C22002900006	PE8 - AGE-IT	PE0000015	13/D3 - Demography and Social Statistics	SECS-S/04 - Demography	1	Bologna
Political and Social Sciences - SPS	PE	J33C22002900006	PE8 - AGE-IT	PE0000015	14/D1 - Economic Sociology, Sociology of Work, Urban and Environmental Sociology	SPS/09 - Economic Sociology and Sociology of Work and Organizations	2	Bologna
Legal Studies -DSG	PE	J33C22002810001	PE7 - SERICS	PE0000014	14/C3 - Political Sociology, Sociology of Law	SPS/12 - Sociology of Law, Deviance and Social Change	1	Bologna
Pharmacy and Biotechnology -FaBiT	PE	J33C22002970002	PE12 - MNESYS	PE000006	07/H1 - Veterinary Anatomy and Physiology	VET/01 - Veterinary Anatomy	1	Bologna
Agricultural Sciences - DiSTAL	PE	J33C22002860001	PE10 - ONFOOD	PE0000003	07/H2 - Veterinary Pathology and Inspection of Foods of Animal	VET/04 - Inspection of Foods of Animal Origin	1	Bologna

ATTACHMENT 1

The specific elements of this procedure are as follows:

- **Department:** Department of Cultural Heritage - DBC
- **SC:** 02/D1 – Applied Physics, Physics Teaching and History of Physics
- **SSD:** FIS/07 – Applied Physics
- **Number of positions:** 1
- **Main place of employment:** Ravenna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** Fondi PNRR – Bando PE – Progetto PE5 – CHANGES, "Cultural Heritage Active Innovation for Next-Gen Sustainable Society" – Codice PE0000020
- **CUP:** J33C22002850006
- **Project manager:** Mariangela Vandini
- **Project title:** Sustainable science-based approaches and methods for cultural heritage conservation
- **Duration of contract:** 36 months
- **Brief description of the project:** The activity is part of the National Recovery and Resilience Plan (NRRP), Mission 4 Component 2 Investment 1.3 funded from the European Union – NextGenerationEU – Project CHANGES (Spoke 6). The main objective is the definition, correlation and validation of procedures and protocols based on tested case studies to enhance the effectiveness, durability and sustainability of conservation, protection, and restoration of cultural heritage. The activity consists in planning and applying scientific methodologies and protocols to various classes of cultural heritage materials, to assess the characteristics of durability of the materials, the phenomena of degradation in the geo-environmental and climatic evolution of the contexts, the reconstruction of historical restoration interventions and the test of effectiveness of conservation procedures. Part of the activity is also devoted to the development of public communication strategies of the scientific results
- **Objective of the research project:** Number of publications submitted to indexed journals: not less than 6 in 3 years Increase of the number of citations: +10% each year Increase of H index: +1 each year(desirable), + 1 in 2 years (acceptable)
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 2

The specific elements of this procedure are as follows:

- **Department:** Department of Biological, Geological, and Environmental Sciences - BiGeA
- **SC:** 04/A1 – Geochemistry, Mineralogy, Petrology, Volcanology, Earth Resources and Applications
- **SSD:** GEO/08 – Geochemistry and Volcanology
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** Fondi PNRR – Bando PE – Progetto PE3 – RETURN, "Multi-risk science for resilientcommunities under a changing climate" – Codice PE00000005
- **CUP:** J33C22002840002
- **Project manager:** Federico Lucchi
- **Project title:** Definition of eruptive scenarios and vent location based on geological-structural studies aimed at volcanic hazard assessment
- **Duration of contract:** 36 months
- **Brief description of the project:** Activities foreseen in the declaration of the national Scientific Field GEO/08 – Geochemistry and Volcanology in terms of geological-structural studies of quiescent/active volcanoes for the definition of the eruptive behavior and the transport and deposition dynamics of the erupted products for the purpose of hazard assessment and risk mitigation, extended to calderas and lateral collapses and other gravity-driven instabilities. In particular, the activities are aimed at the multidisciplinary knowledge of the structure of a volcanic system in order to model the eruptive processes and forecast the pathways of magma rise and the location of vents, contributing to define the time and size of an eruption. A specific objective is to investigate the relationships between the structural setting of a volcanic area and the areas of fluid circulation and fumarolic activity in the context of the dynamics of an active hydrothermal system
- **Objective of the research project:** Over the three-year period, the researcher's scientific productivity objectives are to publish at least 4 publications in international peer-reviewed journals, of which at least 3 as the lead author, and the presentation of the obtained results at national and/or international scientific conferences. The researcher is also expected to play an active role in the preparation of project proposals and participation to national and international research projects.

- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 3

The specific elements of this procedure are as follows:

- **Department:** Department of Physics and Astronomy "Augusto Righi" - DIFA
- **SC:** 04/A4 – Geophysics
- **SSD:** GEO/10 – Solid Earth Geophysics
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 30
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** Fondi PNRR – Bando PE – Progetto PE3 – RETURN, “Multi-risk science for resilientcommunities under a changing climate” – Codice PE00000005
- **CUP:** J33C22002840002
- **Project manager:** Filippo Zaniboni
- **Project title:** Study of slope stability - Activity in the framework of VS2 (Ground Instability) - Extended Partnership RETURN – National Recovery and Resilience Plan
- **Duration of contract:** 36 months
- **Brief description of the project:** The research activity will be integrated in Vertical Spoke 2 (Ground Instability) and will consist of studying the predisposing factors for slope destabilization, both with geophysical surveys, and by means of numerical techniques. In the first case, the failure prone area will be studied with instrumentation that will characterize the geometry, the geotechnical parameters, and the ongoing deformation processes. In the second framework, the candidate will develop and implement numerical codes able to represent adequately the slope destabilizing factors, integrating the survey and the monitoring data, and adopting an approach allowing to consider the slope heterogeneities and the variability of the destabilizing agents (rain and water table level, magmatic intrusion in volcanic environment, presence of the water column in submarine cases).
- **Objective of the research project:** The candidate will get acquainted with some geophysical techniques for ground analysis (seismic, electric, gravimetric methods) and of the respective acquisition and interpretation software, to get an adequate representation of the slope and of the potentially destabilizing processes. Moreover, he/she will produce quantitative analysis of slope proneness to failure through numerical codes including the factors that are mainly responsible for destabilization, also evaluating the time variability. In this way, he will provide elements for the evaluation of multiple geohazard in mountain and coastal areas. In terms of publications, the winner will have the goal of submitting at least two papers per year to peer

reviewed journals and of presenting the results of the work at national and international meetings and conferences.

- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 4

The specific elements of this procedure are as follows:

- **Department:** Department of Architecture - DA
- **SC:** 08/C1 – Design and Technological Planning of Architecture
- **SSD:** ICAR/13 – Design
- **Number of positions:** 2
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** Fondi PNRR – Call PE – Project PE11 – 3A-ITALY, "Made in Italy Circolare e Sostenibile" – Codice PE0000004
- **CUP:** J33C22002950001
- **Project manager:** Flaviano Celaschi
- **Project title:** Circular & Sustainable Made in Italy: Advanced Design Processes and Tools
- **Duration of contract:** 36 months
- **Brief description of the project:** Working within the cultures, practices and research processes that characterize the SSD ICAR-13, the researchers will interveene in the productive sectors that characterize made in Italy (wood-furniture, textiles-clothing, mechanics, and machinery). In particular, they will develop skills and experiences in the systems, processes and tools which are used by industrial designers to increase the rate of circularity (material phenomena) and sustainability (intangible phenomena), that depend on proper management of the design process. Particularly important will be the demonstrated ability to understand and dialogue with other disciplinary fields competing with the required outcome, as well as the ability to engage citizens and users, of PPAAs, in an environmentally sensitive perspective, as characterized by quintuple helix open innovation with reference to the UN Agenda 2030 Goals.
- **Objective of the research project:** Author or co-author of, at least, four scientific publications in journals of national and/or international importance, monographs, essays in collective works or proceedings of international conferences, concerning the research topics. The organization and/or participation (as a member of the scientific and/or organizing committee) of one scientific event of international and national importance concerning the research topics (conferences, round tables, seminars, workshops). Involvement, as a researcher or proposer, in at least 1 applied research project. Collaboration in the activities of the Department of Architecture in the SSD ICAR/13.

- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 5

The specific elements of this procedure are as follows:

- **Department:** Department of Industrial Engineering - DIN
- **SC:** 09/C1 – Fluid Machinery, Energy Systems and Power Generation
- **SSD:** ING-IND/09 – Energy Systems and Power Generation
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** Fondi PNRR – Bando PE – Progetto PE2 – NEST, “Network 4 energy sustainable transition” – Codice PE0000021
- **CUP:** J33C22002890007
- **Project manager:** Michele Bianchi
- **Project title:** Innovative and sustainable energy conversion systems for energy transition
- **Duration of contract:** 36 months
- **Brief description of the project:** The research activity will be focused on the study of innovative thermodynamic cycles aimed at the exploitation of programmable and non-programmable renewable primary sources and/or their integration with traditional ones. The scientific approach will have to combine both numerical and experimental analysis. The research activity will also focus on the study and development of Power-to-Heat and/or Heat-to-Power and/or Power-to-X technologies integrated with renewable generation. During the research activity, particular emphasis will be dedicated to the definition of optimal management strategies, for the most promising solutions identified, in order to maximize the exploitation of renewable primary energy. The ultimate goal of the research activity is to identify most promising solutions and/or technologies for promoting the energy transition (towards the exclusive use of renewable sources in energy conversion) and the reduction/complete abatement of green-house-gas emissions.
- **Objective of the research project:** Aims of scientific activities will be the publication of results in international journals (indexed by SCOPUS and/or by Web of Science) and/or in international conferences (ASME, Elsevier, etc.), dealing with the themes of the academic recruitment field 09/C1.
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 6

The specific elements of this procedure are as follows:

- **Department:** Department of Industrial Engineering - DIN
- **SC:** 09/B2 – Industrial Mechanical Systems Engineering
- **SSD:** ING-IND/17 – Industrial Mechanical Systems Engineering
- **Number of positions:** 2
- **Main place of employment:** Bologna
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Duration of contract:** 36 months
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

- **Description of the projects and their specific elements:**

1) **Project 1 – Title:** Methods and digitally enhanced solutions for manufacturing systems optimization
   - **Financial coverage:** Fondi PNRR – Bando PE – Progetto PE11 – 3A-ITALY, "Made in Italy Circolare e Sostenibile" – Codice PE0000004
   - **CUP:** J33C22002950001
   - **Project manager:** Alberto Regattieri
   - **Number of hours of frontal teaching per year:** 0
   - **Brief description of the project:** RTD will address the study and the development of methods and digitally enhanced solutions for supporting the design and the management of mix products and manufacturing processes. In particular, but not exclusively, the topics of the realisation of the product mix by means of product platforms, optimisation of transport and logistics also considering the environmental impact and the Supply chain circularity, connected to materials for the construction of finished products, will be addressed. The application of methods for advanced prognostics of complex systems in order to realise product/production systems with a more efficient life cycle will also be addressed. The introduction of digital twins based on AI approaches (e.g. Machine Learning, Deep learning) could also be considered. Research will be applied to real industrial and/or laboratorial contexts where possible.
   - **Objective of the research project:** The researcher's scientific productivity objectives will be aimed, over the three-year period, at production as author/co-author of at least 6 publications in international peer-reviewed journals, which project activities, and to the

participation in at least 3 national or international scientific conferences to present the results achieved in the project.

2) **Project 2 – Title:** Smart integration of energy plants and networks

- **Financial coverage:** Fondi PNRR – Bando PE – PE2 – NEST, "Network 4 energy sustainable transition" – Codice PE0000021
- **CUP:** J33C22002890007
- **Project manager:** Cesare Saccani
- **Number of hours of frontal teaching per year:** 60
- **Brief description of the project:** The project involves the development of innovative solutions for the design, optimization and automation of mechanical industrial plants in the renewable energy supply chain, with particular attention to the areas of research included in the project PNRR "PE2 – NEST: NETWORK 4 ENERGY SUSTAINABLE TRANSITION". The project will focus on the design, control and optimized management of energy plants through the design and use of technologies and instrumentation, and the definition of integrated strategies for control and automation aiming to a smart integration of energy plants and networks. The activity will include aspects related to plants' efficiency and those relating to energy sustainability, maintenance, and health and safety at work. The activities will require an intense dialogue with the industrial chain, with instrumentation and plants' suppliers, and with energy network managers.
- **Objective of the research project:** The scientific productivity objectives of the researcher are, over the three years, the publication as an author and/or co-author of papers on ISI-SCOPUS indexed international journals related to the ING-IND/17 area in all their various meanings and interpretations, the participation in international conferences and the presentation of scientific reports. Finally, the researcher will collaborate with national, European and non-European research institutes.

ATTACHMENT 7

The specific elements of this procedure are as follows:

- **Department:** Department of Industrial Engineering - DIN
- **SC:** 09/C2 – Thermal Sciences, Energy Technology, Building Physics and Nuclear Engineering
- **SSD:** ING-IND/19 – Nuclear Power Plants
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** Fondi PNRR – Bando PE – Progetto PE10 – ONFOOD, "Research and innovation network on food and nutrition Sustainability, Safety and Security – Working ON Foods", Codice PE0000003
- **CUP:** J33C22002860001
- **Project manager:** Sandro Manservisi
- **Project title:** Computational platform for the control and optimization of problems related to heat conduction and fluid dynamics simulation for industrial applications.
- **Duration of contract:** 36 months
- **Brief description of the project:** The researcher will develop within an open-source computational platform specific modules for the control and optimization of problems related to heat conduction and fluid dynamics simulation. The possibility of controlling from the external boundary the temperature profiles that develop within the volumes of interest is of fundamental importance in many industrial applications. The computational platform includes the open-source SALOME software and contains additional modules for thermofluid dynamics simulation based on both finite elements, such as LIBMESH/FEMus, and finite volumes, such as OpenFoam. The platform contains computational grid generators, three-dimensional graphical data visualization software, and advanced, parallel solvers of algebraic systems. The various codes will be coupled for realistic multiscale modeling.
- **Objective of the research project:** The researcher will have to reach a scientific level that will be an integral part of the project from the first year. The development of software and numerical algorithms using various programming languages is expected. The software produced will be open-source and possibly available. The researcher will be the author of publications in international journals and will have to participate in national and international conferences.

- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 8

The specific elements of this procedure are as follows:

- **Department:** Department of Civil, Chemical, Environmental, and Materials Engineering - DICAM
- **SC:** 09/D1 – Materials Science and Technology
- **SSD:** ING-IND/22 – Materials Science and Technology
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE11 – 3A-ITALY, "Made in Italy Circolare e Sostenibile" – Codice PE0000004
- **CUP:** J33C22002950001
- **Project manager:** Maria Bignozzi
- **Project title:** Materials and products for circular and sustainable processes in Italian manufacturing
- **Duration of contract:** 36 months
- **Brief description of the project:** The project "3A-ITALY" takes into account that Italy has major expertise in the following main industries, namely Fashion, Furniture, Automation and Food. Circularity, eco-design, green and innovative materials are the milestones of this research and accordingly the activities will be focused on the following steps: (i) mapping and characterization of industrial waste coming from fashion and furniture (mainly ceramic base materials) industry; (ii) evaluation of purification treatments needs for the transformation of waste in recycled raw materials ; (iii) development of innovative materials with added value based on the recycled raw materials for application in furniture industry as well as in other sector (e.g. construction sector), (iv) development of new design strategies and methods to be adopted by furniture/ceramic companies at product level.
- **Objective of the research project:** 3 international peer reviewed papers (at least 1 open access) 3 contributes published on national or international conference proceedings
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 9

The specific elements of this procedure are as follows:

- **Department:** Department of Medical and Surgical Sciences - DIMEC
- **SC:** 09/D1 – Materials Science and Technology
- **SSD:** ING-IND/22 – Materials Science and Technology
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE3 – RETURN, "Multi-risk science for resilientcommunities under a changing climate" – Code PE00000005
- **CUP:** J33C22002840002
- **Project manager:** Francesco Saverio Violante
- **Project title:** New biomaterials and advanced techniques to foresee and improve the resilience to changing environment and disaster risks
- **Duration of contract:** 36 months
- **Brief description of the project:** The researcher will develop new biomaterials aimed at: i) creating functionalized biomedical devices, capable of mitigating the impact of catastrophic events on the population, thus reducing its susceptibility and ii) creating tissue models that can increase the reliability of in vitro tests for evaluating the impact of adverse events and climate change on human health. The former materials and devices, which include prostheses, personalized braces and DPIs, will be obtained by advanced additive manufacturing and surface functionalization techniques. In particular, the functionalization of the devices will guarantee additional/improved performance, such as increased mechanical properties, antibacterial action, photocatalytic activity for protection against pollutants. The candidate will also apply the characterization techniques characteristic of materials science and technology (including electron microscopy and FT-IR microscopy) for the study of human tissues exposed to pollutants.
- **Objective of the research project:** During the project the researcher must publish at least 12 articles in peer-reviewed journals and attend at least 6 national or international meetings relevant for the subject of the project.
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 10

The specific elements of this procedure are as follows:

- **Department:** Department of Electrical, Electronic and Information Engineering "Guglielmo Marconi" - DEI
- **SC:** 09/E2 – Electrical Energy Engineering
- **SSD:** ING-IND/33 – Electrical Power Systems
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** Fondi PNRR – Call PE – Project PE2 – NEST, “Network 4 energy sustainable transition” – Codice PE0000021
- **CUP:** J33C22002890007
- **Project manager:** Carlo Alberto Nucci
- **Project title:** Development of innovative methods and relevant software for the optimal management of microgrids with large penetration of renewable and storage sources.
- **Duration of contract:** 36 months
- **Brief description of the project:** The winner will deal with active micro grids with generation from renewable sources and equipped with storage systems, connected to distribution networks. Part of the activity will be dedicated to the development of models to reproduce their operation in dynamic/transient regimes, both when connected to the distribution network and in stand-alone operation, following typical perturbations such as unexpected power variations of generators, loads, charge/discharge profile of storage systems. A first aim of the models, which will include hardware in the loop techniques for the development of digital twins of the systems of interest, will be the betterment of frequency and voltage control in such networks in order to improve their stability, also including synthetic inertia devices. The second aim will be to allow the optimal management of the energy flows of the microgrids when they are representative of an energy community model.
- **Objective of the research project:** At the end of the project, the candidate must have acquired the ability to manage cutting-edge techniques, not necessarily developed / applied currently at the University of Bologna. Furthermore, he must have established contacts with international research groups and have participated in international conferences and meetings / workshops. The research activity must be published in at least three articles in

international journals at the end of the three years of the project. The candidate must have a documented teaching activity.

- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 11

The specific elements of this procedure are as follows:

- **Department:** Department of Industrial Engineering - DIN
- **SC:** 09/G2 – Bioengineering
- **SSD:** ING-IND/34 – Industrial Bioengineering
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** Fondi PNRR – Bando PE – Progetto PE6 – HEAL ITALIA "Health Extended Alliance For Innovative Therapies, Advanced Lab-Research, and Integrated Approaches of Precision Medicine", Codice PE0000019
- **CUP:** J33C22002920006
- **Project manager:** Marco Viceconti
- **Project title:** Development of neuromusculoskeletal digital twins for precision medicine
- **Duration of contract:** 36 months
- **Brief description of the project:** Digital twins are computer models that when informed with a patient's data, predict quantities for that patient that are difficult or impossible to measure experimentally. The researcher will have to contribute to the realization of the technological infrastructure that allows the collection, processing, and submission of clinical and experimental data as input to digital twin software even if running on computing resources outside the hospital, as well as the return of the results of the simulation in the same data archive. All this should be done in compliance with the laws in force regarding the processing of sensitive data. The researcher will then have to demonstrate the functionality of this infrastructure by supporting clinical studies using digital twins, in the context of neuromusculoskeletal diseases
- **Objective of the research project:** At least three scientific publications in indexed international journals
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 12

The specific elements of this procedure are as follows:

- **Department:** Department of Management - DiSA
- **SC:** 09/B3 – Business and Management Engineering
- **SSD:** ING-IND/35 – Business and Management Engineering
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE9 – GRINS "Growing Resilient, INclusive and Sustainable", Code PE0000018
- **CUP:** J33C22002910001
- **Project manager:** Riccardo Fini
- **Project title:** Circular innovation ecosystems: determinants and impact
- **Duration of contract:** 36 months
- **Brief description of the project:** The project aims to analyse the determinants and impact of technologies conceived to enable the transition to the circular economy (CE) paradigm. The activity will exploit technology assessment and evaluation techniques to develop indicators to assess CE-related innovations and map their geographical, sectoral, and technological topologies and spillovers. Adopting an ecosystem approach, the role of different institutional actors in the generation and diffusion of CE-related technologies will be assessed and modelled. Specific attention will be given to interactions among firms, universities, financial institutions, research centers, innovative start-ups, incubators, and accelerators. This research plans to elaborate indicators to assess innovations enabling the CE transition; develop models and scenarios to simulate trends and evolutionary patterns of technological trajectories and local patterns of interactions among institutional actors.
- **Objective of the research project:** The target to be reached at the end of the three years consists either in at least 2 articles ranked in classes 3 or 4 according to the classification of the Journal Quality Guide of the Association of Business Schools (ABS), or in a cumulated SJR (SCIMAGO Journal Rank) index greater or equal to 14.1 or at least 146 Scopus citations in the last five years.
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 13

The specific elements of this procedure are as follows:

- **Department:** Electrical, Electronic, and Information Engineering "Guglielmo Marconi" - DEI
- **Number of positions:** 2
- **SC:** 09/E3 – Electronics
- **SSD**: ING-INF/01 **–** ELECTRONIC ENGINEERING
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE1 – FAIR, "Future Artificial Intelligence Research" – Code PE0000013
- **CUP:** J33C22002830006
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Duration of contract:** 36 months
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: English
- **Foreign language**: /
- **Description of the projects and their specific elements:**

1) **Project 1** – **Title:** Intelligent processing of data and signals coming from sensors - a
   - **Project manager:** Riccardo Rovatti
   - **Brief description of the project:** Activity focuses on the conception and development of machine-learning-based algorithms for the processing of sensor signals in embedded systems or at the first stages of the data chain from sensors to cloud (hubs and edge devices). Both theoretical and applicative aspects are addressed including the hardwaresoftware codesign paradigm.
   - **Objective of the research project:** Objective of the research project, during the period of the contract, will be the production of at least one article in high-impact international scientific journals in the ISI Electrical Electronic Engineering category and at least three presentations at international conferences

2) **Project 2 – Title**: Intelligent processing of data and signals coming from sensors - b
   - **Project manager:** Luca De Marchi
   - **Brief description of the project:** Activity focuses on the design of electronic system for the processing of sensor signals. These systems characterize the first stages of the data

processing chain from sensors to cloud (hubs and edge devices) with a design that focuses on the implementation of machine-learning-based algorithms. Both theoretical and applicative aspects are addressed, as well as hardware implementation and optimization.

- **Objective of the research project:** Objective of the research project, during the period of the contract, will be the production of at least one article in high-impact international scientific journals in the ISI Electrical Electronic Engineering category and at least three presentations at international conferences.

ATTACHMENT 14

The specific elements of this procedure are as follows:

- **Number of positions:** 5
- **Department:** Department of Electrical, Electronic and Information Engineering "Guglielmo Marconi" - DEI
- **SC:** 09/F2 – Telecommunications
- **SSD:** ING-INF/03 – Telecommunications
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR Funds – Call PE – Project PE14 - RESTART "Research and innovation on future Telecommunications system and networks, to make Italy more smRT", code PE0000001
- **CUP:** J33C22002880001
- **Duration of contract:** 36 months
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Description of the projects and their specific elements:**

1) **Project 1** – **Title:** Methodology for the design, development and deployment of programmable networks for communication infrastructures and services of the future

- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Project manager:** Carla Raffaelli
- **Brief description of the project:** Future telecommunication systems will largely rely on virtualization techniques as well as programmable network capabilities. This project aims at developing methodologies and solutions for the design and operation of flexible virtual infrastructures and network applications, including vertical environments, such as industrial networks, with virtual resources spanning from the cloud to user devices. The research project includes: definition of novel methodologies for the design and development of virtual infrastructures based on intelligent and autonomic resource orchestration techniques and SDN control mechanisms, investigation of zero-touch optical network management techniques based on AI/ML and pervasive telemetry data collection, development of an open software framework for network programmability, including data plane and control plane operations of the edge-cloud network infrastructure
- **Objective of the research project:** It is proposed to publish the results in indexed international journals and to present them at high-impact international conferences. It is

also proposed to identify technology transfer methods with the companies involved in the project and to identify other potentially interested parties. The publication goal includes 3 international journals indexed in Scopus (e.g., IEEE Communications Magazine, IEEE Transactions on Network and Service Management, Elsevier Computer Networks) and 3 international conferences (e.g., IEEE ICC, IEEE Globecom) in the three years. It is also foreseen the support to the preparation and submission of a European, national, or regional project proposal.

- **Language in which the interview will take place**: Italian
- **Foreign language**: English

2) **Project 2** – **Title:** Network architectures and protocols for intelligent and energy-efficient services in 6G massive access scenarios

- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Project manager:** Daniele Tarchi
- **Brief description of the project:** Telecommunications networks play a fundamental role in the digitization process of production infrastructures. In particular, vertical applications, such as industrial networks, emergency networks, networks for health and safe mobility, impose very stringent requirements in terms of high reliability, low latency, coverage, data rate, scalability and energy efficiency. The future 6G standard envisages the integration of computing technologies, non-terrestrial segments, and artificial intelligence technologies to meet the very stringent requirements mentioned above, enabling massive access scenarios. This project aims to identify the network architectures and the related components and protocols most suitable for supporting efficient solutions in terms of performance and sustainability of the so-called "edge-to-cloud continuum," by integrating it with distributed intelligence, considering the different logical and physical layers of network infrastructure
- **Objective of the research project:** It is proposed to publish the results in indexed international journals and to present them at high-impact international conferences. It is also proposed to identify technology transfer methods with the companies involved in the project and to identify other potentially interested parties. The publication goal includes 3 international journals indexed in Scopus (e.g., IEEE Communications Magazine, IEEE Transactions on Mobile Computing, IEEE Transactions on Vehicular Technology, IEEE Transactions on Network and Service Management, Elsevier Computer Networks) and 3 international conferences (e.g., IEEE ICC, IEEE Globecom) in the three years. It is also foreseen the support to the preparation and submission of a European, national, or regional project proposal.
- **Language in which the interview will take place**: Italian

- **Foreign language**: English

3) **Project 3** – **Title:** Communication and sensing in future generation wireless systems

- **Main place of employment:** Cesena
- **Number of hours of frontal teaching per year:** 60
- **Project manager:** Andrea Giorgetti
- **Brief description of the project:** The research project concerns the study of innovative solutions for future generation wireless systems capable of providing communication and sensing functionalities in smart radio environments, with particular emphasis on industrial scenarios. The innovations can be theoretical and empirical/experimental and must impact the international scientific community. The research will mainly concern aspects related to the physical and medium access control layers and the use of statistical signal processing techniques.
- **Objective of the research project:** It is proposed to publish the results in indexed international journals and to present them at high-impact international conferences. It is also proposed to identify technology transfer methods with the companies involved in the project and to identify other potentially interested parties. In terms of scientific publications, the project targets acceptance of 3 international journals indexed in Scopus (e.g., IEEE Transactions on Communications, IEEE Transactions on Wireless Communications) and 3 international conferences (e.g., IEEE ICC, IEEE Globecom) in the three years. It is also foreseen the support to the preparation and submission of a European, national, or regional project proposal.
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

4) **Project 4** – **Title:** Wireless schemes for next-generation Internet of Things

- **Main place of employment:** Cesena
- **Number of hours of frontal teaching per year:** 60
- **Project manager:** Enrico Paolini
- **Brief description of the project:** Design and performance evaluation of efficient wireless transmission schemes in scenarios that foresee multiple IoT devices that communicate with the same receiver (gateway or base station). Joint design of the physical and MAC layers, with particular reference to the transmission of short packets, to the energy efficiency of the developed solutions and to their applicability in the context of the future 6G mobile networks and in industrial applications. The activities may include, besides the fundamental research ones, also experimental ones concerning the employment of IoT technologies for asset tracing.

- **Objective of the research project:** It is proposed to publish the results in indexed international journals and to present them at high-impact international conferences. It is also proposed to identify technology transfer methods with the companies involved in the project and to identify other potentially interested parties. In terms of scientific publications, the project targets acceptance of 3 international journals indexed in Scopus (e.g., IEEE Transactions on Communications, IEEE Transactions on Wireless Communications) and 3 international conferences (e.g., IEEE ICC, IEEE Globecom) in the three years. It is also foreseen the support to the preparation and submission of a European, national, or regional project proposal.
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

5) **Project 5 – Title:** Analysis and implementation of L1, L2 and L3 layer wireless communication technologies and protocols for Industrial and Vehicular Networks

- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Project manager:** Roberto Verdone
- **Brief description of the project:** The activity will be in the context of the RESTART IN, WINET and Moveover projects. It will include 1) support to the definition of use cases 2) study of channel models 3) investigation on scenarios including vehicles, drones or industrial machines 4) development of proof-of-concepts
- **Objective of the research project:** It is proposed to publish the results in indexed international journals and to present them at high-impact international conferences. It is also proposed to identify technology transfer methods with the companies involved in the project and to identify other potentially interested parties. In terms of scientific publications, the project targets acceptance of 3 international journals indexed in Scopus (e.g., IEEE Transactions on Communications, IEEE Transactions on Wireless Communications) and 3 international conferences (e.g., IEEE ICC, IEEE Globecom) in the three years. It is also foreseen the support to the preparation and submission of a European, national, or regional project proposal.
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 15

The specific elements of this procedure are as follows:

- **Department:** Department of Legal Studies - DSG
- **SC:** 12/A1 – Private Law
- **SSD:** IUS/01 – Private Law
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 30
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** Fondi PNRR – Call PE – Project PE1 – FAIR, "Future Artificial Intelligence Research" – Code PE0000013
- **CUP:** J33C22002830006
- **Project manager:** Giusella Dolores Finocchiaro
- **Project title:** New contracts concerning data utilization in AI applications
- **Duration of contract:** 36 months
- **Brief description of the project:** The candidate will have to carry out research activities on the use of data in artificial intelligence applications. Research activities must be carried out in Italian and English. The activity may consist of bibliographical and scientific research in general, active participation in research groups, assistance and publication of scientific contributions
- **Objective of the research project:** The researcher's scientific productivity objectives will be to produce 1 monograph or 6 articles, of which at least 4 in class A, on the project topic or related topics over the three-year period
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 16

The specific elements of this procedure are as follows:

- **Department:** Department of Legal Studies - DSG
- **SC:** 12/B2 – Labour Law
- **SSD:** IUS/07 – Labour Law
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 30
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** Fondi PNRR – Call PE – Project PE1 – FAIR, "Future Artificial Intelligence Research" – Code PE0000013
- **CUP:** J33C22002830006
- **Project manager:** Alberto Pizzoferrato
- **Project title:** AI impacts on Labour Law
- **Duration of contract:** 36 months
- **Brief description of the project:** The Researcher will be required to carry out intense scientific research activities under the control and supervision of the scientific head of the project, also contributing to providing a significant aid to the teaching activities pertaining both to the topics related to the research project and to the conference and seminar initiatives that will be undertaken for the most appropriate enhancement and implementation of the project.
- **Objective of the research project:** The Researcher will be required, as minimum objectives of scientific productivity to be achieved during the three-year period of research, the drafting of at least one monographic essay published in a series of prominent scientific value, three essays published in international or national A-tier journals, minor contributions published in journals of scientific interest on topics strictly relevant to the SSD of reference.
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 17

The specific elements of this procedure are as follows:

- **Department:** Department of Legal Studies - DSG
- **SC:** 12/E4 – European Union Law
- **SSD:** IUS/14 – European Union Law
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE1 – FAIR, "Future Artificial Intelligence Research" – Code PE0000013
- **CUP:** J33C22002830006
- **Project manager:** Pietro Manzini
- **Project title:** Artificial Intelligence – EU law perspectives
- **Duration of contract:** 36 months
- **Brief description of the project:** The research activity will be firstly aimed at the critical and perspective analysis of EU hard and soft law instruments related to Artificial Intelligence, as well as of the main judicial developments at the EU level. Starting from the theoretical framework concerning EU emergency management (by also taking in account the evolution of international law in the field), particular attention will be devoted to the use of AI for a better enforcement of the relevant EU normative framework, and for the elaboration of further instruments of prevention, mitigation and response to crisis situations (for example natural disasters, health crisis and security threats deriving from terrorist or conventional attacks). To complete the picture, the research will explore the impact of these legal developments upon the EU system of protection of fundamental rights.
- **Objective of the research project:** The objectives of scientific production are the following: publication of at least 4 articles concerning the research activities on scientific journals of national and international relevance; publication of at least 2 contributions concerning the research activities in edited volumes; participation to conferences at the national and/or international level concerning the topics of the research; drafting projects for funding concerning the topics of the research.
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 18

The specific elements of this procedure are as follows:

- **Department:** Department of History and Cultures - DiSCi
- **SC:** 10/A1 – Archaeology
- **SSD:** L-ANT/08 – Christian and Medieval Archaeology
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE5 – CHANGES, "Cultural Heritage Active Innovation for Next-Gen Sustainable Society" – Code PE0000020
- **CUP:** J33C22002850006
- **Project manager:** Isabella Baldini
- **Project title:** Digital strategies for enhancing cultural heritage: the Villa del Casale of Piazza Armerina, from the late Antique building site to the museum collection
- **Duration of contract:** 36 months
- **Brief description of the project:** The candidate will carry out a research project focused on digital strategies for enhancing the archaeological heritage of the Villa del Casale (EN), with a major concern for the issue of the Late Antique building site. Since past studies mainly approach mosaic decoration, the RTD will take charge of a research focused on architectural morphologies with main attention on stone heritage. She/he may also approach quantitative analyses to convey synthesis figures in diachronic perspective. Her/his research will investigate the role of digital contents in museum collections and will apply virtual technologies to enhance the (in)tangible heritage of the Villa (digital archives, 2D/3D reconstructions, virtual relocation of findings, digital storytelling, virtual exhibitions), thus proposing a valorization model potentially scalable in other contexts.
- **Objective of the research project:** At least 3 contributions (articles in category A journals or book chapters).
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 19

The specific elements of this procedure are as follows:

- **Department:** Department of the Arts - DAR
- **SC:** 10/C1 – Cinema, Music, Performing Arts, Television and Media Studies
- **SSD:** L-ART/06 – Cinema, Photography and Television
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE5 – CHANGES, "Cultural Heritage Active Innovation for Next-Gen Sustainable Society" – Codice PE0000020
- **CUP:** J33C22002850006
- **Project manager:** Giacomo Manzoli
- **Project title:** DigItal(I)y: the digital distribution of Italian audiovisual heritage
- **Duration of contract:** 36 months
- **Brief description of the project:** The work that RTDa will carry out within the project will have to keep together different directions: from a historical and archival research on the Italian audiovisuals heritage to the contemporary dynamics of circulation of media products made possible by digital platforms. The role of the RTDa will require carrying out interdisciplinary research capable of dialoguing with film and media studies, with production studies and with the approaches of historical studies. Furthermore, in order to outline the strategies that encourage certain strategies for promoting brand-Italy as a global cultural heritage, the research fellow will have to master a multiplicity of methodologies ranging from the historical-critical analysis of media products to the study of narrative components, and of the forms of representation, from the study of reception to digital ethnography and qualitative interviews.
- **Objective of the research project:** Over the course of the contract, the research fellow will achieve the following scientific productivity objectives: • the publication of at least three articles in scientific journals, or in collective volumes of relevant scientific profile; • the publication of a monograph; • participation in three scientific conferences; • the digitization and systematization of unpublished archival materials; • the creation of materials in Italian and English for an open access MOOC course aimed at students and scholars interested in learning more about the themes of the project
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 20

The specific elements of this procedure are as follows:

- **Department:** Department of Biomedical and Neuromotor Sciences - DIBINEM
- **SC:** 06/D5 – Psychiatry
- **SSD:** MED/25 – Psychiatry
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Medical care service to be performed in line with the agreement with the Hospital Trust USL of Bologna, Rep. 1335/2013, Prot. 16675 of 15th April 2015, at the U.O. SPDC Psichiatria - Ospedale Maggiore
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE12 – MNESYS "A multiscale integrated approach to the study of the nervous system in healt and disease" – Code PE000006
- **CUP:** J33C22002970002
- **Project manager:** Diana De Ronchi
- **Project title:** Pharmacogenetics for precision medicine in mood and psychotic disorders
- **Duration of contract:** 36 months
- **Brief description of the project:** Recent research indicates a fundamental genetic contribution in the pathogenesis, clinical manifestation and response to therapies in subjects suffering from mood and psychotic disorders. The purpose of the research project is to identify the specific factors involved in order to improve the prevention, treatment and long-term outcome of mood and psychotic disorders. The availability of large samples of clinical and genetic data allows the feasibility of the project through the use of clinical and genetic analysis techniques.
- **Objective of the research project:** During the project the researcher must publish at least 5 articles in peer-reviewed journals and attend at least 5 national or international meetings relevant for the subject of the project
- **Admission requirement:** Residency (post-graduate training) in Psychiatry (or equivalent)
- **Maximum number of publications:** 15
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 21

The specific elements of this procedure are as follows:

- **Department:** Department of Biomedical and Neuromotor Sciences - DIBINEM
- **SC:** 06/D6 – Neurology
- **SSD:** MED/26 – Neurology
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 12
- **Medical assistance services, if required:** Medical care service to be performed in line with the agreement with the Hospital Trust USL of Bologna, Rep. 1335/2013, Prot. 16675 of 15th April 2015, at the U.O. Clinica Neurologica – Programma Neuropatologia delle Malattie Neurodegenerative
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE12 – MNESYS "A multiscale integrated approach to the study of the nervous system in healt and disease" – Code PE000006
- **CUP:** J33C22002970002
- **Project manager:** Pietro Parchi
- **Project title:** Multidimensional integrated approach for the in vivo identification, biologic characterization and prognostic stratification of Creutzfeldt-Jakob disease's subtypes (strains)
- **Duration of contract:** 36 months
- **Brief description of the project:** The project will involve the carrying out of clinical, neuropathological, and laboratory activities. The researcher will collect clinical, instrumental (cerebral MRI, EEG), molecular and histopathological data on new patients with rapidly progressive neurological syndromes referred to the Regional Reference Center and retrospectives on the already acquired cases. In close collaboration with the biologists of the Neuropathology Laboratory, the researcher will participate in the execution and analysis of in vitro aggregation assays (prion RT-QuIC) and in the development and implementation of analyzes aimed at identifying new biomarkers with a discriminative capacity of the different subtypes of Creutzfeldt-Jakob disease (CJD). Finally, the researcher will participate in the statistical processing of all data (clinical, histopathological, and molecular) to develop an algorithm that allows identifying with high accuracy the different subtypes of MCJ in vivo also to stratify the prognosis.

- **Objective of the research project:** During the project the researcher must publish at least 12 articles in peer-reviewed journals (of which at least 3 as first author) and attend at least 3 national or international meetings relevant for the subject of the project.
- **Admission requirement:** Residency (post-graduate training) in Neurology (or equivalent) obtained in Italy or abroad, as well as the authorization to practice medicine in Italy
- **Maximum number of publications:** 15
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 22

The specific elements of this procedure are as follows:

- **Department:** Department of Biomedical and Neuromotor Sciences - DIBINEM
- **SC:** 06/D6 – Neurology
- **SSD:** MED/26 – Neurology
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 16
- **Medical assistance services, if required:** Medical care service to be performed at the ASL of Bologna, U.O.C. Clinica Neurologica Metropolitana (NeuroMet)
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE12 – MNESYS "A multiscale integrated approach to the study of the nervous system in healt and disease" – Code PE000006
- **CUP:** J33C22002970002
- **Project manager:** Pietro Cortelli
- **Project title:** Multidimensional biomarker models to define natural disease trajectories of prodromal alpha-synucleinopathies: a biological and neurofunctional approach
- **Duration of contract:** 36 months
- **Brief description of the project:** The researcher will delineate his/her research activity in the diagnosis, follow-up and clinical and neurophysiological characterization of patients with prodromal (isolated REM Sleep Behavior Disorder and isolated/Pure Autonomic Failure) and already manifest (Parkinson's Disease, Dementia with Lewy Bodies and Multiple System Atrophy) a-synucleinopathies. He/she will perform, according to project timelines and clinical practice needs, assessments of motor, cognitive, autonomic and videopolisonnographic profiles of such patients. He/she will also collaborate with informatics-laboratory professionals for setting up an appropriate project infrastructure and for the integrated molecular collection and analysis of specimens and imaging data of these patients. Finally, he/she will ensure the recruitment, the proper re-evaluation and characterization of cohorts of healthy, centenarian subjects and siblings of patients with Parkinson's Disease.
- **Objective of the research project:** During the project the researcher must publish at least 3 articles in peer-reviewed journals and attend at least 3 national or international meetings relevant for the subject of the project
- **Admission requirement:** Residency (post-graduate training) in Neurology (or equivalent) obtained in Italy or abroad, as well as the authorization to practice medicine in Italy

- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 23

The specific elements of this procedure are as follows:

- **Department:** Department of Education Studies "Giovanni Maria Bertin" -EDU
- **SC:** 11/D2 – Methodologies of Teaching, Special Education and Educational Research
- **SSD:** M-PED/03 – Methodologies of Teaching and Special Education
- **Number of positions:** 2
- **Main place of employment:** Bologna
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Duration of contract:** 36 months
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

- **Description of the projects and their specific elements:**

1) **Project 1 – Title:** Education and awareness tools for Artificial Intelligence.
   - **Financial coverage:** Fondi PNRR – Bando PE – Progetto PE1 – FAIR, "Future Artificial Intelligence Research" – Codice PE0000013
   - **CUP:** J33C22002830006
   - **Project manager:** Chiara Panciroli
   - **Number of hours of frontal teaching per year:** 60
   - **Brief description of the project:** The RTD will: 1. develop two instructional units on pervasive AI topics to be offered to accademic students. The units will include an integration of sources and activities on an LMS with classroom teaching activities. 2. collect data on at least 1300 students throughout their entire learning process from their interaction with the LMS (e.g. scrolling behavior, logs, video, audio, images, formative assessments, etc.) 3. develop an automated detector of learning trajectories that are effective in terms of final achievements 4. implement an automatic system capable of: - provide feedback to students (e.g. recovery, consolidations or in-depth actions and resources) - provide feedback to the teacher, suggesting which topics to resume in class - allow the teacher to monitor the feedback given to students - allow researchers and teachers to expand the system learning, through an "expert knowledge injection" process.
   - **Objective of the research project:** The researcher, will develop: • Two instructional units on pervasive AI • An automated Feedback tool • A special issue of an international scientific journal on AI tools to enhance the teacher role and students learning**.**

2) **Project 2 – Title:** Policy, Behavior and Education. Educate on sustainable eating: pathways of innovative learning methodologies at school.

- **Financial coverage:** Fondi PNRR – Bando PE – PE10 – ONFOOD, "Research and innovation network on food and nutrition Sustainability, Safety and Security – Working ON Foods", Codice PE0000003
- **CUP:** J33C22002860001
- **Project manager:** Giovanna Guerzoni
- **Number of hours of frontal teaching per year:** 60
- **Brief description of the project:** The activities to be carried out by the researcher are related to promote a healthy and sustainable diet within educational/school contexts, by exploring perceptions and representations food consumption and to educational and didactic methodologies that can foster the promotion of conscious eating styles. In the scope of the project, the researcher will carry out study activities in the field of Didactics and Special Pedagogy, through the use of investigation methodologies typical of participatory action-research and training: - video-analysis and discourse analysis to investigate the perceptions of teachers/educators/auxiliary staff and perceptions of children attending pre- and primary school; - pedagogical coaching and action-research to support the co-design and implementation of innovative practices to promote culturally-responsive food education programmes in schools, with a focus on valuing cultural diversity.
- **Objective of the research project:** The researcher, upon completion of the contract, must have produced: - a research report summarizing the outcomes of the project with specific reference to effective training strategies for promoting healthy, sustainable and culturally responsive food education practices in preschool and primary school (training toolkit) - two essays in collective books and/or scientific journals per year. The quality of the publications must meet the criteria set by the field when defining acceptable products for national evaluation of research quality.

ATTACHMENT 24

The specific elements of this procedure are as follows:

- **Department:** Department of Psychology "Renzo Canestrari" - PSI
- **SC:** 11/E1 – General Psychology, Psychobiology and Psychometrics
- **SSD:** M-PSI/02 – Psychobiology and Physiological Psychology
- **Number of positions:** 1
- **Main place of employment:** Cesena
- **Number of hours of frontal teaching per year:** 24
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** Fondi PNRR – Bando PE – Progetto PE12 – MNESYS "A multiscale integrated approach to the study of the nervous system in healt and disease" – Codice PE000006
- **CUP:** J33C22002970002
- **Project manager:** Alessio Avenanti
- **Project title:** Functional organization and plasticity of human brain networks supporting perception, action control and regulation of body-related signals
- **Duration of contract:** 36 months
- **Brief description of the project:** The RTD researcher will investigate the functional organization of the human brain networks that support perception, action control, and processing and regulation of body-related psychophysiological signals during cognitive and motor tasks. The research will address these processes, their sensitivity to manipulations of brain plasticity through neurostimulation, and the neurofunctional differences that contribute to intra/inter-individual variability. The research will be carried out in healthy individuals and patients with brain injury, using multimodal approaches that combine behavioral methods, and electrophysiological and neurostimulation techniques, with the goal of developing therapeutic protocols inspired by precision neuroscience.
- **Objective of the research project:** During the project the researcher must publish at least 3 articles in international, peer-reviewed, indexed journals and attend at least 2 national or international meetings in the area of competence and relevant to the project.
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 25

The specific elements of this procedure are as follows:

- **Department:** Department of Psychology "Renzo Canestrari" - PSI
- **SC:** 11/E4 – Clinical and Dynamic Psychology
- **SSD:** M-PSI/08 – Clinical Psychology
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 15
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE8 – AGE-IT "A novel public-private alliance to generate socioeconomic, biomedical and technological solutions for an inclusive italian ageing society", Codice PE0000015
- **CUP:** J33C22002900006
- **Project manager:** Rabih Chattat
- **Project title:** Development, assessment and care planning of psychological support for formal and informal carers of dependent older adults.
- **Duration of contract:** 36 months
- **Brief description of the project:** Analysis of the usability and acceptability (user-friendly) digital solutions, psychological acceptance considering user preferences and attitudes with the involvement of end users through both quantitative and qualitative methodologies; the selection, administration and analysis of the results concerning the dimensions of well-being and quality of life of both family members and dependent older adults; the partecipation in the evaluation of the cost-effectiveness of the solution adopted; selection of tools for the assessment and to carry out data collection as well as data processing aimed at planning personalized interventions that can be useful for services as well as for caregivers; the results will be used also for the development of training modules for formal and informal caregivers of people with chronic disease and dementia to deliver appropriate care approaches including informative, psychoeducation and skills building.
- **Objective of the research project:** Scientific output will be mainly writing reports and booklets to facilitate the use of the digital solutions adopted and the publication of papers in indexed scientific journals indexed with the aim to make available e disseminate the results and indications to facilitate the recognition and the use of the digital solutions developed in public and private care context focused on the support of family caregivers and professionals as well as indications on the tools to be used for outcomes assessment in clinical practice.

- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 26

The specific elements of this procedure are as follows:

- **Department:** Department of Psychology "Renzo Canestrari" - PSI
- **SC:** 11/E4 – Clinical and Dynamic Psychology
- **SSD:** M-PSI/08 – Clinical Psychology
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 15
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE10 – ONFOOD, "Research and innovation network on food and nutrition Sustainability, Safety and Security – Working ON Foods", Code PE0000003
- **CUP:** J33C22002860001
- **Project manager:** Elena Tomba
- **Project title:** Theoretical models and the role of clinical factors in promoting healthy and sustainable eating: an emerging and challenging area for clinical psychology
- **Duration of contract:** 36 months
- **Brief description of the project:** The researcher will carry out research activities in clinical and health psychology in order to identify the clinical psychological factors associated with or underlying the promotion and/or the lack of engagement in sustainable eating behaviors. Empirical contributions will be requested through the administration of questionnaires in the target populations (populations at risk for disordered eating, populations with selective eating, clinical populations) to investigate the possible intersection (positive or negative) between selective and sustainable eating patterns and disorders and eating disorders. In accordance with the needs of the project, the researcher will be requested to develop and apply methodological approaches such as structural equation modeling (SEM), and mediation and moderation analyses. Coordination with the other project partners will also be an important role of this position.
- **Objective of the research project:** The research results will be evaluated according to the following key indicators of performance: in addition to the production of 2 “deliverables” as planned within the project, the publication of articles in scientific journals will be requested, indexed in international databases (SCOPUS and/or WOS) including co-authorships, as well as dissemination activities at scientific conferences, national or international, in the appropriate sector of the project.

- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 27

The specific elements of this procedure are as follows:

- **Department:** Department of Economics - DSE
- **SC:** 13/A3 – Public Economics
- **SSD:** SECS-P/03 – Public Economics
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 30
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE8 – AGE-IT "A novel public-private alliance to generate socioeconomic, biomedical and technological solutions for an inclusive italian ageing society", Code PE0000015
- **CUP:** J33C22002900006
- **Project manager:** Gianluca Fiorentini
- **Project title:** Policies to improve the compliance with organizational and clinical guidelines in programs of health promotion and prevention for aging adults
- **Duration of contract:** 36 months
- **Brief description of the project:** A first task is to contribute to the development of a data platform integrating already existing individual-level longitudinal databases on healthcare services with supply-side databases on the activities of professionals and structures involved in primary and intermediate care. A second task is to participate in the analysis of the comparative effectiveness of various supply-side interventions - educational, monetary incentives, organizational solutions – in affecting the compliance of general practitioners (GPs) with clinical pathways and specific guidelines. A third task concerns the analysis of the management of chronic care programs where different specialists are given the leadership and of the effects of competition between specialists and between them and the GPs on the continuity of care. Finally, the candidate will be required to draft policy advice on to align the incentives of the professionals involved in primary and intermediate care.
- **Objective of the research project:** The objectives of scientific productivity of the researcher will be aimed, over the three-year period, at the production of at least 3 publications, including working papers, of which at least one published in international journals.
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 28

The specific elements of this procedure are as follows:

- **Department:** Department of Political and Social Sciences - SPS
- **SC:** 13/A4 – Applied Economics
- **SSD:** SECS-P/06 – Applied Economics
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE9 – GRINS "Growing Resilient, INclusive and Sustainable", Code PE0000018
- **CUP:** J33C22002910001
- **Project manager:** Paola Bordandini
- **Project title:** A geography of social (and cultural) capital in Italy
- **Duration of contract:** 36 months
- **Brief description of the project:** Literature review on the concept of social (and cultural) capital in order to investigate and conceptualize its drivers its links with concepts like trust, participation, cohesion, inclusion, well-being, quality of life, poverty, equity and development. To collect objective and subjective measures of social (and cultural) capital at regional, provincial and municipalities level in different time-points. To apply multivariate statistics to data collected in order to build subjective and objective indexes of social (and cultural) capital and investigate their relationship with the main analysis dimensions of the GRINS project. To select and analyze case studies at the municipal level to identify new forms of social capital in Italy. To contribute to the development of an open access database on social (and cultural) capital. The researcher will have to perform activities of quantitative data analysis and data collection. The researcher will teach a total of 60 hours of classes
- **Objective of the research project:** Proposal of at least 4 articles to national and international scientific journals, participation in an edited volume on the research activities, organization of an event for dissemination and discussion of research results, participation in at least one conference organized by recognized international/national scientific associations. The researcher will also actively participate to local research group meetings and to the organized meetings of the national spoke 8.
- **Admission requirement:** PhD
- **Maximum number of publications:** 12

- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 29

The specific elements of this procedure are as follows:

- **Department:** Department of Life Quality Studies - QUVI
- **SC:** 13/C1 – Economic History
- **SSD:** SECS-P/12 – Economic History
- **Number of positions:** 1
- **Main place of employment:** Rimini
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE5 – CHANGES, “Cultural Heritage Active Innovation for Next-Gen Sustainable Society” – Code PE0000020
- **CUP:** J33C22002850006
- **Project manager:** Patrizia Battilani
- **Project title:** Tourism social and Economic sustainability in historical perspective
- **Duration of contract:** 36 months
- **Brief description of the project:** This project pursues a triple objective: a) to analyze the evolution of cultural tourism in a perspective of social and economic sustainability; b) use the case studies of the CHANGE project to co-design socially and economically sustainable valorisation processes; c) build a meta-narrative of the implementations carried out with the CHANGES project in a socially sustainable cultural tourism perspective
- **Objective of the research project:** a) Participation in one national and one international scientific conferences in order to enhances the results of the research project b) Submission of two papers to Italian scientific journals and one paper to one international scientific journal included in the A list of the Anvur Scientific Journals
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 30

The specific elements of this procedure are as follows:

- **Number of positions:** 2
- **Department:** department of Statistical Sciences "Paolo Fortunati" - STAT
- **SC:** 13/D1 – Statistics
- **SSD:** SECS-S/01 – Statistics
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Duration of contract:** 36 months
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: English
- **Foreign language**: /
- **Description of the projects and their specific elements:**

1) **Project 1** – **Title:** Statistical foundations of AI: advanced methods and stochastic models for learning and prediction of complex and high-dimensional data

- **Financial coverage:** PNRR Funds – Call PE – Project PE1 – FAIR, "Future Artificial Intelligence Research" – Code PE0000013
- **CUP:** J33C22002830006
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Project manager:** Cinzia Viroli
- **Brief description of the project:** The research activities will be focused on the foundational methodological issues for decision-making and prediction in AI models and algorithms. More specifically, the aim is to develop advanced methods and stochastic models for statistical learning and machine learning, with particular emphasis on supervised and unsupervised classification strategies and scalable techniques for high-dimensional data
- **Objective of the research project:** The scientific outputs of the researcher to be delivered within the 3 years will be targeted at the publication of two journal articles and two working papers on relevant subjects in relation to the research project topic

2) **Project 2** – **Title:** Integrating complex survey data: the bayesian statistical matching.

- **Financial coverage:** PNRR Funds – Call PE – Project PE9 – GRINS "Growing Resilient, INclusive and Sustainable", Code PE0000018

- **CUP:** J33C22002910001
- **Main place of employment:** Rimini
- **Number of hours of frontal teaching per year:** 60
- **Project manager:** Fedele Pasquale Greco
- **Brief description of the project:** The objective of this research is to integrate data from independent sample surveys on consumption, income and life satisfaction through Bayesian statistical matching. This integrated data set will allow the analysis of economic and non-economic poverty and/or inequality at a multidimensional level. More in detail, the research activities will concern: 1) adoption of a Bayesian matching strategy that relaxes the conditional independence assumption, adopted in a wide range of statistical matching applications, and evaluation of the matching uncertainty; 2) construction of a pseudo panel from one or more of the mentioned surveys by matching data collected in repeated surveys without individual overlapping among waves; 3) outline of poverty profiles that jointly take into account the consumption habits of households, their ability to produce income, and their satisfaction with different life domains, with focus on regional disparities, possibly at a small area level
- **Objective of the research project:** The scientific outputs of the researcher to be delivered within the 3 years will be targeted at the publication of two journal articles and two working papers on relevant subjects in relation to the research project topic

ATTACHMENT 31

The specific elements of this procedure are as follows:

- **Number of positions:** 2
- **Department:** Department of Statistical Sciences "Paolo Fortunati" -STAT
- **SC:** 13/D2 – Economic Statistics
- **SSD:** SECS-S/03 – Economic Statistics
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Duration of contract:** 36 months
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: English
- **Foreign language**: /
- **Description of the projects and their specific elements:**

1) **Project 1** – **Title:** Small area estimation of poverty, inequality, and social exclusion parameters
   - **Financial coverage:** PNRR Funds – Call PE – Project PE9 - GRINS, Growing Resilient, INclusive and Sustainable, Code PE0000018
   - **CUP:** J33C22002910001
   - **Project manager:** Maria Ferrante
   - **Brief description of the project:** Official data on household's economic dimensions are collected by ISTAT and EUROSTAT in sample surveys planned for estimation at macro area level. Since local domains fall outside the survey design plan, the local sample is too small, yielding unreliable design-based estimation. In statistics, this is known as the "small area estimation" problem. The main aim of this project is the evaluation of the Italian territorial disparity referred to poverty and inequality. More in detail, the research activities will be on: 1) proposal of bayesian small area model-based estimators in which exploit the skewness and the heavy tails of the design-based estimator distribution; 2) evaluation of the bias of inequality design-based estimators in small samples and proposal of estimators with bias-correction; 3) specification of the variance function of each design-based estimator in the finite population context

- **Objective of the research project:** The scientific outputs of the researcher to be delivered within the 3 years will be targeted at the publication of two journal articles and two working papers on relevant subjects in relation to the research project topic

2) **Project 2** – **Title:** Quantitative analysis of food consumption behaviour, private strategies and policies

- **Financial coverage:** PNRR Funds – Call PE – Project PE10 – ONFOOD, "Research and innovation network on food and nutrition Sustainability, Safety and Security – Working ON Foods", Code PE0000003
- **CUP:** J33C22002860001
- **Project manager:** Mario Mazzocchi
- **Brief description of the project:** The research activities will be mainly targeted at analysing the determinants of food purchases and intakes, in relation to their actual and perceived impact on health and the environment, and with a special focus on the public policy and private strategy implications. More specifically, the planned empirical analyses relate to: 1. Estimation of demand models, both demand systems and discrete choice models, based on transaction-level microdata (scan data); 2. Application of stochastic microsimulation models for the ex-ante valuation of strategies and policies, under alternative future scenarios; 3. Application of quasi-experimental methods for the ex-post evaluation of strategies and policies, and their integration with microsimulation models
- **Objective of the research project:** The scientific outputs of the researcher to be delivered within the 3 years will be targeted at the publication of two journal articles and two working papers on relevant subjects in relation to the research project topic

ATTACHMENT 32

The specific elements of this procedure are as follows:

- **Department:** Department of Statistical Sciences "Paolo Fortunati" - STAT
- **SC:** 13/D3 – Demography and Social Statistics
- **SSD:** SECS-S/04 – Demography
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE8 – AGE-IT "A novel public-private alliance to generate socioeconomic, biomedical and technological solutions for an inclusive italian ageing society", Code PE0000015
- **CUP:** J33C22002900006
- **Project manager:** Roberto Impicciatore
- **Project title:** Life courses and health in old age
- **Duration of contract:** 36 months
- **Brief description of the project:** In a context of ageing societies, the uneven distribution among the elderly of vulnerability factors and the their possible effects needs to be better understood being essential to design effective policies. In life courses marked by declining physical and mental health and bereavement of loved ones, a key role is played by family ties, retirement process, socio-economic and relational resources. Using retrospective and longitudinal data, the project aims to investigate possible factors of social inequality among older people by focusing on the interconnections between the events that characterize life courses in old age and how these events are related to individual traits and past experiences in the areas of work, family, relationships and health
- **Objective of the research project:** The scientific outputs of the researcher to be delivered within the 3 years will be targeted at the publication of two journal articles and two working papers on relevant subjects in relation to the research project topic
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: English
- **Foreign language**: /

ATTACHMENT 33

The specific elements of this procedure are as follows:

- **Department:** Department of Political and Social Sciences - SPS
- **SC:** 14/D1 – Economic Sociology, Sociology of Work, Urban and Environmental Sociology
- **SSD:** SPS/09 – Economic Sociology and Sociology of Work and Organizations
- **Number of positions:** 2
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE8 – AGE-IT "A novel public-private alliance to generate socioeconomic, biomedical and technological solutions for an inclusive italian ageing society", Code PE0000015
- **CUP:** J33C22002900006
- **Project manager:** Marco Albertini
- **Project title:** Age-IT Ageing well in an ageing society – Care sustainability in an ageing society
- **Duration of contract:** 36 months
- **Brief description of the project:** The project focuses on the study of actual and future long-term care needs of Italian (and European) ageing societies, the adequacy of actual institutional solutions and the sustainability of future institutional arrangements. The study is particularly concerned with the stratification of care needs and care resources, the wellbeing of care providers (both formal and informal ones) and involves an extensive integration between different social sciences (sociology, demography, economics, and psychology) and medical aspects of care provision. The project requires some experience in conducting quantitative data analysis and/or in data collection and management within an approach of computational social sciences. The researcher will teach 60 hours of classes on the topics and methods of the research project.
- **Objective of the research project:** The researcher is expected, in the three years of the contract: to publish at least two articles in class A journals (according to the classification of ANVUR); to prepare at least one article for submission to an international academic journal; to participate to at least one conference per year among those organized by internationally/nationally recognized scientific organizations. The researcher will also actively participate to the meetings of the national research group
- **Admission requirement:** PhD

- **Maximum number of publications:** 12
- **Language in which the interview will take place**: English
- **Foreign language**: /

ATTACHMENT 34

The specific elements of this procedure are as follows:

- **Department:** Department of Legal Studies - DSG
- **SC:** 14/C3 – Political Sociology, Sociology of Law
- **SSD:** SPS/12 – Sociology of Law, Deviance and Social Change
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE7 – SERICS, "SEcurity and RIghts in the CyberSpace" – Code PE0000014
- **CUP:** J33C22002810001
- **Project manager:** Alvise Sbraccia
- **Project title:** Policing the cyberspace and managing surveillance: Police practices and individual rights in the context of control and crime changes in datafied societies.
- **Duration of contract:** 36 months
- **Brief description of the project:** A total of 350 hours of supplementary teaching and student services activities are to be provided for each academic year covered by the contract. Within the above-mentioned 350 hours, 60 hours of frontal teaching are contemplated. With reference to the provisions of Article 10 of the regulation governing researchers on fixed-term contracts issued by R.D. 344 of 29/03/2011 and subsequent amendments, the activities to be performed by the researcher are linked to the development of the project: "Policing the cyberspace and managing surveillance: Police practices and individual rights in the context of control and crime changes in datafied societies".
- **Objective of the research project:** The researcher is expected to produce a minimum of 3 articles and/or book chapters. At the end of the three years, these contributions should be published or accepted for publication in scientific journals and for prestigious publishers. At least two of the scientific articles should be published in class A Journals, in Italian or English. The researcher should also produce a monographic book, in Italian or English, which should be published or accepted for publication. He or she is also expected to disseminate the results of his/her research by organising and participating at national or international conferences and academic events.
- **Admission requirement:** PhD
- **Maximum number of publications:** 15

- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 35

The specific elements of this procedure are as follows:

- **Department:** Department of Pharmacy and Biotechnology - FaBiT
- **SC:** 07/H1 – Veterinary Anatomy and Physiology
- **SSD:** VET/01 – Veterinary Anatomy
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 24
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE12 – MNESYS "A multiscale integrated approach to the study of the nervous system in healt and disease" – Code PE000006
- **CUP:** J33C22002970002
- **Project manager:** Laura Calzà
- **Project title:** Mnesys, SPOKE 4 – Perception, movement and brain-body interaction: development and validation of a muldimensional prognostic matrix for spinal cord injury.
- **Duration of contract:** 36 months
- **Brief description of the project:** The researcher will work in the WP2 of Mnesys project; Systems biology of preclinical and clinical models of neuro-functional phenotypes (NFP), towards new multidimensional biomarkers. She/he will produce multidimensional data matrices from animals with spinal cord injury, related to the locomotor phenotype (spontaneous locomotion and gait analysis assisted by videotracking techniques and automatic trace analysis), biochemicals (biomarkers in CSF and plasma with multiparametric techniques) and biomolecular (transcriptomics via pathway analysis and / or RNAseq). This data matrix will then be processed with mathematical models in the spoke, in order to define a prognostic dataset and a data matrix usefull to monite new therapies efficacy. The researcher will talso ake care in the preparation of similar data matrices derived from cohorts of patients with spinal cord injury, as part of the collaboration of the Montecatone Rehabilitation Institute in the Mnesys project.
- **Objective of the research project:** a minimum of 3 publications in Clarivate peer-reviewed journals.
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English

ATTACHMENT 36

The specific elements of this procedure are as follows:

- **Department:** Department of Agricultural and Food Sciences - DISTAL
- **SC:** 07/H2 – Veterinary Pathology and Inspection of Foods of Animal
- **SSD:** VET/04 – Inspection of Foods of Animal Origin
- **Number of positions:** 1
- **Main place of employment:** Bologna
- **Number of hours of frontal teaching per year:** 60
- **Medical assistance services, if required:** Not required
- **Costs indication:** 36.840,00 gross euros per year
- **Financial coverage:** PNRR funds – Call PE – Project PE10 – ONFOOD, "Research and innovation network on food and nutrition Sustainability, Safety and Security – Working ON Foods", Code PE0000003
- **CUP:** J33C22002860001
- **Project manager:** Gerardo Manfreda
- **Project title:** One Health Approach to trace foodborne pathogens in innovative and resilient food of animal origin and their genomic characterization in order to predict their virulence and antimicrobial resistance
- **Duration of contract:** 36 months
- **Brief description of the project:** Research activities will be under the umbrella of the One Health approach with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, food, and their shared environment. The aim of the research activities will be to trace bacterial foodborne pathogens and antimicrobial resistant bacteria along the farm to fork chain of foods of animal origin. Besides industrial-based food, innovative and resilient foods will be considered. In particular, traditional microbiology methods will be applied along with microbial genomics for the isolation, typing and characterization of the virulome and resistome of bacteria of interest for human health. Sequenced genomes will be compared with public available ones in order to predict the potential risk for human health as well as the geographical distribution and dissemination along the interface humans, animals, food and the environment.
- **Objective of the research project:** 4 publications ISI/Scopus
- **Admission requirement:** PhD
- **Maximum number of publications:** 12
- **Language in which the interview will take place**: Italian
- **Foreign language**: English