



**UNIVERSITÀ DEGLI STUDI
DI CAGLIARI**



HR EXCELLENCE IN RESEARCH

Department of Mathematics and Computer Science

Head of Department prof. Riccardo Scateni

Selection code: IR_DMI_02_26

NOTICE FOR THE COLLECTION OF EXPRESSIONS OF INTEREST FOR THE DIRECT AWARD OF N°
1 RESEARCH ASSIGNMENT PURSUANT TO ARTICLE 22-ter OF LAW 240/2010

SCIENTIFIC_DISCIPLINARY AREA: 13 – Economics and Statistics

SCIENTIFIC DISCIPLINARY GROUP: 13/STAT-01 Statistics

TUTOR/ SCIENTIFIC SUPERVISOR: Dott. Alessandro Sebastian Podda

PUBLISHED ON THE WEBSITE: 24/03/2026

DEADLINE FOR APPLICATIONS SUBMISSION: 14/04/2026

The Head of the Department

HAVING REGARD to Law No. 168 of May 9, 1989, and in particular Article 6 on “University autonomy;

HAVING REGARD to Law No. 241 of August 7, 1990, “New rules on administrative procedure and the right of access to administrative documents”;

HAVING REGARD TO Presidential Decree No. 445 of December 28, 2000, containing legislative and regulatory provisions on administrative documentation and further modifications;

HAVING REGARD TO Legislative Decree No. 196 of June 30, 2003, “Code regarding the protection of personal data,” as amended by Legislative Decree No. 101 of August 10, 2018, in accordance with Regulation (EU) 2016/679 (GDPR);

HAVING REGARD TO Legislative Decree No. 82 of March 7, 2005, “Digital Administration Code,” and further modifications;

HAVING REGARD TO Law No. 240 of December 30, 2010, and in particular Article 22-ter relating to research assignments;



HAVING REGARD TO MUR Decree No. 592 of August 6, 2025, which sets the minimum amount for research assignments and post-doctoral positions (Articles 22-bis and 22-ter of Law 240/2010);

HAVING REGARD TO the Statute of the University of Cagliari, issued by Rectoral Decree No. 339 of March 27, 2012 and further modifications;

CONSIDERING the procedure governed by this notice is in line with the University “Human Resources Excellence in Research” procedure for the implementation of the principles of the *European Charter for Researchers*, with the aim of promoting an attractive research environment, particularly for junior researcher profiles (R1 – First Stage Researcher), through a comparative evaluation of candidates, in accordance with the standards for open, transparent, and merit-based recruitment (OTM-R);

HAVING REGARD TO the Regulations for the awarding of research assignments, pursuant to art. 22-ter of Law No. 240/2010, issued by Rectoral Decree n 848 of October 10, 2025;

HAVING REGARD TO the project entitled “*ENTROPIA: Extending the Theory of scoring Rules for modern Predictive challenges*” - CUP F83C26000350007 - funded under Fondazione di Sardegna;

GIVEN THAT the above-mentioned project is funded with external resources obtained either at national, international, or European level based on competitive calls for which Law 240/2010 allows direct award after collecting expressions of interest;

HAVING REGARD TO the request by prof. Monica Musio, scientific supervisor of the project, for the activation of n 1 research assignment lasting 12 months through a direct award procedure pursuant to Article 3, paragraph 1, letter b) of the Assignment Regulations;

HAVING REGARD TO the resolution of the Department Council no. 3/2026 of 23/02/2026, which verified the conditions for the activation of direct award after collecting expressions of interest and approved of all the essential elements indicated in the request made by Prof. Monica Musio;

HAVING VERIFIED the availability of financial coverage in the amount of € 35.101.92 corresponding to the gross cost to the administration, to be charged to:

UA 00.17 Budget of the Department of Mathematics and Computer Science – project code RICALTRO_CTC_2026_MUSIO - Fondazione di Sardegna 2024-2025 - CUP F83C26000350007;

ORDERS



Art. 1 – Subject and purpose

A selection procedure is hereby announced for the direct awarding, following the collection of expressions of interest, of no. 1 research assignment pursuant to Article 22-ter of Law No. 240/2010, aimed at carrying out research and innovation activities within the project entitled “*ENTROPIA: ExtENding the Theory of scoring Rules for mODern Predictive chAllenges*”.

Department and place of research and innovation activity: Department of Mathematics and Computer Science – Via Ospedale n. 72 – 09124 Cagliari;

Scientific supervisor: Prof. Monica Musio

Duration of each assignment: 12 months

Estimated start date: 20/04/2026

Scientific-disciplinary area: 13 Economics and Statistics

Scientific-disciplinary group: 13/STAT-01

Scientific-disciplinary sector: STAT-01/A - Statistics

Description of the research and innovation programme covered by the assignment and planned activities:

The successful candidate for this research post will join the research programme entitled ‘Geometric regression models for ordinal compositional data’. The research will focus on developing a new class of regression models for the analysis of ordinal compositional data, a complex data type in which observations are vectors of proportions that, in addition to their intrinsic simplicial structure, exhibit a natural ordering among their components. The innovative approach on which the project will focus consists of integrating the 1-Wasserstein distance – a tool from optimal transport theory that effectively captures the geometries of ordinal spaces – within the compositional regression modelling framework. The aim is to overcome the limitations of classical approaches, based on Aitchison’s geometry, by providing more flexible and interpretable models to capture the relationships between covariates and the ordered compositional structure of the response variable. Specifically, the researcher will be assigned the following tasks:

Methodological Development: Contribute to the design and theoretical formalisation of the regression framework, defining the model, the appropriate link functions, and the use of the 1-Wasserstein distance in the likelihood function or objective function.

Computational Implementation: Develop efficient, dedicated algorithms (preferably in R or Python) for parameter estimation and inference, creating a well-documented software package of the same name.

Experimental Validation: Conduct extensive simulations to evaluate the performance of the proposed method against existing techniques, in terms of goodness of fit, predictive accuracy and stability.



Case Study Analysis: Apply the developed methodologies to real-world datasets, in collaboration with project partners, to extract meaningful insights and produce publishable scientific results.

Dissemination: Prepare manuscripts for publication in international peer-reviewed journals and present the results at national and international conferences in the field.

Translated with DeepL.com (free version)

Gross annual of the research assignment (gross employee): € 27.754,43;

Funding/project: Fondazione di Sardegna annualità 2024-2025 “ENTROPIA: Extending the Theory of scoring Rules for modern Predictive Challenges” - CUP F83C26000350007

Art. 2 – Admission requirements and incompatibilities

Expressions of interest may be submitted by candidates, without restrictions based on citizenship, who meet the following requirements:

-Master's degree (pursuant to Ministerial Decree no. 270/2004 or degrees obtained pursuant to Ministerial Decree no. 509/1999 and degrees obtained under the system in force prior to Ministerial Decree 509/1999 equivalent to the above-mentioned master's degrees pursuant to the Interministerial Decree of July 9, 2009) in: LM 40 Mathematics - obtained no more than six years ago, together with a curriculum suitable for assisting in research or innovation activities.

Candidates who obtained a degree abroad no more than six years ago may also participate in the present direct award procedure. The degree must be issued by an institution officially accredited in the country of origin and must be recognized as equivalent by the Scientific Supervisor, in terms of nature, level, and disciplinary correspondence, to the Italian degrees indicated above, for the sole purpose of this award. In foreign university systems that provide for a single course of study that includes a second-level degree and a doctorate through the award of a single degree, the Scientific supervisor shall assess the correspondence of the degree, even if it is of a higher level.

The following individuals are not eligible to participate in this procedure:

- Those who obtained the degree required for admission more than 6 years prior to the deadline for submitting applications;
- Staff permanently employed by universities, public research organisations and experimental institutions;
- Those who have benefited from contracts referred to in Article 24 of Law 240/2010;
- Those who are related up to and including the fourth degree of kinship and affinity to a professor of the Department, or to the Rector, the General Director, or a member of the University's Administrative Board (Article 18, paragraph 1, letters b and c, Law 240/2010);



- Those who have held positions established and possibly renewed by the University of Cagliari, or by other universities or organisations, pursuant to Articles 22, 22-bis, 22-ter, and 24 of Law 240/2010, for a period which, added to the expected duration of the assignment referred to in this call for applications, exceeds a total of eleven years, even if not continuous;
- Those who have benefited from research assignments referred to in Article 22-ter of Law No. 240/2010 at the University of Cagliari or at other Italian universities, whether state, non-state, or online, or at research institutions, for a period which, when combined with the duration provided for the position of the present the call, exceeds an overall total of three years, even if non-continuous. For the purposes of calculating the overall duration, periods of maternity or paternity leave or for health reasons, in accordance with the legislation in force, shall not be considered.
- Those who are excluded from the enjoyment of civil and political rights;
- Those who have been dismissed, released, or declared to have forfeited a public employment position with a Public Administration;

The research assignment is not compatible with:

- a) research contracts referred to in Article 22, post-doctoral assignments referred to in Article 22 bis, and contracts referred to in Article 24 of Law 240/2010, and cannot be held simultaneously by the same person;
 - b) scholarships of any kind awarded by national or foreign institutions, including doctoral scholarships and emoluments related to medical specialization contract, except those exclusively aimed at international mobility for research purposes;
 - c) any other employment relationship, including part-time or fixed-term employment, with public or private entities;
 - d) attendance of bachelor's, master's, doctoral, or medical specialization courses in Italy or abroad, without prejudice to the possibility of implementing specific European Union research funding programs within the framework of actions related to the Marie Skłodowska-Curie (MSCA) programme;
 - e) holding research grants or other research positions not included among those indicated in letter a) of this paragraph, including at other universities or public research institutions.
- Notwithstanding the above, the selected candidate may not, under any circumstances, engage in activities that could give rise to a conflict of interest with the activities of the University.

The selected candidate may carry out professional activities and enter into contracts that fall within the category of self-employment contracts, including teaching and research support activities, subject to written notification to the Head of the Department and provided that such activities are declared by the Department Council to be compatible with the exercise of research activities, based on the reasoned opinion of the tutor/ scientific supervisor, verifying that such activities do not interfere with the successful performance of the research assignment covered by the contract, do not involve a conflict of interest with the same, and are compatible with the contractual constraints and reporting rules established by the funding Body.



Art. 3 – Submission of expressions of interest

The expression of interest must be submitted, under penalty of exclusion and using annex 1, by 11:59 p.m. on 22/03/2026 via certified email(pec) to: protocollo@pec.unica.it, with the subject line: “Department of Mathematics and Computer Science – Expression of interest no. IR_DMI_01_26 of 02/03/2026.”

The application may be digitally signed or by handwritten signature, with a copy of a valid identity document attached.

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Only foreign candidates who do not have certified email, may send their application to the email address segreteria.dmi@unica.it.

The following documents must be attached to the application:

- scientific curriculum vitae in the form required by Presidential Decree 445/00 (Annex No. 2);
- a copy of a valid identity document;
- any relevant publications and qualifications;
- self-certification in lieu of affidavit in which the candidate declares that the copies of qualifications and publications attached are true and conform to the originals (Annex 3).

In accordance with the regulations on self-certification, the University will verify the accuracy of substitute declarations and self-certifications, pursuant to the Presidential Decree n 445/2000.

Non-EU citizens legally residing in Italy must comply with the following documentation requirements:

- Self-certification: they may use self-declaration pursuant to arts. 46 and 47 of Presidential Decree 445/2000 regarding the possession of status, facts and personal qualities that can be certified or attested to by Italian Public Bodies, or if self-certifications are provided in application of international conventions in force between Italy and the candidate’s country of origin.
- Foreign documentation: in all other cases, status, personal qualities, and facts must be documented by means of original certificates or attestations issued by the competent authority of the foreign country. These documents must be accompanied by an Italian translation certified by the Italian consular authority, certifying their conformity with the original.

Citizens of countries outside the European Union who are legally residing in Italy must attach a copy of their residence permit or EU long-term residence permit (residence card for foreign nationals), duly issued by the competent authority and currently valid, or the details of the receipt of their application for such permit. If the candidate is declared the winner of this direct award procedure, the residence permit or EU long-term residence permit (residence card for foreign nationals) or the receipt of the application for the same must be submitted in original to the Department no later than the date set for the signature of the contract.



Failure to submit the document will result in automatic forfeiture of the right to conclude the contract. Citizens of non-European Union countries residing in their country of origin at the time of participation in this direct award procedure, if successful, must submit to the Department the entry visa obtained following the issue of the clearance certificate by the competent authorities by the date of the presumed start of activity. Failure to submit this document will make it impossible to commence the activity.

Art. 4 – Evaluation of expressions of interest.

After the deadline for submitting expressions of interest, the scientific supervisor of the research project shall send to the Head of the Department a minutes listing the candidates who have submitted expressions of interest, expressing a reasoned assessment on each candidate's suitability/unsuitability for the research program, based on their scientific and professional profile, and indicating the candidate to whom the assignment should be awarded.

The final decision on the direct award is announced by publishing the decision of the Head of the Department on the University website.

Art. 5 – Contract stipulation

The selected candidate will be invited to sign an individual research contract, in accordance with the University's standard template. Upon signing the individual research contract, the University will ask the candidate to submit the documentation required by current legislation. The interested party may request a postponement of the start date, provided that this is compatible with the project activities. Failure to sign the contract within the specified time frame shall result in forfeiture of the right to enter into the contract.

The contract must specify:

- a) the start and end dates of the assignment;
- b) the main location where the assignment activities will be carried out;
- c) research activities and any other additional specifications;
- d) the tutor or scientific supervisor of the research;
- e) identification of any competitive funding that shall cover the cost of the research assignment and the relevant CUP (Unique Payment Code);
- f) the scientific-disciplinary sector(s) and scientific-disciplinary group(s) to which the research and innovation activities are referred;
- g) indication of the gross employee remuneration;
- h) indication of the procedures by which the appointed candidate is required, at the end of the assignment, to submit a specific report on the results of the research to the relevant Department;
- i) indication of the causes for termination and the necessary notice periods;
- j) an indication of the causes for withdrawal, pursuant to Article 2119 of the Italian Civil Code;
- k) aspects relating to intellectual property and data processing regulations and related confidentiality obligations;



l) a commitment to comply with the obligations contained in the University's code of ethics and conduct.

The assignment contract is signed by the appointed candidate and the Head of the Department.

The appointed candidate carries out research collaboration activities related to the scientific-disciplinary sector(s) and scientific-disciplinary group indicated in the contract under the coordination and supervision of the tutor or scientific supervisor.

In the event of withdrawal, remuneration shall be paid until the last day of actual service.

The contract does not constitute an employment relationship, does not give rise to the right of access to University roles, public research bodies, and institutions whose scientific specialization diploma has been recognized as equivalent to a PhD degree pursuant to Article 74, fourth paragraph, of Presidential Decree No. 382 of July 11, 1980, nor can it be counted for the purposes of Article 20 of Legislative Decree No. 75 of May 25, 2017.

Carrying out research activities outside the physical premises of the Department or Structure that proposed the assignment must be previously authorized by the Head of the Department, after consulting the tutor or scientific supervisor.

For Research assignment holders, for periods spent off-site, previously authorized by the tutor or the scientific supervisor and by the Head of the Department, mission allowances are granted as regulated by the relevant University regulations.

Art. 6 – Economic, tax, and social security treatment

The holder of the research assignment, pursuant to Art. 22-ter of Law 240/2010, is subject to the following provisions: for tax matters the provisions set forth in Article 4 of Law No. 476 of August 13, 1984; the provisions set forth in Article 2, paragraphs 26 et seq. of Law No. 335 of August 8, 1995 apply for social security matters; the provisions of the Decree of the Minister of Labor and Social Security of July 12, 2007, published in the Official Gazette No. 247 of October 23, 2007 apply in matters of compulsory maternity leave. Article 1, paragraph 788, of Law No. 296 of December 27, 2006 shall apply in matters of sick leave.

During the period of compulsory maternity leave, the allowance paid by the National Social Security Institute (INPS) pursuant to Article 5 of the aforementioned decree of July 12, 2007, shall be supplemented by the university up to the full amount of the remuneration for the research assignment.

The research assignment holder is required to take out an accident insurance policy, copies of which shall be delivered to this Administration.

Art. 7 – Head of the procedure

Pursuant to Art. 5 of Law No. 241 of August 7, 1990, the person responsible for the procedure referred to in this notice is Mrs Stefania Curto (email stefania.curto@unica.it phone: +39 0706758506, Administrative Manager of the Department of Mathematics and Computer Science.

Art. 8 – Personal data processing



The University of Cagliari handles the processing of personal data pursuant to the provisions of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 and Legislative Decree 196/2003, Code for the Protection of Personal Data, respecting human dignity, rights and fundamental freedoms of the person. The information on the processing of data relating to the category of data subjects - CITTADINI - is published at https://www.unica.it/unica/it/utility_privacy.page.

Art. 9 – Advertising and regulatory framework

This notice is published on the website of the Department of Mathematics and Computer Science. For anything not expressly provided for, please refer to Law 240/2010 and the University Regulations for research assignments.

The Head of the Department

Prof. Riccardo Scateni

Signed with digital signature

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