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CALL FOR APPLICATIONS FOR THE AWARD OF 2 RESEARCH GRANTS FOR THE SECTOR 01/A3 MATHEMATICAL ANALYSIS, PROBABILITY AND STATISTICS, AT THE CENTER BIDSА – BOCCONI INSTITUTE FOR DATA SCIENCE AND ANALYTICS OF UNIVERSITA' COMMERCIALE "LUIGI BOCCONI" OF MILAN.

Article. 1
Call for Competition

To promote the education and improvement of junior scholars, the Università Commerciale "Luigi Bocconi" of Milan, announces a competition by exams and academic titles for the award, by means of an appropriate contract, according to art. 22 of Law 240/2010 and using the relative University Regulations emanated with the Rectoral Decree n° 129 of 10th June 2011, of 2 research grants with the following characteristics:

Duration: **1 YEAR (renewable)**

Sector: **13/D1 STATISTICS**

(Scientific Sector SECS-S/01 Statistics)

In the Center BIDSА – Bocconi Institute for Data Science and Analytics

Professor of referral: **prof. Botond SZABO**

Title of the project: "BigBayesUQ" – The missing mathematical story of Bayesian uncertainty quantification for big data - Horizon Europe Call: ERC-2022-StG. Grant Agreement n. 101041064"

Project: Recent years have seen a rapid increase in information. This has created an urgent need for fast statistical and machine learning methods that can scale up to big data sets. Standard approaches including the now routinely applied Bayesian methods are becoming computationally infeasible especially in complex models with many parameters and large data sizes. A variety of algorithms have been proposed to speed up these procedures but these are typically black box methods with very limited theoretical underpinning. In fact empirical evidence shows the potentially bad performance of such approaches. This is especially concerning in real-world applications e.g. in medicine or astronomy. In this project we aim to provide theoretical guarantees and limitations for such scalable (Bayesian) methods and based on the theoretical understanding derive more accurate procedures.

Job Description: Research in mathematical statistics focusing on uncertainty quantification for scalable statistical methods. The candidate is expected to publish paper(s), present the work on conference(s) and attend the departmental research seminar in a regular basis. Successful candidates will have to prove strong analytical skills, experience in mathematical statistics (in any of following topics - Bayesian statistics, inverse problems, high-dimensional models, scalable computation, multiple testing, neural networks), and excellent command/highly proficiency in spoken and written English. Good programming skills would be an asset.

Article. 2 ***Admission Requirements***

In order to participate in the competition, the candidate must have, as a preferred qualification, the possession of a PhD or equivalent, carried out in Italy or abroad, or in the course of being conferred.

Relations (up to the fourth degree of kinship) to any professor in the University Board, the University Rector or the Managing Director are not allowed.

The award of the research grant is incompatible with any participation in degree courses, specialist or master's degree, University master's degree, research doctorate with scholarship in Italy or abroad and if the candidate is a public employee, they must take unpaid leave.

The total duration of any grants or scholarships with any university according to article 22 of the Law 240/2010 and contracts according to article 24 of the Law 240/2010 cannot exceed a total of twelve years, even if not continuous. Time off for maternity or health reasons is not counted as part of the twelve years.

These statutory pre-requisites must be in place at the deadline for the presentation of applications determined by the present announcement.

Applicants will obtain a conditional acceptance. At any time, the administration can arrange, with reason, exclusion from the selection procedure due to the lack of necessary pre-requisites.

Article. 3 ***Applications***

Applicants should apply by submitting the complete package via our on-line application system, which can be found at "www.unibocconi.eu/faculty-postdoc" by **10 April 2022**.

Each candidate's application must clearly indicate:

- surname and name
- date and place of birth
- fiscal code (codice fiscale) (if available)
- citizenship
- residence
- contact address
- educational qualifications (degree and PhD certificate)

The application must include the following documents, which must be attached to the application:

- professional C.V., in pdf format;
- a list of any titles and publications, in pdf format;
- any certificate, publication, or document that the candidate intends to submit for evaluation, in pdf format.
- List of minimum two and maximum three highly qualified academic referees providing

a reference letter

The award of the research grant is compatible with any form of occasional work but incompatible with any simultaneous use of PhD grants, specialist schools or post-doctorate grants.

If the candidate covers any other position, the candidate must attach a declaration specifying the type of activity undertaken, duration and the university in which they are carrying out their research and the commitment to give up the employment if conferred the grant due to incompatibility.

Finally, if the candidate has benefitted from any previous grants or scholarships with any other institution, he or she must attach a declaration explaining the time periods, length and universities where they benefitted from the grant.

Article. 4 ***Evaluation Committee***

The Evaluation Committee of the current competition, named by the Rector, is made up of three core faculty professors who will remain for two years in their role.

The competition will be carried out by an evaluation of titles and examination, consisting of an interview.

The Committee can allocate a maximum of 100 points for each candidate, split as follows:

- 30 points for the evaluation of CV and academic titles;
- 30 points for the evaluation of scientific publications presented;
- 40 points for the evaluation by interview

In order to be admitted for the interview, candidates must receive a minimum of 40/100 points in the evaluation of titles and publications.

The interview will revolve around titles and publications, and will be held in a room of the university or via conference call. Candidates will be informed of the interview date and place by e-mail, with advance notice of at least 7 days. The interview will be open to the public.

At the end of the assessment, the Committee formulates a final judgement for each candidate and creates a ranking in descending order on the basis of the scores assigned, thereby identifying the winning candidate.

The Committee may appoint suitable candidates who can take over in the event of withdrawal/renunciation of the winner.

The winning candidate will receive a written communication stating the awarding of the grant, which should be duly signed before the deadline of 15 days from receipt of the letter.

The grant cannot be divided. If for any reason the awardee stops receiving the grant, they cannot be substituted by other candidates who did not win a grant.

Article.5
Rights and Duties of the Grant Winner

The grant will last for one year and indicatively run from **1st September 2022**.

The award of the grant implies a commitment to undertake research, study and preparation of research activities for at least four days a week.

The normal obligations of the research include:

- Research activity as part of the Research Project presented, as well as additional programs elaborated by the Center, supervised by the *Professor of referral*, who will check the activity carried out;

All other work undertaken outside of the four days should not conflict with that performed as researcher at Bocconi University. A judgment of any such circumstances will be decided by the Center Director, having consulted with the professor of referral. Such circumstances will lead to the ending of the assignment of the grant.

The award of the research grant does not constitute an employment contract and does not confer any rights to teaching roles within the University.

Article.6
Compensation

The research grant ranges from a minimum of **€ 30.000,00 gross per annum** up to a maximum of **€ 50.000,00 gross per annum** and varies according the selected candidate's international profile assessment made by the evaluation Committee.

The amount is excluded from "Irpef tax" (income tax), according to article 4 of the Law dated 13th August 1984, n°476 and subsequent modifications and additions and subject to social security according to article 2, comma 26 and the Law dated 8th August 1995, n°335 and subsequent modifications and additions.

The University will provide insurance for risks of injury and civil responsibility.

The payment will be made at the end of each month, following presentation within the administrative deadlines, of a payment note signed by the *Professor of Referral* to certify the activity undertaken.

Article.7
Causes of deferral or suspension of the grant

If a candidate is on maternity leave, minimal payments will be made by INPS (national insurance) as according to the Ministerial Decree dated 12th July 2007, published in the "Gazzetta Ufficiale" n. 247 of 23rd October 2007. For illness the article 1, comma 788 of the Law 27th December 2006, n. 296 and subsequent modifications and additions will apply. During the period of mandatory maternity leave, a top-up payment will be made by Bocconi University up to the monthly amount of the grant as according to article 5 of the Decree

dated 12th July 2007.

Article. 8
Stays Abroad

Any stays abroad, for study reasons, should be approved by the Rector beforehand, by means of a formal assessment by the Center Director, having conferred with the *Professor of referral*. During such periods the payment of the grant may be suspended.

Article. 9
Certificate of the activity carried out

At the end of the grant period, the beneficiary has the right to ask for a certificate from the *Professor of Referral*, stating the scientific activity carried out during their time in Bocconi as a researcher.

Article. 10
Treatment of Personal Data

According to a General Data Protection Regulation n. 679/2016 all personal data supplied by candidates to the Faculty and Staff Administration, both in electronic and paper format, is exclusively for evaluation purposes and to publicize the acts related to the current evaluation procedure and the conferral of a Research Grant position as detailed in this announcement.

Article. 11
Advertising

The announcement of the competition for assigning the research grants is advertised on the Bocconi University website, as well as the Italian Ministry and European Union websites. Università Bocconi can also publish this announcement on the main international job opening websites for this scientific sector. Copy of this call is available from the Faculty and Staff Administration.

This announcement is also published in English. In case of divergences between the Italian and the English texts, the Italian version will be considered definitive.

FACULTY AND STAFF ADMINISTRATION
(dott. Marcello Valtolina)

