



Decree of the Rector n. 853 of 11/09/2023
Competition for awarding 1 research grant at the University of Udine

DISCLAIMER:

The official and legally binding call for applications is in Italian only. This document cannot be used for legal purposes and is only meant to provide information in English on the call for applications (Decree of the Rector n. 853 of 11/09/2023). Please refer to the official call published on: <https://www.uniud.it/it/albo-ufficiale>

Any change and integration will be made available on the above mentioned web page. Therefore, no personal written communication regarding the examination date and/or competition results shall be provided to applicants.

Annex 1

Competition announcement for the assignment of 1 research grant at the University of Udine, entitled "Transcriptional analysis for the study of grapevine responses to heat stress" SSD: AGR/03 (principal investigator, Rachele Falchi)

Research grant co-funded by the resources of the project PRIN 2022 - Prof. n. 20228PPXBN

Art. 1

A selection procedure is hereby launched for the award of 1 research grant at the University of Udine, as identified in Attachment A which constitutes an integral part of the present announcement.

The research grant is linked to the research project and is subject and conditioned upon the relative funding.

The fellowship may be renewed, in compliance with Art. 22, Law No. 240 of 30 December 2010 (as in the text in force before the implementation of the Conversion Law of the D.L. 36/2022, L. 79/2022), Law No. 11 of 27 February 2015, and the current regulations of the University of Udine for awarding research grants, issued with the Rector's Decree No. 182 of 31 March 2021. The renewal is subject to the scientific coordinator's positive assessment of the researcher's activities, an adequate scientific rationale, and a corresponding financial covering.

The research fellowship does not give rise to any right with regards to accessing University posts.

Any personal communication to candidates related to this selection will be sent exclusively to the email address indicated when registering for the selection, as mentioned in Art. 5.

Art. 2

The research grant described in this competition announcement and the required qualifications to apply for the position are identified in Attachment A. The lack of the admission requirements leads to the automatic exclusion from the competition procedure.

Possession of a PhD or equivalent degree obtained abroad or, only for the interested areas, of a medical specialization accompanied by an adequate scientific production, constitutes a preferential qualification for awarding the research fellowship of this selection, if it has not been provided as a mandatory requirement.



For the only purpose of the admission to the competition, the Examining Board (Art. 7) shall assess the equivalence of the qualification obtained abroad, except for the evaluation of the medical specialization qualification to which Article 38 of the Legislative Decree 165/2001 and subsequent modifications and additions, and EU regulations on the matter, shall be applied.

The Examining Board will proceed to the evaluation of the qualification obtained abroad according to the documentation attached to the application form. The Examining Board may exclude the candidate if the submitted documentation does not provide sufficient information for the assessment.

Therefore, applicants must enclose all the documentation in their possession relating to their qualification in order to provide the Examining Board with sufficient information for assessment.

Candidates holding a qualification issued by a **European Research Area country**, if successful, must submit, if not already attached to the application form one of the following options:

- Supplement Diploma in English issued by the competent University.
- CIMEA Certificate of comparability of the foreign qualification, issued by CIMEA (Information Centre on Academic Mobility and Equivalence) via the "diplome" service at <https://cimea.diplome.eu/udine/#/auth/login>

Candidates holding a qualification issued by a **non-European Research Area country**, if successful, must submit, if not already attached to the application form one of the following options:

- Declaration of the on-site value of the qualification and the certificate relating to the degree with examinations and grades. A certificate in a language other than Italian or English must be accompanied by an official translation into one of these languages (certified by the competent diplomatic-consular authority or certified by a court in Italy).
- CIMEA Certificate of comparability of the foreign qualification, issued by CIMEA (Information Centre on Academic Mobility and Equivalence) via the "diplome" service at <https://cimea.diplome.eu/udine/#/auth/login>

If the Supplement Diploma or the statement/attestation of comparability are not available when signing the contract, the applicant must demonstrate that he/she has requested the documentation and submit it as soon as possible.

Any exclusion from the selection procedure due to lack of eligibility requirements, absence of required documents, failure to sign the selection application or submission of the selection application in a manner different from what is provided for in this call for applications will be communicated to applicants exclusively at the email address indicated in the application form.

Art. 3

The research grant referred to in this call for applications cannot be awarded:

- a. to employees of Universities and the entities referred to in Article 22, section 1, of Italian Law no. 240 of 30 December 2010 (in the text prior to the reform introduced by Law no. 79 of 29 June 2022);
- b. to those who have already been awarded research grants pursuant to Italian Law no. 240 of 30 December 2010 (prior to the reform introduced by Law no. 79 of 29 June 2022) for the maximum period provided by law, even if not continuously, excluding the period in which the grant was used in conjunction with the doctorate, up to the legal term of the relative course;
- c. to those who have already benefited from research grants and fixed-term researcher contracts provided for, respectively, in Articles 22 and 24 of Italian Law no. 240 of 30 December 2010 (in the text prior to the reform introduced by Law no. 79 of 29 June 2022), for a total of 12 years, even if not consecutive;



- d. to anyone who has a degree of kinship or affinity, up to and including the fourth degree, with:
- the Rector, the Director General or a member of the Board of Directors of the University of Udine;
 - the scientific supervisor or a professor/researcher belonging to the department or organisation hosting the research grant in question.

The research grant provided for in this call for applications cannot be combined:

- a) with scholarships of any kind, except for those granted by Italian or foreign institutions to supplement, by means of stays abroad, the fellow's training or research activities;
- b) with other research grants;
- c) with an employment relationship, even if part-time, without prejudice to the relevant provisions for employees of public administrations.

The grant awarded under this call for applications is also incompatible with simultaneous attendance at university degree courses, either Bachelor's degree or Master's degree courses, research Doctorates with scholarships and medical specializations, in Italy or abroad.

Art. 4

Applicants must enclose with their application, under penalty of exclusion, the following documents:

- a) their professional scientific CV, highlighting the candidate's aptitude for carrying out and implementing the research project (Attachment A);
- b) their identity card, their passport or any other identification document¹;
- c) (for candidates with a foreign qualification only) certification or self-certification of both the academic qualification required for the admission to the selection, and of the exams (with evaluation) took during the period of study abroad, and of any other document that can be useful to the evaluation of the degree by the Examining Board.

Applicants can attach to the application, publications and any other certification considered useful to demonstrate the qualification based on the research program (Attachment A) and to certify any research activity accomplished at public or private institutes (indicating the starting and ending date and the duration).

The documents and qualifications mentioned above must be submitted in Italian or English. Those that are not as requested will not be evaluated. Documents originally written in a language other than Italian or English must come with a translation in Italian or English, that the candidate will do on its own responsibility. The translation can be an abstract concerning the thesis.

Italian and Community candidates wishing to submit qualifications referring to conditions and facts attested by Public Administrations must proceed exclusively with self-certification.

Non-EU citizens legally residing in Italy may self-certify only data that can be verified or certified by Italian public bodies. They may also use declarations in lieu when provided for by an international convention between Italy and the declarant's country of origin.

Non-EU citizens not residing in Italy cannot self-certify.

Only the qualifications possessed by the candidate on the date the application form is submitted and submitted in accordance with the procedures set out in Article 5 will be assessed.

¹ Please be aware that the residence permit is not an identification document.



Failure to submit mandatory documents provided for in this article will constitute grounds for exclusion from the selection.

Art. 5

The submission of the applications for the present call starts on September 21, 2023 at 2:00 pm (Italian time) and ends on October 19, 2023 at 2:00 pm (Italian time).

The application to take part in the selection must be completed, under penalty of exclusion, using the appropriate online procedure, available at the link <https://pica.cineca.it/>. The procedure involves an applicant registration step, for those who do not already have an account, and then an application completion step.

Once completed, the online application must be signed in the manner described in the online procedure (manual signature with attached identity document or digital signature), under penalty of exclusion from selection. The application does not have to be signed if you access the above-mentioned online procedure using your SPID ID.

The qualifications referred to in Article 4 must be attached to the application in .pdf format. Individual .pdf files may not exceed 30MB.

The application for participation in the selection is automatically sent to the University of Udine with the definitive closing of the online procedure.

The University Administration:

- is not responsible if it is impossible to read the submitted documentation in electronic format due to damaged files;
- shall not accept or take into consideration qualifications or documents received in paper form or by any means other than what is specified in this article.

Reference to documents or publications already submitted in connection with other competitions is not allowed.

The Administration is not responsible for any missing document or communication because of inaccurate indication of residence and/or address submitted by the candidate during the application. Also, the Administration is not responsible if the candidate has not communicated changes in this information, or has communicated them too late. The Administration is also not responsible for any postal or telegraphic problems not attributable to the Administration itself.

Applicants are advised not to wait until the last few days before the closing date to submit their application. The University accepts no responsibility for any malfunctions due to technical problems and/or overloading of the communication line and/or application systems.

Art. 6

The selection procedure is held in accordance with the modality indicated in Attachment A.

The test will aim to assess the general preparation, experience and aptitude for research of the candidate. It will consist in the evaluation of the professional scientific curriculum, of the publications and qualifications presented, and of the interview, where foreseen.



Art. 7

The Examining board for the competition is identified in Attachment A of the present competition announcement, of which it is an integral part.

At its first meeting, the Examining board shall appoint its President and Secretary, and establish the criteria and methods for evaluating the qualifications and the interview, where foreseen.

The results of the qualifications assessment must be disclosed to applicants during the interview, where foreseen.

The Examining board can award a maximum of 100 points (one hundred out of one hundred) to the selection.

At the end of the evaluation procedure, the Examining board shall formulate the general merit list based on the overall score of each candidate, and draw up the minutes of the whole competition procedure.

Based on the ranking list, the assignment is awarded to candidates who have obtained a minimum overall score of 70/100 (seventy out of one hundred).

The Examining board's judgement is final.

The ranking list will be made public exclusively through publication on the University's official website.

Applicants will not be notified of the outcome of the evaluation.

Those who do not declare their acceptance of the research grant and do not present themselves at the research centre within the deadline communicated by the latter, even if not formally, shall lose the right to receive it. Exceptions to this term will only be granted in cases of documented force majeure.

Art. 8

The research activity cannot be started before signing the contract defining the terms and conditions of the collaboration.

The activity covered by the research grant must have the following characteristics:

- a) it must be carried out as part of the research programme covered by the grant and not be a merely technical support to it;
- b) it must have a close connection with the realization of the research program for which the winner of the grant has been awarded the contract;
- c) it must be continuous and, in any case, temporally defined, not merely occasional, and in coordination with the overall activity of the University;
- d) it must be carried out autonomously, solely within the limits of the programme prepared by the programme supervisor, without predetermined working hours.

The researcher is required to submit a detailed written report on the work carried out and the results achieved, accompanied by the opinion of the scientific supervisor, to the reference organisation at the intervals set out in the contract. The researcher must also submit interim reports and timesheets, if requested by the reference organisation.

Either the fellow or the reference organisation may withdraw from the contract.



The reference organisation may terminate the contract not only in the cases referred to in Article 9, sections 2 and 3, of the "Internal rules for awarding research grants pursuant to law 240 of 30 December 2010" of the University of Udine, but also in the event the research project and therefore the financial coverage on which the research grant is based cease to exist.

Art. 9

The following legal dispositions shall apply to the grant referred to in this call for applications:

- for tax matters, the provisions of Article 4 of Italian Law no. 476 of 13 August 1984, as subsequently amended and supplemented;
- for social security matters, the provisions of Article 2(26) *et seq.* of Italian Law no. 335 of 8 August 1995, as subsequently amended and supplemented;
- for mandatory maternity leave, the provisions of the Italian Ministerial Decree of 12 July 2007;
- with regard to sick leave, the provisions of Article 1(788) of Italian Law no. 296 of 27 December 2006 and subsequent amendments.

During the period of mandatory maternity leave, the allowance paid by INPS according to Art. 5 of the Italian Ministerial Decree of 12 July 2007 is supplemented by the University up to the full amount of the research grant.

The grant will be paid in monthly instalments.

Art. 10

The data collected as part of the procedure referred to in Art. 5 are necessary to properly manage the selection procedure, for any subsequent management of the research grant and for purposes related to managing services provided by the University. The University of Udine is the Data Controller. At any time, the data subject may request access, rectification and, depending on the University's institutional purposes, cancellation and restriction of processing or oppose the processing of their data. The data subject can always lodge a complaint with the Italian Data Protection Authority. The complete disclosure is available on the University of Udine website in the "Privacy" section, accessible from the home page www.uniud.it Direct Link: <https://www.uniud.it/it/it/pagine-speciali/guida/privacy>

Art. 11

For all matters not expressly mentioned in this call for applications, refer to the regulations in force on the subject cited in the introduction and to the "Internal rules for awarding research grants pursuant to Italian Law no. 240 of 30 December 2010" of the University of Udine, issued by Rector's Decree no. 182 of 31 March 2021.

Art. 12

The procedure supervisor is Dr Sandra Salvador, Head of the Research Services Area of the University of Udine.

The Responsible office at the University of Udine is "Area Servizi per la Ricerca - Ufficio Formazione per la Ricerca", via Mantica n. 31 - 33100 Udine, Italia.

To request information about the call for applications, please complete the following form available on the University of Udine website:

https://helpdesk.uniud.it/SubmitSR.jsp?type=req&accountId=universityofudine&populateSR_id=42105



Attachment A

Responsabile scientifico della ricerca / Principal investigator:

Nome e cognome / Name and surname: Rachele Falchi
Qualifica / Position: Professoressa Associata / Associate Professor
Dipartimento / Department: Scienze agroalimentari, ambientali e animali / Agricultural, Food, Environmental and Animal Sciences
Area MUR / Research field: 07 – Scienze agrarie e veterinarie
Settore concorsuale e Settore scientifico disciplinare / Scientific sector: 07/B2; AGR/03 – Arboricoltura generale e coltivazioni arboree

Titolo dell'assegno di ricerca / Topic of the research fellowship "assegno di ricerca":

I bandi sono consultabili dal sito dell'Ateneo, del MUR e di Euraxess / The calls are available on the University, MUR and Euraxess websites

Testo in italiano:

Analisi trascrittomiche per lo studio delle risposte della vite allo stress termico.

Text in English:

Transcriptional analysis for the study of grapevine responses to heat stress.

Obiettivi previsti e risultati attesi del programma di ricerca in cui si colloca l'attività dell'assegnista di ricerca / Foreseen objectives and results of the research programme performed by the research fellow "assegnista di ricerca":

I bandi sono consultabili dal sito dell'Ateneo, del MUR e di Euraxess / The calls are available on the University, MUR and Euraxess websites

Testo in italiano:

La temperatura è uno dei più importanti fattori ambientali che regolano l'attività fenologica e fisiologica delle piante. La vite è la specie arborea temperata più importante in termini economici nel mondo e una delle specie modello più importanti nella fisiologia delle coltivazioni arboree. Nella vite, è stato evidenziato l'effetto della temperatura sull'esportazione dei carboidrati dalla foglia, ma attualmente si dispone di poche conoscenze sulla sua rilevanza. Le probabili conseguenze del riscaldamento globale imporranno una migliore comprensione degli effetti della temperatura sulla viticoltura e una rivalutazione delle metodologie di gestione della chioma e di prevenzione dello stress termico. In quest'ultimo ambito, diverse sperimentazioni hanno messo in evidenza l'effetto positivo di alcuni agenti schermanti, quali il caolino e la zeolite, sulla riduzione della temperatura della chioma e sul miglioramento dello stato idrico delle piante.

In dettaglio, la temperatura potrebbe influenzare l'esportazione di carboidrati dalle foglie durante il giorno e la notte, in modo specifico per il genotipo. Una migliore comprensione dei meccanismi di traslocazione dei carboidrati e la capacità di prevedere il comportamento dei diversi genotipi in un clima in cambiamento è cruciale per affrontare le sfide future. Inoltre, a livello di bacche, l'eccesso termico ha un effetto negativo sul metabolismo secondario, modificando la biosintesi dei composti polifenolici e soprattutto aromatici.

Gli obiettivi principali del progetto sono: (1) caratterizzare l'effetto della temperatura sull'esportazione dei carboidrati dalle foglie in 10 delle più importanti varietà di vite; (2) determinare i meccanismi fisiologici e molecolari alla base della limitazione imposta della temperatura sull'esportazione dei carboidrati dalle foglie; (3) fornire un'indicazione sull'adattabilità delle principali varietà agli scenari futuri di cambiamento climatico; (4) evidenziare l'effetto del caolino e della zeolite sul metabolismo secondario delle bacche.



Verranno effettuati diversi esperimenti su varietà contrastanti per comprendere la modulazione dei geni bersaglio coinvolti nel trasporto e nel metabolismo degli zuccheri, condizionati da caricamento diurno/notturno, potenziale idrico e variazione del gradiente source-sink causato dalla temperatura. Inoltre verrà impostata una prova di confronto tra trattamenti di caolino / zeolite per verificare la modulazione di alcuni geni legati alla biosintesi di polifenoli e aromi in condizioni di irrigazione e di stress idrico.

Il candidato sarà coinvolto nella determinazione del grado di variabilità nella velocità di esportazione degli assimilati in funzione della temperatura su un'ampia gamma di varietà di vite e nell'analisi dei geni più reattivi coinvolti nel caricamento floematico degli zuccheri diurno e notturno e nell'esportazione dalle foglie e di altri geni correlati costantemente modulati dai trattamenti. Inoltre il candidato dovrà valutare le modifiche del metabolismo secondario di bacche d'uva derivanti dai diversi trattamenti schermanti applicati anche in condizioni di stress idrico. In dettaglio, basandosi sui risultati di RNA-seq e sui dati fisiologici, verrà identificato un certo numero di geni chiave nei diversi processi di esportazione di assimilati diurni e notturni dalle foglie, e alcuni geni coinvolti con il metabolismo dei polifenoli e aromi nelle bacche d'uva. Al fine di valutare la regolazione trascrizionale di questi geni selezionati, in diverse condizioni sperimentali in cambiamento (ad esempio, diverse temperature in luce/ombra, giorno/notte e stress idrico), verranno effettuate estrazioni di RNA, sintesi di cDNA e analisi mirata dell'espressione genica tramite qRT-PCR su campioni di foglie delle due varietà più diverse (3 replicati biologici ciascuno) e su campioni di uve sulla prova relativa agli agenti schermanti.

Text in English:

Temperature is one of the most important environmental factors regulating the phenological and physiological activity of plants. Grapevine is the most important agricultural temperate woody species in terms of value in the world and one of the most important model species in tree physiology. In grapevine, the effect of temperature on carbohydrate export from the leaf has been pointed out, but poor knowledge on its significance is currently available. The likely outcomes of global warming will impose a better understanding of the occurrence of temperature effects on viticulture and a reconsideration of canopy management and prevention methods. As regard this last aspect, several experiments have ascertained the positive effect of some shield agents, in detail kaolin or zeolite, on the reduction of canopy temperature and on the improvement of grapevine water status.

In detail, temperature could influence the diurnal and nocturnal export of carbohydrates from leaves, in a genotype-specific manner. A better understanding of carbohydrate translocation and the capability of forecasting genotype behavior in a changing climate is crucial to cope with the future challenges. Moreover, the heat stress has a negative effect on secondary metabolism, modifying the biosynthesis of polyphenols and aroma compounds.

The primary objectives of the project are: (1) to phenotype the effect of temperature on carbohydrate export from leaves in 10 among the most important grapevine cultivars; (2) to determine the physiological and molecular mechanisms underlying temperature limitation to carbohydrate export from the leaves; (3) to provide an indication for the adaptability of major grapevine varieties to future climate change scenarios; (4) highlight the effect of kaolin and zeolite on the grape berry secondary metabolism.

Several experiments will be carried out on contrasting varieties to understand the modulation of target genes involved in sugar transport and metabolism as conditioned by diurnal/nocturnal loading, water potential, and source-sink gradient variation caused by temperature. Moreover, an experiment comparing the effects of kaolin and zeolite will be set up with the aim to verify the modulation of some genes related with the biosynthesis of polyphenols and aroma compounds, in both well-watered and water stress conditions.

The candidate will be involved in determining the degree of physiological variability in the assimilates export rate as a function of temperature on a wide range of grapevine varieties and in analysing the most responsive genes involved in diurnal and nocturnal sugar loading and export from the leaves and other related genes consistently modulated by treatments. In detail, based on RNA-seq results and physiological data, a number of genes will be identified as key players in the different processes of



day- and night-time assimilates export from leaves, and some other genes involved in the polyphenols and aroma metabolism in grape berries. In order to assess the transcriptional regulation of these selected genes, in the changing experimental conditions (i.e., different temperatures in light/shade, day/night, and water stress condition), RNA extraction, cDNA synthesis and targeted gene expression analysis by qRT-PCR will be carried out on leaf samples of the two most differing cultivars (3 biological replicates each), and also on grape berry samples as regard the experiment dealing with shield agents.

Struttura dell'Università di Udine presso la quale verrà sviluppata l'attività di ricerca / Department or other structure of the University of Udine where research activities will be carried out:

Dipartimento di Scienze Agroalimentari, Ambientali e Animali (DI4A) / Department of Agricultural, Food, Environmental and Animal Sciences

Importo dell'assegno di ricerca (al lordo oneri carico assegnista) / Total grant gross for the research fellowship:

€ 38.912,00

Durata dell'assegno di ricerca / Duration of the research fellowship "assegno di ricerca":

24 mesi / months

Finanziamento / Financed by:

La copertura finanziaria graverà su:

- progetto PRIN 2022 – "Environmental and temperature effects on carbohydrate export in grapevine leaves in the frame of climate change (TEXPOVINE)"; Prot. n. 20228PPXBN. Decreto di finanziamento n. 1048 del 14/07/2023 - Settore LS9. Codice CUP G53D23003920001. Ministero dell'Università e della Ricerca (Finanziato dall'Unione Europea, NextGenerationEU);
- fondo di ricerca libera del prof. Paolo Sivilotti, codice U-GOV: RICLIB_SIVILOTTI.

Requisiti di ammissione / Minimum qualifications necessary:

- Possesso di un diploma di laurea vecchio ordinamento (ante decreto 3 novembre 1999 n. 509) o di laurea specialistica/magistrale (ex decreto 3 novembre 1999 n. 509 e decreto 22 ottobre 2004 n. 270) o titolo equivalente conseguito all'estero;
- possesso di un curriculum scientifico professionale idoneo allo svolgimento dell'attività di ricerca contemplata.
- University degree obtained before Decree n. 509 of 3 November 1999 or specialistic/Master's degree (post decree n. 509 of 3 November 1999 and decree n. 270 of 22 October 2004) or equivalent degree obtained abroad;
- professional scientific curriculum suitable for the research activity above mentioned.

Procedura selettiva / Competition procedure:

Valutazione per titoli e colloquio / Evaluation of titles and oral exam

I risultati della valutazione dei titoli saranno resi noti agli interessati nel corso del colloquio / The evaluation of the qualifications will be disclosed to candidates during the interview



Calendario del colloquio / Calendar of the oral exam	Modalità / Modality	In presenza / On site
	Data / Date	31 ottobre / October 2023
	Ora / Time	11:00 / 11:00 am (Italian time)
	Luogo / Place	Sala riunioni "Sala dei Cereali" (secondo piano) - Dipartimento di scienze agroalimentari, ambientali e animali (DI4A), Università degli Studi di Udine via delle Scienze, 206 – 33100 Udine (UD)

Per sostenere il colloquio i candidati devono esibire un valido documento di riconoscimento. /
Candidates must come to the interview with a valid identity document.

Eventuali variazioni saranno rese note esclusivamente mediante pubblicazione all'albo ufficiale on line
dell'Ateneo / Any change will be made public solely through publication on the University web site
http://web.uniud.it/ateneo/normativa/albo_ufficiale

Commissione giudicatrice / Examining Board:

Nome e Cognome	Qualifica	SSD	Università
Membri Effettivi / Permanent members			
Rachele Falchi	PA	AGR/03	Università degli Studi di Udine
Guido Cipriani	PO	AGR/03	Università degli Studi di Udine
Mirko Sodini	RTD	AGR/03	Università degli Studi di Udine
Membri Supplenti / Temporary members			
Giannina Vizzotto	PA	AGR/03	Università degli Studi di Udine
Giorgio Alberti	PA	AGR/05	Università degli Studi di Udine