

Rector Decree n. 2316

THE RECTOR

- CONSIDERING the Statute of the University of Bari Aldo Moro;
- CONSIDERING the Law of 3 July 1998, No. 210, in particular Art. 4;
- CONSIDERING the Legislative Decree of April 11, 2006, No. 198 “Code of Equal Opportunities between men and women”;
- CONSIDERING the Law of December 30, 2010, No. 240;
- HAVING REGARD TO National Recovery and Resilience Plan (PNRR), submitted to the European Commission on 30/04/2021 in accordance with art.18 of Regulation (EU) n. 2021/241 and approved by decision of the ECOFIN Council of 13/07/2021 notified to Italy by the General Secretariat of the Council with note LT161/21 of 14/07/2021;
- HAVING REGARD TO Guidelines defined by the Ministry of University and Research for the system initiatives of Mission 4 "Education and Research", Component 2 "From Research to Business", approved with Ministerial Decree no. 1141 of 7 October 2021;
- HAVING REGARD TO Interministerial Decree of 07/12/2021 adopting the guidelines aimed at promoting equal gender and generational opportunities, as well as the employment inclusion of people with disabilities in public contracts financed with the resources of the PNRR and the PNC;
- HAVING REGARD TO Gender Equality Plan (GEP) 2022-2024 of the University of Bari "Aldo Moro" adopted with D.R. no.4781 of 12/23/2021;
- HAVING REGARD TO Gender Report 2021 of the University of Bari "Aldo Moro" adopted with D.R. no. 4782 of 12/23/2021;
- CONSIDERING the D.M. No. 226 of 14 December 2021 “Rules on accreditation of doctoral venues and programmes and criteria for the institution of doctoral programmes by accredited bodies”;
- CONSIDERING the Ethical Code of this University;
- CONSIDERING the Regulations of the University of Bari on PhDs, issued by D.R. No. 1867 of 17 May 2022;
- CONSIDERING the Didactic Regulations of the University of Bari Aldo Moro;
- CONSIDERING the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 (General Regulation on Data Protection);
- CONSIDERING the Public call for the presentation of Proposals for Intervention for the Strengthening of research facilities and the creation of R&D "national champions" on some Key Enabling Technologies to be financed under the National Recovery and Resilience Plan, Mission 4 Component 2 Investment 1.4 "Strengthening research facilities and creation of "National R&D Champions" on some Key Enabling Technologies" funded by the European Union - NextGenerationEU (DM MUR n.3138 of 16.12.2021);
- CONSIDERING the Directive Decree MUR No. 1035 of 17.06.2022 granting funding to the National Research Centre – “Developing Gene Therapy and Medicines with RNA Technology” ID code CN_00000041;
- CONSIDERING the Public Call for the presentation of Proposals for action for the creation of "Partnerships extended to universities, research centers, companies for the financing

of basic research projects" - under the National Recovery and Resilience Plan, Mission 4 "Education and Research" - Component 2 "From research to enterprise" - Investment 1.3, financed by the European Union - NextGenerationEU (DM No. 341 of 15.03.2022);

CONSIDERING the Directorial Decrees MUR No. 1153, 1155, 1158 of 11.10.2022 for admission to funding of the Extended Partnerships:
"A multiscale integrated approach to the study of the nervous system in health and disease", ID code PE00000006;
"Future Artificial Intelligence Research – FAIR" ID code PE00000013
"GRINS – Growing Resilient, INclusive and Sustainable", ID code PE00000018;

HAVING REGARD to the obligations to ensure the achievement of targets and milestones and the financial targets set out in the NRP;

GIVEN the Public Notice for the granting of funding for research initiatives for innovative technologies and paths in the Health and Welfare sector issued by Directorial Decree no. 931 of 06-06-2022;

CONSIDERING the Directorial Decree MUR n. 1985 of 09.12.2022 of admission to funding of the "DARE - Digital Lifelong Prevention" Initiative, acronym "DARE", ID code PNC0000002;

CONSIDERING the need to adhere to the envisaged cross-cutting principles from NRP, such as, inter alia, the principle of contribution to the objective climate and digital (so-called tagging), the principle of gender equality and the obligation to protect and enhance young people;

CONSIDERING also the need to comply with Article 17 EU Regulation 2020/852 defining environmental objectives, including the principle of not causing significant harm (DNSH, "Do no significant harm");

ACKNOWLEDGING that the approved projects provide, among other things, for the activation of PhD scholarships to be allocated to the 39th cycle, and that the allocation of the same must take place taking within a short period of time, into account the 36-month deadline set by the Ministry of University and Research for the realization of the same;

CONSIDERING the Italian Ministerial Decree No. 247 dated 23 February 2022, which set at €16.243,00 the annual amount of the doctoral scholarship, starting from 1 July 2022;

CONSIDERING note no. 301 of 22 March 2022 by which the Ministry transmitted the new Guidelines for the Accreditation of doctoral programmes;

CONSIDERING the M.D. n. 117 of 02.03.2023 which provides for the financing of three-year doctoral scholarships for the attendance of paths for innovative doctorates, for the year 2023/2024, under the PNRR, Mission 4, component 2 "From Research to Business" - investment 3.3 "Introduction of innovative doctorates that meet the innovation needs of companies and promote the recruitment of researchers by companies";

HAVING REGARD to the letters of intent of private institutions/companies for the activation and financing or co-financing of PhD scholarships for the XXXIX cycle, also pursuant to Ministerial Decree n. 117/2023;

CONSIDERING the possibility that, even after the issuance of this decree, there are further expressions of interest in the co-financing of doctoral scholarships pursuant to Ministerial Decree n. 117/2023 or in the entire financing of scholarships by external bodies;

CONSIDERING the DM n. 118 of 02.03.2023 which provides for the funding, for the year 2023/2024, of three-year doctoral scholarships for the attendance of doctoral courses for digital and environmental transitions, for research of interest for the PNRR, for the Public

	Administration and for the cultural heritage under the PNRR, Mission 4, component 1 "Strengthening the provision of educational services: from kindergartens to universities" - Investment 3.4 "Teaching and advanced university skills" and Investment 4.1 "Extension of the number of PhDs and innovative doctorates for public administration and cultural heritage";
CONSIDERING	the resolutions adopted by the Academic Senate and the Board of Directors in their respective meetings held on 28 April 2023- 23 May 2023 and 02 May 2023 – 25 May 2023;
CONSIDERING	the resolutions adopted by the Academic Senate and the Board of Directors in their respective meetings held 14.06.2023 and 15.06.2023;
HAVING REGARD	to the agreements signed with external bodies for the activation and operation of PhD courses of National Interest and Industrial PhD course pursuant to Articles 10 and 11 of Ministerial Decree no. 226/21;
HAVING REGARD	to the agreements signed with external bodies for the activation and operation of PhD courses in associated form pursuant to Article 3 paragraph 2 of Ministerial Decree no. 226/21;
HAVING REGARD	to the accreditation proposals of this University transmitted to the MUR through the CINECA platform;
RESERVED	the provisions of the Ministry of Universities and Research, on the assent of ANVUR, on the request for accreditation for the establishment and/or activation of the PhD programmes of the XXXIX cycle for which the University of Bari Aldo Moro is administrative headquarters;
ASCERTAINED ALLOWING FOR	the availability of financial resources; any eventual changes and/or additions to this notice that will be published exclusively at: https://www.uniba.it/it/ricerca/dottorati/dottorato-ricerca-39-ciclo-aa-23-24 and on the website of each doctoral programme, whose link is available on the single profiles

DECREES

PART I

CALL FOR ADMITTANCE TO PhD PROGRAMMES

Art.1 – INSTITUTION AND SELECTIONS

The XXXIX cycle of the Ph.D. Programme has been established for academic year 2023/2024 at the University of Bari Aldo Moro with the present call regulating admission to the following three-year Ph.D. programmes:

1. Biodiversity, Agriculture and the Environment
2. Biosciences and Biotechnology
3. Digital Innovation and E-Health
4. Rights and Protection in Globalized Markets
5. Mediterranean Rights, Economies and Cultures
6. Rights, Institutions and Safeguards in Transitional Societies
7. Earth Processes and Management of Resources and Risks for a Resilient Society and Territory (PhD of National Interest)
8. Economics and Finance of Public Administrations
9. Economics and Management
10. Physics

11. Gender Studies (PhD of National Interest)
12. Sustainable Land Management
13. Computer Science and Mathematics
14. Leadership, Empowerment, and Digital Innovation in Education and Learning (Lediel)
15. Humanities, Languages and Arts
16. Metabolism, Aging and Social Medicine
17. Applied Neurosciences
18. Mediterranean Archaeological, Historical, Architectural and Landscape Heritage: Integrated Systems of Knowledge, Planning, Preservation and Promotion (PhD of National Interest)
19. Historical and Philosophical Heritage for a Sustainable Innovation
20. Animal Health and Zoonosis
21. Public Health, Clinical Medicine, and Oncology
22. Chemical and Molecular Science
23. Veterinary Internal, Surgical and Obstetrical Clinical Sciences
24. Pharmaceutical Science
25. Soil and Food Sciences
26. Human Relations Sciences
27. Political and Social Sciences for Security and Development – SPSSS
28. Sustainable Technologies for the Industrial Development of Medicines and Diagnostics
29. Transplantation of Tissues and Organs and Cellular Therapies

According to Ministerial Decree 226/2021, the above mentioned PhD courses will be activated after verification of the possession or maintenance of accreditation requirements by the Ministry of University and Research. Winners will therefore only be able to register following this ministerial review. Therefore, the allocation of positions put up for competition as well as the awarding of scholarships are subject to confirmation of accreditation by ANVUR and are subject to ministerial approval.

It should be noted that in the event that the MUR does not pay the funding for the coverage of scholarships on a subject linked DD.MM no. 117/23 and no. 118/23, the same will not be disbursed, with consequent forfeiture of the positions attributed to the winning candidates. The winners will therefore be able to enroll only after this Ministerial verification. For each PhD programme described in attachments 1 to 29, which form an integral part of this call for applications, the following information are indicated:

- the Administration Department;
- the number of positions with and without scholarships which will be assigned according to the specific merit rankings of the Course, considering the eventual distribution per Curriculum;
- the number of positions with a thematic – related scholarship funded under the DD.MM. n. 117/23 and n. 118/23;
- the number of potential apprenticeship contracts;
- the number of positions dedicated to candidates with degree obtained at foreign universities;
- the number of positions reserved to those holding a scholarship in specific programmes of international mobility;
- the number of positions reserved to candidates with degrees from foreign universities established in the funding institution “Budget Miur Department of Excellence”;
- the eventual curricula;
- the admission procedures, examination schedule, the location of the examinations as well as further admission requirements.

The types of scholarships announced for competition are as follows:

Type 1 - PhD scholarships ex D.M. 118/2023

- **Investment 3.4: Digital and environmental transitions**
- **Investment 4.1: PNRR research (generic)**
- **Investment 4.1: Public Administration**
- **Investment 4.1: Cultural heritage**

The scholarships referred to in this subparagraph shall include:

- (a) periods of study and research in companies, public administrations or research centers, including museums, institutes and training institutions of the Ministry of Culture, archives, libraries from a minimum of six (6) months to a maximum of twelve (12) months, even non-continuous and also at several institutions, over the three-year period;
- (b) periods of study and research abroad, even non-continuous and also at several institutions, from a minimum of six (6) months up to a maximum of twelve (12) months over the three-year period, extendable to eighteen (18) in the case of co-supervision of these;

Exceptions are doctoral scholarships pursuant to Ministerial Decree 118/23 relating to PNRR (generic) PhD programs for which only the period of study and research abroad is mandatory from a minimum of six (6) up to a maximum of twelve (12) months over the three-year period, extendable to eighteen (18) in case of co-supervision of these.

The periods of study and research referred to in letters a) and b), where both are provided, are distinct and must be carried out with separate subjects.

- (c) a research theme consistent with the specific planning within the Ministerial Decree 118/23;
- (d) the drafting, through the appropriate online platform (<http://dottorati.mur.gov.it>) of a half-yearly report indicating the time commitment (divided into months in the company / institution if foreseen, on site, abroad) and a summary of the main activities carried out, validated by the coordinator of the doctoral course.

Type 2 - PhD grants ex D.M. 117/2023 Investment 3.3: PNRR

The scholarships referred to in this subparagraph shall include:

- (a) periods of study and research in the company from a minimum of six (6) months to a maximum of eighteen (18) months, even non-continuous and also at several institutions, over the three-year period;
- (b) periods of study and research abroad, even non-continuous and also at several institutions, from a minimum of six (6) months up to a maximum of twelve (12) months over the three-year period, extendable to eighteen (18) in the case of co-supervision of these.

The periods of study and research referred to in points (a) and (b) shall be distinct and shall be carried out with separate subjects;

- (c) a research theme consistent with the specific planning within the Ministerial Decree 117/23;
- (d) the drafting, through the appropriate online platform (<http://dottorati.mur.gov.it>) of a six-monthly report indicating the time commitment (divided into months in the company, at headquarters, abroad) and a summary of the main activities carried out, validated by the coordinator of the PhD course.

Type 3 - PhD scholarships funded by PNRR Projects National Champions (NC), Extended Partnerships (EP), Research initiatives for innovative technologies and pathways in Health and Care (PNC)

The scholarships referred to in this paragraph are financed by the projects under the PNRR Mission 4 Component 2, Investments 1.3 (Extended Partnerships), 1.4 (National Champions), and Research initiatives

for technologies and innovative paths in the Health and Welfare sector (PNC) - of which the University of Bari is a beneficiary partner.

Therefore, the entire PhD, training and research course must be carried out in line with the themes and objectives covered by the projects that finance the scholarship, in collaboration with the respective scientific referents of the project.

The candidate winner of the scholarship referred to in this paragraph must report the research activities, as required by the PhD course and the project by producing:

- a periodic summary of the main activities carried out, countersigned by the tutor and the scientific manager;
- appropriate documentation certifying the activity carried out;
- a report indicating the time commitment.

Type 4 - PhD scholarships funded by third parties or departments

The scholarships referred to in this paragraph are financed by public or private bodies, other universities or departments or departments of excellence of UNIBA, some with a restricted theme requested by the funding body.

Type 5 - PhD scholarships of the University of Bari Aldo Moro.

The scholarships referred to in this paragraph are entirely financed by the University of Bari Aldo Moro.

With regard to doctoral scholarships funded under the PNRR calls, including Ministerial Decree no. 117/23 and Ministerial Decree 118/23, all places must be covered by scholarship (not waivable), as required by Ministerial Decree no. 301/22 in par. 3.3 letter e).

The number of positions and scholarships listed in the attachments may be increased as a result of funding by public and/or private bodies.

All scholarship positions given by other funding bodies or received by Department, PhDs and higher education apprenticeship will be activated as soon as the agreement is fulfilled. Each agreement regulates the organization of the Course, the specific funding management and the resources available by the partners for each Course, the relationships and obligations of the Parties and the doctoral students who will have to fulfill their duties.

Supernumerary students may be admitted even after the completion of the examinations, if they are provided with foreign Bodies funds or under specific international cooperation and/or mobility programmes. Admission is, however, subjected to a positive judgment of the candidate's eligibility by the Academic Board (Collegio dei Docenti) who will establish the modalities and criteria for evaluation.

This call thus serves as official notification, and candidates are therefore required to present themselves without prior notice at the venue on the day and time indicated for each Ph.D. programme referred to the attached sheet of this decree.

The absence of the candidate, for whatever reason, will be considered as withdrawal from the call. Any changes, updates or additions to the content of this call will be made available exclusively at the website: <https://www.uniba.it/it/ricerca/dottorati/dottorato-ricerca-39-ciclo-aa-23-24> and on the website of each doctoral programme, whose link is available on each single profile

Art. 2 - ADMISSION REQUIREMENTS

Candidates holding one of the following qualifications are eligible regardless of their citizenship and age (with the exception of those candidates who apply for an apprenticeship who must not be over 29):

- degree awarded under the system "vecchio ordinamento" in place prior to the one introduced by Ministerial Decree(D.M.) no. 509 of 03 November 1999, amended by Ministerial Decree (D.M.) no. 270 of 22 October 2004;

- "laurea specialistica" or "laurea magistrale" (second cycle degree);
- second-level academic qualification ("titoli accademici di secondo livello") awarded by Institutions belonging to the AFAM ("Alta Formazione Artistica e Musicale") sector;
- master's degree awarded abroad, recognised as such solely for the purpose of admission to the competition.

A) Admission to the selection for the candidates with an academic degree conferred abroad

Those in possession of a degree from a foreign university which has not yet been declared equivalent to an Italian degree will have to apply for their equivalence solely for the purposes of admission to the Ph.D. programme for which they intend to apply.

In such case, in order to allow for assessment of the qualification, application for participation must be accompanied, by the following documentation:

- **(In the case of Italian and EU citizens)** Self-certification, according to D.P.R. 445/2000 and subsequent modifications, of the academic qualification obtained with details of examinations, the relative results and the legal duration of the programme.
- **(Non-EU citizens)** A certificate attesting to the academic qualification obtained with details of examinations, the relative results and the legal duration of the programme together with a translation into Italian and/or english. The translation must be signed under the applicant's own responsibility in order to allow the qualification to be recognized.

The suitability of qualifications obtained abroad will be evaluated by the Judging Commission in accordance with the regulations in force in Italy and in the country where the qualification was obtained and relative treaties and international agreements on the recognition of qualifications for the continuation of studies.

In case of admission to the Ph.D. programme, applicants must submit, within 60 days from the date of registration, the following documentation:

- Curricular qualifications translated into Italian and legalized by the relevant Italian diplomatic or consular representations abroad;
- "Certificate of equivalence of qualification" of the foreign qualification issued by the relevant diplomatic or consular representations abroad; alternatively, the Certificate of comparability of the foreign university qualification issued by the ENIC-NARIC center in Italy (CIMEA) can be presented, which contains all the information necessary for the evaluation of the qualification.

In order to enter Italy, citizens of non-EU countries residing abroad must register on the University portal and apply for an entry visa (postgraduate visa type D) at the competent Italian Embassy or Consulate.

In case of doubts about the qualification validity, the University also reserve the right to request the "Certificate of equivalence of qualification" to those who have obtained a qualification in a European Union country.

B) Admission to the selection for candidates who have not yet received the degree.

Candidates who are going to obtain the qualification necessary for entry to the Ph.D. programme may also apply if they are to obtain their qualification by and no later than **30 September 2023**. Failure to gain the relevant qualifications by this date will result in exclusion from the call.

These candidates will be admitted sub condizione and **no later than 30 September 2023** must send by PEC (universitabari@pec.it) and email to dottorato@uniba.it the self-certification (or certification in the case of qualifications obtained abroad) with date and handwritten signature, accompanied by a copy of a valid photo identification document indicating:

- the name of the university issuing the qualification;
- date of completion of the qualification;
- type of qualification (specialist/master/old cycle degree, second level academic degree issued by institutions belonging to AFAM);
- final result.

Candidates who, for whatever reason, do not communicate the obtainment of the relevant qualification by the deadlines indicated or who send incomplete, incorrect applications, by different means or to different addresses other than those indicated above will be excluded from the call.

Art. 3 - APPLICATION AND ENTRY TO THE CALL

The application for participation in the selection must be submitted using only the appropriate procedure made available at: <https://pica.cineca.it/uniba/dottorati39> **no later than July 20, 2023 at 12.00 pm (Italian time)** under penalty of exclusion from the selection.

Access to the procedure takes place on the PICA portal (Integrated University Competition Platform) which can be accessed upon registration or with SPID credentials, as indicated in the Guidelines.

Applications received in a different way than the one indicated will not be considered valid.

The registration fee for the competition is € 50.00; in the case of foreign applicants residing abroad, no payment is due. The entry fee is non-refundable for any reason.

The candidate must pay the fee by clicking on the "Paga con Pago PA" button and choosing as the payment method:

- Credit/debit card: for card payment
- Current account: for direct debiting your account
- Any other payment methods and circuits that allow the fulfillment of PagoPA notices.

Candidates wishing to participate in more than one call must submit multiple applications each showing the relevant qualifications and necessary attachments along with payment for each individual application made.

Each candidate may select up to a maximum of two positions belonging to two different types of scholarships pursuant to Article 1, of which at least one is based on the PNRR and submit the related research project for each choice made. The choice made will in no case be binding for the Judging Commission, for the purpose of awarding the aforementioned scholarships, in accordance with the provisions of Article 7 below.

All candidates are admitted to the competition, subject to verification that all requirements have been met.

The procedure for completing and submitting applications online can be carried out on any computer connected to the network.

Please note that any technical issues regarding the completion of call applications should be notified by sending a message to Supporto.

Applicants are invited to complete the application for participation in the call with sufficient time prior to the deadline of this call.

It is the responsibility of candidates to verify the correct conclusion of the procedure. Complaints will not be considered in the case of the malfunctioning of the IT system due to application overloads near the deadline. The payment of the €50,00 call fee does not constitute right to admission to the call in the absence of a formal application, even if made by the deadline of the call notice.

To the application form must be attached, in pdf format, the documents required by the profile of the chosen course as well as:

1. substitute self-certification Statement relating to degree certificates:

- **for graduate candidates:** self-certification statement (Art. 46 TU - DPR No. 445 of 28 December 2000) signed and dated, specifying the qualification type (old degree cycle/specialist/Master degree etc.), the date of award, the final result and the indication of the university issuing the qualification;

- **for candidates who are to obtain their qualification by September 30, 2023:** self-certification statement (Art. 46 TU - DPR No. 445 of 28 December 2000), signed and dated indicating the university at which they are enrolled, the qualification type (old degree cycle/specialist/Master degree etc.), the name of the degree program, the list of the examinations taken along with their relative results and the expected graduation date. The same self-certification must also specify the weighted average of the marks of all exams taken up to the

expiry date of this call (the weighted average is obtained by multiplying each result by the corresponding examination credits, adding the results obtained and dividing that sum by the total credits earned through exams with results);

2. signed and dated curriculum vitae;
3. numbered, signed and dated list of qualifications deemed useful for the call attached to the application;
4. numbered, signed and dated list of publications deemed useful for the call attached to the application;
5. qualifications the candidate considers relevant to the call;
6. single copy of scientific publications, numbered progressively; publications listed but not uploaded will not be considered
7. photocopy of a valid ID document of the applicant;
8. where required, research project, relating to the bound theme chosen by the candidate, of a maximum of 3500 words (unless otherwise indicated in the PhD profile attached to this notice) which must include:
 - scientific assumptions and related bibliographic data;
 - purpose, methodologies and expectations of the research;
 - where necessary, experimental and data analysis methodologies.

The application is to be considered in all respects by law as a self-certification, pursuant to Art. 46 and 47 of DPR 445/2000 and ss.mm.ii., the data contained therein and in the documents annexed thereto.

Once completed, the application must be printed, signed and reloaded in the procedure following the indications described in the online procedure. The lack of signature and/or ID is a reason for exclusion from the selection.

In the case of authentication with the use of SPID (Public Digital Identity System) credentials, it will not be necessary to sign the application.

Failure to choose the curriculum, where provided, results in exclusion from the competition. The application is submitted to the University automatically with the definitive closure of the online procedure. Therefore, no delivery or shipment of paper material to the Offices should be made.

At the end, the application will be registered and the submission confirmed by e-mail by the system.

The University may, at any time, on the basis of a reasoned decision by the Rector, exclude an application due to failure to meet the prescribed requirements, submission without the required signatures and/or for the lack of chosen curricula where required in the profiles.

Candidates with sensory and motor impairments as recognized in accordance with Law 104/1992 and successive modifications, candidates with a disability percentage of 66% or more in accordance with Law 68/1999 and candidates with recognized learning disabilities (“DSA”) in accordance with Law 170/2010 may, depending on their situation, apply for the support auxiliaries necessary for the carrying out of the call examination and/or additional time. Interested candidates must submit to this University, **by the deadline of July 20, 2023 at 12.00 pm (CET Italian time)** the request completed on the application accompanied by appropriate medical certification issued by the competent health authorities. The necessary aids cannot be guaranteed if the application is received after the deadline of this call. It should be noted that for candidates qualifying as having “DSA” learning disabilities and candidates with sensory and motor impairments in accordance with ex-Law 104/1992, the certification attached must have been issued within the last three years by organisations accredited by the national health service. Additional time will be granted upon request as governed by current legislation.

Call administration assumes no responsibility for misdirected communications due to the improper indication of addresses by the applicant, missing or late notification of a change of address indicated in the application, or for any postal or delivery issues attributable to third parties, due to either accident or force majeure.

Art.4 – JUDGING COMMISSION

The Judging Commission for the Ph.D. programme call will be nominated through a Decree by the Rector in compliance with rules governing research Ph.D. programs at the University of Bari Aldo Moro.

As an exception to the current University Regulations on PhDs, for National Doctorates, the Selection Boards will be formed in such a way as to ensure the participation of foreign or external components to the affiliated subjects.

The composition of individual Commissions will be published on the site following the deadline for the call at: <https://www.uniba.it/it/ricerca/dottorati/dottorato-ricerca-39-ciclo-aa-23-24>.

Art.5 – THE CALL SELECTION PROCEDURE BASED ON QUALIFICATIONS AND EXAMS: CRITERIA FOR THE ASSESSMENT OF QUALIFICATIONS

With regard to the call based on qualifications and exams, a total score of 20 points will be awarded for qualifications.

The categories of qualifications will be evaluated in terms of their relevance to the Ph.D. programmes and for which you apply, the maximum score attributable to each is as follows:

- ◆ Graduation assessment up to a maximum of 10 points determined as follows

Up to 100	0 points
101-104	4 points
105-107	6 points
108-110	8 points
110 with honours	10 points

For candidates who are to obtain their qualification by September 30, 2023, assessment will be calculated based on the weighted average of the results of all exams up to the expiry date of this call. If the candidate holds more than one degree, relevant to the course for which he wishes to compete, he must indicate the title to be taken into account for the evaluation by the Judging Commission.

- ◆ Up to a maximum of 4 points may be awarded for scientific qualifications relevant to the subjects covered by the Ph.D. programme for which application is made:

- Scientific publications (monographs, articles in scientific journals)
- Minor Publications (national and international dissemination conferences, specific volume contributions, etc.)

- ◆ Up to a maximum of 4 points may be awarded for academic and study qualifications relevant to the subjects covered by the Ph.D. programme for which application is made:

- 1st or 2nd Level University Master, post-graduate specialization qualifications, specialised diploma qualifications;

- ◆ Up to a maximum of 2 points may be awarded for:

- Documented research activities at qualified Italian and foreign institutions relevant to the subjects covered by the PhD programme for which application is made.

The assessment of qualifications, after identification of the criteria, will be carried out after the written test and before the evaluation of the papers

For procedure B referred to in Article 6 below, the evaluation of qualifications will be carried out before the evaluation of the projects.

The documentation may be withdrawn personally or by a delegate. After the specified period has expired, in the case of non-collection, call administration may dispose of the materials in question.

Documents and certificates must be produced on unstamped paper according to Article 1 of Law No. 370 of 23 August 1988; if produced in a foreign language they must be accompanied by a certified Italian translation in accordance with the foreign text, produced by the competent diplomatic or consular representation or by an official translator.

Reference to documents and publications already submitted to this University is not permitted for any reason.

Documents, qualifications or publications received by this University after the deadline for applications will not be considered in the call.

The University assumes no responsibility for misdirected communications due to the improper indication of addresses by the applicant, missing or late notification of a change of address indicated in the application, or for issues attributable to third parties, due to either accident or force majeure.

ART. 6 – THE CALL SELECTION PROCEDURE BASED ON QUALIFICATIONS AND EXAMS: EXAMPROCEDURES

With regards to the call based on qualifications and exams, the admission test consists of a proper test in order to ensure a comparative evaluation and to ascertain the aptitude of the candidates for scientific research. Without prejudice to the assessment of qualifications under art. 5, the exam procedures, specified in the doctoral profile attached to this call, involve one of the following modalities: A) written and oral examination; B) evaluation of the research project and oral examination; C) oral examination.

In the case of the exam procedure referred to in letter B), as well as where it is explicitly required in the annexed doctoral programme profile, the research project must be attached to the application, **under penalty of exclusion**.

The scores related to the various tests are given as follows:

	A)	B)	C)
Qualifications score*	max 20	max 20	max 20
Written examination score	max 40		
Research project score		max 40	
Oral examination score**	max 40	max 40	max 80

* Up to 10 for the graduation mark

** It includes the examination of the knowledge of English/other foreign language as well as the research project evaluation where required in the profile.

The subjects covered within the examinations relate to scientific disciplinary sectors which make reference to the Ph.D. programme.

In order to be admitted to the examination, candidates must have one of the following validation documents: National ID card, passport, driving license, boat license, weapons license, identification document, provided they include photographs and stamps or other equivalent marks issued by a state administration.

For foreign applicants, written and oral tests may, upon prior request, be carried out in English or in any of the other foreign languages specified in the Ph.D. programme.

For the written examination, candidates must use a black ink pen only.

An examination of the knowledge of at least one foreign languages indicated by the applicant is included in the oral examination from among those listed in the Ph.D. programme profile.

For apprenticeships positions in the annexes, the Commission will also examine the research topics outlined in the relevant profile at the end of the oral examination, without prejudice to the provisions of the following art. 9.

A) Written and oral examination

Each Commission, for the evaluation of each candidate, may award up to forty points for each of the two examinations, in addition to the qualifications score.

The day of the written examination, the Commission will inform applicants about the date and location in which they will be able to view the list of those candidates admitted to the oral examination.

The Judging Commission will formulate the list of candidates admitted to the oral test.

Before the oral examination, candidates will be informed of the scores obtained in the evaluation of qualifications and the result of the written examination.

Candidates passing the written examination with a score of no less than 27/40 will be admitted to the oral

examination. Where stated in the single Ph.D. programme profile, the oral examination may also consist in a discussion of a research project.

The oral examination will be considered passed in cases in which the candidate has scored no less than 27/40. At the end of each oral examination session, the Judging Commission will formulate the list of candidates examined with an indication of results awarded.

This list, signed by the President and the Secretary of the Commission, will be posted on the same day on the notice board of the exam venue or published on the PhD web page specified in the profile.

B) Evaluation of the research project and oral examination

Each Commission, for the evaluation of each candidate, in addition to the qualifications score, may award up to forty points for the project evaluation and up to forty points for the oral examination.

The Judging Commission will formulate the list of candidates admitted to the oral test. Before the oral examination, candidates will be informed of the scores obtained in the evaluation of qualifications and in the evaluation of the project.

Candidates obtaining a score of no less than 27/40 in the project evaluation will be admitted to the oral examination. The oral examination will be considered passed in cases in which the candidate has scored no less than 27/40.

At the end of each oral examination session, the Judging Commission will formulate the list of candidates examined with an indication of results awarded.

This list, signed by the President and the Secretary of the Commission, will be posted on the same day on the notice board of the exam venue or published on the PhD web page specified in the profile.

C) Oral examination

Each Commission, for the evaluation of each candidate, in addition to the qualifications score, may award up to eighty points for the oral examination.

Before the oral examination, candidates will be informed of the scores obtained in the evaluation of qualifications. Where stated in the single PhD programme profile, the oral examination may also be a discussion of a research project. The oral examination will be considered passed in cases in which the candidate has scored no less than 54/80.

At the end of each oral examination session, Judging Commission will formulate the list of candidates examined with an indication of results awarded.

This list, signed by the President and the Secretary of the Commission, will be posted on the same day on the notice board of the exam venue or published on the PhD web page specified in the profile.

ONLINE EXAMINATION

The examination may be taken online. In such cases, the email address specified by the candidate will be used by the Judging Commission to invite the candidate to join a “team” created via MICROSOFT TEAMS platform or other digital platform and thus allow him/her to take the exams. The operational indications will be provided close to the test, by public notice on the PhD programme web page specified in the profile of the doctoral course the candidate is interested in. Candidates are required to verify admission to the test on the date set for the communication of the results of the research project and, in the event that the examination is online, they must connect on the day and at the time specified in order to take it by videoconferencing via MICROSOFT TEAMS platform or similar, they must install the specified platform software on their own device and equip themselves with a webcam to allow for their identification before the test.

For those Courses that do not provide for a written examination, foreign candidates who are resident or domiciled abroad and all candidates who prove, giving an adequate reason, the impossibility of being in person at the place and time scheduled for the oral examination may require to take such examination online. In such cases, the candidate must submit a written request to be sent to the PEC address of the Department which is the administrative headquarters of the Course, specified in the single PhD programme profile as well as to the email address dottorato@uniba.it, by and no later than the second day before the examination date.

Art. 7 – RANKING MERIT LIST FOR THE ADMISSION TO THE Ph.D. PROGRAMME

Having carried out the call examinations, the Commission will compile a general merit ranking based on the sum of the results awarded to each candidate in each examination. At the end of the call procedure, the Rector, having ascertained procedure regularity, will approve the call acts and the relevant merit ranking and declare the successful candidates. The merit ranking will be produced according to the order of the overall points for each candidate in the examinations and in the evaluation of qualifications.

The rankings of suitable candidates for each restricted theme scholarship will flow into a single general ranking that will entitle access, possibly divided according to the curricula. The winners will be declared the candidates who have obtained the highest score for each restricted theme scholarship, possibly taking into account the preferences indicated by the candidates during the submission of the application, however not binding.

In the event that there are not suitable in the ranking for the places co-financed by the aforementioned DD.MM. n. 117/23 and n. 118/23 it will be possible to assign the aforementioned place (s) with scholarship, subject to ministerial authorization and subsequent resolution of the board of teachers, to the suitable ones usefully placed in the general ranking according to the order of scrolling of the same.

For scholarships pursuant to Ministerial Decree no. 117/23, places will be assigned on condition of the successful conclusion of the agreement with the co-financing company.

The winners will be declared, within the limits of the places put out to competition, the candidates usefully placed in the merit ranking. In the case of parity in the merit ranking lists for positions with scholarship, the evaluation of the economic condition prevails, determined in accordance with the D.P.C.M. 9.4.2001 and D.P.C.M. 5.12.2013 n. 159. In this case the candidate must declare his/her economic and patrimonial status (ISEE Dottorato di Ricerca). This declaration must be received within 20 days from the date of the publication of the ranking list. After the aforementioned 20 days, the candidate will be placed in the least favourable position in the merit ranking list.

The candidate can present the ISEE declaration on his/her restricted family in accordance with D.P.C.M. n. 159/2013 art 8 co. 4. In assigning positions without scholarship, the youngest candidate has the priority. For reserved positions for graduates in foreign universities, the Commission will draw up a specific merit rankings according to the overall score obtained by each candidate. In the case of parity in the merit ranking list, the youngest candidate will prevail.

The decrees approving the acts and the relative rankings will be made public by publication in the online Praetorian Register and on the website at the following address: <https://www.uniba.it/it/ricerca/dottorati/dottorato-ricerca-39-ciclo-aa-23-24>.

This publication shall be valid in all respects as official notification to the successful candidates. No home communications will be sent to individual addresses.

Art. 8 – ADMISSION TO THE PhD PROGRAMME

Candidates will be declared successful according to the call merit rankings and according to the number of positions made available for each Ph.D. programme.

In the case of withdrawal by successful call candidates, the call administration will proceed to nominate the next most successful candidate according to the order of the merit ranking. In such cases the nominated candidate must register within three working days otherwise the nomination will be void. In the case of a candidate being declared successful in more than one ranking, the candidate must select one Ph.D. programme. A successful candidate who already holds a Ph.D. title may be admitted to attend a second Ph.D. degree programme different to that already attended. In the case of parity of merit, candidates applying for the first time will be awarded priority.

In case the positions with scholarships and the positions without scholarship will not be assigned to graduates at foreign Universities, they will be awarded to the students in the ranking of ordinary positions.

All candidates are admitted to the call subject to the verification of self-certified declarations under D.P.R. 445/2000 and subsequent modifications.

Art. 9 – HIGH-LEVEL APPRENTICESHIP CONTRACTS

In compliance with current legislation and in accordance with D.M. 226/2021, it is possible to undertake a high level apprenticeship training programme for the acquisition of the title of Doctor of Research and, at the same time, to be engaged by a business with an apprenticeship contract.

The selected candidate is admitted to the PhD programme without a scholarship and employed by a company on an apprenticeship contract of equivalent duration to that of the doctoral Ph.D. programme. For the purposes of delivering training and mentoring activities, the company and the University are to adopt appropriate forms of coordination and integration for the entire duration of the contract. Application for participation is open to those in possession of the requirements as stated in Art. 2 above who are between the ages of 18 and 29 at the moment of employment by the company and who have Italian or EU nationality, or non-EU nationals in possession of a regular residence permit in Italy.

Such candidates must state in the application an interest in the “posto con contratto di apprendistato” and will be required to explore, at the end of the oral examination, the themes on which the apprenticeship doctorate will focus.

For these reserved positions, admission will be made through the procedures provided for in the profile relating to the doctoral course for which the candidate competes, without prejudice to the evaluation of a research project discussed with the commission (referred to in Art. 4) possibly supplemented by a member of the company. For this purpose, candidates must attach to the application for participation a specific research project related to the theme indicated by the profile relating to the PhD course for which they compete. The agreements between the University and the companies regulate the financing aspects, the modalities of carrying out the research activities and the distribution of the commitment of the PhD student-worker. The salary is considered equivalent to a scholarship and contributes to the calculation of the scholarship put up for tender.

Art. 10 - SCHOLARSHIPS

The scholarships available in accordance with the profiles attached to this call, as well as those potentially added in accordance with Article 1, will be awarded with the Rector Decree in order of the merit ranking lists of each PhD course, taking into account the possible assignment by curriculum.

The different types of scholarships, in favor of the entitled candidates, will be awarded by the Academic Board (Collegio dei Docenti) of each PhD Course, at its absolute discretion, based on the examination results and the candidate's curriculum vitae. For the purposes of the award of the scholarships funded by external companies/bodies, the Academic Board (Collegio dei Docenti) of the relevant PhD Course, where it deems this appropriate, may be completed with a representative of the financing body in an advisory capacity.

In the event of scholarships funded by a Third Party and/or aimed at carrying out a specific research project, the Coordinator shall inform the winner who is going to carry out the above-mentioned project about the related commitments and shall obtain his/her consent, to be communicated to the relevant Office.

The number of positions and scholarships available may be subjected to a subsequent increase due to the University participation in competitive calls, public notices issued by public or private bodies including the INPS call for the funding of scholarships to be awarded to candidates who meet the requirements of the selection call issued by the aforementioned Institute.

The related scholarships will be awarded pursuant to the rules contained in the same calls and, where required, in the specifications signed by the University, following admission to the funding, using in the absence of different indications contained in the aforementioned calls, the general ranking merit list for admission to the doctoral programmes XXXIX cycle referred to in this call.

The annual scholarship is of € 16.243,00 subject to INPS social security contributions. The duration of the scholarship is equal to the entire duration of the programme.

The scholarship will be paid in deferred monthly instalments and the maximum total annual gross income limit necessary in order to qualify for a scholarship is set at € 16.000,00 (sixteentousand/00). The determination of this income limit includes income from property and assets as well as income of any other nature.

Exceeding the income limit will lead to the loss of the right to the scholarship for the year in which the excess occurs and obliges the repayment of any monthly payments already received.

The scholarship cannot be combined with other scholarships or grants, except for those intended to supplement research during stays abroad.

The scholarship cannot be awarded in the case of a suspension of more than thirty days, or exclusion from the programme.

During the programme the doctoral candidate may, for research needs, be authorized by the Coordinator for periods of up to six months, or by the Academic Board (Collegio dei Docenti), for periods of more than six months, to complete a period of study in Italy and/or abroad or to carry out an internship with either public or private bodies.

The amount of the scholarship is increased by 50% in the case of periods spent abroad.

Those who have already received a scholarship for a Ph.D. programme (including for a single year or part of year) may not apply for a second scholarship.

Those entitled to a scholarship must, at the time of application, submit a declaration of expected gross personal income as well as declaring the absence of any eventual incompatibilities as outlined in the present article. Scholarship beneficiaries will be required to set up an INPS contribution profile, enrolling in the “Gestione separata” scheme of that Institute.

Scholarships shall be subject to tax relief provisions in accordance with Art. 4 of Law 13.08.1984 No. 476. In any case the special provisions in each specific financing agreement for the scholarship, remain valid. It is understood that, if a scholarship is declared ineligible for funding following verification by the competent ministerial office, the candidate registered in the post corresponding to that scholarship will be declared forfeited.

Art. 11 – ADMISSION IN EXCESS

Any admitted as extra will not benefit from the scholarship.

They can be admitted as extra, up to a maximum of 10% of the positions with scholarships, subject to a resolution taken by the Department Councils concerned regarding the guarantee of the payment, on own funds, of 10% and 50% of the amount of the scholarship for research activities in Italy and abroad and without prejudice to the maximum number of positions for which accreditation has been requested pursuant to Article 5 paragraph 2 of Ministerial Decree no. 226/21:

- Grant holders, without the PhD diploma, eligible for admission having passed the Ph.D. programme admission tests may apply for entry to the programme, in excess of the number of designated positions, provided that the Ph.D. programme they are attending is in the same scientific disciplinary research area for which the allowances are intended. Admission to the programme will be granted following the decision of the Academic Board (Collegio dei Docenti), and the Council of the Department (Consiglio di Dipartimento) from which the research grant is made, which must express their favor on the compatibility of the two activities. In the event that the applicant carries out his/her activities at another University, the authorization of that University is required;
- Non-EU citizens and public employees who qualify as a result of passing the admission test without the award of a scholarship. For public employees, admission in excess is subject to the opinion expressed, pursuant to Article 8 paragraph 2 of the current University Regulations for Research Doctorates, by the Academic Board which may request the signing of a specific agreement with the relevant public body, without prejudice to the regulatory provisions and the national collective labour agreement of the sector (Italian CCNL).

Those candidates will also be admitted who, although not applying directly to the call, have, by the official

start date of the PhD programme, been selected as part of the European Union's HORIZON 2020 programme or other cooperation and/or international mobility programmes (e.g. Erasmus Mundus) and have been successfully awarded a scholarship or a research contract within the PhD disciplinary scientific area of interest. In such cases, applicants will be required to submit a special application form that must be approved by the Academic Board who could establish other methods of evaluation. Registration is, however, subject to the prior approval of the Academic Board (Collegio dei Docenti) of the Ph.D. programme which will determine further methods of evaluation.

Art. 12 - PUBLIC EMPLOYEES

Public employees admitted to the Ph.D. programme are placed, upon request, compatibly with the needs of the affiliated administration, on extraordinary leave for study purposes without allowances for the duration of the programme and with a scholarship in cases in which it is required.

In the case of admission to a doctoral Ph.D. programme without a scholarship or the renunciation of the same, the applicant concerned retains the economic, social and pension benefits associated with the public office the working relationship is established with. If following the doctoral Ph.D. programme, the relationship with the public administration ceases on the will of the employee during a period of two years, repayment of the amounts paid during the second period will be due.

Those public employees who have already obtained a doctorate or public employees who have been enrolled in a Ph.D. programme for at least one academic year are not entitled to extraordinary leave, with or without allowances, benefiting from that leave. The extraordinary leave period is relevant for career advancement, retirement and retirement benefits.

Art. 13 – Ph.D. COURSES AND MEDICAL SPECIALIZATION SCHOOLS

If successful in the selection process for a PhD, students enrolled at medical Specialisation Schools will be allowed to enrol in a PhD Course in compliance with the following conditions:

- a) compatibility, also in consideration of the distance between the seats, of the activities and commitment envisaged by the Specialization School and the PhD Course, certified by the Board of the Specialisation School and by the Academic Board of the PhD Course;
- b) incompatibility between the PhD grant and the emoluments, however denominated, received in relation to the activities of the specialization school.

In cases of joint attendance, the request for a reduction in doctoral activities is approved by the Academic Board of the PhD Course, after a positive assessment of the consistency of the research activities already carried out in the medical Specialization course with the doctoral project. In order to accept the application referred to in this paragraph, the opinion of compatibility, expressed by the Board of the Specialization School, of the doctoral project with the didactic purposes of the Specialization School is also required. If the application referred to in this paragraph is accepted, the PhD Course will have in any case a duration of no less than two years.

Art. 14 – ENROLMENT

Successful call applicants will have to enroll by the dates to be announced at the time of the publication of the merit rankings.

Notification will not be sent to successful call applicants regarding the deadline of enrolment. Failure to enroll within the terms of each Ph.D. programme will be considered withdrawal from the call and the position will be awarded to the next candidate on the basis of merit ranking order.

The application for enrolment and its attachments must be uploaded to the Esse3 platform during enrolment, with the following documentation:

1. signed photocopy of a valid ID document;
2. proof of payment of the registration fee for non-scholarship holding public employees admitted to the Ph.D. programme;

3. receipt of payment of the regional tax for the right to University Study to be made by following the instructions on the ADISU web site at the link: <http://w3.adisupuglia.it/pagamenti-pa>;
4. photocopy of fiscal code card (codice fiscale);
5. a passport-sized photographs signed on the rear;
6. a payment of € 16,00 for duty fee through PagoPA on the Esse3 platform;

In addition, in case of admission to the doctorate, candidates **with an academic qualification obtained abroad** must also submit, within 60 days from the date of enrolment, the following documentation:

- curricular qualifications translated into Italian and legalized by the competent Italian diplomatic or consular representations abroad (original Master's Degree or Certificate or Certified Master's Degree);
- Certificate of the exams (Transcripts) taken during the second cycle course in original or certified copy of the original;
- "declaration of value on the spot" of the qualification obtained abroad issued by the competent diplomatic missions or consular posts abroad; alternatively, the Certificate of comparability of the foreign university qualification issued by the ENIC-NARIC center in Italy (CIMEA) can be presented, which contains all the information necessary for the evaluation of the qualification.

The Administration reserves the right to request the "declaration of value on site" also to those who have obtained the title in a country of the European Union in the event that there are doubts about the validity of the same.

Non-EU citizens must submit a valid permit of stay or a copy of the required application to the competent authorities as well as an Italian fiscal code document (codice fiscale).

Foreign nationals not resident in Italy must submit the following certificates within 60 days of enrolment:

- a) birth certificate;
- b) certificate of citizenship;
- c) certificate of civil and political rights status in the state of origin or provenance;
- d) a certificate equivalent to the general certificate of judicial records issued by the competent authority of the state of which the foreign candidate is a citizen.

In order to enter Italy, citizens of non-EU countries residing abroad must register on the University portal and apply for an entry visa (postgraduate visa type D) at the competent Italian Embassy or Consulate.

In addition, non-EU citizens must present a **valid residence permit** or a copy of the request to the competent authorities and Italian tax code.

Certificates issued by the competent authorities of the state of which the foreign applicant is a citizen must comply with the provisions in force in that state and signatures must be legalized by the competent Italian consular authorities. Foreign language translations must be accompanied by a certified Italian translation of the foreign text produced by the competent diplomatic and consular representation or by an official translator. Documentation relating to the above-mentioned requirements will also be made available online at the website: <https://www.uniba.it/it/ricerca/dottorati/dottorato-ricerca-39-ciclo-aa-23-24>.

Art. 15 – TAXES AND FEES

The annual fee for access and attendance of the Ph.D. programme, payable by non-scholarship holding public employees, amounts to € 891,80 divided as follows:

- **First payment:** € 365,60 upon enrolment and together with payment of the regional tax;
- **Second payment:** € 526,20 due from those students with an ISEE indicator greater than € 14.518,38 A.Y. 2023/2024 which must be paid by July 31 of each year of the programme.

Doctoral students who do not benefit from the scholarship or who decline the scholarship are exempt from paying fees. Public employee doctoral students who are not scholarship beneficiaries are required to pay fees. Doctoral students who are eligible for ADISU scholarships and honorary loans and those doctoral students who are eligible for assistance due to a scarcity of resources are exempt from the payment of fees.

Ph.D. students with disabilities with a recognized disability of 66% or more, even if already in possession of an academic degree, are exempted from taxes and fees.

All doctoral students are required to pay the regional tax for the right to university study except doctoral students with a disability of at least 66%.

All doctoral students are required to pay the Regional Tax, determined on the basis of the income of their family unit (ISEE Module), according to the amounts indicated in the table below:

ISEE REGIONAL TAX

from € 0 to € 23.626,32 = € 120,00

from € 23.626,33 to € 47.252,64 = € 140,00

over € 47.252,64 = € 160,00

Students who do not present the ISEE declaration are placed in the maximum band of the regional tax.

This sum for ADISU must be paid by following the instructions on the ADISU web site at the link: <http://w3.adisupuglia.it/pagamenti-pa>;

Doctoral students already in possession of the title of Research Doctor are required to pay maximum fees. Doctoral students who do not renew enrolment for the years following the first year of the programme will be excluded from the Ph.D. programme.

In all cases, the sum of € 67,60 is payable per diploma, in addition to the duty stamp in force in a given period. Late payments will incur a penalty of € 20,00 for payments made within 30 days of the payment deadline, € 40,00 for payments made within 60 days of the payment deadline and € 80,00 for payments made more than 60 days after the payment deadline.

PART II

CALL FOR POSITIONS RESERVED FOR GRADUATES FROM FOREIGN UNIVERSITIES

Art. 16 – PROVISIONS FOR POSITIONS RESERVED FOR GRADUATES FROM FOREIGN UNIVERSITIES

The provisions of this section govern the procedures for participation in the call reserved for graduates from foreign universities, where applicable in the individual Ph.D. programme profiles attached (from 1 to 29).

Applications are accepted for the call reserved for graduates (including Italian graduates) from foreign universities holding a qualification equivalent to an Italian degree, as indicated in article 2. Those in possession of a degree from a foreign university which has not yet been declared equivalent to an Italian degree will have to apply for their equivalence solely for admission to the Ph.D. programme for which they intend to apply as governed by article 2 of this call.

Applications for admission must be completed online using the special procedure available at: <https://pica.cineca.it/uniba/dottorati39/>.

Candidates must indicate in the application:

- name and surname, date and place of birth, citizenship, possible tax code, residence and address chose for call communication, post code, e-mail address, and telephone number;
- the exact title of the Ph.D. programme to be applied for.

Art. 17 - SUBMISSION OF APPLICATION AND SELECTION PROCEDURE

The application for participation in the selection must be submitted using only the appropriate procedure made

available at: <https://pica.cineca.it/uniba/dottorati39/>, **no later than July 20, 2023 at 12.00 pm (Italian time)** under penalty of exclusion from the selection.

Access to the procedure takes place on the PICA portal (Integrated University Competition Platform) which can be accessed upon registration or with SPID credentials, as indicated in the Guidelines.

Applications received in a different way than the one indicated will not be considered valid.

The registration fee for the competition is € 50,00; in the case of foreign applicants residing abroad, no payment is due. The entry fee is non-refundable for any reason.

The candidate must pay the fee by clicking on the "Paga con Pago PA" button and choosing as the payment method:

- Credit/debit card: for card payment
- Current account: for direct debiting your account
- Any other payment methods and circuits that allow the fulfillment of PagoPA notices.

Application for participation in the call must refer exclusively to the Ph.D. programme for which application is made. In the case of application for more than one programme, multiple applications are required.

For each doctorate it is possible to submit your application under penalty of exclusion, for a single scholarship with a tied theme.

The application is to be considered in all respects by law as a self-certification, pursuant to Art. 46 and 47 of DPR 445/2000, the data contained therein and in the documents annexed thereto.

The University assumes no responsibility for misdirected communications due to the improper indication of addresses by the applicant, missing or late notification of a change of address indicated in the application, or for issues attributable to third parties, due to either accident or force majeure.

The following documents must be attached to the application:

◆ A certificate attesting to the foreign degree of study with the indication of the examinations and the relative results together with a translation into Italian. The translation must be signed under the responsibility of the candidate in order that the qualification be recognized;

◆ Curriculum vitae outlining academic qualifications and study, scientific activities and professional experience, written in Italian, English or French, indicating the academic qualifications obtained. In particular, candidates should indicate: any scholarships awarded by Italian, foreign or international bodies specifying the start date, end date, and duration; attestations of participation in postgraduate or Master's degree programmes, specifying the date of completion, duration, and the training provider; any acknowledgments and other scientific/academic titles deemed relevant to selection;

◆ Scientific publications;

◆ A summary of the degree thesis in English or French, of a minimum of 3 and a maximum of 6 pages organized as follows: thesis topic, research methodology, results obtained;

◆ Indication of the specific research interest of the applicant (Statement of Research Interest);

◆ At least two letters of reference from experts or professors of the Institutions where the candidate has studied or has worked or has collaborated with;

◆ Where applicable in the programme profiles, a research project relating to the Ph.D. programme for which application is made;

◆ A photocopy of a valid ID document of the applicant;

Qualifications conformity to the original must be declared by the candidate through self-certification or a Substitute Declaration of Certification of Conformity to the Original Copy in accordance with Art. 19, 46 and 47 of D.P.R. 445/2000.

Once completed, the application must be printed, signed and reloaded in the procedure following the indications described in the online procedure. The lack of signature and/or ID is a reason for exclusion from the selection.

In the case of authentication with the use of SPID (Public Digital Identity System) credentials, it will not be necessary to sign the application.

Failure to choose the curriculum, where provided, results in exclusion from the competition. The application

is submitted to the University automatically with the definitive closure of the online procedure. Therefore, no delivery or shipment of paper material to the Offices should be made.

At the end, the application will be registered and the submission confirmed by e-mail by the system.

The Judging Commissions will be appointed by Decree of the Rector as foreseen in Article 4 of this notice. The Commission may award a total of 100 points for the evaluation of candidates, which will be carried out based on qualifications only (procedure 1), based on qualifications and oral examination (procedure 2) according to the particulars contained within the individual Ph.D. profiles attached. Candidates scoring below 60/100 will not be eligible.

The categories of qualifications to be evaluated, insomuch as relevant to the subjects of the relative Ph.D. programmes of the call, and the maximum score attributable to each of them are described below:

A) Selection procedure based on qualifications only (procedure 1)

For the evaluation of the qualifications submitted by candidates, the Commission shall, unless otherwise indicated in the profile relating to each Ph.D. programme, allocate up to 100 points as follows:

- ◆ For Curriculum Vitae e Studiorum (including academic and study qualifications, as well as for scientific activity and professional experience) up to a maximum of 60 points;
- ◆ For scientific qualifications relevant to the subjects covered by the Ph.D. programme, up to a maximum of 20 points:
 - Scientific publications (monographs, articles in scientific journals)
 - Minor publications (national and international dissemination conferences, specific volume contributions, etc.);
- ◆ Professional expertise and reference letters illustrative of the candidate's abilities, skills and attitudes, written in English, up to a maximum of 20 points.

B) Selection procedure based on qualifications and oral examination (Procedure 2)

For the evaluation of the qualifications submitted by the candidates the Commission may, unless specifically stated otherwise in the profile relative to each Ph.D. programme, allocate up to 60 points as follows:

- ◆ For Curriculum Vitae e Studiorum (including academic and study qualifications, as well as for scientific activity and professional experience) up to a maximum of 30 points;
- ◆ For scientific qualifications relevant to the subjects covered by the Ph.D. programme, up to a maximum of 15 points:
 - Scientific publications (monographs, articles in scientific journals)
 - Minor publications (national and international dissemination conferences, specific volume contributions, etc.);
- ◆ Professional expertise and reference letters illustrative of the candidate's abilities, skills and attitudes, written in English, up to a maximum of 15 points.

In case of a research project is required in the Ph.D. programmes profile, whose positive evaluation together with the evaluation of the other qualifications is necessary condition for the admission to the oral examination, a maximum of 20 points will be attributed. In this case, the scores assigned to the other qualifications will be reduced by assigning 20 points for the curriculum, 10 for publications, and 10 for reference letters.

The oral test, with up to a maximum of 40 points, is intended to ascertain the knowledge of foreign languages and the aptitude of the candidates for scientific research, including through discussion of the research project submitted by the candidate where applicable in the Ph.D. programmes profiles referred to in Article 1.

The oral test will be deemed successful should the candidate score at least 27/40. Only and exclusively if specified in the profile relating to the Ph.D. programme selected, applicants resident abroad may take the oral examination at distance via MICROSOFT TEAMS platform or other digital platform. In this case, interested applicants will have to make a specific request to make use of such a location, provide their contact in the application for admission to the call and ensure the use of a webcam to allow their identification to the Commission. The candidate must be available at their previously communicated contact address on the day for the oral examination, according to the calendar published on the website as indicated on the profile.

The Commission may agree with the candidate on a precise time for the interview to take place.

For the purposes of identification, each candidate must, prior to commencement of the interview, identify themselves, displaying the same identity document already submitted as a copy attached to the application. Failure to do so will result in exclusion from the call.

Failure by the candidate to communicate their personal address, a lack of internet connection, the unavailability of the candidate on the day or time established or the failure to display a valid identification document in accordance with the previous paragraph constitute reasonable motives for exclusion from the call. The University of Bari does not accept any responsibility for the possibility of technical issues preventing the carrying out of the oral examination.

The prevision of art. 6 of this call shall apply accordingly.

In the case of the parity between two or more candidates, preference will be given to the youngest candidate. A specific merit ranking will be drawn up by the Commission for those positions reserved for graduates at foreign universities.

The merit ranking will be established according to the order of points of the overall result reported for each candidate based on the evaluation of qualifications.

The successful candidates will be declared, dependent on the number of positions designated, according to best performance on the merit ranking.

At the end of the call procedure, the Rector will approve the acts of the call and the relative merit ranking. All candidates are admitted with reserve to the call.

The declarations of approval of the acts and the relative merit rankings will be made public through their communication on the notice board of the U.O. Dottorato di Ricerca, Ateneo Building of the University of Bari Aldo Moro, II floor, and through publication on the website at

The above methods of publication act as formal notification to successful candidates. No communication will be sent to individual addresses.

In the event of withdrawal by one of the successful candidates, the next candidate will be summoned according to the merit ranking.

Art. 18 - ENROLMENT

Successful call applicants will have to enroll by the dates to be announced at the time of the publication of the merit rankings.

Failure to enroll within the terms of each Ph.D. programme will be considered withdrawal from the call and the position will be awarded to the next candidate on the basis of merit ranking order.

The application for enrolment and its attachments must be uploaded to the Esse3 platform during enrolment. Documentation relating to the above-mentioned requirements will also be made available online at <https://www.uniba.it/it/ricerca/dottorati/dottorato-ricerca-39-ciclo-aa-23-24>.

PART III SUPPLEMENTARY INFORMATION

Art. 19 - TRANSLATION AND LEGALIZATION OF DOCUMENTS

Acts and documents in a foreign language must be translated and certified by the relevant Italian diplomatic or consular representations in the foreign state in question and must comply with the provisions in force in that State.

Art. 20 – INSURANCE COVER

The University guarantees insurance cover for civil liability and accident for the entire duration of the programme for activities strictly related to the Ph.D. programme itself and will arrange the stipulation of the relevant policy.

Art. 21 – RIGHTS AND OBLIGATIONS OF DOCTORAL STUDENTS

Without prejudice to the rights and obligations provided for by the current University Regulations on PhD and by Ministerial Decree no. 226/21, the acceptance of scholarships from the funds of DD.MM. 117/23 and 118/23 and scholarships from PNRR projects implies compliance with the related obligations provided for by Ministerial Decrees.

Doctoral students are obliged to attend the programme and to carry out continuous study and research activities at the sites designated for this purpose in accordance with the procedures as set out by the Academic Board (Collegio dei Docenti), with an exclusive full-time commitment equivalent to 1500 hours a year. This commitment is verified by the compilation of a register.

Academic Board (Collegio dei Docenti) may, on the basis of a motivated request of the doctoral student, authorize the performance of remunerated activities, verifying their compatibility with the successful carrying out of programme (didactic and research) activities. In particular, doctoral students with scholarships may only carry out remunerated activities strictly related to the Ph.D. programme. Non-scholarship doctoral students must, in any event, consider the possibility that working activities result as incompatible without causing any detrimental effects to basic rights protected data constitutional level, such as the right to study for the capable and worthy, even without the necessary means to do so. Doctoral students, as an integral part of the programme, and having obtained clearance from the Academic Board and with the agreement of the relevant didactic bodies may, without any additional increase to the scholarship, participate in tutoring activities for both undergraduate and graduate Master students for up to a maximum limit provided for by the legislation in each academic year as supplementary teaching activities. Doctoral students in the medical field may participate in clinical-care activities in accordance with the provisions of Art. 4, Section 1 of the current Doctoral Research Regulations. After the third year of the Ph.D. programme, this limit is abrogated.

The measures of Legislative Decree no. 68/12 are extended to doctoral students, in accordance with the contents therein.

The Maternity Provisions of the Ministry of Labour and Social Security Decree of July 12, 2007, published in the Official Journal no. 247 of 23 October 2007 are applied in the case of female doctoral students.

The University Regulations provide doctoral students with a doctoral student representation for the purpose of the resolution of educational and organizational issues.

The attendance of a doctoral student may be suspended, upon deliberation of the Academic Board, for a period of up to a maximum of one year while retaining the rights to any scholarship, unless it should cease to be awarded, through resuming regular attendance on the programme. This is applied to cases such as maternity, military or civil service, serious and documented illness.

The doctoral student may not simultaneously be enrolled in a specialization school programme or another degree program. If a successful candidate for a Ph.D. programme results as already enrolled in a specialization school or degree program, he or she undertakes to suspend attendance before beginning the Ph.D. programme, with the exception of medical specialization (Art. 13 of this call).

Participants enrolled on Master or Specialization programmes can obtain the suspension of the beginning of doctoral activities for a maximum of three months from the effective start of the Ph.D. program, to be recuperated within the scope of the legal duration of the Ph.D. programme according to indications from the Academic Board.

If this period is longer than three months, and in any case no more than one year, activities relating to the Ph.D. programme must be deferred.

The granting of scholarships for doctoral studies is compatible with other income, including continuous income in the calendar year in which the scholarship is perceived, provided that maximum limit established by current legislation is not exceeded. If the income limit is exceeded, the scholarship will be revoked for the full year. The doctoral student concerned is obliged to declare the predicted annual income and report the possible exceeding the established limit.

Within the date set by Academic Board (CdD), for the purposes of annual auditing tests, the doctoral candidate

is required to submit a written report to the CdD on the research activities and results carried out, as well as indications of possible participation in seminars and conferences and other scientific initiatives, together with publications produced. The positive assessment by the CdD denotes entry to the successive year of the programme, or admission to the final exam in the case of final year doctoral students.

The CdD may propose, by reasoned decision, that the student concerned is temporarily suspended or excluded from the programme, resulting in the partial or total loss of any scholarship in the event of:

- Negative judgment by the CdD within the annual audit;
- Unjustified and prolonged absences;
- Behavior contradicting rules on incompatibility.

Art. 22 – CONFIDENTIALITY AND INTELLECTUAL PROPERTY

In the case in which a doctoral student has, during the Ph.D. programme, developed research products which may qualify for the granting of industrial rights or intellectual property, or for which it may be possible to obtain the designation of industrial property, such as inventions (whether patentable or not), know-how, utility models, designs and drawings, software, data or data collections, these will be regulated in accordance with current university inventor regulations and University of Bari regulations, without prejudice to particular agreements concluded on the basis of particular types of relationships (e.g. apprenticeship contract).

The doctoral candidate must undertake a specific commitment to confidentiality and the recognition of industrial and/or intellectual property rights in relation to confidential information, data, and documents that the doctoral student should become familiar with in the course of his or her activities, including those carried out by a company, an Institution or an University.

The doctoral student is, in any case, given the opportunity to perform standard publishing activities as foreseen by the programme, which will take place in compliance with the commitment to confidentiality assumed with the University for their work including that carried out within a company, as well as any specific agreements concluded on the basis of particular types of relationships (e.g. apprenticeship contract).

Art. 23 – AWARDING OF TITLE

The title of Doctor of Research (Dott. Ric) or Ph.D. is awarded following positive evaluation of a research thesis that contributes to the advancement of knowledge or methodologies in the chosen field of enquiry. The doctoral thesis, accompanied by a summary in Italian and in English, may be written in either Italian or English or, with prior permission from the Academic Board (Collegio dei Docenti), in another language.

The examining Commissions for the final exam will be formed and nominated, for each Ph.D. programme, according to the doctoral regulations. The examination may not be resit.

Art. 24 – BACKGROUND CHECKS

The University carries out the necessary background checks on the authenticity of the substitute statements made by the candidate. In case the audit establishes falsehoods in the content of such statements, the candidate is excluded from applying to the call or, if already enrolled as a successful call candidate, withdrawn from the programme subject to the criminal penalties provided for in Art. 76 of Law no. 445/2000.

Art. 25 - TREATMENT OF PERSONAL DATA AND RIGHT OF ACCESS

The personal data contained in the application form (and in the curriculum) will be processed for the purposes of the management of this procedure and in application of the current regulations concerning the processing of personal data. The data will be processed - by the parties authorized to process it - with manual, computer tools and telematic tools within and for the purposes specified above, in compliance with the security measures adopted by the University and in compliance with the provisions of EU Regulation no. 2016/679 on the protection of individuals with regard to the processing of personal data and the free movement of such data, as well as legislative decrees to adapt the national legislation to the provisions of the afore mentioned

Regulation. The Data Controller is the University of Bari Aldo Moro, with registered office in Piazza Umberto I, n. 1, 70121 - BARI. The designated Data Protection Officer can be contacted at the e-mail address rpd@uniba.it

The full text of the information is available at:

<https://www.uniba.it/ateneo/privacy/informative/informative-selezioni/view>

The documents of the selection are public. The candidates may exercise the right of access the documents of the selection according to the legislation in force.

Art.26 – RESPONSIBLE PARTIES FOR CALL PROCEDURE

Pursuant to Law No. 241/1990 subsequent modifications and integrations, the Head of Call Proceedings is Dr. Maria Luisa Loiudice - Head Office U.O. – Dottorato di Ricerca (PhD Office).

Any clarifications may be requested at the following e-mail address: dottorato@uniba.it

Art. 27 – LAWS OF REFERENCE

For any specific issues not provided for in the present notice, reference should be made to the current legislation in force and, in particular, to University of Bari Regulations on doctoral research published at: www.uniba.it.

Foreign students may obtain more information at <http://www.studiare-in-italia.it/studentistranieri/>.

This call notice translated into English is to be considered informative in nature. In the event of any dispute, the original Italian version of this call notice will prevail.

Art. 28 – PUBLICATION

The notice of the announcement of this call was submitted to the Ministry of Justice for publication in the Official Journal of the Italian Republic - 4th Special Series - Calls.

This decree will be ratified by the Governing Bodies in their next assemblies.

Bari June 20th 2023

THE RECTOR
Signed Prof. Stefano BRONZINI

ANNEX 1)

PROFILE

PhD PROGRAMME IN BIODIVERSITY, AGRICULTURE, AND ENVIRONMENT

Scientific Area CUN: 07 - Agricultural and Veterinary Sciences; 05 - Biological Sciences

Scientific Subject Code: AGR/01, AGR/02, AGR/03, AGR/04, AGR/05, AGR/07, AGR/11, AGR/12, AGR/17, AGR/19, BIO/03, BIO/04, BIO/05, BIO/07, CHIM/12 and ICAR/03

Coordinator: Prof. Enrico de Lillo

Administrative office: Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti

PEC: disspa@pec.uniba.it

Duration: 3 years

Curricula:

- 1) Genetics and Plant Biotechnology (Scientific Subject Code: AGR/07);
- 2) Environmental Sciences (Scientific Subject Codes: BIO/03, BIO/04, BIO/05, BIO/07, CHIM/12 and ICAR/03);
- 3) Mediterranean Sustainable Agriculture (Scientific Subject Codes: AGR/01, AGR/02, AGR/03, AGR/04, AGR/05, AGR/17 and AGR/19);
- 4) Crop Protection (Scientific Subject Codes: AGR/11 and AGR/12).

Total number of positions with scholarship: 23, as follows:

- n. 8 positions with a scholarship funded by D.M. n. 117/2023 – innovative doctorates with industrial address: 1 position for curriculum 2); 5 position for curriculum 3); 2 position for curriculum 4);
- n. 5 positions with a scholarship funded by D.M. n. 118/2023 – doctorates for the Public Administration 4.1: 2 position for curriculum 1); 1 position for curriculum 2); 1 position for curriculum 3); 1 position for curriculum 4);
- n. 4 positions with a scholarship funded by D.M. n. 118/2023 – PNRR doctorates 4.1: 1 position for curriculum 1); 1 position for curriculum 2); 1 position for curriculum 3); 1 position for curriculum 4);
- n. 1 position with a scholarship funded by D.M. n. 118/2023 – doctorates for digital and environmental transitions 3.4: 1 position for curriculum 3);
- n. 2 positions with a scholarship funded by ENEA for curriculum 1);
- n. 1 position with a scholarship funded by CNR-ISPAs for curriculum 3);
- n. 1 position with a scholarship funded by project MARV.E.L. reserved to graduates at foreign Universities curriculum 4);
- n. 1 position with a scholarship funded by the University of Bari for curriculum 2);

Total number of positions without scholarship: 1, as follows:

- n. 1 position without a scholarship for curriculum 3.

Short descriptions for the projects funded by D.M. n. 117/2023 – innovative doctorates with industrial address

- 1) position for curriculum 2 co-funded by Befreest s.r.l. - **Development of innovative, sensor-based methodological approaches for indoor-outdoor pollution assessment and health risk assessment in areas of high industrial density** - The project must develop innovative methodological approaches for health risk assessment that, through the intelligent use of new technologies and the development of innovative citizen science approaches (e.g., smart devices connected in 5G for "near field" ecosystem monitoring), allow for the improvement of citizens' quality of life. Such a project idea must,

moreover, be linked to the safeguard and welfare objectives considered in the Horizon 2021-2027 Program and be framed within the social priorities and challenges envisaged by the Smart Specialization Strategies of the Apulian Region (Smart Puglia 2030).

2) position for curriculum 3 co-funded by Oliveti d'Italia s.c.p.a. - **Study of agronomic and environmental sustainability of new olive cultivation systems, including in areas infected with *Xylella fastidiosa* subsp. *pauca*** - The project should address the design and management of sustainable development of the olive supply chain, improving farm performance and competitiveness of the olive farm, including in reference to areas infected with *Xylella fastidiosa* subsp. *pauca*. The main innovation need to be met is to define olive cultivation systems with very high efficiency from a climatic-environmental and agronomic performance point of view.

3) position for curriculum 3 co-funded by Donnapaola Società Agricola s.r.l. - **Enhancement of officinal species specific to Apulian biodiversity through environmentally sustainable process technologies** - The project should concern the study of new models of production chains that can be traced back to the traditional use of medicinal plants albeit with an innovative approach resulting from the adoption of biotechnologies for field management of crops and processing technologies characterized by simplified, sustainable and high-performance management processes. This is in order to revalorize the biodiversity of the territory, select species for the production of bioactive molecules for cosmetics, functional foods and crop protection as a viable opportunity for the rehabilitation of marginal areas through the development of low-impact supply chains integrated in the territories and connected with bioeconomy infrastructures.

4) position for curriculum 3 co-funded by Fattoria Gallo Rosso S.s.a. - **Use of organic fertilizers to increase the yield and quality of vegetables in protected environment and in the open field, as a substitute for mineral fertilizers, in the context of sustainable agriculture** - The project should evaluate the use of organic fertilizers derived from animal and plant wastes as a substitute for mineral fertilizers in the vegetable cultivation both under protected cultivation, on soil and soilless, and in the open air. The effects of the addition of biostabilized organic fertilizers, to soil or crop substrates, in order to counteract biological degradation, loss of biodiversity, avert the triggering of desertification phenomena, improve the sustainability of production systems, as well as stimulate vegetable growth and resistance to biotic and abiotic stresses, will have to be evaluated. In addition, the effects on the quality of vegetable products should be evaluated.

5) position for curriculum 3 co-funded by Gemanco S.p.a. - **Review of nutrient requirements of durum wheat under irrigation** - The project has to study the new nutrient requirements of durum wheat under irrigation and the definition of appropriate determination methodologies that would allow a suitable professional qualification for the introduction of innovation resulting from the rational use of irrigation on durum wheat with sustainable fertilization management plans and positive spin-offs for farmers and quality durum wheat production.

6) position for curriculum 3 co-funded by ENI S.p.a. - **Field studies to quantify the impact of photovoltaic systems on "food/no food"- crops** - The project should address the implementation of hybrid agriculture-energy production systems that contribute to environmental and economic sustainability on the farm. Data should be collected on both the photovoltaic systems and the crops grown below the panels. In particular, the research has to focus on the microclimatic conditions, water savings, soil fertility recovery, climate change resilience, and agricultural productivity/quality for different types of crops (food and non-food).

7) position for curriculum 4 co-funded by A. Costantino & C. S.p.a. - **Applications of plant-derived biostimulants to improve the stress response of plants and/or their products** - The project should be aimed at responding to the growing needs for safe and quality food for the consumer, as well as to the increasing attention to environmental protection, which has made the search for effective, safe and eco-friendly treatments to reduce losses of plant products both during the field stage and after harvesting increasingly pressing. This could include the use of plant-derived biostimulants that by enhancing the metabolism of the host plant increase its response to biotic and abiotic stresses. The latter (e.g., drought) are increasingly relevant from a climate change perspective and contribute to food insecurity.

8) position for curriculum 4 co-funded by Progresso Agricolo Fasano s.c.p.a. - **Improving sustainable protection strategies for vegetable crops in the Apulian range** - The project should be aimed at defining effective and innovative strategies for the sustainable protection of the main vegetable crops in the Apulian area from plant pathogens. Technological

innovation has to be mainly focused on rapid systems for diagnosis and field detection of pathogens and on disease management with alternative and environmental-friendly approaches, based on natural substances, new synthetic plant protection products, physical tools and beneficial microorganisms, aimed at improving crop yield as well as postharvest storage, quality and food safety.

Short descriptions for the projects funded by D.M. n. 118/2023 – doctorates for the Public Administration 4.1

1) position for curriculum 1 - **Plant resilience to environmental and climate changes: candidate genes and metaomic approaches** - The project should address the mapping and characterization, using a genetic/molecular approach, of the existing Gramineae plant biodiversity and genetic variability in different protected areas of the Apulia Region, in order to identify factors related to resilience to environmental and climate change with particular attention to high temperature stress and drought, as well as the improvement of water and mineral resource use efficiency, and to further this knowledge in species of agricultural interest.

2) position for curriculum 1 - **Enhancement of cereal production and typical Apulian products** - Durum wheat provides the raw material for the pasta industry and is of primary interest in our country. In order to enhance Apulian cereal productions, the project must study genetic efficiency and its interaction with new modulations of nitrogen fertilization in order to identify the minimum doses to be used in cereal crops widespread in the regional territory. The research activity may involve a physiological and genetic approach for the evaluation of nitrogen use efficiency in different wheat varieties that could allow the identification of well-adapted varieties with good production performance and high nutritional quality.

3) position for curriculum 2 - **Innovative municipal wastewater treatment technologies for the containment of energy consumption and climate-altering gas emissions: monitoring of effluent discharge and best management practices** - The project should contribute to the design and simplification of organizational models, as well as processes for the selection and adoption of innovative technologies and solutions for the treatment and monitoring of municipal wastewater using innovative techniques in order to achieve better environmental performance by reducing electricity consumption and climate-altering gas emissions. The research activity should also be oriented toward establishing a risk management approach for the purpose of verifying the quality of purified and refined water for reuse and to minimize the impact on human health.

4) position for curriculum 3 - **Conservation varieties for resilient and sustainable Apulian vegetable crops** - The project should cover the activity of registration in the National Register of Conservation Varieties (conditions for admission; admission procedures; variety denomination; area of origin), seed production (seed of which may be "certified" or "standard"), and marketing of seed and seed potatoes (marketing conditions; quantitative restrictions in relation to the area cultivated for each variety; crop control; packaging and labeling) consistent with Legislative Decree No. 20 of February 2, 2021.

5) position for curriculum 4 - **Regional phytosanitary standards for plant protection** - The project must reconstruct and interpret the national and supranational legal framework of reference, including regulations of a technical/application cogent nature with regard to emerging pests on crops of major importance or more recent spread in the regional/national territory, as well as on the rationalization of protection strategies in order to integrate the regional regulatory framework also with operational proposals in the specific guidelines. In this way, it will be possible to identify aspects that require in-depth investigation, with the implementation and evaluation of specific experimental activities.

Short descriptions for the projects funded by D.M. n. 118/2023 – PNRR doctorates 4.1

1) position for curriculum 1 - **Development of new durum wheat varieties rich in bioactive components adapted to climate change** - The project must address the recovery of biodiversity. In particular, it should focus on the study of the genetic pathway of bioactive components such as carotenoids and anthocyanins in durum wheat populations and the identification of candidate genes for the increase of these components and lines with high nutritional quality. Increasing the efficiency of resource use, the technical means used in the production process, and the development of new varieties that are more productive and of higher quality are alternatives for improving the sustainability of the cereal sector.

2) position for curriculum 2 - **Development of non-destructive technologies for mapping, protection, and restoration of vulnerable marine habitats** - The project must develop and use innovative and non-destructive technologies for the mapping and study of marine habitats vulnerable to harvesting activities (deep-sea fisheries). In particular, it must deal with the study of marine habitats of particular biological and conservation importance, such as the biological communities present on the seamounts of the Italian coasts, which play a fundamental role in maintaining the biodiversity of the deep seabed of the Mediterranean Sea and constitute important spawning, development (nursery), refuge and feeding areas for a large number of fish species, ensuring the repopulation of the adjacent seabed through the spillover effect phenomenon.

3) position for curriculum 3 - **Development and preservation of local breeds and enhancement of production** - The project should address the maintenance of biodiversity in livestock species of interest, oestrus control technologies and fecundity of livestock animals of interest for production purposes, sustainability of low-input livestock production processes, resilience of animal populations to climate change and valorization of products.

4) position for curriculum 4 - **Multi-omics approaches for the study of plant pathogens and other plant-associated microorganisms** - The project has to deal with the identification of key genes, metabolites and metabolic processes associated with the infectious process, biosynthesis of mycotoxins and activity of beneficial microorganisms. Research has to be aimed at advancing knowledge of the biology and ecology of plant-associated pathogenic and beneficial microorganisms at different levels (soil and rhizosphere, phyllosphere, carposphere, as well as endophytes), and of their complex interactions with plants and other microorganisms, also considering the changing of climatic conditions.

Short descriptions for the projects funded by D.M. n. 118/2023 – doctorates for digital and environmental transitions 3.4

1) position for curriculum 3 - **The possibilities of agrivoltaics** - The project should deal with the use of precision agriculture's own technologies associated with the production of renewable energy with solar panels with the aim of contributing to greater environmental sustainability in the context of climate change (recovery of marginal land, water saving, preservation of biodiversity) and helping farms economically and energetically. This is to strengthen the adoption of circular economy solutions, protect nature and biodiversity, and ensure a fair, healthy and environmentally friendly food system. An agri-voltaic system can ensure agricultural production even in marginal and less resource-intensive areas as well as a significant supply of sustainable energy for either rural or urban communities.

Short descriptions for the projects funded by ENEA:

1) position for curriculum 1 - **Microalgae engineering for optimization of hydrogen production** - Hydrogen production through microalgae is a very promising alternative source of energy. The experimental activity of the project should focus on the molecular and functional characterization of hydrogen production mechanisms exploiting a transcriptomic, metabolomic and bioinformatic integrated approaches. After that, transgenic and mutant strains should be generated to obtain microalgae with increased hydrogen production capacity, biomass and useful bioproducts.

2) position for curriculum 1 - **Isolation, expression and improvement of enzymes for the production of hydrogen derivatives** - Transformation of hydrogen in hydrogen containing derivatives is one of the proposed solutions for its conservation, storage, and transportation. In this framework, the proposed research should deal with the identification of novel and/or improved enzymes for the catalysis of organic reactions that generate molecules incorporating hydrogen. Molecular biology, genomics and bioinformatic approaches should be used to investigate the presence of enzymes of interest in selected substrates containing microorganisms able to convert, for example, CO₂ to formate. Selected enzyme/s should be expressed in a heterologous system and improvement of enzyme activity will be attempted by random mutagenesis and selection.

Short descriptions for the projects funded by CNR-ISPA:

1) position for curriculum 3 - **"Sensor-based" technologies for rational and sustainable fertigation management of horticultural crops in the Mediterranean environment** - The project has to develop and deploy sensor-based systems for the automatic management of irrigation and fertilization in the open field and/or protected environment. The improvement of production processes in the agricultural sector, through the application of strategies and technologies aimed

at rationalizing the use of agronomic inputs, is a strategic priority for the country's sustainable development. Reduced availability of water resources in Mediterranean environments, rising costs for energy and fertilizer supply, and uncertainty related to possible crisis scenarios, impose the need to refine and fully operationalize innovative precision agriculture approaches.

Short descriptions for the projects funded by project MAR.V.E.L.

1) position for curriculum 4 - **Protection of agricultural and forestry plants and their products** - The project has to develop aspects related to strategies for plant protection, and management and prevention of phytosanitary emergencies with particular regard to marginal areas and in the context of climate change.

Short descriptions for the projects funded by the University of Bari:

1) position for curriculum 2 - **Ex situ conservation of taxa of conservation concern of Apulian territory** - To address the current biodiversity loss, the United Nations declared 2021-2030 as the decade of Ecosystem Restoration, recognizing that healthy natural ecosystems sustain all forms of life. Achieving restoration goals has been largely recognized to be challenging if the current native plant seeds supply is not improved. *Ex situ* conservation is a crucial tool to preserve plant biodiversity and support *in situ* conservation. Specifically, seed banking offers a solution to plant conservation since seeds of most plants can be potentially maintained for decades occupying relatively little space. As many taxa of Apulian territory are subject to an increasing risk of extinction, the preservation of their different local ecotypes into seed banks plays a major role, so that genetically appropriate seeds can be supplied when needed for *in situ* conservation.

A specific exam for each curriculum will be made; the ranking lists of each curriculum will be merged into a final one which will be used for the candidate admission.

The positions will be awarded, among the curricula, according to the final ranking list, until their exhausting.

Non-assigned positions of a curriculum, because of lack of eligible candidates, can be assigned to candidates of another curriculum based on the score of the final ranking list.

The candidates must indicate their curriculum choice on the application form **on penalty of exclusion from this selection procedure**.

Admission mode:

The selection will be made following the art. 6 typology B of the call.

The selection for the reserved position will take place in accordance with Article 17 procedure 2 of the call.

The examination will be based on the evaluation of candidate qualification, proposed research project (at most 12000 characters, spaces included) on the specific selected thematic and oral interview (on submitted documentation and research project) and foreign language knowledge checking (English).

Admission tests for foreigner candidates:

Foreign candidates are allowed to be examined in English.

Admission exam dates and time:

Evaluation of the qualification: 26 July 2023, at 8,30 am CET

Evaluation of the research project: 28 July 2023, at 8,30 am CET

Oral interview: 2 August 2023, at 8,30 am CET

Place: Aula X – Agricultural Building, Via Amendola, 165/A – Bari

For more information see the website:

<https://www.uniba.it/ricerca/dipartimenti/disspa/dottorato-di-ricerca/biodiversita-agricoltura-e-ambiente>

ANNEX 2)

PROFILE

PhD PROGRAMME IN BIOSCIENCES AND BIOTECHNOLOGIES

CUN Scientific Areas CUN: 05-Scienze Biologiche, 06-Scienze Mediche, 07-Scienze Agrarie e Veterinarie, 03-Scienze Chimiche, 09 - Ingegneria industriale e dell'informazione.

Scientific Subject Codes: AGR/17, BIO/04, BIO/05, BIO/06, BIO/07, BIO/08, BIO/09, BIO/10, BIO/11, BIO/12, BIO/13, BIO/16, BIO/17, BIO/18, BIO/19, CHIM/11, ING-IND/34, MED/03, MED/04, MED/46, VET/10,

Coordinator: Prof.ssa Giovanna Valenti

Administrative office: Department of Biosciences, Biotechnologies and Environment

PEC: direzione.bioscienze@pec.uniba.it

Duration: 3 years

Curricula: Yes

1. Biomolecular Sciences and Bioinformatics (Scientific disciplinary sectors: BIO/10, BIO/11, MED/46)
2. Cellular and Molecular Physiology and Biotechnology (Scientific disciplinary sectors: BIO/09, BIO/17, VET/10, AGR/17, MED/04, ING-IND/34)
3. Biochemical Sciences and Cell Biology (Scientific disciplinary sectors: BIO/10, BIO/12, BIO/13, BIO/14, BIO/16, CHIM/11)
4. Genetics, Microbiology and Molecular Evolution (Scientific disciplinary sectors: BIO/18, BIO/19, BIO/08, MED 03)
5. Morphofunctional Biology (Scientific disciplinary sectors: BIO/04, BIO/05, BIO/06, BIO/07)

Total number of positions with fellowships n. 15:

n. 6 positions on D.M. 118/23 PNRR 4.1

n. 1 positions on D.M. 118/23 PNRR 3.4 Transizioni Digitali

n. 3 positions on D.M.117/23

n. 2 positions on Ateneo funds

n. 3 positions PNRR Centri Nazionali CN3

Total number of positions without fellowships n. 3

Project: Enhancement of plant biomass used in the production of biomethane for reuse in agriculture -*Curriculum 5-*

Call for tender: D.M.117/23

Fellowship 1. Title Scholarship: Biosciences and Biotechnologies

Research activity description: The research aims to characterize and enhance some types of biomasses digestates, based on microbial fermentation, like biomass waste deriving from the solid fraction of urban solid residue and the local agricultural production chain, for their use in agriculture. The main goals are the chemical and biochemical characterization of the biomasses used and the study of the effects related to their use as soil improvers, in the model (*Arabidopsis thaliana*) and non-model plant species. Through an integrated approach, based on omics and non-omics techniques, the main metabolic pathways involved in nitrogen and phosphorus assimilation, will be evaluated, in order to identify the most suitable growth conditions in terms of biomass increase and absence of adverse related to the treatment.

Project: Cellular rejuvenation induced by partial reprogramming in in vivo and in vitro models: an artificial intelligence-based approach. -*Curriculum 2-*

Call for tender: D.M.117/23

Fellowship 2. Title Scholarship: Biosciences and Biotechnologies

Research activity description: Partial reprogramming involves a modification of the differentiation state of the cells (partial pluripotency) allowing their return to a more juvenile stage. The main goal of this project is to use protocols for the transient expression of the four Yamanaka transcription factors to induce partial reprogramming both in vitro in mammalian cells and in vivo in *Drosophila melanogaster*. In particular, the project aims at evaluating the hitherto unexplored effect of the stoichiometric variation of the expression levels of each of Yamanaka's four factors, taken individually or in combination, on cellular rejuvenation.

Project: Biological and technological characterization of yeast cells for applications in bioremediation. -*Curriculum 3-*

Call for tender: D.M.117/23

Fellowship 3. Title Scholarship: Biosciences and Biotechnologies

Research activity description: The project is aimed to characterize and develop cellular models for application in bioremediation. Bioremediation is a sustainable process where biological systems, such as bacteria and yeast, are used to remove environmental pollutants. Research activities will include the biological and technological characterization of *Saccharomyces cerevisiae* yeast cells applied to water cleaning processes from contaminants. In this field, yeast cells represent a promising resource due to their high tolerance to organic and inorganic compounds and their transformation capacity into not toxic compounds. The use of bioremediation in industrial processes is aligned with the principles of ecological transition and the goals of 2030 Agenda.

Project: Identification of the genetic causes of idiopathic infertility through Single-Cell Strand sequencing.

-*Curriculum 4-*

Call for tender: D.M.118/23 PNRR 4.1

Fellowship 1. Title Scholarship : Biosciences and Biotechnologies

Research activity description: The proposed project aims to identify the causes of reproductive failure through the use of an innovative technique known as Single Cell Strand-sequencing to identify submicroscopic inversions and translocations in the human genome and to evaluate their contribution as genomic risk factors to reproductive failure in patients with idiopathic infertility.

Project: Searching for inhibitors of flavin cofactors biosynthesis and of tumoral cell proliferation -*Curriculum 1-*

Avviso: D.M.118/23 PNRR 4.1

Fellowship 2. Title Scholarship: Biosciences and Biotechnologies

Research activity description: This project moves from basic to applied research, focusing on the role of enzymes and translocators involved in ensuring cellular homeostasis of redox flavin cofactors FMN and FAD, which derive from the water-soluble vitamin B₂ or Riboflavin, and on their implications in different types of human tumours. The central idea underlying this project is based on the recent demonstration that flavin cofactors play central roles not only in bioenergetics, but also in epigenetics. Thus, enzymes involved in their production may be potential therapeutic targets in cancer.

The PhD student will study the molecular mechanisms regulating the expression of genes involved in Rf transport and metabolism in cancer cells, as well as will search for drugs/nutraceuticals able to modulate FAD biosynthesis

Project: Digital transition applied to histology and tissue nanostructure studies -*Curriculum 2-*

Call for tender: D.M.118/23 3.4 Digital Transitions

Fellowship 3. Title Scholarship: Biosciences and Biotechnologies

Research activity description: Digital transition has a key role in the “digital era”, with a broad range of applications, including the didactic/scientific field. On this scenario, the development of a smartphone application is well appropriate for the study/deepen of histology, a matter developed for the study of tissues that in different percentage forms organs. The application will be developed thanks to the collaboration with a local “industry” specialized in digital transition. Furthermore, thanks to the partnership with an abroad Institution it will be deepened the study of tissues at nanostructure level using particular instruments and software. This new digital approach will support the classical study on histology and will allow to counteract the classical limitations thus leading to the detailed study of different tissues.

Project: Development of 3D model of Pancreatic ductal adenocarcinoma to be used for clinical trial and identification of early

biomarkers. -Curriculum 3-

Call for tender: D.M.118/23 PNRR 4.1

Fellowship 4. Title Scholarship: Biosciences and Biotechnologies

Research activity description: Pancreatic ductal adenocarcinoma (PDAC) is a devastating disease with a very low survival rate. An unfavorable prognosis of PDAC is due to the lack of effective therapies and, above all, late diagnosis. The murine models of PDAC currently used in clinical trials are not completely overlapping with human PDAC. In this project, the aim is to develop 3D models of PDAC using induced pluripotent stem cells (iPSCs), in which the function of the main genes involved in the pathogenesis of PDAC (KRAS, p53, SMAD4, and p16) will be studied. Upon validation, the different models will be tested for their sensitivity to chemotherapy drugs and the secretion of specific early biomarkers.

Project: Blue biotechnologies: bioinformatics and biomolecular approaches for the selection of new enzymatic activities from marine microbial communities -Curriculum 1-

Call for tender: D.M.118/23 PNRR 4.1

Fellowship 5. Title Scholarship: Biosciences and Biotechnologies

Research activity description: Enzymes are gaining increasing attention as catalysts in the chemical and pharmaceutical industries and in the development of approaches for environmental decontamination. Indeed, they are relevant for novel, and more selective and ecological processes. New and unique enzymatic activities can be identified by modern functional metagenomics approaches based on the combined use of bioinformatics methodologies and bio-molecular assays. In this context, the project envisages two main activities: i) the use of bioinformatics tools for the analysis of omics data from marine microbial communities to select genes associated with specific catalytic activities; ii) validation of the results by bio-molecular assays.

Project: New in vitro/in silico strategies for the study of uncharacterized membrane transporters and for the identification of new modulators of transport activity of characterized membrane transporters of the SLC family.

-Curriculum 3-

Call for tender: D.M.118/23 PNRR 4.1

Fellowship 6. Title Scholarship: Biosciences and Biotechnologies

Research activity description: The aim of the project is to develop a platform for predicting the function and identifying modulators (small molecules) of SLC family transport proteins' function (i.e., 10.1016/j.bcp.2015.11.019), whose members are considered promising pharmacological targets (10.1038/d41573-020-00056-6) for the treatment of tumor-related pathologies and/or rare pathologies characterized by neuromuscular degeneration (10.1016/j.bcp.2022.115405; 10.3390/molecules27113494). The results of the in-silico analyses will be validated in vitro by using calorimetric binding affinity assays. Additionally, isotopic labelling assays and metabolomics will be conducted in collaboration with experts in omics analysis and metabolic pathways at the Cellomet laboratories (Bordeaux, FR), to test the activity of the investigated ligands.

Project: Innovative surveys for the study and mapping of *Posidonia oceanica* meadows along the Apulian coasts.

-Curriculum 5-

Call for tender: D.M.118/23 PNRR 4.1

Fellowship 7. Title Scholarship: Biosciences and Biotechnologies

Research activity description: The present research is focused on the study of marine habitats of particular biological and conservation importance, such as the *Posidonia oceanica* meadow. The project involves the development of innovative investigations for the study and mapping of the *P. oceanica* meadow along the Apulian coasts through an ecology landscape approach (seascape). A valid tool to understand the role of different factors in the mechanisms of regression and fragmentation of grasslands.

Project: "National Center for Gene Therapy and Drugs based on RNA Technology" CN3

Call for tender: PNRR Centri Nazionali CN3

Fellowship 1.

Title Scholarship: Intercellular Cross-Talk Mediated by Tunneling Nanotubes: Mechanisms and Functions. -Curriculum 2-

Research activity description: "Tunneling Nanotubes" (TNTs) are long intercellular bridges that allow the exchange of

signals (ions, proteins, RNA, etc.) between distant cells, contributing to the regulation of cellular and tissue activities under both physiological and pathological conditions. The mechanisms underlying the formation of TNTs, the transmitted signals, and their respective functions are largely unknown.

This project aims to investigate the role of TNTs in intercellular trafficking of RNA among tumor cells, with specific focus on the intercellular trafficking of circular RNAs.

Project: "National Center for Gene Therapy and Drugs based on RNA Technology" CN3

Call for tender: PNRR Centri Nazionali CN3

Fellowship 2. Title Scholarship: Development of experimental approaches for gene therapy in cellular models of patients affected by mitochondrial disorders caused by nuclear gene deficiencies. -*Curriculum 3*-

Research activity description: The use of 3D models (organoids) derived from the differentiation of induced pluripotent stem cells (iPSCs) from patients for studying human diseases is an innovative experimental approach, especially for the development of personalized therapies. In this project, the aim is to develop new experimental approaches for gene therapy, such as genome editing of specific mutations, gene knock-in using adeno-associated vectors (AAV) or inserting wild-type ORFs into the AAVS1 locus, to restore the deficiency of specific mitochondrial proteins encoded by nuclear genes. The modified iPSCs from patients will then be differentiated into specific mature cell lines (neurons, hepatocytes, etc.) and characterized for the validation of the correction made.

Project: "National Center for Gene Therapy and Drugs based on RNA Technology" CN3

CUP H93C22000430007; CODE CN_00000041

Call for tender: PNRR Centri Nazionali CN3

Fellowship 3. Title Scholarship: Molecular strategies to correct pathogenic mutations through RNA editing programmable tools -*Curriculum 1*-

Research activity description: RNA editing is one of the most relevant epitranscriptome mechanisms by which cellular RNAs are modified in specific localizations in a not-transient fashion. In human, RNA editing involves the deamination of cytosine in uridine by APOBEC enzymes and, most frequently, the conversion of adenosine in inosine by the ADAR family of enzymes. A-to-I editing in non-coding regions is important in modulating the innate immune response, while modifications in protein coding genes has several functional and physiological implications. The aim of this project is to use RNA editing programmable tools for correcting pathological mutations at RNA level in human cells.

Fellowships covered by 'Ateneo funds'

Fellowship 1 Project title: Development and application of third generation sequencing protocols and bioinformatics methodologies for the study of biodiversity -*Curriculum 1*-

Research activity description: Biodiversity studies includes investigations from genes to genomes and epigenetic variation, and from populations to species and ecosystems. Third generation sequencing provides a wide array of novel tools to characterize the molecular biodiversity, including the generation of reference genomes able to provide unique insights into genomic diversity and architecture, thereby enabling comprehensive analyses of population and functional genomics. The project aims to develop new sequencing protocols and bioinformatics methodologies based on third generation sequencing for the study of biodiversity, in particular of non-model species and species complex.

Fellowship 2 Project title: Role of astrocytes in homeostasis in health and diseased brain -*Curriculum 2*-

Research activity description: The present proposal aims to carry out studies on the role of astrocytes in brain homeostasis in health and disease and to identify the molecular mechanisms responsible for the onset and progression of neurodegenerative or neurodevelopmental diseases. The studies will be conducted by super-resolution microscopy which will be used to study the expression of water and ion channels and actin cytoskeleton. Functional studies of water transport, migration/invasion assays, measurements of calcium signals and patch clamps on tissue slices will be performed to evaluate molecular alterations of CNS homeostasis and cell communication. Finally, mouse models characterized by alterations of the water and ion homeostasis of the CNS will be studied using two-photon microscopy.

Positions without fellowships

Fellowship 1 Project title: Development of a microRNA signature to predict metastases development in breast cancer. -

Curriculum 2-

Research activity description: A compelling body of evidence sustains the role of microRNAs to fine tune gene expression at multiple levels by interacting with a number of mRNAs as epigenetic modifiers. The objective of this program is to integrate genome, transcriptome and miRNAs data obtained from the analysis of breast cancer tissues and plasma samples to clarify the molecular mechanisms associated with development and progression of the breast cancer and possibly generate diagnostic, prognostic and predictive algorithms for improving clinical management and treatment of patients. The capability of miRNAs to affect cell phenotype toward aggressiveness will be characterized *in vitro and* in animal models to identify molecular signatures supporting breast cancer progression and spreading to distant sites.

Fellowship 2 Project title: Nanoscale interfaces and neurospheres as model to study neural development.

-Curriculum 2-

Research activity description: Neurospheres (NS) are widely used as an *in vitro* model to study the molecular, structural and functional mechanisms of neurodevelopment. Nanostructured biomaterials may be useful for reproducing, *in vitro*, the biochemical and biophysical signals derived from the extracellular matrix (ECM), critical in neurodevelopment, and which are often lost in NS growth *in vitro*. In order to define a new *in vitro* model, which mimics the features of the cerebral microenvironment, in this project, we will use of nanostructured biomaterials as a substrate to grow NS able to induce NS differentiation. The expression of ion channels, aquaporins and ECM will be analyzed by calcium imaging, electrophysiology, cellular and molecular biology.

Fellowship 3 Project title: A cost-effective multi-OMICs strategy for the diagnosis of rare Mendelian disorders by integrating data from exome, whole-transcriptome and low-pass genome sequencing in Medical Genetics outpatient clinics *-Curriculum 4-*

Research activity description: Next-generation sequencing (NGS) has become gold-standard diagnostics for most Mendelian diseases. Nevertheless, NGS diagnostics still presents limitations in genetic variants detection and interpretation, turnaround times, and costs for an effective application.

The present project aims to verify the technical, clinical, and economic feasibility of a transfer in diagnostics of "multi-OMICs" investigation approaches based on the integration of exome, transcriptome and genome sequencing data for the diagnosis of individuals affected by rare Mendelian diseases in the clinical context of Medical Genetics. A multi-OMICs bioinformatics pipeline will optimize variant interpretation for generating actionable information.

Admission procedures:

The selection will be made following the art. 6 typology B of the call.

The examination will be based on the evaluation of candidate qualification, proposed project, oral interview, and foreign language knowledge checking (English).

Admission tests for foreigners:

The videoconference interview of foreign candidates will be in English.

Admission exam dates and time:

Qualification : title evaluation 26/7/2023:

Proposed project evaluation: 27/7/2023:

Oral interview: 31/7/2023

The oral examination will be held in the 'Aula Magna' on the ground floor of the Biological Departments Building - "Ernesto Quagliariello" University Campus in Via Orabona – Bari starting from 9.30 a.m.

For more information see the website: <https://www.uniba.it/it/ricerca/dipartimenti/dbba>

ANNEX 3

PROFILE

PHD PROGRAMME IN “DIGITAL INNOVATION AND e-HEALTH”

CUN Scientific Areas: 01 - Mathematical and Computer Sciences, 03- Chemical Sciences, 05 - Biological Sciences, 06 - Medical Sciences, 09 - Industrial and Information Engineering, 11 - Historical, Philosophical, Pedagogical, Psychological Sciences, 13 - Economics and Statistics.

Scientific Subject Codes: INF/01 – Informatics; CHIM/12 - Chemistry of the environment and cultural heritage; BIO/12 - Clinical biochemistry and clinical molecular biology; BIO/14 – Pharmacology; MED/09 - Internal Medicine; MED/13 – Endocrinology; MED/14 – Nephrology; MED/48 - Nursing Sciences and Neuropsychiatric and Rehabilitative Techniques; ING-INF/05 - Information Processing Systems; M-PSI/01 - General Psychology; M-PSI/08 - Clinical Psychology; SECS-S/01 – Statistics; SECS-P/10 - Business Organization

Coordinator: Prof. Monica MONTAGNANI

Administrative office: Department of Precision and Regenerative Medicine and Ionian Area (DiMePRE-J)

PEC: direzione.dimeprej@pec.uniba.it

Duration: 3 years

Curricula: NO

Total number of positions with fellowships: n. 10, as follows:

Project: PNRR- general 4.1

- ***Investigation of biological and environmental bases of risk for major psychiatric disorders, of their response to treatment and of related collateralities***
 - **Call for tender** D.M. N. 118 A.A. 2023/2024, PNRR - Missione 4, componente 1 “Potenziamento dell’offerta dei servizi di istruzione: dagli asili nido all’Università”: M4C1 - Investimento 4.1 “Estensione del numero di dottorati di ricerca e dottorati innovativi per la pubblica amministrazione e il patrimonio culturale”
 - **Title** *Investigation of biological and environmental bases of risk for major psychiatric disorders, of their response to treatment and of related collateralities*
 - **Research activity description:** The project aims at using an integrated computational, clinical and bio-molecular approach, to investigate the risk for major psychiatric disorders, the mechanisms implied in the response of such disorders to pharmacological treatment, and the subject-specific sensitivity to the development of iatrogen collateralities.

Project: PNRR – general 4.1

- **Call for tender:** D.M. N. 118 A.A. 2023/2024, PNRR - Missione 4, componente 1 “Potenziamento dell’offerta dei servizi di istruzione: dagli asili nido all’Università”: M4C1 - Investimento 4.1 “Estensione del numero di dottorati di ricerca e dottorati innovativi per la pubblica amministrazione e il patrimonio culturale”
- **Title** *Identification of molecular markers and targets for the treatment of rare diseases using omics approaches*
 - **Research activity description:** The research topics will concern the study with omics methods of rare diseases in the Health field. Rare diseases are defined as all those diseases that have a prevalence of less than 5 cases/10,000 people. These pathologies present a high degree of biomedical complexity, often with multi-organ expression which therefore require the convergence of different skills and the use of orthogonal bio-medical scientific approaches.

- **Project: PNRR- general 4.1**
 - **Call for tender:** D.M. N. 118 A.A. 2023/2024, PNRR - Missione 4, componente 1 “Potenziamento dell’offerta dei servizi di istruzione: dagli asili nido all’Università”: M4C1 - Investimento 4.1 “Estensione del numero di dottorati di ricerca e dottorati innovativi per la pubblica amministrazione e il patrimonio culturale”
 - **Title** *Innovative multi-parametric methodological approaches in breathomics as e-health tools for early diagnosis and management of chronic and oncologic diseases*
 - **Research activity description:** The project proposal aims at promoting digital and technological innovation in breathomics research field addressed at the development of integrated and innovative systems serving as health-tools for the detection of various physio-pathological conditions of human body and for the early diagnosis of both chronic and oncologic diseases, through the chemical characterization of human breath volatile fraction and the identification of pathology-related biomarker patterns.
- **Project: PNRR- TRANSIZIONI DIGITALI E AMBIENTALI 3.4**
 - **Call for tender:** D.M. N. 118 A.A. 2023/2024, PNRR - Missione 4, componente 1 “Potenziamento dell’offerta dei servizi di istruzione: dagli asili nido all’Università”: M4C1 - Investimento 3.4 “Didattica e competenze universitarie avanzate”
 - **Title** *Development and application of machine learning algorithms for the prediction of the properties of small organic molecules*
 - **Research activity description:** The research will focus on the development and application of machine learning algorithms to predict the toxicity and biological activity of xenobiotics, including biologically active compounds. Physicochemical descriptors and molecular fingerprints will be calculated for each compound in the database. A chemoinformatics platform will be developed, following the Human-Centered Artificial Intelligence, to derive highly predictive classifiers using various machine learning algorithms.
- **Project: PNRR- PUBBLICA AMMINISTRAZIONE 4.1 PA**
 - **Title** *Deception detection in contexts of discomfort, marginality, and deviance*
 - **Call for tender:** D.M. N. 118 A.A. 2023/2024, PNRR - Missione 4, componente 1 “Potenziamento dell’offerta dei servizi di istruzione: dagli asili nido all’Università”: M4C1 - Investimento 4.1 “Estensione del numero di dottorati di ricerca e dottorati innovativi per la pubblica amministrazione e il patrimonio culturale”
 - **Research activity description:** The present research project is focused on the study of deceptive behavior affecting health and well-being of individuals and communities with innovative digital methodologies. The availability of new technologies, such as complex vocal analysis and verbal analysis through AI tools, enables the development of complex and predictive models of deception detection. A multimodal approach will be used to provide an accurate deception detection in contexts in which communicative interactions are have a strong impact in terms of: (i) individual well-being, such as work contexts, recruitment processes, customer satisfaction, and therapeutic settings, and (ii) collective adjustment, as in the legal context.
- **Project: “DARE - Digital Lifelong Prevention” CUP B53C22006420001**
 - **Title:** *Digital Tools for psychiatric and cognitive disorders: identify subjects at risk for conversion from preclinical conditions to psychosis*
 - **Research activity description:** Psychosis risk trajectories are complex and heterogeneous. Indeed, genetic and environmental factors, interacting with each other, may lead to neurobiological and cognitive alterations which, in turn, are associated with psychotic symptoms, even attenuated or intermitted. Within this complex pathophysiological framework, identifying markers of psychosis in an accurate and generalizable way is of pivotal importance in order to build effective individualized interventions. The project is therefore aimed at generating machine learning algorithms predicting clinical outcomes in individuals at risk for psychosis using a different data sources (neurobiological, cognitive, behavioral, clinical) within a longitudinal perspective in an accurate and generalizable way.
- **Project: “DARE - Digital Lifelong Prevention” CUP B53C22006420001**
 - **Title** *Data mining, artificial intelligence, and machine learning approaches to identify subnetworks of cancer*

associated with early prediction, survival, metastasis or phenotypes in cancer subtypes focusing on myeloma

• **Research activity description:** While several progression multiple myeloma (MM) risk stratifications have been employed and validated, new, interpretable, and reliable machine learning tools are greatly needed to account for disease complexity and improve personalized MM medicine. The project aims to address these unmet needs to provide healthcare professionals with quantitative indicators to identify and monitor people at high risk of developing and/or at risk of progression of this pathology and associated conditions. Objectives are to develop novel ML methods that support the personalized follow-up and treatment of target patients; leading in MM the two-fold concept of 'Clinician in-the AI loop/AI in-the clinical decision loop' and follow up of patients using the interaction tools typical of distance medicine.

• **Project: "DARE - Digital Lifelong Prevention" CUP B53C22006420001**

• **Title:** *Artificial intelligence approaches to identify early, survival, metastasis or phenotypes in multiple myeloma*

• **Research activity description:** In clinical practice, the amount of data that can be collected is enormous, and often this numerosity is not exploited given the difficulty of data analysis. Defining a standardized method for data collection and developing artificial intelligence approaches are fundamental to analyse and understand such amount of data. To date, the assessment of disease progression and life expectancy are obtained with the analysis of indicators that provide an approximate stratification, however taking into consideration only the specifics of the individual patient. It is necessary to study and plan new tests and relevant experimental protocols AI based, to add to traditional clinical and instrumental assessments, to identify those patients at high risk of Multiple Myeloma and obtain a more precise stratification

• **Project: DARE - Digital Lifelong Prevention" CUP B53C22006420001**

• **Title:** *Meta-analysis and decision making processes in Healthcare*

• **Research activity description:** Researches aim to encourage the application and adaptation of methods and tools capable of managing the organizational processes of healthcare organizations but also to develop innovative methods aimed at directing and supporting decision-making processes in various areas of the healthcare world. In this context, the development of researches in a multidimensional, multidisciplinary and multistakeholders logic is encouraged, capable of being translated into integrated, clinical-economic-organizational-technological, governance models that pay particular attention to the analysis of the state of health and real needs of the patient but at the same time to improve the healthcare processes of diagnosis, treatment and rehabilitation.

• **Project: "DARE - Digital Lifelong Prevention" CUP B53C22006420001**

• **Title:** *Transitioning AI models into eHealth systems*

• **Research activity description:** The success of AI models, and data-driven methods in general, does not exclusively depend on their accuracy, but also on the quality of their integration with non-AI software, as part of sizeable AI-based systems. Achieving this integration is particularly challenging in the context of eHealth systems, characterized by demanding non-functional requirements. This research project aims at defining approaches for transitioning ML models, developed by data scientists, into AI-based software systems. The focus will be on MLOps, including online monitoring to assure the quality of both data and models after their deployment into eHealth systems.

Method of admission: The selection will be made following the art. 6 typology B of the call.

The examination will be based on the evaluation of candidate qualification, proposed project, oral interview, and foreign language knowledge checking English.

Admission exam dates and time for the ordinary competition:

Qualification: **July 31st, 2023 – 9:30 a.m.**

Proposed project: **July 31st, 2023 – 3:00 p.m.**

Oral interview: **August 2nd, 2023 – 9:30 a.m. – Department of Computer Science, VII Floor – Department Head Room
Campus Universitario "Ernesto Quagliariello" - Via E. Orabona, 4 - Bari 70125**

Admission tests for foreigners:

The videoconference interview of foreign candidates will be on Microsoft platform TEAMS (or in presence, at the location indicated above) on:

August 3rd, 2023 – 9:30 a.m.

For more information see the website:

<https://www.uniba.it/it/ricerca/dipartimenti/dimepre-j/ricerca/dottorato/digital-innovation-and-e-health>

ANNEX 4)

PROFILE

PhD PROGRAMME IN RIGHTS AND PROTECTION IN GLOBALIZED MARKETS

CUN Scientific Areas: 12 – Legal Sciences; 13b – Economics and business sciences

Scientific Subject Code:

IUS/01, IUS/02, IUS/03, IUS/04, IUS/05, IUS/07, IUS/13; IUS/14; IUS/15; IUS/17; IUS/20; SECS-P/07

Coordinator: Prof. Vito Sandro Leccese

Administrative office: Dipartimento di Giurisprudenza

PEC: direzione.giurisprudenza@pec.uniba.it

Duration: 3 years

Curricula: NO

Total Available PhD positions with scholarship n. 6, among which:

n. 2 positions with scholarship DM 119/2023 – PhD for Public Administration (D.M. 02 MARCH 2023, N. 118 A.A. 2023/2024, PNRR - Mission 4, component 1 “Strengthening the provision of education services: from nurseries to Universities”: M4C1 - Investment 4.1 “Increase research and innovative PhD number for public administration and cultural heritage”), among which:

- n. 1 scholarship for the research activity “**Dejuridification of the gender affirmation process**” (Scientific Subject Code IUS/20)

The project aims to investigate, in a sociolegal perspective, the current regulatory framework in Italy affecting gender affirmation and the opportunities that may rise from a greater involvement of the public administration in the paths that lead to a full gender affirmation. The project will examine the tools of self-determination built from below in recent years in order to promote, on the juridical level, the depathologization of gender affirmation, as recommended by WHO in 2018. The aim of the project will be to evaluate the opportunity of a homogeneous discipline on a national level to guarantee fundamental rights such as those to name and health, in line with the Italian jurisprudence and the laws recently approved across the European Union.

Period abroad: Universitat de València (Spain) – 6 months

Period at the Public Administration: Bari Municipality –Welfare Department – 6 mesi

- n. 1 scholarship for the research activity “**Multifunctional farming and enhancement social welfare**” (Scientific Subject Code IUS/03)

The research project aims to define legal aspects of agricultural business activities with social impact. The research will focus the legal framework of agricultural business within the evolution of national legislation as well as the activities related to the main farmers activities, referred to the enhancement of social welfare, through the analysis of the different typologies of social farming.

The research will deepen the role of multifunctional farming, in the framework of CAP objectives for the sustainable development of rural territories, as well as the regional framework for the implementation of rural development measures and social cohesion policies, by identifying the legal instruments aimed at increase the opportunities of inclusion in the labour market of vulnerable people, develop short food supply chain, implement socio-sanitary services.

Period abroad: Universidad Castilla La Mancha (Spain) – 6 months

Period at the Public Administration: Apulia Region – Regional Department of Agriculture and Agrifood resources – 6 months

n. 3 positions with scholarship DM 118/2023 - PNRR (D.M. 02 MARCH 2023, N. 118 A.A. 2023/2024, PNRR - Mission 4, component 1 “Strengthening the provision of education services: from nurseries to Universities”: M4C1 - Investimento 4.1 “Increase research and innovative PhD number for public administration and cultural heritage”), among which:

- n. 1 scholarship for the research activity “**Adequacy principle for the early warning of business risks in SME**” (Scientific Subject Code IUS/04)

The research aims to investigate the organisational, administrative and accounting adequacy in SMEs (in the form of individual, collective, listed and unlisted, micro, small and medium enterprises) in the perspective of a plurality of business risks prevention. Particularly (but not only), the obligations of preparation of adequate structures for the prevention of the risk of crisis, of crime of legal persons, for an adequate anti-corruption and antitrust compliance and for complying with to the new sustainability duties and non-accounting information (i.e. the sustainability report) connected to them and extended to SMEs with EU Directive 2022/2464 (CSRD). How these duties to set up adequate structures behave in relation to the size of the company will be investigated, as will the interrelationships between the various systems functional to the aforementioned sectoral compliance.

Period abroad: Jaume Universidad di Castellón de la Plana (Spagna) – 6 months

- n. 1 scholarship for the research activity “**Food labelling, technological innovation and market access**” (Scientific Subject Code IUS/03)

The project is aimed at deepening the legal framework of technological innovation in food production. The research will concern legal tools for the regulation of agrifood chain, considering the impact on conventional agrifood production, the regulative framework to be complied by food business operators and the information to consumers.

Moving from the policy legislative choices, as defined by EU documents of Green deal and Farm to Fork strategy, the research aims to define the new legislative framework applicable to food production by technological innovation, with regard to food safety rules, transparency of risk analysis, agrifood chain governance and extra-UE trade, as well as consumers’ information rules.

Period abroad: Universidad de Valladolid (Spain) – 6 months

- n. 1 scholarship for the research activity “**Invisible welfare: non-native women and care work**” (Scientific Subject Code IUS/20)

The enactment of rules to promote the Italian women employment, combined with the chronic insufficiency of Italian welfare, involves the risk of a forced choice between work and family for Italian women; the often-undeclared care work ends up burdening non-native women, excluded from a process of female emancipation, which is limited within the borders of citizenship. A sociolegal research project should critically investigate the effects of labor and migration policies that may reinforce different forms of exclusion and subordination, based on gender differences, legal status, geographical origin and socio-economic status. Period abroad: Universitat de València (Spain) – 6 months

n. 1 position with scholarship funded by the University of Bari:

- n. 1 scholarship for the research activity “**Digital Transition and Protection of Fundamental Rights in the European Union**” (Scientific Subject Code IUS/14)

The research focuses on the action undertaken by the EU to achieve the strategic goal of digital transformation and on the ways in which the respect of fundamental rights, which is the aim of the action itself (“anthropocentric digital transformation”), is to be ensured.

From the regulatory perspective, the research could analyse the innovations aimed at regulating the new technologies – both sectoral and horizontal – and the sources for the protection of fundamental rights.

(2030 Digital Compass: the European way for the Digital Decade, COM (2021) 118 final; European Declaration on Digital Rights and Principles for the Digital Decade, COM(2022) 28 final, COM (2021)27 final; Protecting Fundamental Rights in the Digital Age, COM(2021) 819 final; Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on Artificial Intelligence (Artificial Intelligence Act), COM(2021) 206 final.)

The available positions will be assigned according to the order in the merit ranking for each topic, up to their exhaustion. In the absence of suitable candidates for a specific research activity, positions will be assigned according to the order in the merit ranking. Any additional scholarship will be assigned according to the order in the merit ranking.

Admission test:

The selection will be made following the art. 6 typology B of the call, by qualifications, research project and interview. The oral exam will be based on the discussion of an original research project (maximum 12000 characters including spaces) on the topic of the call, previously sent by the candidate, together with the admission application under penalty of exclusion, to be assessed in relation to its originality, rigor methodological and consistency with the topic covered by the call. The oral exam will also be based on verifying the maturity and knowledge, skills and aptitude for scientific research of each candidate in relation to the sector (or sectors) to which the research refers, as well as foreign language knowledge checking (English/French/German/Spain, at the choice of the candidate). The oral exam will be held in person.

Admission test for foreign applicants:

Foreign candidates can choose to do the admission test in Italian or English language.

Admission test date and time:

Oral exam: 4th August 2023, h 9.30.

Venue: Meeting Room Private Law– 1st floor - Dipartimento di Giurisprudenza – Corso Italia, 23 - Bari

For more information please see:

<https://uniba.it/it/ricerca/dipartimenti/lex/post-laurea/dottorati-di-ricerca/dottorato-di-ricerca-39deg-ciclo-in-diritti-e-tutele-nei-mercati-globalizzati-2/dottorato-di-ricerca-39deg-ciclo-in-diritti-e-tutele-nei-mercati-globalizzati>

ANNEX 5)

PROFILE

PHD PROGRAMME IN MEDITERRANEAN RIGHTS, ECONOMIES AND CULTURES

CUN Scientific Areas: 11a Historical, philosophical and pedagogical sciences, 12 - Legal sciences, 13 - Economic and statistical sciences, 14 – Political and social sciences

Scientific Subject Code: IUS/01, IUS/02, IUS/03, IUS/04, IUS/05, IUS/06, IUS/07, IUS/08, IUS/10, IUS/11, IUS/12, IUS/13, IUS/16, IUS/17, IUS/19, IUS/21, SECS-P/01, SECS-P/02, SECS-P/06, SECS-P/07, SECS-P/08, SECS-P/11, SECS-P/13, SECS-S/01, M-PED/01, SPS/12

Coordinator: prof. Alessandro Rubino

Administrative Office: Dipartimento Jonico in "Sistemi Giuridici ed Economici del Mediterraneo: società, ambiente, culture"

PEC: segreteria.djsge@pec.uniba.it

Duration: three years

Curricula: NO

Total available PhD positions 9 organised as follows:

1) Scholarship DM n. 117/23 – Scientific sector: SECS-P/13 Commodity Sciences

- **Project** n. 1 scholarship on the subject "Life Cycle Assessment (LCA) of photovoltaic systems with focus on the phases of predictive maintenance and end of life" co-financed by **ITALCAVE Spa**
- **Call for tender:** DM n. 117/2023
- **Scholarship thematic title:** Life Cycle Assessment, Commodity Sciences SECS-P/13
- **Description of research activities:** The objective of this PhD project is to apply the LCA tool to photovoltaic systems, with particular attention to the maintenance and end-of-life phases. The maintenance phase has a considerable impact on the environmental profile of the system. The information necessary for the activation of predictive maintenance paths dedicated to photovoltaic systems can be produced by applying different survey methods via UAV (unmanned aerial vehicle). The increasing extension of the renewable installations requires new data acquisition technologies to improve maintenance efficiency; in this sense, UAVs equipped with thermographic cameras lead to the reduction of maintenance costs and operational risks and increase the effectiveness of aerial inspections. During the PhD project attention will be paid to these technologies, to the LCA of the protocols and to the identification of the most efficient and environmentally friendly operating methodologies.
- **Research period at the Company:** 6 Months at Italcave s.p.a. via per Statte, 6000 – 74123 Taranto
- **Research period at Universities or research institutions abroad:** 6 months at Mineral and Energy Economy Research Institute Polish academy of Science ul. J. Wybickiego 7° 31-261 Kraków, Poland

2) Scholarship DM n. 117/23 - Scientific sector: SECS-P/02, SECS-P/06 economic policy, applied economics

- **Project** n. 1 scholarship on the subject "Impact of carbon obligations on the energy transition investments a focus on business models and power regulations in Sub-Saharan Countries and MENA region" co-financed by **GOPA-International Energy Consultants GmbH**
- **Call for tender:** DM n. 117/2023

- **Scholarship thematic title:** regulation, energy markets, investments, energy transition, economic policy, applied economics; SECS-P/02; SECS-P/06
- **Description of research activities:** Investments in modern infrastructures for energy are required to engage more directly with technological innovations and are subject to rapid replacement cycle. governments alone cannot afford to close these increasing infrastructure gaps through tax revenues. It is therefore critical in emerging markets (such as the Sub Sahara Africa – SSA and Middle East and North Africa - MENA) to attract private investors to intensify investments aimed at increasing productivity and promote sustainable growth. This project moves from an analysis of the factors that determine investment under uncertainty, in a low carbon transition context. It explores the relationship between market, regulatory and institutional factors on investment signals in the energy sector with two main focuses: 1) Test the ability of the existing business environment to deliver the desired quantity and type of investment and to identify investment gaps; 2) Define effective business models and regulatory frameworks able to tackle and reduce risk exposure.
- **Research period at the Company:** 18 Months at GOPA-International Energy Consultants GmbH, Hindenburgring 18; 61348 Bad Homburg v.d.H., Germany
- **Research period at University or research institutions abroad:** 6 mesi presso Institute of Environmental Technology and Energy, Economics (IUE) at Hamburg University of Technology, Hamburg, Germany

3) Scholarship DM n. 118/23 – PNRR 4.1. - Scientific Sector IUS/10 - Administrative Law

- **Project n. 1** scholarship on the subject "The impact of the new regulations for the simplification and acceleration of administrative procedures instrumental to the implementation of the Recovery and Resilience Plan on the authorization procedures relating to the installation of plants powered by renewable sources, with particular reference to the environmental impact assessment procedure in the Arpa Puglia intervention area"
- **Call for tender:** DM n. 118/2023 PNRR 4.1.
- **Scholarship thematic title:** implementation of strategies for the simplification of administrative procedures, administrative law, IUS/10
- **Description** of research activities: The project aims to analyze the implementation of strategies for simplifying administrative procedures involving environmental interests, especially with reference to the renewable energy sector, in order to: 1) monitor the implementation of the measures introduced by the PNRR in terms of simplification and acceleration of environmental decisions; 2) measure the effectiveness, in terms of reduction of procedural times, of new environmental authorizations and administrative processes, with particular reference to environmental impact assessment procedures, strategic environmental assessment and the issuance of authorizations for installations powered by renewable sources; 3) deepen the role of the Regional Environment Agency (ARPA) in environmental procedures relating to the Puglia Region area; 4) provide a comparative analysis of the implementation of actions to simplify environmental procedures in the other Member States of the European Union.
- **Research period at Universities or research institutions abroad:** 6 months at University of Białystok, Mickiewiczza 1, Białystok, Polonia

4) Scholarship DM n. 118/23 – PNRR 4.1. Scientific sector: SECS-P/11 - Economics of financial intermediaries.

- **Project n. 1** scholarship on the subject “Climate risk, Sustainability and Complex Networks in Modern Financial Systems”
- **Call for tender:** DM n. 118/2023 PNRR 4.1.
- **Scholarship thematic title:** sustainable finance, climate risk management, risk management - Economics of financial intermediaries SECS-P/11 .
- **Description of research activities:** Natural disasters, linked to climatic, environmental, and human factors leave behind human, social and economic losses. These risks affect the resilience of economic activities, especially when linked to sectors that are particularly vulnerable to climate and environmental risks. As economic and financial systems are inherently complex, the simultaneous interaction of different agents and the heterogeneity of possible economic and financial interactions make these systems naturally suited to be modeled through the metrics of complex network science. In this project , we aim to examine the nature of the complex relationship between systemic and climate risk, identifying a link between financial systemic risks and climate change and the different trajectories through which climate change and related natural disasters can influence global economic and financial crises.

- **Research period at universities or research institutions abroad:** 6 months at Universiteit Leiden, Faculty of Mathematics and Natural Sciences, Leiden Institute of Physics, The Netherlands
- 5) Scholarship DM n. 118/23 – PNRR 4.1. PUBLIC ADMINISTRATION - scientific sector M-Ped 01 GENERAL AND SOCIAL PEDAGOGY
- **Project** n. 1 scholarship on the subject “Digitization of public administration communication: innovative processes and interactive participation methods”
 - **Call for tender:** DM n. 118/2023 4.1. P.A.
 - **Scholarship thematic title:** digitization of communication, Municipality of Taranto, GENERAL AND SOCIAL PEDAGOGY, M-Ped 01
 - **Description of research activities:** The gradual affirmation of ICT within organizations and around the world has brought to light the need to reconsider the work of the public administrations in terms of management. The Digital Transformation, if oriented on the pedagogical-social level through an approach to the human resource training that is not limited and self-centred, but rather inclusive and participatory, can foster the achievement of the sustainable development goals of the different territories and represent the driving force for the economic growth and the conversion of the current communication model of the public administration with the outside. It makes it possible to adapt the complex reality of the public administration to the new challenges for innovation concerning society, education and work, with an important impact on the environment and the economy.
 - **Research period in Public Administration:** 6 months at the Municipality of Taranto, Piazza Castello, Taranto (TA)
 - **Research period at Universities or research institutions abroad:** 6 months at Universidad de León: Leon, Castilla y León, Department of General and Specific Didactics and Educational Theory, Spain
- 6) Scholarship DM n. 118/23 – PNRR 4.1. PUBLIC ADMINISTRATION - scientific sector M-Ped 01 GENERAL AND SOCIAL PEDAGOGY
- **Project** n. 1 scholarship on the subject “Active social policies for inclusion and for overcoming inequalities”
 - **Call for tender:** DM n. 118/2023 4.1. P.A.
 - **Scholarship thematic title:** active social policies, Municipality of Taranto, GENERAL AND SOCIAL PEDAGOGY, M-Ped 01
 - **Description of research activities:** The UN 2030 Agenda and the program guidelines of the NRRP (Mission 5) highlight the chance of pursuing the sustainability project by focusing on the development of smart and inclusive cities. In fact, urban regeneration implies a better quality of life, not only on an economic level but also on a social one, i.e. with respect to its pedagogical framework and in the perspective of the construction of territorial networks committed to actions of care, assistance and social inclusion. The project aims at the identification and subsequent implementation of a community welfare model, based on a shared and participatory vision, in order to prevent inequalities and promote the social inclusion of the most disadvantaged categories (minors, NEETs, women, immigrants) in the Ionian territory.
 - **Research period in Public Administration:** 6 months at the Municipality of Taranto, Piazza Castello, Taranto (TA)
 - **Research period at Universities or research institutions abroad:** 6 months at Universidad de León: Leon, Castilla y León, Department of General and Specific Didactics and Educational Theory, Spain
- 7) Scholarship DM n. 118/23 – PNRR 4.1. PUBLIC ADMINISTRATION Scientific-disciplinary sector: SECS-P/13 Commodity Sciences
- **Project** n. 1 scholarship on the subject “Quantification of airborne industrial emissions of benzene through gas chromatography via drone to assess the environmental load with Life Cycle approach”.
 - **Call for tender:** DM n. 118/2023 4.1. P.A.
 - **Scholarship thematic title:** Life Cycle Assessment, Commodity Sciences SECS-P/13
 - **Description of research activities:** The present research project starts from the primary need to develop an effective protocol for the measurement of benzene concentrations in airborne form through innovative technologies that include the integration of portable gas chromatographic instrument on UAV platform. The Project is fully in line with the themes of PNRR and aims to develop new technologies and protocols for monitoring airborne benzene emissions from industrial plants (steel, oil, etc.) with a Life Cycle Assessment approach. The UAV and gas chromatographic

technologies available in the department' laboratory will be available to the PhD student to carry out the experiments coordinated by ARPA at industrial centers (preferably steel and oil).

- **Research period in Public Administration:** 6 months at ARPA (Agenzia Regionale Protezione Ambiente), corso Trieste, 27, 70126, Bari
- **Research period at Universities or research institutions abroad:** 6 months at Institute of Sustainability in Civil Engineering RWTH, Aachen University, Mies-van-der-Rohe-Straße 1, 52074 Aachen, Germany

8) Scholarship DM n. 118/23 – PNRR 4.1 Cultural Heritage Scientific-disciplinary sector IUS/19 – History of medieval and modern law

- **Project n. 1 scholarship on the subject “Law and Society in the Confraternities of Southern Italy”**
- **Call for Tender:** DM n. 118/2023 4.1. Cultural Heritage
- **Scholarship thematic title:** Diritto e la Società del Mezzogiorno, Corporazioni di Arti e Mestieri, Storia del diritto medievale e moderno, IUS/19
- **Description of research activities:** The Confraternities have always been considered a historical and cultural heritage of the whole of Italy, but especially of the South. The study of this phenomenon, through the research of their origins and the comparison of their Statutes and Internal Regulations, aims to bring to light the Law and Society of the South, retracing, both from a historical and juridical point of view, the purposes that have given rise, and that still keep alive these realities that are well established in the panorama of our peninsula. The themes addressed in this project, therefore, will be the following: Origin of the Confraternities and Corporations of Arts and Crafts, with particular attention to their Statutes and Internal Regulations, but above all, historical reconstruction of the Law and Society of Southern Italy through the lens of the congregations.
- **Research period in research centers:** 6 months at Pontificia Facoltà Teologica dell'Italia Meridionale, viale Colli Aminei n. 2, 80131, Napoli – via F.Petrarca, 115, 80122 Napoli.
- **Research period at Universities or research institutions abroad:** 6 months at Universidad Rey Juan Carlos – Facultad de Ciencias, Jurídicas y Políticas, Madrid, Spagna

9) Scholarship DM n. 118/23 – PNRR 3.4 Digital Transitions Scientific sectors: SECS-P/02, SECS-P/06

- **Project n. 1 scholarship on the subject “Renewable Energy Solutions deployment in the Mediterranean Region and South Saharan Africa and its determinants: A spatial econometric approach”**
- **Avviso:** DM n. 118/2023 3.4 Transizioni Digitali.
- **Scholarship thematic title:** decentralized investments, renewable energy, regional and urban economy, spatial econometrics, economic policy, applied economics, SECS-P/02, SECS-P/06
- **Description of research activities** Promoting access to and increasing the supply of renewable energy is of fundamental importance for all countries in the Mediterranean area and neighboring regions, and in particular for those countries where the population has limited access to electricity. The present research project aims to provide an assessment of the enablers for decentralized investments in renewable energy (solar/photovoltaic/wind) by adopting both a country level approach and an approach with a higher level of geographical disaggregation. To this end, the research project foresees, applying a theoretical and empirical development of the regional and urban economy, the definition of a series of indicators that allow to identify the characteristics of the geographical areas in which decentralized investments in renewable energy sources are facilitated and an analysis of development policies that can encourage these virtuous processes using a spatial econometric approach.
- **Research period at the Company:** 6 months at Gestore dei Servizi Energetici GSE S.p.A., Sede legale Viale Maresciallo Pilsudski, 92 – 00197, Roma
- **Research period at Universities or research institutions abroad:** 6 months at Technoeconomics of Energy Systems Laboratory (TEESlab) at University of Piraeus, Karaoli ke Dimitriou 80, Piraeus 185 34, Greece

The PhD positions put out to tender with thematic scholarships pursuant DD. MM. n.117/2023 and n.118/2023 will be assigned according to the order in the merit ranking for each theme, until the places are completed.

Admission procedure:

The selection will take place pursuant to art. 6 of the call.

With regard to the places put out to tender with thematic scholarships pursuant to DD. MM. n.117 / 2023 and n.118 / 2023, the exam will be based on the evaluation of the qualifications and on the interview focusing on the discussion of an original research project (maximum 12000 characters including spaces) defined along the research lines of the doctoral course- The submission of the research project is an essential part of the application procedure , and therefore **must** be included together with the application and the document required for the call. Failing to do so will **determine the exclusion from the evaluation process**.

The interview will focus on the discussion of the research project and will evaluate its originality, methodological rigor and coherence with the research lines of the project. Th interview will also focus on the candidate's aptitude for scientific research and the coherence of his scientific and academic profile with the themes of the doctoral program. As part of the interview, the knowledge of the English will also be verified.

Procedures for carrying out the exam for foreign candidates:

Foreign candidates can choose to take the exam in Italian or in English.

Calendar and location of the admission tests:

Evaluation of qualifications and evaluation of the project 26 July 2023 (10:00 am)

Interview: 28 July 2023, 10:00 am

Examination venue Classroom IV Ionian Department in " Sistemi Giuridici ed Economici del Mediterraneo: società, ambiente, culture ", Via Duomo, 259 Taranto or remotely on Microsoft teams platform upon request.

Per ulteriori informazioni consultare il sito web: <https://www.uniba.it/it/ricerca/dipartimenti/sistemi-giuridici-ed-economici/postlaurea/dottorato-di-ricerca>

ALLEGATO 6)

PROFILE

PH.D. PROGRAMME IN RIGHTS, INSTITUTIONS AND SAFEGUARDS IN TRANSITIONAL SOCIETIES

CUN scientific sectors: **12 – Legal Sciences**

Scientific-disciplinary fields (SSD): **IUS/01, IUS/08, IUS/09, IUS/10, IUS/11, IUS/12, IUS/13, IUS/14, IUS/16, IUS/19, IUS/20, IUS/21**

Coordinator: Prof. **Alessandro TORRE**

Administrative location: **Department of Law**

Certified mail (PEC):

direzione.giurisprudenza@pec.uniba.it

Duration: **3 years**

Curricula: **NO**

Number of position with scholarship: **6, of which:**

- **Project fund by university scholarship**
- **The candidate shall freely choose and submit a research project.**

- **Project with a scholarship fund by the National Plan for Recovery and Resilience (PNRR)**
- **Notice:** Ministerial Decree (DM) 118/23
- **Title of the project:** *Citizenship, foreigners' rights, and migration phenomena*
- **Description of the research activity:** *The research aims to address the issues of citizenship - in its dual dimension of belonging and the right to have rights - in contemporary constitutional democracies, which are characterized by high rates of immigration and pluralistic and multicultural social contexts. With regard to citizenship-belonging, it will study tools and strategies designed to ensure that the same operates as a tool for building inclusive societies. About citizenship as the right to have rights, the research project will first investigate issues related to the effectiveness of rights, including the political rights of citizens and foreigners in constitutional democracies. In particular, it will focus on the factors and possible solutions to the many inequalities between citizens and foreigners, which generate deep-rooted social exclusion and vulnerability.*

- **Project with a scholarship fund by the National Recovery and Resilience Plan (PNRR)**
- **Notice:** Ministerial Decree (DM) 118/23
- **Title of the project:** *The metaverse and the new foundations of law*
- **Description of the research activity:** *The new information and communication techniques increasingly permeate our social reality, changing its temporal and spatial dimensions. Rewriting our daily lives are often artificial intelligences that become the engine of a multitude of "metaverses" into which we transfer our lives. The objective of this project is to understand what are the new foundations of law from the informational revolution, which is a critical path of philosophical research to legally reconstruct the revolution now upon us that will significantly revise the relationship between the infosphere and the biosphere. Indeed, the constitutional guarantees of human rights and the legal order of private and public relations find in the infosphere unprecedented and, in some ways, upsetting fields of application for general theory and philosophy of law, demanding a new reflection starting from the very concepts of law and rights.*

- **Project with a scholarship fund by the National Recovery and Resilience Plan (PA)**
- **Notice:** Ministerial Decree (DM) 118/23
- **Title of the project:** *Differentiated regionalism in Italy: constitutional status, evolution and perspectives for reform*

- **Description of the research activity:** *In a direct partnership with ISSiRFA-CNR, the research will focus, from a multidisciplinary perspective, on issues related to regionalism, federalism, local autonomies, territorial decentralization, and multilevel governance of local communities, which are matters concerning not only Italy but, more generally, the European, comparative and international landscape. In this view, and through a direct connection of constitutional law, public and regional, with the economic, financial, social, and geographic disciplines, a particular focus will be devoted to the issues inherent to the essential levels of services and assistance which could be altered, together with citizens' social rights and civil coexistence in the event of a re-structuring of territorial autonomies, if carried out in a radical differentiation perspective.*
- **Project with a scholarship fund by the National Recovery and Resilience Plan (PNRR) on Digital and Environmental Transitions**
- **Notice:** Ministerial Decree (DM) 118/23
- **Title of the project:** *Public regulation of markets, between competition, public-private partnerships, and pricing systems in the waste sector*
- **Description of the research activity:** *The research will cover disciplinary and thematic areas consistent with the country's needs, as well as (especially) the regional territory covered by the program. It addresses, in fact, the transition to a circular economy, facing a highly topical issue consisting of the frequent interference of regulatory authorities with market rules and fundamental freedoms. In other terms, moving from a conflict of values that repeatedly manifests itself in the regulation of disputable markets of energy, gas, water resources, and, now, waste, the research intends to verify the potential synergy, in a public-private approach, between the broad interest in 'closing the waste cycle' and the 'full and efficient reuse of production waste' and the reduction of the tax costs that citizens and businesses incur for the financing of the waste collection, transportation, reuse, valorization, and disposal service.*
- **Project with a scholarship fund by the National Recovery and Resilience Plan (PNRR) on Public Administration**
- **Notice:** Ministerial Decree (DM) 118/23
- **Title of the project:** *Green public procurement: between sustainable development and the Protection of Competition*
- **Description of the research activity:** *The line of research aims to analyze the evolutionary trend of the regulatory system on green public contracts in the light of the existing relationships between the principles of integration, sustainable development, and protection of competition as implemented by the current regulations, focusing attention on the underlying critical issues, to highlight possible improving solutions of the relevant provisions, within the framework of a national discipline of public contracts that is increasingly marked by the "multivalent" character of the procedures for awarding contracts, oriented by different and often opposing purposes from the primary interest of the protection of competition for which the relevant regulations have their origins*

Each Project will be evaluated under the following criteria:

- 1) consistency with research lines of the National Recovery and Resilience Plan (PNRR) and the PhD programme;
- 2) state of the art;
- 3) objectives;
- 4) method.

Admittance modality:

The selection will take place under art. 6 of the Call for PhD Selection

All Projects will be selected according to: evaluation of the applicant's titles; evaluation of the Project;; test on verbal attitudes and language knowledge, with separate assessment of free and PNRR projects examination and their final confluence in a single list.

The evaluation criteria will be: 1) coherence to the Ph.D. research guidances; 2) knowledge of the state of the art; 3) clear ends; 4) methodological care.

The oral test will be carried on by an argued survey of the Project as submitted by the applicant, and an assessment of his/her overall training about the very content of the researchnas proposed and of the The Project in itself.

The Project, written in Italian or English, will be attached, under exclusion, to the candidate's application and its extension will not exceed 15.000 types.

When in the oral test, the Commission will assess the applicant's skill in English or even another foreign language chosen between French and Spanish.

Accordingly, the examination will be based on:

1. **TITLES**
2. **RESEARCH PROJECT**
3. **ORAL TEST.**
4. **ORAL LINGUISTIC TEST** [English, French or Spanish]

Examination procedures for foreign applicants:

Foreign applicants may choose to take the admission exam in **English, French or Spanish**

Calendar and location of the admission exam:

Titles evaluation: 26th July 2023 – h.9:00 AM

Project evaluation: 27th July 2023 – h.3:00 PM

Oral examination: 28th July 2023 – h.9:00 PM

Department of Law – 4th Floor – Room B - 1, Cesare Battisti Square Bari

Website for further details

<http://uniba.it/it/ricerca/dipartimenti/lex/post-laurea/dottorati-di-ricerca/dottorato-di-ricerca-39deg-ciclo-in-diritti-istituzioni-e-garanzie-nelle-societa-in-transizione/dottorato-di-ricerca-39deg-ciclo-in-diritti-istituzioni-e-garanzie-nelle-societa-in-transizione>

ALLEGATO 7)

PROFILE

PhD PROGRAMME IN “Earth Processes and Management of Resources and Risks for a Resilient Society and Territory”

CUN Scientific Areas: 04; 08

Scientific Subject Codes: GEO/02; GEO/04; GEO/05; GEO/08; ICAR/02; ICAR/09

Coordinator: Prof. Roberto Sulpizio

Administrative office: Dipartimento di Scienze della Terra e Geoambientali

PEC: <mailto:direzione.giurisprudenza@pec.uniba.it> direttore.geo@pec.uniba.it

Duration: 3 years

Curricula:

- 1) Earth processes (Scientific Subject Code: GEO/02)
- 2) Resource management (Scientific Subject Code: GEO/05)
- 3) Risk assessment and mitigation (Scientific Subject Code: GEO/04; GEO/08; ICAR/02; ICAR/09)
- 4) Resilient society and territory (Scientific Subject Code: GEO/05)

Project: **Dalla Ricerca all'Impresa**

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:
D.M.117/23

- 1) Title Scholarship: **Optimization of dissipative frame systems for the seismic retrofitting of buildings**

Research activity description:

The project steps can be summarized as follows:

- Analysis of existing seismic retrofitting systems
- Study of seismic action dissipation methodologies in seismic upgrading interventions on the existing structure
- Study of the technological systems applied in the interventions on the existing structures (e.g. Diagrid-type metal frames)
- Dimensional analysis of the system (vertical elements, horizontal elements, sizing of elements connecting to the existing structure, node analysis)
- Construction analysis (study of materials and their characteristics)
- Structural analysis of the connection nodes to the existing structure
- Identification and standardization of the constructive characteristics of the system, definition of the kit components
- Validation of the model by monitoring the structural behavior of the real prototype

The PhD student is expected to spend a period of 6 months at the company that will co-finance the PhD scholarship (SUD-Montaggi) and a period of 6 months at a foreign university.

Total number of positions with fellowships n. 1:

- 2) Title Scholarship: **Base research and environmental monitoring in areas affected by high risk of natural events**

Research activity description:

The project focuses on the development of monitoring techniques proper of geology and geophysics, aimed at evaluating the hazard in areas affected by natural events, through detailed geological base research. Final goals are devoted to find efficient strategies for managing and mitigating the risk associated to such events. The project is expected to integrate various methodological approaches spanning from work in the field and laboratory, data elaboration through conventional and advanced computational systems, even involving machine learning algorithms. This research project will be carried out in partnership with TEKNE srl

Total number of positions with fellowships n. 1:

3) Title Scholarship: Landslide susceptibility assessment by integration of thermal surveys and numerical modeling

Research activity description:

The PhD project is aimed at the assessment of landslide susceptibility by means of the integration of field surveys carried out with thermal sensors and numerical models of the landslide areas. The research will be focused on two landslide typologies (earthflows and rockfalls), which are quite common along the slopes of the Southern Apennines and along the coasts of Southern Italy, respectively. The PhD work will consider two landslide case-studies. Thermal surveys will be performed along the soil and rock slopes affected by instability in order to investigate the periodic variations of temperature, both daily and seasonal, and the corresponding distribution throughout the landslide masses. The data acquired will be used to calibrate numerical thermo-hydro-mechanical models of the examined slopes in order to quantify the influence of temperature in relation to expected changes in hydro-meteorological patterns and to the slope susceptibility to failure. The application of the thermal surveys will be made available through the cooperation with Mer Mec Engineering srl enterprise.

Total number of positions with fellowships n. 1:

4) Title Scholarship: Dynamic Risk Management of Landslides and Subsidence using Satellite Detection Techniques

Research activity description:

This project focuses on the dynamic management of risks associated with landslides and subsidence through the utilization of satellite-based detection techniques (Synthetic Aperture Radar, SAR). The objective is to develop effective strategies for monitoring and mitigating these hazards.

The project will explore the integration of satellite data with other geospatial information, such as digital terrain models, land use maps and field data to improve the accuracy of hazard assessment and risk mapping. The combination of various datasets will enable the identification of vulnerable areas and the development of effective risk management strategies. The project aims to harness the potential of satellite-based detection techniques to enhance the understanding, monitoring, and management of landslide and subsidence risks, leading to more resilient and safer communities. The project will be carried out in partnership with Planetek company.

Total number of positions with fellowships n. 1:

5) Title Scholarship: Assessment of the risk of shallow landslides integrating InSAR and optical data with a distributed eco-hydrological model

Research activity description:

The doctoral project presents an integrated and innovative approach to the assessment of the risk of shallow landslides by combining interferometric synthetic aperture radar (InSAR) data, optical remote sensing data, and a distributed eco-hydrological model.

The tRIBS-Landslide model is a physically-based, spatially-distributed numerical model that couples a hydrological model

with components of vegetation dynamics and soil instability.

Its maximum potential can be exploited if grid-type data are considered as input. The results of the combined use of InSAR, optical remote sensing, and eco-hydrological modelling could improve the accuracy of landslide risk assessment and contribute to more informed decision-making processes for land management and disaster risk reduction. The research will be carried out in partnership with Griddit company.

Total number of positions with fellowships n. 1:

Project: Potenziamento dell'offerta dei servizi di istruzione: dagli asili nido all'Università

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:
D.M.118/23: PNRR 4.1

1) Title Scholarship: **Laboratory to large-scale experiments to understand the mobility of debris flows**

Research activity description:

Hazardous natural granular flows (snow avalanches, landslides, debris flows, and pyroclastic density currents) occur frequently in nature and can be enormously destructive. Accurate hazard assessment and planning strategies for minimizing the impact of these events can be greatly enhanced by physical models that are able to reproduce key features of these flows. On the other hand, the flow of granular materials plays a critical role in many industrial and mining processes. Improvements in comprehension of granular flow behaviour increase efficiency, resulting in significant economic benefits. The project aims with the engineering of laboratory experiments on dynamics and rheology of granular material, in order to improve the physics that underpins their behaviour.

Total number of positions with fellowships n. 1:

2) Title Scholarship: **Reconstructing sea surface temperatures of past interglacials at unprecedented temporal resolution**

Research activity description:

In the light of current global warming, past interglacials (particularly the Last Interglacial, LIG) are of interest to the scientific community as they can be used to study the behaviour of the climate during periods as warm or slightly warmer than the present, but without a significant human imprint. This can help to discriminate the natural mechanisms of current global warming from the anthropogenic component. This project aims to reconstruct, on a seasonal scale, the palaeotemperatures of the LIG using biogeochemical proxies (oxygen isotope ratios and/or trace elements) obtained from fossil corals of *Cladocora caespitosa*. The Project consists of: 1) Search for deposits containing poorly diagenised *C. caespitosa*; 2) Definition of a coral sample collection protocol, 3) Dating using the U-series method; 4) Analyse trace element and/or isotopes; 5) Data processing and modelling

Total number of positions with fellowships n. 1:

3) Title Scholarship: **Multi-parametric analyses of volcano degassing for the assessment of radiogenic element content**

Research activity description:

The project is aimed to the development of instrumentation able to measure radionuclides concentration in fumarolic and tectonic degassing areas, in order to use them as markers for a better comprehension of magmatic and hydrothermal processes. The dispersal modelling of both gas and radionuclides will also help in mitigate the hazard from these emissions. The results that we plan to achieve are the following: i) measuring gas and radionuclides concentrations using multi-sensors

detectors; ii) modelling of key gas (i.e., CO₂, H₂S and SO₂) and radionuclides (i.e., Rn, Ce) dispersion from volcanic and tectonic environments; iii) direct measurement *in-situ* of the air gas concentration and radionuclides through multiple gas sensors; iv) cross-validation of direct measurements and models of gas dispersion; v) probabilistic hazard assessment in support to decision-makers. The research will be carried out jointly by Dipartimento di Scienze della Terra e Geoambientali and Dipartimento Interateneo di Fisica of Bari University

Total number of positions with fellowships n. 1:

4) Title Scholarship: **Geomaterials from supergenic deposits: recover of critical metals and valorization of mining rock waste**

Research activity description:

The EU promotes the circular use of critical raw materials (CRMs), with focus on recovery and recycling. This project aims to investigate CRMs, with emphasis on REEs, in bauxite deposits and residues to develop strategies for their recovery through solid-liquid extraction processes. New silicate- and aluminosilicate- based materials will be employed to optimize extraction, adsorption, release, and selectivity of REEs. The project final goal is to transfer the results to the production system, with beneficial implications for environmental sustainability and technological development. These challenges represent priority objectives for the EU, aiming to achieve a "zero waste" regime, as outlined in the EU Raw Materials Initiative (EC/2008/699) directive

Total number of positions with fellowships n. 1:

5) Title Scholarship: **Hydrogeology of coastal areas affected by saline intrusion, and related effects to the environment**

Research activity description:

The PhD project is focused on the severe problem of saline intrusion in Apulia coastal areas, a highly karst land, almost entirely surrounded by the sea. Apulia presents a semi-arid climate, and its economy is mostly based upon agriculture and tourism, both elements requiring huge amounts of freshwater resources, especially during summer. Through analysis of existing datasets on karst hydrogeology, water salinity, and climate, the project will aim at developing models to reconstruct the evolution of seawater intrusion in the last decades, in the attempt to forecast future scenarios by considering the evolution of coastal morphology together with climatic (increasing temperature, sea level rise, etc.) and anthropogenic forcing (stronger pressure by agriculture and tourism). In such a setting, saline intrusion greatly affects the land, with likely negative impacts in the future.

Total number of positions with fellowships n. 1:

6) Title Scholarship: **Multi-sensor onsite early-warning combining strong-motion and GNSS observations**

Research activity description:

Considering the increased density of seismological, and especially accelerometer networks in northeastern Italy, it is certainly useful to investigate the possibility of implementing and testing earthquake early warning (EEW) systems as a possible tool for earthquake risk mitigation. In particular, the suitability of an onsite earthquake early warning (OSEEW) and, specifically, a decentralized OSEEW (DOSEEW), should be explored as an alternative or complement to the regional approach in northeastern Italy. The project involves the collaboration of the student in developing innovative multi-parameter instrumentation but especially in developing ad-hoc methodologies for the analysis of real-time multi-parameter signals for

probabilistic analysis of expected shaking and deformation scenarios and the expected damage associated with them. The project will be carried out in collaboration with OGS.

Total number of positions with fellowships n. 1:

7) Title Scholarship: **Big data, AI and physically based modeling for hydrological risk assessment, mapping, and resilience in a changing environment.**

Research activity description:

Changes in climate and socio-economic systems pose unprecedented challenges in the understanding of hydrological risks, such as floods and droughts, and of societal responses in terms of adaptation and resilience. Synergy among emergent (AI, big data-analytics) and more consolidated techniques (direct and EO observation, physical based modeling) are required to address such challenges. The research will focus on the integration of distributed hydrologic modeling and resilience dynamics system modeling to assimilate traditional and new sources of data with the aid of AI-based data assimilation techniques

Total number of positions with fellowships n. 1:

8) Title Scholarship: **Earth observation and artificial intelligence for geo-hydrological hazard assessment, mapping, and monitoring**

Research activity description:

Earth observation (EO) and artificial intelligence (AI) are powerful tools for assessment, mapping, and monitoring of geo-hydrological hazards. EO techniques can provide valuable data on the topography, hydrology, geology, and vegetation of an area, which are all important factors in determining susceptibility. AI can be used to analyze these data and identify patterns or changes over time. EO data that can be used for hazard assessment include satellite imagery, DInSAR, LiDAR, and aerial photography. AI techniques can be used to analyze them and identify areas that may be exposed to different hazard levels. Machine learning algorithms can be trained to recognize data patterns associated with past events, i.e. changes in vegetation cover or in topography. EO and AI can also be used to monitor areas for signs of potential events. This information can then be used to issue warnings or take other actions to mitigate the risk of damage or loss of life

Total number of positions with fellowships n. 1:

9) Title Scholarship: **Use of non-metallic reinforcement and composite materials for the design, retrofit and sustainability of structures and infrastructures subjected to seismic events.**

Research activity description:

Two main issues plague the construction industry today: on one hand, there is the need to design safe structures that are able to respond adequately to increasingly frequent natural disasters, and, on the other hand, there is the growing need for full compliance with the principles of environmental sustainability. These two aspects can often lead to different design solutions, and thus arises the need to develop new techniques that ensure excellent durability, low environmental impact and adequate structural performance in the event of natural disasters, such as seismic events. This is the context for this proposal, which involves the use of non-metallic composite materials as reinforcement for buildings and infrastructure. The effectiveness of FRP (Fiber Reinforced Polymers) reinforcement in improving the durability and the structural performances of structures has been increasingly investigated in the last decades. Further studies are still needed with a view to determining the impact of such materials in the life cycle assessment of structures as well as to improve and integrate design provisions. This research proposal deals with the study of innovative solutions that can mitigate the structural vulnerability under seismic events while improving the long-term performances and reduce the environmental impact of constructions.

Total number of positions with fellowships n. 1:

10) Title Scholarship: **Sustainable and low-impact rehabilitation solutions for more resilient structures and infrastructures**

Research activity description:

Existing constructions are frequently characterized by a large deficit in terms of structural safety against man-made and natural hazards due to low design standards, further exacerbated by materials' degradation. This may lead to heavy losses and disruption of essential services in case of adverse events, thus impairing communities' resilience. Based on robust assessment and monitoring techniques, the research proposal aims to develop and numerically validate sustainable and low-impact rehabilitating solutions for structures and infrastructures able to guarantee both life safety and operational capacity. Local and global solutions will be considered following micro/macro modelling approaches to provide in-depth analyses on their performance and tools for practice purposes.

Total number of positions with fellowships n. 1:

Project: **External fellowships**

- 1) **c Implementation of mathematical and artificial intelligence algorithms to solve complex environmental monitoring applications in the real world**

Research description.

The project involves the study, analysis, implementation and integration of mathematical algorithms and artificial intelligence for the design and implementation of complex water and soil monitoring programs aimed at a more accurate assessment of the environmental state. Activities could be applied in various contexts to be monitored on a regional scale, such as quarries, landfills, environmental crimes, widespread pollution and fragile ecosystems protection, aiming to improve and optimise data processing workflow of various remote sensing images both from satellites and from airborne sensors and drones. The types of sensors that can be used, according to the needs, are different: multi and hyper-spectral, thermal and LiDAR.

The expected result is the optimization of processing processes for thematic purposes using the Sentinel-1 and Sentinel-2 images of the Copernicus program (ESA) as the main input data. Other acquisitions will be realised as validation activities (ground truth data): field activities are also planned for the ground verification of remote sensing data through the use of sensors for expeditious measurements such as probes, thermal imaging cameras, fieldspec, ground penetrating radar and others (depending on the needs).

In the development and implementation of operational workflows, priority will be given to the use of open-source software, therefore, the PhD student will also acquire programmer skills capable of developing interoperability tools between different geodatabases to enhance the scientific knowledge acquired by different Actors involved in environmental monitoring.

The final objective is, therefore, to develop innovative procedures for environmental monitoring to identify more accurate management practices aimed at reducing the impacts of human activities and consequently offering valid support in risk management practices.

Total number of positions with fellowships n. 1

- 2) Project title: **Geodynamic evolution of the Central Mediterranean region**

Research description.

The Central Mediterranean is characterised by a large variety of structural domains, encompassing the Calabrian Arc subduction complex, a volcanic arc, and a number of sedimentary basins. Slab roll-back, plate convergence and continental collision at different stages of evolution, are the driving processes that cause shortening and crustal thickening, strike-slip tectonics, margin segmentation, crustal extension and gravitative tectonics. During several marine geological expeditions, this region was studied using multidisciplinary and multi-scale approach, which

involved the acquisition of geological/geophysical data. This domain is among the most seismically active in the Mediterranean, and had been struck in the past by destructive earthquake/tsunami events, which left a signature in the marine sedimentary sequence. ISMAR-CNR is working in this region to better define geodynamic evolution of seismogenic faults through structural and morphological analyses based on multiscale seismic reflection profiles and high-resolution multibeam bathymetry, as well as through the study of sediment cores providing a chronostratigraphic framework to both fault activity and the past occurrence of earthquake/tsunami events. The PhD project will include acquisition, processing and interpretation of multiscale marine geophysical data, coupled with a multiproxy analysis of sediment cores. Geodynamic reconstructions will include numerical modelling, to be carried out in cooperation with Dept. Earth Sciences, Utrecht University, Netherlands.

Total number of positions with fellowships n. 1

Project: **Free fellowships**

Total number of positions with fellowships: n. 4

Admission:

The selection will be made following the art. 6 typology B of the call.

The examination will be based on the evaluation of candidate qualification, proposed project, oral interview, and foreign language knowledge checking (English).

Admission tests for foreigners:

The videoconference interview of foreign candidates will be in English.

Admission exam dates and time:

Qualification: (date) 26/07/2023

Proposed project: (date) 26/07/2023

Oral interview: (date and venue) 02/08/2023 - Università degli Studi di Bari Aldo Moro - Dipartimento di Scienze della Terra e Geoambientali Via Orabona, 4 - 70125 BARI

For more information see the website:

www.uniba.it

ANNEX 8)

PhD course in “Economics and Finance of Public Administrations”

CUN Scientific Areas: 13a – Economic and statistical science; 12 - Law; 02 –Physical sciences; 13b - Economics and business sciences

Settori Scientifico Disciplinari: SECS-P/01, SECS-P/02, SECS-P/03, SECS-P/06, SECS-P/07, IUS/05, IUS/09, IUS/10, IUS/12, IUS/21, SEC-S/01, SEC-S/06, FIS/01, FIS/07

Coordinator: Prof. Nicola Daniele Coniglio

Administrative Unit of the PhD course: Dipartimento di Economia e Finanza, Università degli Studi di Bari Aldo Moro
PEC: direttore.dsem@pec.uniba.it

Duration: 3 years

Total PhD positions for this Call for Applications: n. 10

- n. 1 on research topics proposed by the candidate;
- n. 6 on research topics (DM 118/23) listed and described below;
- n. 2 on research topics (DM 117/23) listed and described below;
- n. 1 position without scholarship.

PhD scholarships on specified research topics:

N.	Title	Partner	Months	Foreign Partner	Months	Description
1 DM 118/23	Public Policies for the Competitiveness and Sustainable Development of Territories	Bank of Italy (Bari branch)	6	UAB (Barcellona, Spain)	6	This doctoral research focuses on public policies for competitiveness and sustainable development of territories in Italy. It analyses the effectiveness and impact of policies aimed at promoting competitiveness and sustainability, assessing their ability to balance economic development and environmental sustainability. The goal is to provide a mapping of effective strategies to guide local sustainable development in the Italian socio-economic context.
2 DM 118/23	Human Capital, Demographic Dynamics, and Territorial Convergence Processes	Bank of Italy (Bari branch)	6	UAB (Barcellona, Spain)	6	This doctoral research explores the interrelationships between human capital, demographic dynamics, and territorial convergence processes. The aim is to

						understand how the formation and distribution of human capital influence demographic changes and either promote or hinder economic convergence among regions. The project combines quantitative and qualitative methods to provide an in-depth analysis of policies aimed at improving territorial equity.
3 DM 118/23	Public Administration Tested by Postmodernity: E-Democracy	Regione Puglia	6	Institute for European Studies Jagiellonian University (Cracow, Poland)	6	This doctoral research examines the challenge of postmodernity for public administration, focusing on e-democracy and providing a comparative analysis between Italy and other European countries. The project investigates how digital technologies are transforming the structures and processes of public administration, and how these transformations can contribute to a more inclusive and participatory democratic system. The aim is to outline a framework for the effective implementation of e-democracy in the postmodern context, drawing lessons from various European realities.
4 DM 118/23	Anti-Poverty Policies	Fondazione Istituto Pugliese di Ricerche Economiche e Sociali - IPRES	6	International Inequalities Institute, London School of Economics (UK)	6	This doctoral research focuses on measures to combat poverty, providing a comparative analysis between Italy and other European countries. The investigation is centered on the effectiveness and impact of these measures, evaluating the strategies and programs implemented to reduce poverty and promote social inclusion. The aim is to identify best practices and develop policy recommendations based on empirical evidence to address poverty in the Italian and European context.
5 DM 118/23	Big Data for Public Administration in	Regione Puglia	6	Institute for European Studies	6	This doctoral research explores the use of big data in public administration (p.a.)

	the institutional race for the cloud			Jagiellonian University (Cracovia, Polonia)		and the transition towards the cloud, providing a comparative analysis between Italy and other European countries. It examines the effectiveness, benefits, and challenges of this race to the cloud, and assesses how the use of big data can improve the efficiency and effectiveness of the p.a. The aim is to outline strategies for the adoption of cloud and the use of big data that maximize benefits and minimize risks within the Italian and European p.a. context.
6 DM 118/23	Impact Assessments of Health Policies and Technologies	Agenzia Strategica Regionale per la Salute ed il Sociale (ARESS Puglia)	6	University of Surrey (United Kingdom)	6	The PhD fellow will develop skills in the economic evaluation of health policies and technologies. Activities may include systematic reviews, meta-analyses, organizational setups (PPP), and methods of economic evaluation of treatments. The fellows will collaborate with members of the Apulian regional center for Health Technology Assessment (CReHTA) at ARESS.
7 DM 117/23	Digital Marketing Based on Artificial Intelligence	EUSOFT srl	12	Università Autonoma di Barcellona (Spagna)	6	This project aims to delve into the transformative role of artificial intelligence (AI) in the realm of digital marketing. The research will explore how AI is shaping marketing strategies, personalizing customer experiences, and improving decision-making through predictive analytics. Moreover, it will examine how AI can contribute to boosting sustainability, fostering digital innovation, and enhancing community resilience. The research will also address the ethical implications of AI in marketing, as well as potential challenges and limitations of its application. The ultimate goal is to provide a

					comprehensive understanding of AI's impact on digital marketing and construct a roadmap for integrating AI responsibly and effectively in marketing practices, thereby supporting sustainable and resilient digital ecosystems.
8 DM 117/23					The project aims to develop a holistic approach, supported by business process management tools, to the theme of risk management. It involves identifying and classifying potential events that could jeopardize the business's operational continuity across multiple business domains, which will be determined in the initial phases of the project (for example, but not limited to, finance, utilities, infrastructure). Special attention is explicitly given to regulatory and normative aspects. The project then seeks to define and formalize corrective and improvement actions that the organization must undertake for each type of event. The ultimate goal of the project is to create a knowledge base that can guide an organization utilizing a Business Process Management platform, through techniques such as Artificial Intelligence, in undertaking actions and organizational practices that minimize errors, ensure operational continuity, and enable continuous improvement.

*PNRR is the acronymous for National Plan for Recovery and Resilience

Admission requirements:

Applicants with a degree in the following areas of study (or equivalent if obtained in foreign universities) are eligible:
All Masters' degree equivalent to the Italian 'Laurea Magistrale'

Selection criteria:

Evaluation of academic titles + PhD project on a topic related to the Doctoral school proposed by the applicant (n. 1 scholarship) or related to one of the 6 listed topics to be submitted with the application + oral exam for the discussion of the PhD project

The selection of PhD candidates will be carried out considering the academic titles/professional experiences of the applicants as well as an interview. During the interview (oral exam), applicants will also discuss their PhD project (max 4 pages). The candidates are required to submit the PhD project together with the application form.

The interview will also be finalized to test proficiency in English language. The interview might be done in videoconference.

Foreign candidates might decide to take the written test and the interview in Italian or in English.

Selection dates:

Oral exam/Interview: 3/August/2023(time 10.00 am)

Location: Biblioteca 'Etta Chiuri' (2nd floor), Dipartimento di Economia e Finanza, Università degli Studi di Bari Aldo Moro, Largo Abbazia Santa Scolastica, 70124 Bari (Italy).

For further information: <https://www.uniba.it/ricerca/dipartimenti/dse/dottorato>

ANNEX 9)

PROFILE

PHD PROGRAMME IN ECONOMICS AND MANAGEMENT

Subject area CUN: 13 Economics and statistics

Scientific Subject Codes (SSD): SECS-P/01, SECS-P/02, SECS-P/03, SECS-P/05, SECS-P/06, SECS-S/06, SECS-P/07, SECS-P/11, SECS-P/13 and SECS-S/01

Coordinator: Prof. Angela S. Bergantino

Administrative location: Dipartimento di Economia, Management e Diritto dell'Impresa PEC: direzione.demdi@pec.uniba.it

Duration: 3 years

Curricula: YES

1. **Economics** (Scientific Subject Discipline code (SSD): SECS-P/01, SECS-P/02, SECS-P/03, SECS-P/05, SECS-P/06 and SECS-S/06)
2. **Management and Technology** (Scientific Subject Discipline code (SSD): SECS-P/07, SECS-P/11, SECS-P/13 and SECS-S/01)

Total PhD positions for this Call for Applications: 10

n. 7 on research topics listed and described below;

n. 1 on free-research topic;

n. 2 position without scholarship.

N.	Title of the research project	Funding	Research activity description:	subject area/SSD/referent	Partner
1	Smart mobility in urban and suburban areas	Ministerial Decree 118/23 (PNRR 4.1)	The research project intends to investigate the state of the art and the policies adopted and adoptable in terms of sustainable mobility in Italian urban contexts. Analyzes will be carried out on the demand (through the collection of data on stated preferences and revealed preferences at the local level) and on the local supply of mobility services. The data will be studied with econometric models in order to provide significant results with respect to	(SSD: SECS-P/06) applied economics, behavioral economics, spatial economics; Prof. Angela Stefania Bergantino (curriculum Economics)	5T Srl https://www.5t.torino.it/

			public support, the willingness to pay and the factors that facilitate and support the implementation of soft and shared mobility policies in Italian urban contexts. Furthermore, travel data conducted with bicycles, scooters, LPT, made available by the partner company for various Italian cities, will be analysed. These will make it possible to study the current movements, times, places, duration and characteristics of current users.		
2	Study and analysis of sustainable mobility systems in urban contexts	Ministerial Decree 118/23 (PNRR 4.1)	The research project intends to investigate the evolution of the demand for urban mobility, policies that can be adopted and the interventions that can be implemented to promote sustainable mobility and the ecological transition in urban areas, starting from the tools provided by national and European programs. The level of accessibility and urban organization will be studied considering, among other things, the existing and planned cycle paths, the planned BRT, the reserved lanes of public transport, the public transport stops, the green areas of the city, the areas closed to the traffic or limited	(SSD: SECS-P/06) applied to economics, behavioral economics, spatial economics, Prof. Angela Stefania Bergantino (curriculum Economics)	Taranto Municipality (Sustainable Mobility Department)

			<p>traffic, pedestrian areas and electric charging stations. With the support of the Municipality of Taranto, the current infrastructural set will be compared with the planned one through a series of accessibility indices, in order to quantify and spatially define the benefits deriving from the investments. Transport supply and demand will also be analysed. Probabilistic econometric models will be used in order to provide significant results with respect to public support, willingness to pay and the factors that facilitate and support the implementation of soft and shared mobility policies.</p>	
3	DAIANA-Dataset, Assessment, Impact, Analysis in National Agriculture	Ministerial Decree 118/23 (PNRR 4.1)	<p>The DAIANA (Dataset, Assessment, Impact, Analysis in National Agriculture) research project aims to investigate the state of the art in the field of agro-industry in the Apulian context, with regard to the province of Brindisi, with the aim of designing sustainable and circular policies. The analysis will also cover the state of the agro-industrial sector, local policies and best practices envisaged to encourage sustainable and circular agriculture in the various Italian agro-</p>	<p>(SSD: SECS-P/13)commodity sciences, sustainability, Prof. Giovanni Lagioia (<i>curriculum Management and Technology</i>)</p> <p>Province of Brindisi</p>

			<p>industrial contexts. Field data will be collected through surveys and interviews with policy makers and stakeholders involved in the agro-industrial chain. Subsequently, various improvement and impact reduction scenarios will be constructed (built on the basis of the results of the first mapping of the environmental indicators mentioned above) so as to be able to make a comparison and provide some hypotheses also with reference to the reuse of water resources, considering Puglia a sitibonda region, with reduced availability of water. The data will be studied with statistical models and a dataset will be built in order to provide the necessary data collection for producers and to support public institutions engaged in the provision of policies and incentives towards sustainability.</p>	
4	Behavioral economics and microdata analysis: mobility and well-being	Ministerial Decree 117/23	<p>The research project (SSD: SECS-P/06) intends to investigate the state of the art and the policies adopted in the various Italian urban contexts in terms of sustainable mobility. The study will also be made possible thanks to the support of the partner company, UP2GO srl, with the sharing of</p>	<p>applied economics, spatial economics, applied econometrics analysis, big data, Prof. Angela Stefania Bergantino (curriculum Economics)</p> <p>Up2Go (https://www.up2go.it/)</p>

			<p>company microdata on the use of sustainable mobility in various Italian urban contexts, which will allow for an in-depth and granular study of the demand and supply of sustainable mobility with particular emphasis on travel patterns, travel times, origins and destinations and user characteristics. In this way, it will be possible to highlight the factors that can facilitate the modal switch for less impactful shifts and which could be the most effective tools to favourably support this transition. Other econometric-spatial empirical analyzes relating to the estimation of demand, spatial accessibility, and environmental and/or tourism impact will be able to integrate the project to further consolidate its outputs.</p>	
5	<p>Building of datasets for the circular economy of the main Italian production systems</p>	<p>PNRR (GRINS Project) *</p>	<p>The PhD project is part of the activities of the project “Growing Resilient, INclusive and Sustainable (GRINS)”, in order to achieve the milestone titled “The construction of datasets for the circular economy of the main Italian production systems”. The research aims to build a dataset for the circular economy in</p>	<p>(SSD: SECS-P/13) product sciences, sustainability, Prof. Annarita Paiano (<i>curriculum Management and Technology</i>)</p> <p>https://www.mur.gov.it/sites/default/files/2023-02/D.D.%20341%20_PE000018_rev181022NF.pdf</p>

			<p>the main Italian production systems for understanding the impact that companies generated on the environment and on climate change in order to implement a fast transition process towards an increasingly circular and oriented towards environmental sustainability. This objective will be pursued by measuring the environmental impact in some sectors through the use of some indicators and also focusing on the consumption of natural resources.</p>	
6	Inland areas and transport policies and sustainability	PNRR (GRINS Project) *	<p>The research project intends to investigate those rural contexts which, characterized by evident differences in terms of accessibility and services compared to urban areas, need ad hoc policies aimed at narrowing the urban-peripheral gap by promoting social equity. Inland areas suffer in terms of accessibility of public transport, especially from and to urban areas, and the competitive disadvantage of these services compared to private means of transport means the strengthening of the modal share of private means and derived social costs such as pollution and co-</p>	<p>(SSD: SECS-P/06) applied economics, behavioral economics, spatial economics, econometrics, big data, Prof. Angela and Stefania Bergantino (curriculum Economics)</p> <p>https://www.mur.gov.it/sites/default/files/2023-02/D.D.%20341%20_PE000018_rev181022NF.pdf</p>

			management. Based on these challenges, the researcher will deepen the theoretical context of these elements and study, mainly through probabilistic and OD assignment models, the mobility demand of these contexts. Modal accessibility studies will be carried out in addition to the analysis. The related results, supported by the review of the public mobility supply, will produce policy suggestions to strengthen the modal share of public transport.	
7	Big data and spatial data analysis for sustainable mobility and territories	PNRR (GRINS Project) *	The growing availability of very high frequency data and descriptive multidimensionality (big data) makes it possible to study the territorial dynamics of economic development with increasing detail and geographical granularity. Prediction models based on machine learning and spatiotemporal analyzes supported by satellite and vector data (for example road graphs or agglomerations/land use polygons) are increasingly able to provide methodological frameworks to exploit the potential that such data offer. The research project	(SSD: SECS-P/06) applied economics, spatial economics, applied econometrics analysis, big data, machine learning, Prof. Angela Stefania Bergantino (curriculum Economics)
				https://www.mur.gov.it/sites/default/files/2023-02/D.D.%20341%20_PE0000018_rev181022NF.pdf

			intends to deepen these methodologies and, through the collection of big data, study relevant issues of the territorial economy and mobility such as the factors influencing local development, the dynamics and spatial patterns that positively or negatively influence the main indicators of well-being, the study of territorial factors that determine the quality of infrastructure and transport services, the study of modal accessibility at a spatial level and the analysis of territorial gaps.	
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*GRINS Project - “Growing Resilient, Inclusive and Sustainable” code Id. PE0000018 - CUP H93C22000650001 - Funded under the PNRR – Mission 4 – Component 2 – Investment 1.3 – European Union – Next Generation EU).

The scholarships associated with the projects are linked to the curricula to which the scientific coordinator belongs and/or to the SSD of reference.

Admission:

The selection will take place according to art. 6 lett. B of the Call. The selection will be based on titles and discussion of the research project proposed by the candidate, which can be either on the free-topic scholarship or on one of the specific projects indicated above. The candidate should indicate if he/she would apply for the free-topic scholarship or the specific project scholarship. In the latter case they should be coherent with the topic of the project and the SSD/curriculum. The project should be written in Italian or English with a text between 1,000 and 2,000 words, sent together with the application form. During the oral discussion of the research project, the knowledge English (foreign language) will also be verified. The oral test for the discussion of the research project can be carried out online. In case of winners' renunciation, the ranking may scroll.

Admission tests for foreigners:

Foreign candidates can choose to take the entrance exam in Italian or in English.

Admission exam dates and time:

Qualification assessment: July 26, 2023 at 14.00 p.m

Oral interview: 28 July 2023 at 10.00 a.m., in the Aula P. E. Cassandro, (3rd floor – Department of Economics, Management and Business Law) - according to the calendar that will be published on the website.

For more information see the website: <https://www.uniba.it/ricerca/dipartimenti/demdi/ricerca/dottorato-di-ricerca-1>

PROFILE

PhD PROGRAMME IN PHYSICS

in collaboration with ISTITUTO NAZIONALE di FISICA NUCLEARE, FRASCATI - ROMA

CUN Scientific Area: 02 – Scienze Fisiche.

Scientific Subject Codes: FIS/01, FIS/02, FIS/03, FIS/04, FIS/07

Coordinator: Prof. Giuseppe Gonnella

Sede Amministrativa: Dipartimento Interateneo di Fisica “M. Merlin”

PEC: direzione.fisica@pec.uniba.it

Duration: 3 years

Curricula:

- 1) Nuclear, Subnuclear and Astroparticle Physics (Scientific Subject Codes: FIS/01, FIS/04)
- 2) Condensed Matter Physics, Photonics and Quantum Technologies (Scientific Subject Codes: FIS/01, FIS/03)
- 3) Applied Physics (Scientific Subject Codes: FIS/01 e FIS/07)
- 4) Theoretical Physics (Scientific Subject Codes: FIS/02)

Total number of positions with fellowships n. 16:

- n. 3 ordinary positions with scholarship granted by University of Bari.
- n. 3 ordinary positions with scholarship granted by INFN.
- n. 1 position with a scholarship on a project related to:
 - **Project** PNRR - Missione 4, componente 2 “Dalla Ricerca all'Impresa” - Investimento 3.3
 - **Call for tender:** D.M.117/23 - DOTTORATI DI RICERCA INNOVATIVI CON CONNOTAZIONE INDUSTRIALE
 - **Title Scholarship:** *Development of innovative quantum sensing devices for aerospace applications.*
 - **Research activity description:** The research project aims at training a young researcher in the context of quantum imaging and its optimization using machine learning techniques. The activities will be declined in the specific context of aerospace applications and will be developed in collaboration with Planetek S.R.L. The project promotes the learning of highly specialized skills in 2nd generation quantum technologies for the aerospace in Puglia, within the so-called the 2nd quantum revolution.
- n. 1 position with a scholarship on a project related to:
 - **Project** PNRR - Missione 4, componente 2 “Dalla Ricerca all'Impresa” - Investimento 3.3
 - **Call for tender:** D.M.117/23 - DOTTORATI DI RICERCA INNOVATIVI CON CONNOTAZIONE INDUSTRIALE
 - **Title Scholarship:** *Development of Artificial Intelligence algorithms to support ultrasound examinations.*
 - **Research activity description:** The research project will focus on the topics mentioned in the NRPP guidelines such as Artificial Intelligence and its application to diagnostics and innovative therapies in precision medicine. Specifically, the research project aims to train a young researcher to develop artificial intelligence applications for decision support systems in the medical field. The project will be carried out in collaboration with Predict S.R.L. Specifically, it aims to develop machine and deep learning algorithms that can provide decision support and assistance to clinical professionals during ultrasound examinations. The project contributes to promoting the entry of highly specialised expertise from the field of artificial intelligence and decision support systems into the clinical field of diagnostic imaging in the Apulian area.

- n. 1 position with a scholarship on a project related to:
 - **Project** PNRR - Missione 4, componente 2 “Dalla Ricerca all'Impresa” - Investimento 3.3
 - **Call for tender:** D.M.117/23 - DOTTORATI DI RICERCA INNOVATIVI CON CONNOTAZIONE INDUSTRIALE
 - **Title Scholarship:** *AI-Based Applications for SAR satellite sensors.*
 - **Research activity description:** The PhD thesis will focus on AI-Based Applications for SAR Sensor Systems to improve the performance of synthetic aperture radar (SAR) systems. The thesis will explore the potential of AI to enhance the quality and accuracy of SAR images by addressing challenges such as focalization, signal quality, classification, and data fusion.

- n. 1 position with a scholarship on a project related to:
 - **Project** PNRR - Missione 4, componente 1 “Potenziamento dell’offerta dei servizi di istruzione: dagli asili nido all’Università”: M4C1 - Investimento 4.1
 - **Call for tender:** D.M.118/23 - DOTTORATI DI RICERCA PNRR
 - **Title Scholarship:** *Design and development of microfluidic devices for acoustophoresis.*
 - **Research activity description:** The specific objectives span from high-performance computing to development of innovative technologies and methods, in the following areas of interest: i) Exploiting of Lab-on-Chip devices with high biocompatibility for sensing, to manipulate small volumes of fluids for ground-breaking applications, such as environmental and food quality monitoring, development of new pharmaceutical products, homeland security; ii) Development of healthcare systems, to provide equal access to innovative, sustainable, and high-quality health care thanks to the development and uptake of cost-effective and people-centered solutions.

- n. 1 position with a scholarship on a project related to:
 - **Project** PNRR - Missione 4, componente 1 “Potenziamento dell’offerta dei servizi di istruzione: dagli asili nido all’Università”: M4C1 - Investimento 4.1
 - **Call for tender:** D.M.118/23 - DOTTORATI DI RICERCA PNRR
 - **Title Scholarship:** *Development of innovative detectors for diagnostics and dosimetry.*
 - **Research activity description:** The PhD project contributes to the sixth mission of PNRR, which is focused on "Health." The research proposal aims at developing new devices based on scintillating materials able of: i) improving the accuracy of diagnostic systems (PET imaging); ii) enhancing the effectiveness of particle beam therapy.

- n. 1 position with a scholarship on a project related to:
 - **Project** PNRR - Missione 4, componente 1 “Potenziamento dell’offerta dei servizi di istruzione: dagli asili nido all’Università”: M4C1 - Investimento 4.1
 - **Call for tender:** D.M.118/23 - DOTTORATI DI RICERCA PNRR
 - **Title Scholarship:** *Development of parallel computing algorithms with portability libraries and tools, on heterogeneous platforms, for the experimental fundamental research in the framework of the Spoke 2 of the National Centre for HPC, Big data and Quantum Computing.*
 - **Research activity description:** In the framework of the National Centre for HPC, Big data and Quantum Computing - PNRR project (ICSC) -the complex set of ongoing and foreseen activities in the Spoke 2 addresses the need, in particular raised from the experimental fundamental research (for instance that carried out by the large experimental HEP collaborations at CERN) to design, develop and test innovative computational solutions allowing to effectively analyze big amounts of data by increasingly exploiting AI algorithms.

- n. 1 position with a scholarship on a project related to:
 - **Project** PNRR - Missione 4, componente 1 “Potenziamento dell’offerta dei servizi di istruzione: dagli asili nido all’Università”: M4C1 - Investimento 4.1
 - **Call for tender:** D.M.118/23 - DOTTORATI PER IL PATRIMONIO CULTURALE
 - **Title Scholarship:** *Modeling the crossmodal perception of VR cultural experiences. A neuroscience approach.*

- **Research activity description:** In collaboration with the Teatro degli Arcimboldi in Milan and the Cross Modal Perception Research Lab at Oxford University, the PhD project will understand the effects of virtual reality in offering cultural events to spectators. The main objective of this project, funded by the EU National Recovery and Resilience Plan, is to measure the effectiveness of virtual reality and to understand metrics that could highlight the success of this tool even for an experience that benefit from the magic of “physical distribution” like cultural events.

- n. 2 positions with a scholarship on a project related to:
 - **Project ADEQUADE**
 - **Title Scholarship n.1:** *Study and development of correlation plenoptic imaging devices for ranging and tracking applications.*
 - **Title Scholarship n.2:** *Study and development of correlation based passive imaging systems.*
 - **Research activity description:** Both research projects focus on issues connected with the development of Quantum Optical Technologies and, in particular, with the development of correlated imaging techniques for applications in security field. The project team are strictly multi- and inter-disciplinary and involves national and international research institutions, universities and companies.
- n. 1 position with a scholarship on a project related to:
 - **Project PNRR** “National Center for Gene Therapy and Drugs based on RNA Technology” (CUP H93C22000430007, codice di progetto CN_00000041)
 - **Title Scholarship:** *Computational Systems Biology and integrative data analysis.*
 - **Research activity description:** The research project will be focused on the implementation of novel methods to predict how disease-associated large mutations rewire the regulatory contacts of genes expanding proprietary computational technologies based on Machine Learning, computer simulations and the Physics of Complex Systems to infer the 3D structure of chromosomes.

Admission procedures:

Selection will be based on the CV evaluation and an interview.

The knowledge of the English language will be also verified.

The interview will concern physics fundamental arguments from the courses of the First Degree in Physics, the research interests of the candidate related to the doctorate in physics and the presented research project.

There will be a unique merit list and the scholarships will be assigned following the order in the merit list.

Foreign candidates can choose to take the admission exam in Italian or English.

Admission exam timetable:

Oral exam: July 26 th 2023, H: 10.00.

The oral exam will be held at Dipartimento di Fisica, Aula A, Campus Universitario, via Orabona 4, Bari, Italy.

Additional information at the website: <https://dottorato.fisica.uniba.it/>

ANNEX 11)

PROFILE

PhD PROGRAMME IN GENDER STUDIES

CUN Scientific Areas: Area 01 - Scienze matematiche e informatiche, Area 08 - Ingegneria civile e Architettura, Area 10 - Scienze dell'antichità, filologico-letterarie e storico-artistiche, Area 11 - Scienze storiche, filosofiche, pedagogiche e psicologiche, Area 12 - Scienze giuridiche, Area 13 - Scienze economiche e statistiche, Area 14 - Scienze politiche e sociali

Scientific Subject Codes: IUS/01 DIRITTO PRIVATO; IUS/10 DIRITTO AMMINISTRATIVO; IUS/13 DIRITTO INTERNAZIONALE; INF/01 INFORMATICA; L-ART/03 STORIA DELL'ARTE CONTEMPORANEA; L-ART/05 DISCIPLINE DELLO SPETTACOLO; L-ART/06 CINEMA, FOTOGRAFIA E TELEVISIONE; L-LIN/12 LINGUA E TRADUZIONE - LINGUA INGLESE; M-FIL/03 FILOSOFIA MORALE; M-FIL/05 FILOSOFIA E TEORIA DEI LINGUAGGI; M-FIL/06 STORIA DELLA FILOSOFIA; M-PSI/04 PSICOLOGIA DELLO SVILUPPO E PSICOLOGIA DELL'EDUCAZIONE; M-PSI/07 PSICOLOGIA DINAMICA; SECS-P/01 ECONOMIA POLITICA; SECS P/02 POLITICA ECONOMICA; SECS-P/11 ECONOMIA DEGLI INTERMEDIARI FINANZIARI; SPS/01 FILOSOFIA POLITICA; SPS/02 STORIA DELLE DOTTRINE POLITICHE; SPS/04 SCIENZA POLITICA; SPS/07 SOCIOLOGIA GENERALE; SPS/08 SOCIOLOGIA DEI PROCESSI CULTURALI E COMUNICATIVI

Coordinatore: Prof.ssa Francesca Romana Recchia Luciani

Sede Amministrativa: Dipartimento di Ricerca e Innovazione Umanistica, Università degli studi di Bari "Aldo Moro"

PEC: dottorato.genderstudies@pec.uniba.it

Duration: 3 years

Curricula: SI

1) Ambito Filosofico-Politologico (Scientific Subject Code: M-FIL/03 FILOSOFIA MORALE; M-FIL/05 FILOSOFIA E TEORIA DEI LINGUAGGI; M-FIL/06 STORIA DELLA FILOSOFIA; SPS/01 FILOSOFIA POLITICA; SPS/02 STORIA DELLE DOTTRINE POLITICHE; SPS/04 SCIENZA POLITICA)

2) Ambito Economico -Etico-Giuridico- (Scientific Subject Code: IUS/01 DIRITTO PRIVATO; IUS/10 DIRITTO AMMINISTRATIVO; IUS/13 DIRITTO INTERNAZIONALE; INF/01 INFORMATICA; SECS-P/01 ECONOMIA POLITICA; SECS P/02 POLITICA ECONOMICA; SECS-P/11 ECONOMIA DEGLI INTERMEDIARI FINANZIARI)

3) Ambito Artistico -Letterario- Mediale-Linguistico (Scientific Subject Code: L-ART/03 STORIA DELL'ARTE CONTEMPORANEA; L-ART/05 DISCIPLINE DELLO SPETTACOLO; L-ART/06 CINEMA, FOTOGRAFIA E TELEVISIONE; L-LIN/12 LINGUA E TRADUZIONE - LINGUA INGLESE)

4) Ambito Psicologico - Sociologico-Pedagogico- (Scientific Subject Code: M-PSI/04 PSICOLOGIA DELLO SVILUPPO E PSICOLOGIA DELL'EDUCAZIONE; M-PSI/07 PSICOLOGIA DINAMICA; SPS/07 SOCIOLOGIA GENERALE; SPS/08 SOCIOLOGIA DEI PROCESSI CULTURALI E COMUNICATIVI).

Total number of positions with fellowships n. 34:

31 funded by PNRR theme-bound

3 funded by the University of Bari "Aldo Moro" free-topic

The scholarships which are theme-bound are detailed as follows:

Borsa n. 1

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, PNRR 4.1

Title Scholarship: **MEDIA(c)tion: a collaborative sharing platform for language mediation in gender-based violence contexts.**

Research activity description: The project aims to create a network of contacts between language mediators who can make available videos, links to websites and personal experiences concerning mediation in GBV contexts. The main goal is to promote the accessibility and usability not only of the online service offered, but also of medical, legal and juridical terminology related to GBV cases.

Borsa n. 2

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, PNRR 4.1

Title Scholarship: **Archiving gender. Audiovisual heritage and queer cultures in Italy (1950-2020)**

Research activity description: The project is primarily aimed at investigating the relationship between LGBTQ+ cultures and film along with other audiovisual media throughout the Twentieth century in Italy. In particular, the project is set to reconstruct and explore the vast film and audiovisual heritage of LGBTQ+ movements, focusing on the period running between the end of World War II (when these movements started emerging within the Italian public sphere) and the 1990s (when these movements were institutionalized to some degree).

Methodologically, the research is aimed at interweaving film history with gender studies and social history, by locating and studying films and documents created by LGBTQ+ cultures, throughout the second half of the Twentieth century (militant films, video documentaries, magazines, grey literature, memoirs, e.g.).

Borsa n. 3

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, PNRR 4.1

Title Scholarship: **Analysis of the determinants of the professional careers of women in the private sector of and on the related effects on their private lives**

Research activity description: The project intends to document and analyze the dynamics of access and those of career progression of women in the national labor market. The starting point is large private employers with a regional spread. Using data from personnel departments we intend to show whether there is gender parity at the entry level and whether gender gaps are persistent in the progression up to the top of the organisation. It has been amply demonstrated that discrimination in the workplace is a source of inefficiency and lower productivity, as well as a source of vertical and horizontal corporate conflicts. A better understanding of these dynamics (which would also cover women's career interruptions) would also contribute to understanding the obstacles and changes necessary for an increase in the birth rate in the intentions of workers in the age group concerned.

The knowledge and analysis of the obstacles, especially cultural and corporate, will allow a more accurate and targeted use of the new tools for equality, including the newly introduced gender certification.

Borsa n. 4

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, PNRR 4.1

Title Scholarship: **Artistic Jobs and Gender Policies in the Contemporary Art System**

Research activity description: Starting from historical artistic experiences that have placed feminist themes and gender claims at the centre of art practices, the doctoral research line aims to map and outline the situation of women artists in the current contemporary art system. The aim is not only to investigate the real condition of female artists in contemporary art in Italy but also to verify models, policies and implementation strategies adopted at European level.

Borsa n. 5

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, PNRR 4.1

Title Scholarship: Active ageing, welfare care policies and social sustainability

Research activity description: The ageing process is interested by a profound change both in the quantity of demographic trends and in the quality of the substantial change in the social representations of older people and in their self-representation. Cities and territories are facing a challenge in securing the rights to active ageing and ageing in the place that older citizens increasingly demand. In this process, public welfare policies are called to perform a fundamental function in view of the objectives of ensuring high levels of quality of life and social sustainability.

The research, based on quantumqualitative methodologies, will have as object these policies starting both from the visions and choices of public administrators, both from the perspective of citizens with a particular focus on gender also in an intersectional perspective.

Borsa n. 6

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Financial education for the empowerment of women in public administration: training paths and partnerships with the financial system.

Research activity description: The project to be developed by the doctoral candidate aims at studying and structuring training paths aimed at strengthening the economic and financial competences of women, in particular those working in public administration, in order to support them in a path of enhancing management, leadership and effective communication skills in the field of investment and financing choices

Borsa n. 7

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Status and gender

Research activity description: The project will focus on the reconstruction and the interpretation of the legal framework of gender policies in public administrations, with particular reference to the forms in which these are integrated with secondary legislation and the instructions of a technical/applicative nature. To promote structural reforms that may fill the gender gap and discriminations, the project aims to valorize the right to personal identity and to consolidate the theoretical education related to the safeguarding of individual freedom and dignity.

By deepening issues and jurisdictional-political practices of inclusion and diversity management, the monitoring of gender parity in the Public Administration will be promoted.

Borsa n. 8

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Gender stereotypes and hate language, language strategy for inclusiveness and valuing differences in public administration

Research activity description: The project focuses on the relationship between linguistic performativity and gender-based power relations within the workplace, and in particular in internal and external communication in public administrations. It proposes an investigation of stereotypes and forms of hate speech circulating in everyday language use, both at the verbal and nonverbal levels, with particular reference to gender discrimination, in order to deconstruct models of toxic masculinity and the resulting stereotypes of femininity

Borsa n. 9

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Enhancing differences: theories, practices and policies of inclusion & diversity management in public administration

Research activity description: The project is aimed at meeting the challenge of managing issues related to the inclusion of differences, with the goal of responding to the need of organizations confronted with workforces capable of claiming the diversity of which emancipation processes have made them aware. Inclusion of men and women, young and old, with different physical abilities, people from minority ethnicities and cultures, and of different sexual orientations has become a central issue in public and private organizations and companies. This project focuses on ways of valuing difference in work contexts, connecting what is happening in organizations with ongoing processes in contemporary politics and society.

Borsa n. 10

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Analysis of the determinants of women's professional careers in the Public administration and of the relevant effects on their private lives

Research activity description: The project intends to document and analyze the dynamics of access and those of career progression of women in the national labor market. The starting point is big public administrations ("large" employers) with a regional spread. Using data from personnel departments we intend to show how, although there is gender parity at the entry level in most administrations, gender gaps are persistent in the progression up to the top of the organisation. A better understanding of these dynamics (which would also cover women's career interruptions) would also contribute to understanding the obstacles and changes necessary for an increase in the birth rate in the intentions of workers in the age group concerned.

Discrimination in the workplace of the public employer constitutes a contradiction in terms of efficiency and fairness understood in the objectives of policy makers. Knowledge and analysis of obstacles, especially cultural and corporate ones, will allow for a more accurate and targeted use of the new tools for equality, including the newly introduced gender certification.

Borsa n. 11

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Youth Cultures and Skills for Public Administration

Research activity description: The research line aims to develop and test a model for the validation of the skills acquired by the new youth cultures in the spaces of non-formal education, especially with regard to the reinforcement of gender differences and migration backgrounds. In particular, the research line in the Public Administration is a realistic support for the institutional project management, with a special experimentation of models and toolkit of governance and comparative and intersectional policies sectors (youth policies, cultural and educational policies, social policies, gender policies).

Borsa n. 12

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Female Artificial Intelligence Resource for an Inclusive Safe Learning Environment

Research activity description: The project aims to implement an IT platform for English language learning that can carry out such concrete educational actions as overcoming gender stereotypes in favor of increasing women's empowerment. The project will develop strategies to build a gender-sensitive English language learning platform that can recognize sexist language and offer a more appropriate alternative. This platform will be tested in PAs as a tool to facilitate digital transition by ensuring social sustainability and the effectiveness, efficiency, and cost-effectiveness of public interventions

Borsa n. 13

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Public administration, social inclusion and gender policies

Research activity description: The project belongs to subject Area 14 and, in particular, to Storia delle dottrine politiche disciplinari scientific sector.

It aims to provide for the qualification of professional roles which can get to know the structure and tasks of public administration and local government, developing specific competences on gender policies, in the management and verification of welfare institutions, the defence of social identities, the valorisation of human resources, the growth of political participation. Such roles shall be trained with the goal of cultural sensibilization activities, and the monitoring of policies aimed at fostering social inclusion processes, to avoid discriminatory practices and to favour the creation of governance schemes for equal opportunities.

Teaching activities will be aimed at giving a broad overview of inclusion theories, integration of differences and of practices of discrimination management, which permits to solve problems connected with policies.

Borsa n. 14

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 Patrimoni Culturali

Title Scholarship: Queering Italian Media. LGBTQ+ Cultures and Italian audiovisual heritage

Research activity description: The project is primarily aimed at investigating how LGBTQ+ cultures have emerged and been told within the Italian public sphere since the end of World War II, unravelling the modes and approach of their representation and contextualizing them within the wider historical process of social and civic modernization of Italy. In particular, the project will analyze the Italian media system (cinema, TV, mass/popular press, e.g.) and how it has represented and re-introduced LGBTQI+ identities, contributing to their institutionalization – though often contradictorily.

Methodologically, the research is aimed at interweaving film and media history with other research fields and discipline (above all, gender studies and queer studies, also including cultural studies and social history), by locating, digitizing, and studying audiovisual sources and hardcopy documents that have told and shown LGBTQI+.

Borsa n. 15

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 3.4 Transizioni Digitali

Title Scholarship:

Research activity description: The goal of this PhD research project is the study of the Gender dimension not only as paradigmatic and emblematic diversity facet but also as foundational for a novel approach to Trustworthy and Responsible Artificial Intelligence.

Borsa n. 16

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, PNRR 4.1

Title Scholarship: Gender equality measurement in the organizations. A transformative process.

Research activity description: Diversity in the organisations is a source of value. A working environment in which diversity is not penalised but valued enables the organisation to make visible a commitment that has a strong social value in welcoming within it people who are often excluded from the labour market and in stimulating their inclusion and career opportunities with positive effects in terms of greater equity and growth for society as a whole. The research project will focus on measuring gender equality from an intersectional perspective in organisations. A measurement capable of guiding a transformative process based on a data-based system by analysing one's own employment

structure, measuring gender gaps and recognising the policies and organisational models that contribute to their persistence or widening in order to bring about real change.

Borsa n. 17

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, PNRR 4.1

Title Scholarship: Identity, alterity, inclusion. Gender Studies at the crossroads of theoretical aspects and hand-on strategies

Research activity description: This research is going over representations and interpretations of the feminine which may be found throughout the history of Western culture and the history of thought, with particular focus to the following instances: rebuilding theoretical and historical paradigms aiming to reveal gender prejudice related to discriminatory and violent outcomes; gender differences within the extant debate about notions such as identity, diversity and inclusion; Taking cognizance of contemporary theoretical scenarios considering all possible strategies meaning to actualise their transposition within the different contexts of practical and political action.

Borsa n. 18

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, PNRR 4.1

Title Scholarship: Women's political leadership: language and communication

Research activity description: The project focuses on women's political leadership, with an emphasis on the transformations of recent decades from the perspective of political language. The focus on increasing women's leadership and participation is, as highlighted by Unwomen, one of the goals of the UN 2030 strategy. The project could examine the way leadership is constructed with respect to feminist approaches, in its various aspects, and/or neo-liberalism by bringing together policies and the symbolic-political dimension.

Borsa n. 19

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, PNRR 4.1

Title Scholarship: The Path from Observation to Comprehension: Exploring Psychological Factors in Home Study Activities into a Gender Studies Perspective

Research activity description: The education emergency of recent times has sparked considerable interest in understanding the learning processes associated with audiovisual and digital materials, as well as the individual and contextual factors that impact the acquisition of knowledge. The aim of this research is to capitalize on the experiences of this period and turn them into valuable educational opportunities. In particular, the study will focus on analysing home study activities, specifically when technological tools are employed, to explore differences among students of different gender, ages and educational levels, and parental involvement in these processes.

Borsa n. 20

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, PNRR 4.1

Title Scholarship: Gendered Perspectives in Digital Learning: Exploring Psychological Factors in Studying with Digital Materials

Research activity description: The advent of new technologies has brought about considerable improvements, but these have given rise to mistrust. Therefore, the present project aims to investigate the socio-cognitive and emotional-motivational processes underlying studying activities when using digital educational materials, considering potential gender implications. Specifically, an analysis of study activities will be conducted involving students at different

educational levels to examine differences among students of varying ages. Additionally, it will be explored how parents' relationship with technology can serve as a model for their children.

Borsa n. 21

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, PNRR 4.1

Title Scholarship: Gender Studies in the international and European perspective in the light of the “new challenges”

Research activity description: Acquisition of high knowledge and skills regarding the regulatory framework of the so-called “new” and “old” rights relating to Gender Studies in an international and European perspective in the light of Objective 5 of the 2030 Agenda for Sustainable Development and of the transversal principle of the PNRR missions. Verification of its adequacy with respect to the “new challenges” in the field of Gender Studies.

Borsa n. 22

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Age, race, class, gender, and disability in Italian film and media industries

Research activity description: The project proposes a research on the ways in which the Italian media industries and the public administrations that support them (including territorial bodies such as the Film Commissions) deal with issues such as age, race, social class, gender and disability, taking into account both the forms of discrimination and prejudice still present in the various sectors (cinema, television, digital media) and the improvement strategies implemented (both at an institutional level and by individual social actors) and the possible presence of good practices. The interdisciplinary framework, which brings together film and media studies with gender studies, production studies and the sociology of work, is aimed at the goal of implementing innovative strategies within the public administration of the cultural industry, strongly oriented towards the users and the effectiveness of the actions implemented, as well as the valorisation of resources.

Borsa n. 23

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Development of integrated policies and networks in public administration to promote equal opportunities and combat gender-based violence

Research activity description: Equal opportunities and the struggle against gender-based violence have become increasingly central issues for the functioning and legitimacy of public administration.

The design and implementation of integrated and intersectoral interventions have thus become fundamental matters for public administration thanks to the establishment of networks, involving different services and entities, in close connection with the territory, civil society, professions and the educational system (school and university).

Doctoral research will focus on the development of inclusive and comprehensive projects at public administration office, aimed at bringing together institutions, associations and citizens for the prevention of gender-based violence and the promotion of equal opportunities.

Borsa n. 24

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Performance, archive, memory

Research activity description: The "Performance, Archives, Memory" PhD fellowship promotes research aimed at studying theories and practices related to archiving performance events, informed by performance studies, gender studies, queer studies, and decolonial studies. Building upon the radical rethinking of the archive within the field of performance studies, this research will explore the processes of memory and understanding of performance. In conjunction with the study of the archival heritage of the Teatro Stabile del Veneto, the research will develop a digital project that facilitates the socialization and digital valorization of the theater archive, addressing the complexities of the ephemeral nature of performances and the relational surplus that exists between the spectacle, memories, spaces, geographies, and temporalities of events. The doctoral candidate will thus develop an independent research path aimed at defining and enhancing the skills of dissemination and effective communication for public organizations and their cultural and archival heritage

Borsa n. 25

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Diversity management, inclusive citizenship, and Public Administration

Research activity description: In its first part, the research consists in theoretically rebuilding and reworking the notions of citizenship, inclusion and "inclusive citizenship", in connections with the concept of diversity, with a particular attention to cultural, sex, gender, sexuality and "ability" differences. The second part aims at applying the achieved results in the context of Public Administrations, in the direction of an effective and efficient diversity management not only in the problem-solving, but also in contributing to the elaboration of long-term communicative strategies, as well as in developing policy proposals aimed at using the services connected with citizenship, as provided by Public Administrations, in an inclusive and non-discriminatory way, moving from the principles contained in artt. 3 and 97 of the Constitution.

Borsa n. 26

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Stress dimensions, Conflict management, and Psychological health across genders: sSupporting working Staff (SCOPUS)

Research activity description: Consistent with the provisions of the ONU Agenda 2030 for Sustainable Development (Goal 5 on Gender Equality) of the PNRR (Gender Equality as a transversal principle to the Missions), and of art. 9 of the D.M. 118, 2 March 2023 (in particular the aim: "Development of research paths useful for defining and enhancing effective management, leadership and communication skills for public organizations, with particular reference to the selection, management and development of human resources"), the SCOPUS project aims to develop a statistically valid multidimensional model of the determinants of work-related stress associated to gender differences for the definition of evidence-based interventions of support, diversity and conflict management, inclusion and promotion of psychological health in different categories of workers and in different occupational contexts.

Borsa n. 27

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: A biopsychosocial approach for the understanding of sexual harassment and its consequences on victims

Research activity description: Sexual harassment is an urgent public health problem affecting approximately 50% of women. Rather than being primarily motivated by sexual goals, the phenomenon can best be understood as an extreme form of interpersonal domination facilitated by socio-cultural factors in combination with individual predispositions and aspects. Through a longitudinal research design and with a multi-method and multi-informant approach, the aim of this project is to investigate the different dimensions that sexual harassment can assume in the various contexts in

order to identify personal-relational-contextual risk factors useful to understand the phenomenon. This knowledge will be functional for the participation in the organization and strategic direction of the public administration (in particular, the Municipality of Perugia) regarding the implementation of innovative user-oriented strategies and the effectiveness of the actions put in place, as well as the valorization of resources, in the context of social and cultural planning actions on the theme of equal opportunities

Borsa n. 28

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Ethics and Philosophy of Technology for Public Administration

Research activity description: The project aims to explore the links between emerging technologies and the power asymmetries that they can introduce or reinforce, creating new sources of injustice against vulnerable people and thus causing not only distributive inequity but also epistemic damage.

In the process of digital and environmental transformation of public administrations, administrative capacities in the formulation and design of fair and non-discriminatory public policies need to be strengthened. The project will systematically analyse the links between fair machine learning and the literature on methodological approaches in political and ethical theory in the context of public administration.

Borsa n. 29

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Come superare le discriminazioni etniche e di genere nelle organizzazioni e nelle politiche pubbliche

Research activity description: The research aims to develop an autonomous pathway to enhance effective communication skills for public organisations, especially with regard to analysing and overcoming gender discrimination. It is therefore aimed at enhancing public policy design to diagnose the coordination responsibilities of the policy cycle on gender discrimination issues.

Borsa n. 30

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.117/23

Title Scholarship:

Research activity description: The research aims to examine the concept of work-life balance and its implications for the empowerment of women and gender policies from a legal point of view.

In this perspective, the candidate will have to draw up a project that, starting from a recognition of the existing situation, also at a European and international level, methodologically outlines how starting from policies, she intends to build and outline innovative models and legal-organizational tools suitable for supporting and enhancing the equal presence of women in economic life and the territory, promoting access to work, career advancement and the promotion of corporate welfare projects aimed at work-life balance and improving the quality of life of individuals through the reconciliation of family life and work.

Borsa n. 31

Project: PNRR

Call for tender [D.M.117/23-D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali)]:D.M.118/23, 4.1 P.A.

Title Scholarship: Legislative dynamics in Italian theatre and performing arts from 1962 to today.

Research activity description: The project aims to research the legislative dynamics regarding censorship in Italian theater and performing arts from 1962 to the present, with particular reference to public administration theater bodies.

The research methodologies will have to proceed in two directions: one historical-legal and archival-documentary; and the other focused on the analysis of new forms of censorship, as self-censorship. The project, through an interdisciplinary structure, aims to identify tools for analyzing the ways in which censorship intervenes and radiates within institutional and ministerial cultural promotion, developing a research path useful for defining and enhancing effective dissemination and communication skills for public organizations and their cultural and archival heritage

Modalità di ammissione:

The selection will be made following the art. 6 typology B) of the call.

The examination will be based on the evaluation of candidate qualification, proposed project, oral interview, and foreign language knowledge checking (English).

Admission tests for foreigners:

The videoconference interview of foreign candidates will be in English.

Admission exam dates and time:

Qualification : (date) 26/7/2023

Proposed project: (date) 28/7/2023

Oral interview: (date and venue) 1/8/2023.

For more information see the website:

<https://www.uniba.it/it/ricerca/dipartimenti/dirium/postlaurea/dottorati/dottorato-in-gender-studies/Dottorato%20in%20Gender%20Studies>

ANNEX 12)

PROFILE

PhD PROGRAMME IN SUSTAINABLE LAND MANAGEMENT in convention with POLYTECHNIC UNIVERSITY OF BARI

CUN Scientific Areas: 07 – Agricultural and Veterinary Sciences, 08b – Civil Engineering, 02 – Physical sciences, 04 – Earth Sciences, 05 - Biological Sciences, 08a – Architecture, 09 - Industrial and information engineering.

Scientific Subject Codes: AGR/01, AGR/03, AGR/04, AGR/05, AGR/08, AGR/09, AGR/10, AGR/11, FIS/01, FIS/07, BIO/03, GEO/05, ICAR/01, ICAR/02, ICAR/03, ICAR/07, ICAR/20, ING-IND/16, INGIND/22, ING-IND/35 e ING-INF/07.

Coordinator: Prof. Francesco GENTILE (francesco.gentile@uniba.it)

Administrative office: Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti, DiSSPA (Department of Soil, Plant and Food Sciences)

PEC: disspa@pec.uniba.it

Affiliated headquarters: Polytechnic University of Bari

Duration: 3 years

Total number of positions n. 18:

- n. 3 positions with a scholarship from University of Bari Aldo Moro;
- n. 1 position with a scholarship from University of Bari Aldo Moro, Excellence Project DiSSPA Department “MARginal areas: Valorization of Ecosystem resources for fair and sustainable Livelihood (MAR.V.E.L.). This position is reserved for students graduated abroad;
- n. 1 position without a scholarship;
- n. 13 positions with a scholarship from PNNR divided as follow:

- **Project:** INNOVATIVE PhD WITH AN INDUSTRIAL CONTENT
- **Call for tender:** D.M. 117/23 – 3.3

- **Title Scholarship:** Remote sensing techniques to support urban green infrastructure characterization and ecosystem services estimation

- **Research activity description:** Methods for monitoring the quality and quantity of urban green areas and how urban green areas can provide different levels of ecosystem services. Analysis of the main ecosystem services produced by urban forest in relation to the different types of urban green spaces (two-dimensional and three-dimensional typologies); criteria and indicators. Evaluation of urban green areas and ecosystem services according to the climate crisis. Sustainable management of urban green areas. Levels of urban green planning and objectives in the provision of ecosystem services: analysis of the main experiences at global and national level. **Co-financing** Mer Mec Engineering S.r.l.

- **Project:** INNOVATIVE PhD WITH AN INDUSTRIAL CONTENT
- **Call for tender:** D.M. 117/23 – 3.3

- **Title Scholarship:** Digital Twins for Manufacturing sustainability improvement in a pharmaceutical sector

- **Research activity description:** The research aims to devise new solutions based on artificial intelligence that can be used in the pharmaceutical industry to improve production efficiency and environmental sustainability. This involves dealing with complex data interconnections, technological models and deep technological knowledge of the production process in a multidisciplinary approach. **Co-financing** Opella Healthcare Italy Srl

- **Project:** INNOVATIVE PhD WITH AN INDUSTRIAL CONTENT
- **Call for tender:** D.M. 117/23 – 3.3

- **Title Scholarship:** Evaluation of innovative processes for the enhancement of the by-products of the local food supply chain, as an example of ecological transition and circular economy

- **Research activity description:** the research activity will focus on the assessment of the sustainability of the installation of a bio converter that implements the enhancement of organic waste from agro-food industries of different types, using the larvae of an insect, *Hermetia illucens*, capable of transforming organic waste into a particular compost, the Frass. At the end of the production cycle, the larvae, suitably dehydrated and flaked, are used as a protein base for the production of animal feed. The evaluation is based on the application of life cycle based analysis methodologies (LC Assessment, LC Costing, Social LC) whose indicators will show the effectiveness of this circular economy model. **Co-financing** REAGRI S.r.l.

- **Project:** INNOVATIVE PhD WITH AN INDUSTRIAL CONTENT
- **Call for tender:** D.M. 117/23 – 3.3

- **Title Scholarship:** Robotic Equipment for Precision Agriculture

- **Research activity description:** the research will focus on the deepening of the mechatronic, IT and IoT devices supplied with the latest generation agricultural machinery and in the agricultural sector in general. The level of advanced training that is intended to be pursued will allow the PhD student to study and analyse possible innovative solutions that improve the performance of these technologies and make them even more suitable for use within precision agriculture and agriculture 4.0. **Co-financing** VINCENZO CAPOBIANCO e FIGLI S.r.l.

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- **Project:** PhD FOR PUBLIC ADMINISTRATION
- **Call for tender:** D.M. 118/23 4.1 P.A.

- **Title Scholarship:** Soil bioengineering techniques for soil erosion control in natural areas affected by fire

- **Research activity description:** The project aims to increase the knowledge of soil erosion processes that occur in the years following a wildfire, which hit natural areas, and the effects of alternative sustainable techniques in reducing soil erosion. Specifically, the main factors (predisposing factors) that can trigger erosion processes will be identified in areas affected by fire (with different severity classes) and the effects of alternative sustainable techniques (i.e. naturalistic engineering) in reducing the erosion will be assessed using innovative monitoring methods (e.g. Remote and Proximal Sensing).

- **Project:** PhD FOR PUBLIC ADMINISTRATION
- **Call for tender:** D.M. 118/23 4.1 P.A.

- **Title Scholarship:** Capacity building in water accounting instruments for groundwater use monitoring in agriculture

- **Research activity description:** The research, with the aim of fostering digital transition of the PA, aim at developing diagnostic capacity for quantifying self-supplied irrigation uses from groundwater sources. The following research activities are planned: 1) to analyse the data collected by existing management instruments for

irrigation water accounting; 2) to assess reliability of data collected for groundwater withdrawals; 3) to support policies elicitation aimed at boosting farmers' self-communication of irrigation uses.

- **Project:** PhD FOR PUBLIC ADMINISTRATION
- **Call for tender:** D.M. 118/23 4.1 P.A.

- **Title Scholarship:** Processing of geo big data to support modeling of natural and artificial ecosystems
 - **Research activity description:** Geo big data acquired from remote sensors play a key role in describing the phenomena that characterize the climate-forcing evolutionary dynamics of ecosystems. The proposed project is geared toward developing and implementing innovative algorithms/approaches aimed at modeling both natural and anthropogenic ecosystems as well as the most important environmental variables responsible for evolutions on a technological-digital basis, to propose data analysis and processing approaches capable of describing ecosystem conditions with extreme precision and metric and geometric accuracy.

- **Project:** PhD FOR PUBLIC ADMINISTRATION
- **Call for tender:** D.M. 118/23 4.1 P.A.

- **Title Scholarship:** Processing of geo big data for managing natural and artificial ecosystems
- **Research activity description:** The great availability of geo big data has as its natural purpose to experiment and test the latest and most innovative techniques of their management and interpretation, such as Machine Learning (ML) and Deep Learning (DL), and thus to develop and support actions aimed at guiding the exploitation of natural resources with innovative approaches that will allow enhancing administrative capacity in relation to the formulation and design of public policies, both by developing diagnostic capabilities and by taking responsibility for the coordination of the policy cycle.

- **Project:** PhD FOR PUBLIC ADMINISTRATION
- **Call for tender:** D.M. 118/23 4.1 P.A.

- **Title Scholarship:** Advanced hydrological-hydraulic models for the analysis of urban basins
- **Research activity description:** Systematic soil sealing and the artificialization of rivers and channels have contributed to increasing the hydrogeological risk. Although the natural peculiarities of the Italian territory play a fundamental role in the origin of these phenomena, several anthropic factors contribute significantly to the triggering or exacerbation of their consequences. The objective of the proposal is to contribute to the advances in hydrological-hydraulic coupled and digital distributed modeling with particular reference to the urban context, through the development of the so-called "rain on grid" approach, in order to assess the hydrodynamic effects generated by a rainfall event throughout the basin, using sets of earth observation data and high computing capacity.

- **Project:** PhD FOR PUBLIC ADMINISTRATION
- **Call for tender:** D.M. 118/23 4.1 P.A.

- **Title Scholarship:** Innovative hydrological/hydraulic approaches for the analysis of small natural basins
- **Research activity description:** In recent decades the flood frequency analysis associated with the definition of flood risk maps has been taking on increasing interest in the planning of management and mitigation activities. The increasing availability of computational tools with high computing capacity, high resolution topographic data and geospatial information, can provide a strong impact to the growing development of new digital techniques able of reproducing with high accuracy the descriptive data of the Earth's surface required for physical/hydrological/hydraulic process assessments, allowing the updating of the theoretical approaches used for

mapping the hydraulic hazard level of the territory in order to meet the growing needs of the legislation in this field. Moreover, the adoption of these innovative technologies will give a strong effects to the process of technological innovation of public administrations that require the use of such approaches, in order to facilitate the digital and ecological transition and to contribute to ensure greater efficiency and effectiveness of public action. In the project, it is intended to refer to natural basins of small size, for which there are no instrumented sections of which time series of adequate time length are available.

- **Project:** PhD PNRR
- **Call for tender:** D.M. 118/23 4.1 PNRR
- **Title Scholarship:** Nature-Based Solutions (NBSs) to control erosion processes in the semi-arid Mediterranean environment
 - **Research activity description:** The project aims to define a methodology for the evaluation of the long-term effects of the application of low-impact techniques or NBSs, in terms of transport of sediments, nutrients and pollutants on a basin scale. For this purpose the identification of critical areas is envisaged, also through the use of spatially distributed hydrological models applied in highly anthropized basins.

- **Project:** PhD PNRR
- **Call for tender:** D.M. 118/23 4.1 PNRR.
- **Title Scholarship:** Mitigation of anthropogenic impacts on coastal marine water quality
- **Research activity description:** About 40 percent of the oceans are affected by human activities, the impacts of which include pollution, depletion of fish stocks, and loss of natural habitats along the coast, among others. The project aims to identify and/or devise strategies, processes and/or treatments to reduce impacts on coastal marine water quality, especially near big cities or large production facilities. Particular attention will be given to that set of strategies, processes and treatments, to be adopted even in socio-economically disadvantaged contexts, which:
 - make use of resources and/or renewable energy sources;
 - generate by-products that can easily be reintroduced into the production cycle;
 - do not require the use of advanced technologies and/or skilled labor.

- **Project:** PhD PNRR
- **Call for tender:** D.M. 118/23 – 4.1 PNRR.
- **Title Scholarship:** Augmented and mixed reality for the enhancement of the territory
- **Research activity description:** This project proposes the study and application of augmented and mixed reality for the enhancement of the territory. The PhD student's activity will include the study and implementation of augmented reality interfaces for the use of local environments and products and their enhancement. The proposed innovation also provides for the quantification of the personalized response of the user of the augmented and mixed reality experience with artificial intelligence and neuroscience methods in order to be able to suggest the experiences that could be of greater liking. The quantification of each subject's response will also be evaluated with neuromarketing techniques in which the consumer's response and brain dynamics are studied during exposure to different virtual experiences.

Admission procedure:

The exam procedures will be carried out in accordance with art. 6 lett. B.

For reserved position the exam procedures will be carried out in accordance with art. 17 procedure 2 of the call.

The selection will be based on the evaluation of the qualifications and the research project and on an oral test. The knowledge of a foreign language (English) will be evaluated.

Upon submitting the application, the candidate **must attach a synthetic research project**, which can be written in Italian or English, of a maximum length of 2500 words. The research project, which must be relevant to the topics of the PhD Course in Sustainable land management, will be discussed during the oral test. During the oral test, the knowledge of the English language will also be verified.

For scholarship positions funded by the University of Bari, the topics covered in the research project are in no way binding for the identification of the topic that will be developed during the PhD Course.

Failure to submit the project in the application is under penalty of exclusion from the procedure.

Admission tests for foreigners:

Foreign candidates can choose to take the oral exam in Italian or in English.

Admission exam dates and time:

The oral exam will begin on 31 July 2023 at 9.00 am, with eventual prosecution in the following days until the evaluation of all candidates has been completed. The oral exam will take place at the Department of Soil, Plant and Food Sciences of the University of Bari Aldo Moro, via Amendola 165/A, Bari. Foreign candidates can carry out the oral exam electronically on the Teams platform. Similarly, Italian candidates who make a reasoned request to the PhD Coordinator by 26 July 2023 will be able to carry out the oral exam electronically on the Teams platform. The list of those admitted to the oral exam, the exam calendar and how to access the Teams platform will be published on the PhD website by 18:00 on 29 July 2023.

For more information:

<https://www.uniba.it/it/ricerca/dipartimenti/disspa/dottorato-di-ricerca/gestione-sostenibile-del-territorio/gestione-sostenibile-del-territorio>

(ANNEX 13)

PROFILE

PhD PROGRAMME IN IN COMPUTER SCIENCE AND MATHEMATICS

CUN Scientific Areas: 01 Mathematics and Computer Science, 09 Industrial and Information Engineering.

Scientific Subject Codes: INF/01, ING-INF/05, MAT/02, MAT/03, MAT/04, MAT/05, MAT/06, MAT/07, MAT/08

Coordinator: Prof. Francesca Mazzia

Administrative office: Dipartimento di Informatica – Università degli studi di Bari Aldo Moro

PEC: direzione.di@pec.uniba.it

Duration: 3 years

Curricula:

1) COMPUTER SCIENCE (Scientific Subject Code: INF/01, ING-INF/05)

2) MATHEMATICS (Scientific Subject Code: MAT/02, MAT/03, MAT/04, MAT/05, MAT/06, MAT/07, MAT08)

Even if the PhD programme is organized in the two curricula mentioned above, the available positions will be assigned according to the ranking obtained by the applicants, until all positions are covered and by taking into account the reserved positions.

Total number of positions with fellowships n.19:

- **1 position with scholarship, Curriculum “2 Matematica”**

- **Progetto:** Tech4Math-Math4STEM

- **Avviso:** D.M. 118/23 PNRR 4.1

- **Titolo tematica borsa di studio:** Tech4Math-Math4STEM

- **Descrizione attività di ricerca:** The aim of the research is to identify guidelines for the training of mathematics teachers in innovative technologies and methodologies that promote the learning of mathematics and STEM disciplines and the development of soft, trans-disciplinary, skills in 21st century citizens. Mixed methods, both qualitative and quantitative, typical of educational research in the scientific disciplines will be used. The research will have an initial direct impact on the Apulian territory through experiments on STEM subjects that will involve schools in the area and will pay particular attention to promoting the development of scientific skills in female students.

- **1 position with scholarship, curriculum “2 Matematica”**

- **Progetto:** Nonlocal differential problems in Quantum Science

- **Avviso:** D.M. 118/23 PNRR 4.1

- **Titolo tematica borsa di studio:** Nonlocal differential problems in Quantum Science

- **Descrizione attività di ricerca:** The research will be mainly dedicated to the study of nonlinear equations with nonlocal interactions (Pekar-Choquard equations, Hartree type equations, equations and systems of nonlinear dispersive equations, fractional Schrodinger equations). These problems find applications in Quantum Mechanics, in dislocation problems, of phase transition, in image reconstruction. One of the objectives will be to address the study of some classes of interaction functionals, where classical PDE theory fails due to the presence of non-locality, such as density functionals of the Thomas–Fermi–Dirac–von type Weizsäcker (TFDW), resulting from the description of the response of a layer of graphene.

- **1 position with scholarship, curriculum “1 Informatica”**

techniques

- **Progetto:** Analysis and valorization of digitized artistic heritage using Artificial Intelligence

- **Avviso:** D.M. 118/23 4.1 Patrimoni Culturali

Artificial

- **Titolo tematica borsa di studio:** Analysis and valorization of digitized artistic heritage using

Intelligence techniques

- **Descrizione attività di ricerca:** Research topics will cover the development of Artificial Intelligence models for the analysis and enhancement of digitized artistic heritage. The project has an impact on the territory, as artistic heritage plays a role of strategic importance for the country's economic and cultural growth. In fact, the expected results, to the extent of wider enjoyment of artistic heritage, would have positive repercussions on the cultural sector, which has been severely affected by the recent pandemic crisis. In addition, the research responds to the emerging demand for new professional figures whose skills lie at the intersection of the humanities and computer

- **1 position with scholarship, curriculum “2 Matematica”**

- **Progetto:** Topological Data Analysis and optimization for industrial processes

- **Avviso:** D.M.117/23

processes

- **Titolo tematica borsa di studio:** Topological Data Analysis and optimization for industrial

- **Descrizione attività di ricerca:** The research proposal will focus on developing computational models that integrate Topological Data Analysis-TDA concepts with machine learning and optimization techniques to better understand the phenomena that the data under analysis represent. The project idea aims to design variants of supervised learning and dimensionality reduction models that through appropriate optimization methodologies integrate the topological representations of the data into the approximation model to enable a better understanding of their internal data structures and the underlying properties that characterize the real domain of which the data are a representation.

- **1 position with scholarship, curriculum “1 Informatica”**

Recommender Systems in eHealth

- **Progetto:** Artificial Intelligence Approaches for Digital Healthcare through Pose Detection and

- **Avviso:** D.M.117/23
- **Titolo tematica borsa di studio:** Artificial Intelligence Approaches for Digital Healthcare through Pose Detection and Recommender Systems in eHealth

- **Descrizione attività di ricerca:** Digital technologies in healthcare can improve efficiency, reduce costs, increase patient engagement, and lead to better health outcomes. This doctoral project will investigate the possibility of monitoring biological parameters, pose, and activities using wearable and/or IoT technologies. This will allow the physician to obtain a complete health picture of the patient and intervene in case of emergency. Thus, the data collected will also enable feeding recommendation systems for active aging and well-being activities. Providing, for example, personalized activities, targeted food plans, and physical exercises to be performed. The candidate is therefore expected to be able to provide innovative, impactful solutions in the field of eHealth and Artificial Intelligence.

- **1 position with scholarship, curriculum “1 Informatica”**

- **Progetto:** Study of AI techniques for efficient generation of digital humans and 3D environments

- **Avviso:** D.M.117/23

and 3D environments

- **Titolo tematica borsa di studio:** Study of AI techniques for efficient generation of digital humans and 3D environments
- **Descrizione attività di ricerca:** The research will focus on the study and development of generative AI models for creating Digital Human and modeling 3D environments. The project goal is to develop new research skills in the field of Artificial Intelligence, with a focus on the emerging field of Generative AI. The

project idea aims to use generative AI techniques for both text and image generation and the creation of "Digital Human" avatars that are able to replicate human behavior in terms of features, gestures, expressions, and voice. This field of research is innovative and promising and aims to develop algorithms and models that can autonomously generate new content, such as images, videos or text. In addition, Generative AI offers opportunities for innovation and development in various fields, such as art, design, medicine, and many others.

- **1 position with scholarship, curriculum "1 Informatica"**
- **Progetto:** Innovative tools and processes to support predictive analysis in the e-commerce and fintech fields.
- **Avviso:** D.M.117/23
- **Titolo tematica borsa di studio:** Innovative tools and processes to support predictive analysis in the e-commerce and fintech fields.
- **Descrizione attività di ricerca:** Analysis and formalization of artificial intelligence and machine learning tools and methodologies in the fintech field to analyze macroeconomic data and market indexes to predict future trends in the sector. Development of personalized recommendation systems to improve users' online shopping experience: development of intelligent systems that analyze purchase data and user preferences to improve the online shopping experience, helping users discover relevant products and increasing sales for retailers.

- **1 position with scholarship, curriculum "1 Informatica"**
- **Progetto:** Pure augmented reality for remote assistance through mobile and smartglass video calls on web apps and apps
- **Avviso:** D.M.117/23
- **Titolo tematica borsa di studio:** Pure augmented reality for remote assistance through mobile and smartglass video calls on web apps and apps
- **Descrizione attività di ricerca:** The aim of the research is the proposition and experimentation of methods that allow the user to insert objects in Augmented Reality during a remote assistance video call or even during a simple view through a camera. The objects must be fixed in space, being able to be referenced with respect to the inertial platform of the host device, the man-machine interaction must take place via the web and via the app.

- **1 position with scholarship**
- **Progetto:** Explainable Artificial Intelligence (XAI) on Time Series Data
- **Avviso:** D.M.117/23
- **Titolo tematica borsa di studio:** Explainable Artificial Intelligence (XAI) on Time Series Data
- **Descrizione attività di ricerca:** The object of the research is essentially Intelligent Data Analysis. Time series forecasting is fundamental for various use cases in different domains and in particular in the financial one. The typical design process includes five sections that are commonly organized into a pipeline structure: (1) data preprocessing; (2) feature engineering; (3) hyper-parameter optimization; (4) method selection; (5) assembly; The research intends to analyze and compare the automation methods identified for each section of the pipeline. Furthermore, it is necessary to investigate how much the automation of the pipeline can be of help for the "eXplainable AI" which is one of the much studied and of great interest aspects for the usability of the Intelligent Data Analysis in business domains.

- **1 position with scholarship, curriculum "1 Informatica"**
- **Progetto:** Human-centric Cybersecurity
- **Avviso:** D.M.117/23
- **Titolo tematica borsa di studio:** Human-centric Cybersecurity _

- **Descrizione attività di ricerca:** The "national security-centric" approach dominates cybersecurity policies and practices. In the context of the "Competing Visions for Cyberspace", the research activity aims to propose an alternative approach to cybersecurity that derives from the traditional "human security". Rather than prioritizing technological vulnerabilities, this approach prioritizes them to human behavior by identifying the networks as an essential part of modern cyber threat intelligence, analyzing the human cyber reaction in the face of an OT threat, network disservice, ransomware or interruption of corporate business continuity. A human-centric approach is committed to outlining risk insights based on human monitoring by defining what are the weaknesses dictated by the analysis of human misbehaviour.

- **1 position with scholarship, curriculum "1 Informatica"**
- **Progetto:** Enhanced User Experience in no-code software application
- **Avviso:** D.M.117/23
- **Titolo tematica borsa di studio:** Enhanced User Experience in no-code software application
- **Descrizione attività di ricerca:** According to many analysts, software development in the future will be no-code/low-code, i.e. it will also be feasible by operators who do not have advanced IT skills, the so-called Citizen Developers. The project intends to explore and formalize the possible methodological, technical and functional solutions that can be adopted to improve the user experience of Citizen Developers in the development of complex application solutions. The ultimate goal is to drastically reduce the skills gap required for the adoption of a no-code application development platform. The project will be carried out in collaboration with the proposing company not only in the solution identification phase but also in the implementation of the was about to evaluate its benefits with the community of corporate stakeholders.

- **6 positions with scholarship, curriculum "1 Informatica"**
- **Progetto** FAIR S6. SYMBIOTIC AI
- **Avviso:** PNRR PE CUP: H97G22000210007, codice progetto: PE00000013, S6 SYMBIOTIC AI
- **Titolo tematica borse di studio:** Symbiotic AI
- **Descrizione attività di ricerca:** The research of the 6 projects will be focused on the following objectives and will be supervised in specific Work Packages (WP):

1. Study and application of methods and guidelines for human-centered design of symbiotic systems, WP6.1: Design of SAI systems
2. Understanding human needs in Symbiotic AI: towards Symbiotic Recommender Systems, WP6.2: Human understanding capabilities of SAI systems
3. Semantically enriched neural-symbolic methods for Knowledge Graph Refinement and Explanation, WP 6.3: User input for SAI systems performance
4. Explainability of Artificial Intelligence systems for medical applications., WP6.4: Understandability of SAI systems
5. Machine learning model recycling for biomedical applications, WP6.6.2: Design of new AI methods for model recycling
6. Data-Centric AI approaches in Symbiotic AI, WP6.6.3: Design of new AI methods for transforming raw data into smart data

- **2 positions with scholarship of the University of Bari Aldo Moro**

Total number of positions with fellowships n.19.

Admission test (for all applicants):

The selection will be made following the art. 6 typology B of the call.

The applicants will be evaluated on the basis of: a) the documents presented with the application, b) a research project (written in English, max 1000 words), c) an oral exam in which, among other things, they will discuss a research project presented with the application and that will also include the assessment of the applicant's knowledge of the English language. For the applicants to the fellowships with theme bound, the oral exam will concern questions about the related research activity.

Admission exam dates and time:

Qualification and Proposed project: (date) July 16, 2023

Oral interview: (date and venue) July 31, 2023 at 9:30 am, Sala Consiglio on the seventh floor of the Computer Science Department.

Where it is not possible to do it in person, candidates may ask to do it remotely with a motivated request. The motivated letter of request, together with the copy of an identity document, should be sent via email to the coordinator Prof. Francesca Mazzia at francesca.mazzia@uniba.it and to dottorato.ricerca@uniba.it not later than July 27, 2023 at 23:59, Italian time. It will be the responsibility of the commission to communicate the methods of connection.

For more information see the website: <http://dottorato.di.uniba.it>

ANNEX 14)

SCHEDA

DOCTORATE COURSE IN LEADERSHIP, EMPOWERMENT AND DIGITAL INNOVATION IN EDUCATION AND LEARNING (LEDIEL)

CUN Scientific Areas: 10 Scienze dell'antichità, filologico-letterarie e storico-artistiche; 11A Scienze Storiche, filosofiche, pedagogiche; 11B psicologiche; 08 Ingegneria civile e architettura; 01 Scienze matematiche e informatiche;

Coordinator: Prof. Michele Baldassarre

Administrative Office: Dipartimento di Scienze della Formazione, Psicologia, Comunicazione (Department of Education, Psychology, Communication)

PEC: direttore.forpsicom@pec.uniba.it

Duration: 3 years

Total number of positions available: n. 13

Project: Leadership, Empowerment and Digital Innovation in Education and Learning 1

Notice: University funds with foreign surcharge

Scholarship thematic title: LEDIEL_Uniba 1_ Innovative models of faculty professional development in Higher Education contexts

Research activity description: theories and processes that underlie leadership, empowerment and entrepreneurial culture to promote innovation and guide the change of individuals and organizations with a view to establishing the organization chart of TLC and Digital Hub.

Project: Leadership, Empowerment and Digital Innovation in Education and Learning 2

Notice: University funds with foreign surcharge

Scholarship thematic title: LEDIEL_Uniba 2_ New skills for faculty development in Higher Education contexts.

Research activity description: theories and processes that underlie digital innovation connected to AI to promote the improvement of the quality of teaching with a view to establishing the TLC and Digital Hub organizational chart.

Project: Leadership, Empowerment and Digital Innovation in Education and Learning 3

Notice: University funds with foreign surcharge

Scholarship thematic title: LEDIEL_UniFG - Quality of didactic models in higher education

Research activity description: theories and processes that underlie leadership, empowerment and entrepreneurial culture to promote the improvement of teaching quality with a view to establishment of the organization chart of TLC and Digital Hub.

Project: Leadership, Empowerment and Digital Innovation in Education and Learning 4

Notice: University funds with foreign surcharge

Scholarship thematic title: LEDIEL_UniParma Sustainability, innovation and experiential teaching models in Higher Education contexts

Research activity description: Creation and experimentation of training methodologies to promote innovation and guide the change of individuals and organizations with a view to establishing TLC.

Project: Leadership, Empowerment and Digital Innovation in Education and Learning 5

Notice: University funds with foreign supplement and charges for places without scholarship

Scholarship thematic title: LEDIEL_Verona

Research activity description: theories and processes related to the development of transversal skills (with particular reference to critical-reflective, ethical and problem-solving skills) as a tool to promote empowerment, innovation and guide the change of individuals and educational and training organizations from a Faculty Development and Teacher Education perspective.

Project: Leadership, Empowerment and Digital Innovation in Education and Learning 6 “Educational Impact Assessment of Verse, Education and Training in the Metaverse

Notice: DM 117 (Investimento 3.3)

Scholarship thematic title: LEDIEL_UniBa DM 117

Research activity description: study the cognitive and non-cognitive impact on student learning with the metaverse.

Project: Leadership, Empowerment and Digital Innovation in Education and Learning 7

Avviso: DM 118 (Investimento 3.4)

Scholarship thematic title: LEDIEL_UniBa Didactic models for professional development in Higher Education contexts.

Research activity description: creation and experimentation of active learning methodologies for professional development in the university field

Project: Leadership, Empowerment and Digital Innovation in Education and Learning 8

Avviso: DM 118 (Investimento 4.1 P.A.)

Scholarship thematic title: LEDIEL_UniBa Immersive teaching models in Higher Education contexts

Research activity description: creation and experimentation of training methodologies that apply AI in the field of PA

Project: Leadership, Empowerment and Digital Innovation in Education and Learning 9

Avviso: DM 118 (Investimento 4.1 P.A.)

Scholarship thematic title: LEDIEL_UniPalermo Immersive teaching models in Higher Education contexts

Research activity description: creation and testing of training methodologies that apply AI in the field of PA. The PhD project will aim to identify at which level of training university is eligible to enter the teaching with techniques such as TBL, PBL, etc..). In this regard, there will be the possibility to prepare and monitor lessons/seminars/mini-courses within subjects currently in position of doctoral, master's and/or triennial courses. Given the transversal nature of the methodology, the results of this project will benefit students from various disciplines.

Project: Leadership, Empowerment and Digital Innovation in Education and Learning 10

Avviso: DM 118 (Investimento 4.1 P.A.)

Scholarship thematic title: LEDIEL_UniGenova Models and methods for verifying the effectiveness of faculty development interventions.

Research activity description: definition of models and methods for evaluating the effectiveness of faculty development interventions within the Italian university context.

Project: Leadership, Empowerment and Digital Innovation in Education and Learning 11

Avviso: DM 118 (Investimento 4.1 P.A.)

Scholarship thematic title: LEDIEL_UniUrb Innovative models of professional development in Higher Education contexts.

Research activity description: Accessibility, usability and effectiveness of ICT-based experimental training courses aimed at university teachers.

Project: Leadership, Empowerment and Digital Innovation in Education and Learning 12

Avviso: DM 118 (Investimento 4.1 P.A.)

Scholarship thematic title: LEDIEL_UniTn_Systemic approaches and actors for academic development

Research activity description: The project aim is to structure and monitor, through focused research actions, a systemic approach to Faculty Development, with particular attention to strategies and actors relevant to create a sustainable and effective training model, based on dynamic academic development processes and thus on multilevel formal and informal actions aimed at the different roles and tasks of academics.

The ultimate goal of the research is - in the light of national and international literature - to test models, tools and practices aimed at structuring formative programs for academics and then assessing their impacts on teaching and learning processes. The research will be based within the Teaching and Learning Centre of the University (FormID): activities and specific professionals will support teaching innovation and eventually the growth of academics' teaching skills and the quality of students' learning.

Project: Leadership, Empowerment and Digital Innovation in Education and Learning 13

Avviso: position without scholarship LEDIEL_Uniba

Scholarship thematic title: Didactic models for the training of actors for the Teaching and Learning Center of Uniba.

Research activity description: creation and experimentation of training methodologies for the actors of the Uniba Teaching and Learning Center.

The examinations will be differentiated for each project and the respective rankings will merge into a single final ranking that will make the candidate eligible for the grant.

Candidates must indicate in attachment A), which represents integral part of this call, the choice of a single project under penalty of exclusion from the competition.

Admission procedure:

The selection will take place in accordance with **article 6 letter B** of the competition notice.

The selection will be based on scientific qualifications, original research project, to be attached to the application, and oral examination on theoretical and methodological insights inherent in the contents of the project presented, and the assessment of the knowledge of a foreign language: English. It must have a maximum length of 15000 characters, spaces and bibliography included. The project must include four sections: 1) state of the art / rationale and aims of the project, 2) method, 3) expected results, 4) potential threats to project success. The candidates' admission to the oral examination will be conditional upon a positive evaluation of the original research project. The oral examination will be held face-to-face or with remote examination and includes the simultaneous verification of knowledge of the foreign language: English.

The candidates' admission to the oral examination will be conditional upon a positive evaluation of the original research project. The research project will be discussed and the knowledge of the English as a foreign language will be assessed during the oral examination.

Examination for foreign candidates:

Foreign candidates can choose to take the exam either in Italian or English.

Calendar of the examination:

Start of the works (commission only) with evaluation of the qualifications and evaluation of the projects: 26 July 2023 at 9.00

Publication admitted to the oral exam on 27 July 2023, on the website:

<https://www.uniba.it/ricerca/dipartimenti/forpsicom/didattica/formazione-postlaurea/dottorato>

Oral examination: 28 July 2023 at 9.00, face-to-face in Aula Nelson Mandela I Floor, Palazzo Chiaia-Napolitano, via Crisanzio, 42 Bari. The possibility of a remote examination will be guaranteed for off-site candidates.

Admission exams calendar for non-resident candidates:

Oral examination: 28 July 2023 at 9.00, on MS Teams platform at link <https://is.gd/lediel>

Candidates will be invited to share the platform by an e-mail notification. The address of the e-mail is that they have declared on the registration form.

For more information, visit the website:

<https://www.uniba.it/ricerca/dipartimenti/forpsicom/didattica/formazione-postlaurea/dottorato>

ANNEX 15)

PROFILE

PhD PROGRAMME IN HUMANITIES, LANGUAGES AND ARTS

CUN Scientific Areas: 10 - Antiquity Studies, Philology, Literary Studies, Art History

Scientific Subject Codes: L-FIL-LET/02, L-FIL-LET/09, L-FIL-LET/10, L-FIL-LET/11, L-FIL-LET/13, L-FIL-LET/14, L-LIN/01, L-LIN/02, L-LIN/03, L-LIN/04, L-LIN/07, L-LIN/10, L-LIN/11, L-LIN/12, L-LIN/13, L-LIN/21, L-ART/01, L-ART/02, L-ART/03, L-ART/06, L-ART/07, M-GGR/01

Coordinator: Prof. Olimpia Imperio

Administrative office: Dipartimento di Ricerca e Innovazione Umanistica

PEC: dirium@pec.uniba.it

Duration: 3 years

Curricula:

- 1) Literatures and Philology (Scientific Subject Code: L-FIL-LET/02, L-FIL-LET/09, L-FIL-LET/10, L-FIL-LET/11, L-FIL-LET/13, L-FIL-LET/14; L-LIN/03, L-LIN/10, L-LIN/13, L-LIN/21)
- 2) Languages, Linguistics and Translation (Scientific Subject Code: L-LIN/01, L-LIN/02, L-LIN/04, L-LIN/07, L-LIN/10, L-LIN/12, L-LIN/13)
- 3) Arts, Theatre, Music and Performance Studies (Scientific Subject Code: L-ART/01, L-ART/02, L-ART/03, L-ART/06, L-ART/07, L-FIL-LET/02, L-FIL-LET/10, L-FIL-LET/11, L-LIN/10, L-LIN/11, M-GGR/01)

Total number of positions with fellowships n. 14:

- n. 13 positions supported by the PNRR program based on D.M. 118/23
- n. 1 position sponsored by the University of Bari

- Project: *Sculpture between Naples and Madrid, Spain and the viceroyalty in the Baroque period the artist Giacomo Colombo (1663-1731) and his school to be valorised*
- Call for tender D.M.118/23
- Title Scholarship: PNRR 4.1 – **Curriculum 3**

Research activity description: As part of the field of research in the scientific relations between Southern Italy and Spain, the research project is aimed at the study and enhancement of the Baroque sculptural heritage of Southern Italy through the analysis of the cultural, historical and artistic components as well as of the mutual influences, at an international level, between Italy and Spain. The survey of documents and territories that preserve the works of Giacomo Colombo and his school will make it possible to outline the profiles of the various clients and to reconstruct the geography of the trade and communication routes that were crucial for the movement of goods and works of art in the Mediterranean basin from the Kingdom of Naples to Spain between the seventeenth and eighteenth century. The project makes use of the scientific support of the Complutense University of Madrid.

- Project: *Cultural Tropes and New Media*
- Call for tender: D.M.118/23
- Title Scholarship: PNRR 4.1 – **Curriculum 1**

Research activity description: Starting from the wide notion of trope as a rhetorical figure apt to convey a content that is different from the literal and original one, the research examines the refunctionalisation of cultural and literary tropes by means

of current media narratives, in particular those delivered by social networks. In order to be able to analyze the reuse, it is necessary to trace the origin and the modern evolution of the cultural concept of trope also from an intermedial perspective. The case studies in question examine European literature and culture but also some particular local realities in order to single out some autonomous tropes of particular cultural products to then pinpoint their controversial aspects and their potentiality related to AI. In line with the goals of Next Generation EU, the research has a strong intercultural and multimedia approach.

- Project: *Digital Twin and trans-humanistic Narrations for 5.0 Industry*
- Call for tender: D.M.118/23
- Title Scholarship: PNRR 4.1 – **Curriculum 1**

Research activity description: Since 1950s, the implementation of Artificial Intelligence brought not only scientists and technologists, but writers and thinkers as well to take interest in its impact on private and community life. This project aims to carry on a research about the reflections of this debate in contemporary Italian literature, in which at least two positions are to be found: the first being more critic and concerned (which led to dystopic narrations), while the second being more oriented towards the economics and technological investments it can bring (to be found in trans-humanistic literature). In this frame it is nevertheless necessary to analyze which relationships take place between virtual reality (found in industry in the concept of Digital Twin) and one of the most investigated themes of literature tradition: the double.

Project: *FranJeu. Didactic Games and Linguistic Learning between Repository and Experimentation*

- Call for tender: D.M.118/23
- Title Scholarship: PNRR 4.1 P.A. – **Curriculum 2**
- Research activity description: This research refers to the gamification process and mainly to the use of games meant for functional purposes in various fields. Using an interdisciplinary approach, this project aims to promote a critical evaluation of this topic. It will focus on the new challenges that the Didactics of French as a Foreign Language has to face, starting from the constitution of an open access repository collecting the existing models which will empower teachers, trainers and the school staff. The setting up of a didactic experimentation through the use of apps and games will thus turn into a useful tool for the digital transformation of public administration and services, in order to foster foreign language learning in a context of internationalization. Following the principles of the PNRR, the project will be realized in collaboration with the Liceo Linguistico Cartesio and the Centre Sens, Texte, Informatique, Histoire of the Sorbonne Université.

Project: *The voices of the Apulian Franco-Provençal. Oral and ethnographic archive*

- Call for tender: D.M.118/23
- Title Scholarship: PNRR 4.1 P.A. – **Curriculum 2**
- Research activity description: The project aims at the collection of audio and ethnographic archive of the Franco-Provençal, the minority language spoken in the area of Faeto and Celle di San Vito (Apulia).

The project includes the following phases: 1) Identification and collection of audiovisual corpus concerning Franco-Provençal variety, 2) digitization of oral materials, 3) creation of an interactive speech archive, accompanied by texts and images of ethnolinguistic interest, maps and relevant linguistic schemes, 4) linguistic analysis of a speech sample, with particular attention to phonetic and phonological aspects. Partners of the project: Université Jean Moulin Lyon 3 (Dép. de Linguistique) and the Municipality of Faeto (province of Foggia).

- Project: *Collaborative knowledge building Dynamics in a multilingual Environment. Collaborative online Writing and Translation for Agenda 2030*
- Call for tender: D.M.118/23
- Title Scholarship: PNRR 4.1 P.A. – **Curriculum 2**

Research activity description: Against the background of the major role played by processes of collaborative knowledge building, the research aims to promote: 1) An investigation of collaborative dynamics in the practices of collaborative knowledge building (also via translation, with a special focus on texts related to the goals of the 2030 Agenda; 2) Qualitative-quantitative discourse analysis of Agenda 2030 topics based on corpora compiled from collaborative resources and traditional resources, in collaboration with the partner institution, the Centre for Corpus Research (Birmingham, UK); 3) Dissemination of the results through educational activities, seminars, and collaborative translation workshops at the partner institution, Liceo Scientifico Statale "G. Salvemini".

- Project: *Digital Approaches to Shakespearean Drama: research perspectives and multimedia experiments for inclusive education*
- Call for tender: D.M.118/23
- Title Scholarship: PNRR 4.1 P.A. – **Curriculum 1**
- Research activity description: The project aims: 1) to explore the potential of digital tools and methodologies in the research and teaching of Shakespearean Drama in light of the current critical debate and of the resources available on the web; 2) to propose specific case studies with a view to shedding light on literary, cultural, linguistic and performative aspects related to the representation of power in Shakespeare against the background of Elizabethan and Jacobean culture; 3) to create a digital archive of texts and multimedia materials related to this theme offering flexible reading paths which may be adapted to students' different study interests, abilities and special learning needs to enhance inclusive education. Project partners: Liceo Linguistico Bianchi Dottula (Bari) and University of Salford Manchester.

- Project: *Texts, Contexts and Sounds between music and poetry: an interdisciplinary and open access platform for the study of ancient Greek melic poetry*

- Call for tender: D.M.118/23
- Title Scholarship: PNRR 4.1 P.A. – **Curriculum 3**

Research activity description: The project aims to create an innovative, interdisciplinary open access platform containing the most significant fragments of archaic and late archaic Greek melic poetry. The purpose of the project is to conjugate both philological and metrical research methodologies, with particular attention to musical, singing and orchestric features, in order to reconstruct the performative context of the fragments which are under study. While examining contextual elements, it will be necessary to analyse ancient sources, such as fragments with musical notation and ancient musical treatises. The key contribution of Conservatorio 'Niccolò Piccinni' of Bari will allow to modernise the performative dimension of ancient poetry and to engage a broader audience.

- Project: *The presence of Puglia in the French culture of the nineteenth and twentieth centuries*
- Call for tender: D.M.118/23
- Title Scholarship: PNRR 4.1 P.A. – **Curriculum 1**
- Research activity description: The project consists in setting up a digital dictionary with different entries that represent the essential elements of the Apulian presence in French culture and vice versa. This dictionary will include illustrious artists such as Giuseppe and Léontine De Nittis or Ricciotto Canudo. But, alongside these famous names, it will be a question of reconstructing various biographies of less famous Apulian intellectuals in France, with particular attention to the female presence. Likewise, vice versa, it will be a question of identifying French artists and intellectuals, together with personalities from the political or economic world, in the Apulian territory. In addition, the Dictionary will list works with an Apulian setting, written by French authors, such as for example the recent "White House" by Jacques de Saint-Victor.

- Project: *Digital Humanities and Language Learning: assessing the impact of Data-Driven Learning*
- Call for tender: D.M.118/23
- Title Scholarship: PNRR 4.1 P.A. – **Curriculum 2**
- Research activity description: Data-driven learning (Data Driven Learning) is an empirical approach to language learning that considers language as data to be analysed. Accordingly, students take on the role of 'researchers' to be involved in 'discovery' tasks. Against this background, the project aims to: 1) explore the potential of Data-Driven Learning, on theoretical and applicative grounds, in the light of the current critical debate and of the panorama of existing resources; 2) to propose case studies based on the analysis of the impact of Data-Driven Learning in English language teaching at school level; 3) to create innovative teaching material and resources, with a view to a transfer of knowledge and a fruitful innovative dialogue between universities and schools.

- Project: *Archiving Art Relational Practices: Guidelines and Lexicon for Multimedia Relational Art Practices*
- Call for tender: D.M.118/23
- Title Scholarship: PNRR 4.1 Patrimoni Culturali – **Curriculum 3**

- **Research activity description:** Focusing on the ways of collecting, cataloguing, digitizing, and documenting the relational artistic practices developed over the 1990s, the project aims to train graduate students able to implement guidelines to map and archive practices that typically escape thorough and exhaustive documentation. In fact, in terms of process, this kind of art practices are closely linked to subjects outside the art system (such as local communities and stakeholders), and widely disseminated in the life of communities. The debate on archiving relational practices is still ongoing at the national and international levels, and no shared operational perspectives have emerged. In this regard, it seems useful to develop a lexicon and guidelines conducive to archiving relational and community-based practices.

- **Project:** *Festivals Green Book: Fundamentals of Eco-sustainable Event Organization and the Management of European Festivals of Film and Music*

- Call for tender: D.M. 118/23

- Title Scholarship: PNRR 3.4 Transizioni Digitali – **Curriculum 3**

- **Research activity description:** The project is aimed at creating a "consolidate text" set to collect key critical concepts, common terms and the best practices related to eco-sustainable management within live event organisations. In particular, the research is set to focus music and film festivals, thus hinging on two largely interrelated cultural fields in terms of organizational principles. Methodologically, the research will produce an international mapping of so-called green festivals. The mapping will be vertically integrated with data and information gathered through contextual analysis techniques, aiming to provide detailed descriptions of innovative eco-sustainable management practices from across Europe.

- **Project:** *Climate change in the Russian Arctic: environmental imperatives and sustainability in Russian-language literature of Russian Arctic minorities. A digital archive of authors, works, translations.*

- Call for tender: D.M.118/23

- Title Scholarship: PNRR 3.4 Transizioni Digitali – **Curriculum 1**

- **Research activity description:** The project will investigate the environmental impacts resulting from the anthropisation of the Arctic area belonging to the Russian Federation, through the study of the Russian-language literary works of the minorities that have inhabited this region for centuries. The geopolitical and economic value of this territory, but also its unique nature and the worldview of its inhabitants, are interconnected with the surrounding landscape. A number of studies published in Russia (especially Sokolova and Trošina) have not exhausted the problem of the reflections that the potential of this territory has on indigenous literature in Russian. The project aims to give them an organic structure, creating a digital archive of these texts and promoting the dissemination of their message.

Admission test (for all applicants)

The selection will be made following the art. 6 typology B of the call.

The examination will be based on the evaluation of candidate qualification, proposed project (in Italian or in English), oral interview (in Italian), and foreign language knowledge checking (English, French, Spanish, German or Russian).

Admission tests for foreigners:

The oral interview of foreign candidates will be held in Italian or in English.

Admission exam dates and time:

Qualification: (date) July 26th, 2023, 9 a.m.

Proposed project: (date) July 27th, 2023, 3 p.m.

Oral interview: (date and venue) July 28th, 2023, 9 a.m. - Aula Multimediale – Palazzo Ateneo, 2nd floor.

For more information see the website:

<https://www.uniba.it/it/ricerca/dipartimenti/dirium/postlaurea/dottorati/dottorato-in-ricerca-in-lettere-lingue-e-arti/dottorato-di-ricerca-in-lettere-lingue-e-arti-ciclo-xxxix/dottorato-di-ricerca-in-lettere-lingue-e-arti-ciclo-xxxix>

ALLEGATO 16)

PROFILE

PHD PROGRAMME IN METABOLISM, AGING AND SOCIAL MEDICINE- METABOLISMO, INVECCHIAMENTO E MEDICINA SOCIALE

Scientific Areas CUN: 05 – Biological sciences; 06 – Medical Sciences; 07 – Agricultural and veterinary sciences

Scientific disciplinary sectors: MED/04; MED/06; MED/07; MED/09; MED/13; MED/28; MED/36; MED/43; MED/44; MED/46; MED/50; AGR/15; BIO/10; VET/04

Coordinator: Prof. Antonio Moschetta

Administrative office: Interdisciplinary Department of Medicine – p.zza G. Cesare n.11 - 70124 Bari

PEC: direzione.dim@pec.uniba.it

Duration: 3 years

Curricula: NO

Total number of places available: n. 6

- 3 positions with scholarship D.M. 118/2023
- 1 position with scholarship D.M. 117/2023
- 1 position with a funded by Department of the University of Bari
- 1 position without scholarship

- **Project:** The carob tree source of nutraceuticals

Call for tender: D.M.118/23:(PNRR 4.1)

Title Scholarship: Functional foods source of nutraceuticals

Research activity description: Research activities: Analysis of the chemical profile of CEs; Study of the possible effect of CEs on the inhibition of enzymes involved in dysmetabolisms such as α -glucosidase and 3-hydroxy-3-methylglutaryl coenzyme A reductase (HMGCoAR); Formulation and evaluation of the chemical/physical stability of the nutraceutical product. Objectives: Enhancement of carob extracts (ECs) and evaluation of potential Health Claims; As follow-up; Identification of nutraceutical compounds responsible for biological activity; Realisation of nutraceutical formulations with high bioavailability, specific in the treatment of cardiovascular and dysmetabolic diseases. The study will assess whether ECs can be effective in the treatment of dysmetabolic diseases by inhibiting the responsible enzymes.

- **Project:** Systems Biology applied to liver metabolism to understand the Metabolic Syndrome and its liver complications (hepatic steatosis, hepatocarcinoma)

Call for tender: D.M.118/23:(PNRR 4.1)

Title Scholarship: Molecular Biology, Systems Biology, Pathophysiology of Liver Metabolism

Research activity description: Study of the molecular basis of obesity, metabolic syndrome, hepatic steatosis and their complications (cirrhosis/HCC, atherosclerosis). The DIM clinical research team is carrying out a metabolic/hepato-pathological phenotyping of patients. The project requires the PhD student to process mononuclear cells, serum/plasma, biopsies, DNA in the laboratory for omics (lipidomics, metabolomics, sequencing) and in vitro studies, and to spend a research period (6 months) at the Roger Williams Institute of Hepatology (London, UK) in order to conduct a metabolic/molecular characterisation of NAFLD, with a special interest 1) in lipoprotein metabolism and

systems biology 2) biological responses to nutritional/pharmacological therapies.

- **Project** Omics sciences and new therapeutic targets in neuroendocrine neoplasms
- **Call for tender:** D.M.118/23:(PNRR 4.1)

Title Scholarship: Identification of new antigenic targets for the treatment of neuroendocrine neoplasms

Research activity description: The project activity focuses on the identification of neoantigens, cancer-testis antigens, over-expressed antigens and viral antigens in gastroenteropancreatic and lung neuroendocrine neoplasms. In particular, exomic and transcriptomic sequencing data will be incorporated into bioinformatics pipelines for the prediction of putative epitopes. An in vitro validation process of the computational analyses will follow, and novel vaccine immunotherapy strategies will be tested in mouse models.

- **Project** Implementation of the Regional Observatory for Mediterranean Wellness, Health and Longevity Tourism
- **Call for tender:** D.M.117/23

Title Scholarship: Mediterranean wellness, health and longevity tourism

Research activity description: A new global trend is Wellness Tourism, a type of travel that focuses on the health and well-being of body, mind and spirit. In the light of the attention that tourists pay to the health experience as well as the cultural experience, it is of considerable interest to implement the data reported in the Regional Observatory with a series of indicators to assess how tourists' awareness of the close relationship between wellness, food and health has increased. The proposed project aims to collect data and analyse them in order to curve the tourism proposal towards the needs emerging from surveys and promotion campaigns, designed to make the tourism sector a growth driver for the South.

Modalità di ammissione:

The selection will take place in accordance with Article 6 letter B of the call for applications.

The examination will be based on the assessment of the qualifications, the research project proposed by the candidate (to be sent with the application), and an oral exam. The latter will be aimed at discussing the research project submitted as well as verifying general knowledge of the topics to which the project refers.

The Project, written in Italian or English, must be attached, under penalty of exclusion, to the application and must not exceed 12,000 characters in length, including spaces.

During the oral test, knowledge of the English language will also be tested.

Admission tests for foreigners:

Foreign candidates may choose to take the same admission tests in Italian or in English.

If necessary, the tests will take place telematically on a Microsoft Teams platform.

Admission exam dates and time:

Evaluation of qualifications: 26 July 2023, 9:00 am.

Project evaluation: 26 July 2023, 02:00 pm.

Oral exam: 28 July 2023, 9:00 am.

Location: Aula Frugoni - Interdisciplinary Department of Medicine, c/o Pad. Chini - Bari Polyclinic, p.zza G. Cesare n.11 – 70124 Bari

For more information see the website:

<https://www.uniba.it/it/ricerca/dipartimenti/dim/dottorato/home-dottorato>

PROFILE

PhD PROGRAMME IN APPLIED NEUROSCIENCES

Scientific CUN areas: 05 (BIOLOGICAL SCIENCES), 06 (MEDICAL SCIENCES), 11 (HISTORY, PHILOSOPHY, PEDAGOGY AND PSYCHOLOGY Sciences), 02 (PHYSICAL SCIENCES).

Scientific Subject Codes:

Curricula:

1) Basic Sciences (Scientific Subject Codes: BIO/09, BIO/10, BIO/11, BIO/12, BIO/13, BIO/16, BIO/17 M-PSI/02 e FIS/07);

2) Clinical Sciences: (Scientific Subject Codes: MED/05, MED/10, MED/25, MED/26, MED/27, MED/30, MED/31, MED/33, MED/34, MED/39, MED/48, MED/50, M-PSI/01, e M-EDF/02);

Coordinator: Prof. Domenico RIBATTI

Administrative office: Department of Translational Biomedicine and Neuroscience

PEC: direzione.dibrain@pec.uniba.it

Duration: 3 years

Curricula: Yes

Curricula:

1) Basic Sciences

2) Clinical Sciences

Total number of positions available as PhD students: n.5

Total number of positions with fellowships n. 4:

- Number 1 **position** with scholarship for **curriculum # 1**:
- **Project:** “Effect of nutraceuticals on mitochondrial dysfunctions in chemotherapy induced peripheral neuropathy (CIPN)”
- **Call for tender:** Ministerial Decree n. 118 of March 2, 2023 - PNRR 4.1
- **Title Scholarship:** “Effect of nutraceuticals on mitochondrial dysfunctions in chemotherapy induced peripheral neuropathy (CIPN)”
- **Research activity description:**

The pharmacological anti-cancer approach offers several opportunities, but the management of side effect remains an important problem. Chemotherapy-induced peripheral neuropathies (CIPN) represent one of the most disabling side effects. The anticancer drugs, although acting with different molecular mechanisms, induce CIPN (Xiao et al., *Neur.* 2012). To date there is no therapy for the prevention or treatment of CIPN (Flatters et al., *British J. An.*, 2017). The anticancer drugs cause, at the peripheral sensory nervous system, dysfunctions of bioenergetics and mitochondrial dynamics (Doyle and Salvemini, *Neur. Lett.*, 2021; Flatters et al., *Brit. Anaes.* 2017). More data reported the beneficial effect of nutraceuticals (resveratrol, hydroxytyrosol) on mitochondrial function by acting both as antioxidants and as modulators of several signaling pathways (Signorile

et al., BBA 2014; Signorile et al., Antioxidants 2020; Signorile et al., Biomolecules 2021). The aims of project are: i) study the molecular mechanisms and signal transduction pathways involved in mitochondrial dysfunctions associated with CIPN; ii) Test the effect of nutraceuticals in the prevention or treatment CIPN.

- Number 1 **position** with scholarship for **curriculum # 1**:
- **Project**: “Evaluation of the epigenetic and functional effects of natural bioactive products on cellular models of Parkinson disorders”
- **Call for tender**: Ministerial Decree n. 118 of March 2, 2023 - PNRR 4.1
- **Title Scholarship**: “Evaluation of the epigenetic and functional effects of natural bioactive products on cellular models of Parkinson disorders”
- **Research activity description**:

Parkinson's disease (PD) is the second most common multifactorial neurodegenerative disorder (ND). Gene-specific epigenetic changes have been observed, and considering their reversibility, have been proposed as potential therapeutic targets to treat or delay neurodegeneration. The first aim of this project is to identify epigenetic modifications in 2 different ‘in vitro’ cellular models: parkin-mutant fibroblasts from patients affected by familial PD and neurotoxin-induced models using mesenchymal stem cells from periapical cysts differentiated into dopaminergic neurons. The second aim is to explore, in these cellular models, epigenetic and functional effects of natural bioactive compounds (multi-target epidrugs), able to reverse the mitochondrial/cellular damage.

- Number 1 **position** with scholarship for **curriculum # 1**:
- **Project**: “Association between gene co-expression, clinical symptoms and neurobiological phenotypes in individuals at risk for or with first-episode psychosis”
- **Call for tender**: Ministerial Decree n. 118 of March 2, 2023 - PNRR 4.1
- **Title Scholarship**: “Association between gene co-expression, clinical symptoms and neurobiological phenotypes in individuals at risk for or with first-episode psychosis”
- **Research activity description**:

The aim of this project is to generate gene expression and polygenic co-expression indexes from post-mortem human brain data collected from individuals with and without a psychiatric or neurological history. In addition, we will compute polygenic risk scores associated with co-expression patterns. We will use these data, either on their own or in combination with cognitive and neurobiological phenotypes, employing artificial intelligence algorithms to discriminate between healthy controls, individuals at risk for psychosis, and patients with psychosis. The expected outcome is the creation of a gene expression model informed by co-expression features that can explain neurobiological and behavioral phenotypes associated with psychosis. By developing innovative approaches to networks, it will be possible to derive clinically relevant predictions for the genetic or clinical risk status of individuals. The project is already integrated into a prestigious network of international collaborations, such as the one with the Lieber Institute for Brain Development (Johns Hopkins School of Medicine, Baltimore, USA) and the EU7 PRONIA consortium (Personalized Prognostic Tools for Early Psychosis Management).

- Number 1 **position** with scholarship for **curriculum # 1**:
- **Project**: “A multiscale integrated approach to the study of the nervous system in health and disease” - MNESYS
- **Call for tender**: Ministerial Decree n. 341 of March 15, 2022 - PNRR Initiative, Mission 4, Component 2, Investment 1.3 – “Partnerships extended to universities, research centers, companies and research project funding” - NextGeneration EU
- **ID code**: PE00000006
- **CUP**: H93C22000660006

- **Title Scholarship:** “Glioblastoma biomarkers: from AQP4ex to other biomarkers for early detection of tumor progression”

- **Research activity description:**

The PhD student will study glioblastoma and identify potential biomarkers.

The objectives of the research project are:

1. To unveil the complexity of the tumor by analyzing the involvement of the alteration of AQP4ex localization in tumor staging and invasion;
2. To understand tumor transformation and progression by developing models using animal models and vascularized brain organoids;
3. To characterize the extracellular vesicles deriving from gliomas in order to identify tumor biomarkers;
4. To examine the functional relationships between tumor cells and the surrounding healthy tissue by studying the electrophysiological properties of the tumor and its microenvironment.

Number 1 **position** without scholarship – (**curriculum # 1**)

Arrangements for admission: The selection will be made following the art. 6 typology B of the call.

The examination will be based on the evaluation of candidate qualification, proposed project, oral interview, and foreign language knowledge checking (English).

Admission tests for foreigners: Foreign candidates can do the exam in Italian or in English.

Calendar of admission exams:

Oral exam: **THURSDAY, JULY 27, 2023 at 10:00 AM**

Venue of the exams: **Classroom “A” - “New Complex of Biomedical Sciences” – Policlinico Consorziiale di Bari – Piazza Giulio Cesare, 11 – Bari – 70124.**

For more information, see:

<http://www.uniba.it/ricerca/dottorati>

<https://www.uniba.it/it/ricerca/dipartimenti/dibrain>

<http://www.uniba.it/ricerca/dipartimenti/disspa/dottorato-di-ricerca>

ANNEX 18)

PROFILE

PhD PROGRAMME IN ARCHAEOLOGICAL, HISTORICAL, ARCHITECTURAL MEDITERRANEAN LANDSCAPE HERITAGE: INTEGRATED SYSTEMS OF KNOWLEDGE, PLANNING, PRESERVATION AND PROMOTION

CUN Scientific Areas: 08a – Architecture, 10 - Ancient History, Philology, Literature and Art History, 11 - Historical, philosophical, pedagogical and psychological sciences

Scientific Subject Codes: L-ANT/01; L-ANT/06; L-ANT/07; L-ANT/08; L-ANT/09; L-ANT/10; L-FIL-LET/01; L-ART/01; L-ART/02; L-ART/03; L-ART/04; ICAR/08; ICAR/10; ICAR/11; ICAR/13; ICAR/14; ICAR/15; ICAR/16; ICAR/17; ICAR/18; ICAR/19; ICAR/21; M/DEA/01; M-PED/01; M-PSI/08.

Coordinator: Prof. Giuliano VOLPE

Administrative office: Department of Humanistic Research and Innovation, University of Bari 'Aldo Moro'

PEC: direzione.dirium@pec.uniba.it

Duration: 3 years

Curricula:

1) Archaeological, historical, architectural and landscape heritage: knowledge, methods and techniques

Scientific Subject Code: L-ANT/01 (5%), L-ANT/06 (5%), L-ANT/07 (10%), L-ANT/08 (10%), L-ANT/09 (5%), L-ANT/10 (20%), L-FIL-LET/01 (5%), ICAR/10 (5%), ICAR/18 (10%), ICAR/19 (10%); ICAR/15 (5%), ICAR/21 (5%), ICAR/22 (5%)

2) Archaeological, historical, architectural and landscape heritage: project methods and techniques

Scientific Subject Code: L-ANT/01 (5%), L-ANT/06 (5%), L-ANT/07 (10%), L-ANT/08 (10%), L-ANT/09 (5%), L-ANT/10 (20%), L-FIL-LET/01 (5%), ICAR/10 (5%), ICAR/18 (10%), ICAR/19 (10%); ICAR/15 (5%), ICAR/21 (5%), ICAR/22 (5%)

3) Archaeological, historical, architectural and landscape heritage: methods and techniques of participation and inclusion

Scientific Subject Code: M-DEA/01 (50%), M-PED/01 (20%), L-ANT/10 (5%), L-ART/01 (5%); L-ART/02 (5%); L-ART/03 (5%); L-ART/04 (5%); ICAR/22 (5%)

Total number of positions with fellowships **n. 37**:

- **n. 3** positions type 5 with scholarship funded by **University of Studies of Bari**
- **n. 6** positions type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by **University of Studies of Bari**, focusing on the following topic:
 - **Project** PNRR 4.1 Pubblica Amministrazione
Call for tender [D.M.118/23: PNRR 4.1 P.A.]
Title Scholarship: *Historic, urban, rural, underwater landscapes*
Research activity description: Research on ways of living, the organization of urban, rural and coastal spaces, socio-economic systems, the circulation of goods, navigation, the exploitation of resources from land and sea, artisanal and industrial productions from prehistoric to modern-contemporary times with particular reference to the Apulian territory and/or southern regions. The studies will be articulated in the scientific paths and in the investigation methods of the fields of Landscape Archaeology, Archaeology of the Contemporary age, Underwater and Nautical Archaeology, Archaeology of architecture, Archaeology of Production and Material Culture, and will also consider aspects related to preventive archaeology, safeguard, communication, valorization and management, and the relationship between historical landscapes and local communities in the spirit of the European Landscape Conventions (Florence 2000) and on the value of cultural heritage for society (Faro 2005).

A six-month research period is planned at entities/institutions in Italy that have an agreement with the doctoral course (the MiC Direzione Generale Archeologia, Belle Arti e Paesaggio, ICA; the Soprintendenza Nazionale per il patrimonio culturale subacqueo, Taranto) and a period of equal length at affiliated foreign entities/institutions (the INCIPIT institute, (Istituto de Ciencias del Patrimonio) in Santiago de Compostela, Spain; the Italian Archaeological School of Athens (SAIA); the Centre Camille Jullian, Aix-en-Provence; the VIAS (Vienna Institute for Archaeological Science))

- **n. 5** positions type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by **University of Studies of Bari**, focusing on the following topic:

Project PNRR 4.1 Pubblica Amministrazione

Call for tender [D.M.118/23: PNRR 4.1 Patrimoni Culturali]

Title Scholarship: *Humans and the Environment, between knowledge, communication and participation*

Research activity description: Research on the relationship between humans and the environment from prehistoric to modern-contemporary times, on the definition of human communities, on the relationships they have established over time with the contexts and settlements in which they live, on the ecosystems and farming practices and specialized crops, in relation to economic dynamics, social stratifications and environmental conditions, with particular reference to sites in Southern Italy and Apulia.

The ultimate goal will be the reconstruction of historical landscapes delineated over time up to the present day, through the methodological approaches of archaeoanthropology and funerary archaeology, bioarchaeology, archaeobotany and archaeometry finalized, also, to their transmission to the communities of the present. Specific attention will be given to the advancement of knowledge on museology, on the digitization of collections and tangible and intangible heritage, and on the new perspectives opened up by artificial intelligence and metaverse, on communication, on enhancement and management of cultural heritage, on the relationship with different audiences, on work and local development, on forms of participation of 'heritage communities', in the horizontal and inclusive spirit of the Convention on the Value of Cultural Heritage for Society (Faro 2005) and on the most innovative methodological horizons of public archaeology and museum studies. A six-month research period is planned at Italian entities/institutions affiliated with the doctoral course (the Fondazione Scuola dei beni e attività culturali, Rome; the Museum of Civilizations, Rome) and a period of equal length at affiliated foreign entities/institutions (the Consejo Superior de Investigaciones Científicas (CSIC), Spain; the VIAS (Vienna Institute for Archaeological Science); the University of Valencia (Archaechemis research unit); the University of South Florida (USA))

- **n. 1** positions type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by the **Polytechnic University of Bari**, focusing on the following topic:

Project PNRR 4.1 Patrimoni culturali

Call for tender: [D.M.118/23: PNRR 4.1 Patrimoni culturali]

Title Scholarship: *Minoan architecture in its three-dimensionality: for a scientific verification of its image*

Research activity description: Among ancient architectural cultures, the one flourished in Crete between the 20th and 14th cent. B.C. is far from the compositional principles that rule the productions of the historical period in the Mediterranean. In this uniqueness, a prominent place is occupied by the volumetric articulation in the Minoan palaces, featured by multi-storey elevations connected by complex distribution systems. However, there is a lack of studies of these articulations, and the research, to be conducted considering structural, aesthetic, functional and distributive aspects, aims to identify tools for analysing the elevations of the Minoan Palaces and a critical reading of the drawings already edited, according to the principles of virtual restoration that establish the value of scientific transparency in virtual archaeology.

The project foresees the following two stages of study and research: 6 months at the Centro di Archeologia Cretese in Catania and 6 months at Italian Archaeological School in Athens.

- **n. 1** positions type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by the **Polytechnic University of Bari**, focusing on the following topic:

Project PNRR 4.1 Patrimoni culturali

Call for tender: [D.M.118/23: PNRR 4.1 Patrimoni culturali]

Title Scholarship: *Integrated innovative practices for the knowledge and valorization of archaeological parks in the Mediterranean region: case studies compared between Italy and Montenegro*

Research activity description: The Mediterranean region is characterized by the presence of historical sites with considerable potential but still vulnerable and undervalued; particularly, the Ionian-Adriatic region, because of its geographical and historical-cultural condition, can constitute a "laboratory" to elaborate/verify cognitive, conservation and communication practices aimed at recognition and valorisation of the heritage and at its relationship with other 'resources' such as natural-landscape ones. With a holistic approach, the project is aimed at the knowledge, design, management and usability of archaeological sites, as well as at communication strategies and involvement of local communities.

Starting from case studies in Italy and referring to the Montenegrin and Albanian border territories, the objective is to identify the most suitable strategies for enhancing the archaeological heritage, contributing to its conservation and strengthening its value for local communities. At the same time, to propose a reflection on the development of good practices for the management and use of heritage both at a local level and in more general terms, through a comparison with the Italian experience.

The project foresees the following two stages of study and research: 6 months at the MiC Regional Secretariat for Apulia and 6 months at the University of Montenegro.

- **n. 2** positions type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by the **Polytechnic University of Bari**, focusing on the following project:

Project PNRR 4.1 Pubblica Amministrazione

Call for tender: [D.M.118/23: PNRR 4.1 P.A.]

Title Scholarship: *Theories and techniques of design for archaeological places in stratified Mediterranean landscapes*

Research activity description: The project deals with the relationship between Architecture, Archaeology and Landscape, from a point of view that assumes the architectural project as a privileged tool for the protection and enhancement of archaeological sites within the dimension of the landscape.

It will take on one or more experimental cases, such as the archaeological parks of Grumentum, Herakleia and Saturo, which, together with evident problems common to many archaeological parks – related to the needs of accessibility, fruition, protection – present in latency extraordinary characteristics – linked to the relationship that the shape of the ancient city established with the orographic substrate and with the elements of geography, to the spatial sequences that it built, to the identity of its architectures – that only a morphological thought can make not only evident again, but also effective with respect to these same needs.

The design experimentation, applied to the above mentioned case studies, will be aimed at recomposing the topography of the site through interventions on its thickness and forms of geography, integrating the 'technical' aspects of securing, accessibility and protection (coverings of the ruins) with the interpretation of the forms latent in the archaeological traces. The goal is to identify general and transmissible theories and techniques of design, capable of offering cognitive and methodological advancement to current intervention practices.

The project foresees the following two stages of study and research: 6 months at the University of Coimbra (Department of Architecture) or at the University of Valladolid (LABPAP Laboratory) and 6 months at the Regional Direction of the Museums of Basilicata or at the Soprintendenza Nazionale per il Patrimonio Culturale Subacqueo di Taranto.

- **n. 1** positions type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by the **Polytechnic University of Bari**, focusing on the following topic:

Project PNRR 4.1

Call for tender: [D.M.118/23: PNRR 4.1]

Title Scholarship: *The Forms of the "Sacred Mountain". Innovative techniques for knowledge, transformation and valorisation of the places of worship in the Gargano National Park*

Research activity description: The Gargano promontory is an area dotted with numerous important places of worship. On this mountain massif, in ancient and recent times, hermitages, abbeys and monasteries have arisen, expressions of an intense spirituality. So much so that, today, this geographical area could be understood as a single large sanctuary coinciding with the entire Gargano National Park. The research will have to deal with the study of these architectures by focusing attention not only on their value in itself, but also on their relational value,

i.e. on their ability to interpret a place, establishing relationships with other constituent elements, from geographical, landscape and orographic, to settlement ones. Each of these sanctuaries, in fact, embodies a particular aspect of sacredness or religiosity, which is based on the interpretation of the natural place in which it is located. With reference to the purposes of the PNRR, this research aims to define cognitive, interpretative and transformative practices, oriented towards valorisation, useful to territorial government bodies and interested parties dealing with heritage landscapes.

The project foresees a period of study and research of 6 months at the Universitat Politècnica de Catalunya (Escuela Técnica Superior de Arquitectura de Barcelona).

- **n. 2** positions type 4 funded by **University of Studies of Palermo (Polo di Agrigento)**.
- **n. 1** position type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by **University of Studies of Palermo (Polo di Agrigento)** focusing on the following topic:
 - Project** PNRR 4.1 Pubblica Amministrazione
 - Call for tender** [D.M.118/23: PNRR 4.1 P.A.]
 - Title Scholarship:** *The Valley of the Temples of Agrigento in the contemporary landscape*
 - Research activity description:** Akragas is a place of extraordinary beauty where the signs of classicism dialogue with the landscape (natural and anthropic) but which nevertheless presents contradictions and criticalities; This condition allows to investigate in an emblematic way an archaeological context of exceptional value that must reconcile, in the physical present, modernity and memory, the ways of living and the testimonies of history and architecture. The opportunity to read and interpret the memory of the place in relation to its current condition gives the architectural project the opportunity to reinterpret beauty and, starting from this, the sense of modification. The research aims to investigate through the theoretical and experimental tools of the project the possible relationships between archaeological landscape and territory in order to propose more appropriate forms of use and integration. The aim is to systematize the historical-artistic and natural stratifications, elaborating the memory and potential of the places.
There will be a 6-month internship and research period at "Parco della Valle dei Templi" in Agrigento and 6 months at the Universidad de Sevilla, Escuela Técnica Superior de Arquitectura (Spain).
- **n. 1** position type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by **University of Studies of Basilicata** focusing on the following topic:
 - Project** PNRR 4.1 Patrimoni Culturali
 - Call for tender** [D.M.118/23: PNRR 4.1 Patrimoni Culturali]
 - Title Scholarship:** *Archaeology of production and archaeometry*
 - Research activity description:** Archaeometric diagnostics for the archaeological heritage. Knowledge systems and analysis protocols for the reconstruction of the dynamics of the archaeology of production (archaeological artefacts) and the archaeology of architecture (building materials, mortars, wall decorations). Particular attention will be paid to studies and analyses concerning Southern Italy and Basilicata in particular, in a diachronic perspective between antiquity and the Middle Ages, with an eye to the themes of exchanges and connections with neighbouring regions in terms of the exploitation of raw materials and the circulation of technological knowledge. The project must guarantee an integrated, interdisciplinary and diachronic methodological approach aimed at the study, conservation and protection of artefacts and productive landscapes. A stay and research period of 6 months is foreseen at the CNR IMAA, Potenza. Expected period abroad: 6 months at the National Centre for Scientific Research "DEMOKRITOS", Athens (institute of Nanoscience and Nanotechnology / Cultural Heritage sector).
- **n. 1** position type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by **University of Studies of Basilicata** focusing on the following topic:
 - Project** PNRR 4.1 Pubblica Amministrazione
 - Call for tender** [D.M.118/23: PNRR 4.1 P.A.]
 - Title Scholarship:** *Ethnographic study of museums and cultural heritage*
 - Research activity description:** Ethnographic study of museums and cultural heritage. The participation of local communities in enhancing cultural heritage. The relationship between the world of work and research and the best practices that integrate these two fronts. The applications of research in institutional and administrative settings.

The role of institutions in administrative practices and policies on cultural heritage. A stay and research period of 6 months is foreseen at the regional ABAP Superintendencies and at the Soprintendenza Archeologia Belle Arti e Paesaggio of Basilicata. Expected period abroad: 6 months at Institut Català de Recerca en Patrimoni Cultural (Girona - Spain).

- **n. 1** position type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by **University of Studies of Napoli Federico II** focusing on the following topic:
Project PNRR 4.1 Patrimoni Culturali
Call for tender [D.M.118/23: PNRR 4.1 Patrimoni Culturali]
Title Scholarship: *Project strategies for inland and marginal archaeological areas*
Research activity description: The research relates to the definition and experimentation of design strategies for archaeological sites in inland and marginal areas, with particular reference to the southern Italian regions. The goal is to build an advancement of knowledge on places not sufficiently investigated from the point of view of landscape potential and territorial networks. Strategic lines of action for the studied territories will be defined through targeted architectural design insights, developed in the context of a multidisciplinary dialogue. Periods of research activities are required at the Superintendence of Archeology, Fine Arts and Landscape for the Metropolitan Area of Naples (six months) and at Departamento de Expresión Gráfica Arquitectónica y en la Ingeniería, Universidad de Granada, Spain (six months).
- **n. 1** position type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by **University of Studies of Napoli Federico II**, focusing on the following topic:
Title Scholarship: *Urban, landscape and environmental history of Campi Flegrei between the 19th and 20th centuries.*
Research activity description: The Campi Flegrei area is an ideal field of investigation to bring out some issues that the new generation of historical-territorial and urban studies must put at the center of its attention. Between the nineteenth and twentieth centuries, complex and not always coordinated modernization interventions regarded the creation of new railway lines, new military and commercial port structures, the establishment of factories, the reclamation of swamps and the drying up of lakes. A territory that for centuries has assumed the role of myth, in the presence of exceptional thermal, archaeological and naturalistic resources, partly seen as a limit and partly as development potential, was always interested by a consolidated international dimension of tourism that is measured with local phenomena of various kind. Between really built works and not realized projects, a possibly full of implications case study emerges, where urban and landscape history is intertwined with the environmental one.
On the basis of in-depth research of primary and secondary - archival and iconographic – sources, which are typical of urban-historical and territorial-historical studies, integrated with adequate field surveys, the research intends not only to investigate an exemplary area for the complexity of its transformations between eighteenth and twentieth centuries, but also to refine the usual, consolidated methodologies with innovative elements concerning environmental studies.
A research period of 6 months is foreseen at the Superintendency of Archaeology, Fine Arts and Landscape of the Metropolitan City of Naples, and another one of 6 months at the Kunsthistorisches Institut der Universität zu Köln, (Germany).
- **n. 1** position type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by **University IUAV of Venezia**, focusing on the following topic:
Project PNRR 4.1 Pubblica Amministrazione
Call for tender [D.M.118/23: PNRR 4.1 P.A.]
Title Scholarship: *Historical-archaeological traces and landscape construction between mainland and coast*
Research activity description: The research deals with the study of different pieces of landscape as places where new and ancient forms of production, and new and ancient settlement types can show unprecedented forms of development, through specific and original design relations. Compared to a technical-administrative and managerial practice that is not always able to make the instances of protection, conservation and urban legislation dialogue with the contingency of contemporary settlement phenomenologies, the goal is to relocate the problem of ancient structures and infrastructures within the perspective of the city and the landscape, including the coastal

one, of the present and the future, overcoming "defensive" conceptions that are identified with mere conservative recovery, which are impermeable to design logic in interpreting solicitations of transformation and development. A research period of 6 months is foreseen at the Soprintendenza Nazionale per il patrimonio subacqueo, Venice office, and a six-month period abroad at Centre Camille Jullian Aix-en-Provence.

- **n. 1** position type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by **University IUAV of Venezia**, focusing on the following topic:

Project PNRR 4.1 Patrimoni Culturali

Call for tender [D.M.118/23: PNRR 4.1 Patrimoni Culturali]

Title Scholarship: *In the sign of William Hamilton: The configurative profile of the Phlegraean coast, between archaeological evidence and literary and artistic documents*

Research activity description: The research aims to reconstruct the three-dimensional configuration of the Phlegraean coast (in its natural and artificial consistencies) as the British archaeologist, diplomat, antiquarian and volcanologist William Hamilton (1730-1803) depicted it in the volume *Campi Flegrei*. Observations on the Volcanoes of the Two Sicilies, published in Naples between 1776 and 1779, based on his scientific reports sent to the Royal Society. This 18th-century editorial masterpiece was made possible by the culture and the patronage of the British gentleman, who was at that time the Minister Plenipotentiary of Great Britain at the court of Naples, but especially by the art of the Anglo-Neapolitan painter Pietro Fabris (1740-1792), who was the author of the 59 tempera paintings that illustrate the book. Focusing the study on the plates depicting the emergences of the Phlegraean area, and also drawing on the iconographic repertoires of other famous contemporary vedutists, the research intends to develop a digital, interactive and explorable model of this incredible area of very high archaeological density as it must have appeared in the eyes of Hamilton himself: the orographic structure, the vegetation, and the ruins which were visible in the second half of the eighteenth century, will thus be able to be experienced (also in VR and AR) in a model that will return the area to a situation still lacking the conurbation that characterizes it today. The research work will involve a campaign of digital surveys of the archaeological emergencies that insist in the Phlegraean area, in order to elaborate digital models consistent with the eighteenth-century iconographic repertoire. This work will require a coordinated plan with the major public institutions involved to the preservation and communication of that historical-artistic and archaeological heritage. A research period of 6 months is foreseen at Parco Archeologico dei Campi Flegrei, and a six-month period abroad at Hamilton Foundation in London.

- **n. 2** positions type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by **La Sapienza University of Rome** on the following topic:

Project PNRR 4.1 Pubblica Amministrazione

Call for tender [D.M.118/23: PNRR 4.1 P.A.]

Title Scholarships: *Architecture, Archaeology and Landscape*

Research activity description: Cultural heritage and landscape are areas in which countries with a significant historical background are carrying out a reflection capable of addressing the pressures related to tourism, climate change and identity issues requiring an interdisciplinary and transnational collaborative approach. Europe and the entire Mediterranean area are rich in sites where the relationship between archaeology, urban space and nature represents the material and conceptual space for potential synergies. If the past is not only a dead legacy but also a precious source of contemporary meanings, archaeology can be the foundation of new relational values. Working in stratified cities and territories, respecting their historical and environmental values means addressing the cultural and technical complexity of conservation and enhancement projects. The research of PhD students will address methodological guidelines for the knowledge, conservation, transformation of archaeological areas in urban and natural contexts. The research activity can be conducted for a period of six months at the Archaeological Park of the Colosseum and the Archaeological Park of Appia Antica, and for a period of equal duration at the University of Coimbra and the Polytechnic of Athens.

- **n. 1** position type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by **University of Studies of Roma Tre** focusing on the following topic:

Project PNRR 4.1

Call for tender [D.M.118/23: PNRR 4.1]

Title Scholarship: *Forms of the soil and forms of the city in Etruria.*

Research activity description: Rivers, forests, mountains, and valleys are not only the landscape that humankind inhabits from prehistory to the present but are also the living forces with which it has measured itself by creating its history and fueling its imagination.

Nature and culture are not two opposite and distinct realities. Instead, man's history arises from their symbiosis and continuous exchange that dominates cultural, artistic, and scientific horizons, translating ideas into spaces. He has the strength to conquer his existence and consciousness historically.

The research orientation aims to investigate the primary elements of the dwelling condition from the study of land, soil, and how it becomes an anthropic environment and city.

The field of action is southern Etruria: "a territory in which the vestiges of the past seem to undergo a metamorphosis, a mummification of culture in the magic of silence."

A residency and research period of 6 months at ETSAVA, Escuela Técnica Superior de Arquitectura de Valladolid - Uva is planned. Spain.

- **n. 1** position type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by **University of Studies of Foggia** focusing on the following topic:

Project PNRR 4.1 Patrimoni Culturali

Call for tender [D.M.118/23: PNRR 4.1 Patrimoni Culturali]

Title Scholarship: *Landscapes and Archaeological Heritage*

Research activity description: Research on landscape archaeology, settlements and material culture from prehistory to the modern-contemporary age, with particular reference to Apulia and South Italy and an interdisciplinary approach, focusing on the actual outcomes in the fields of the promotion, preservation and management of territories, as well as on forms of communication and the use of technologies.

A period of stay and research of six months at one or more of the Ministero della Cultura (SABAP) locations, in connection with the topics of the doctoral research, and one of equal length at SAIA-Scuola Archeologica Italiana di Atene is envisaged.

- **n. 1** position type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by **University of Studies of Perugia**, focusing the following topic:

Project PNRR 4.1 Patrimoni Culturali

Call for tender [D.M.118/23: PNRR 4.1 Patrimoni Culturali]

Title Scholarship: *(Re)inhabiting Monte Castello di Vibio (PG): ethnography of practices, knowledge and memories working on participation and cultural heritage*

Research activity description: Inhabiting small towns can mean producing sociocultural resources that are both factual and imaginative for the future. In this sense, the main objective of the project is to identify and protect, in order to revive in the contemporary and possibly into the future, forms of memory of practices and knowledge that, to date, constitute valuable heritage resources of the Monte Castello Vibio (PG) territory. A second objective is to create, through a participatory ethnography, shared paths of valorization of these resources, including a web archive, exhibition spaces and permanent workshops on specific lines of interest: paths designed, activated and developed in a constant dialogue between researcher, local administration and interested inhabitants. The doctoral fellow will carry out his or her three years of work in relationship with the Municipality of Montecastello di Vibio. In particular, a period of research activity of 6 months at the same Municipality and 6 months at the Școala Națională de Studii Politice și Administrative, Bucharest, Romania is planned.

- **n. 1** position type 1 with scholarship D.M. n. 118/23, PNRR, funded by **University of Studies of Milano-Bicocca**, focusing on the following topic:

Project PNRR 4.1

Call for tender [D.M.118/23: PNRR 4.1]

Title Scholarship: *Intangible heritage and agricultural knowledge related to viticulture in the area of Vignanello and Etruria cimina (Viterbo).*

Research activity description: Viticulture in the territory of Vignanello (VT) and on the eastern side of the Monti Cimini, whose evidence dates back to the Etruscan-Faliscan age, obtained quality awards (DOC) in the

1990s. Nevertheless, hazelnut cultivation has taken away a large part of the land from vineyards, olive groves and cultivated biodiversity, to the point of homogenizing the landscape.

In recent years, however, there has been a revival of interest in local wine production, the spread of festivals and rituals associated with it, the birth of a new ethnological museum (Museo Divino, 2023) dedicated to local viticulture.

The project will be based on ethnographic research through local sources – observation of social practices and implicit knowledge related to viticulture – with the aim of promoting cultivated biodiversity and the intergenerational transmission of know-how, generating social positive effects.

Specifically, the following goals will be pursued:

1. Promote participation and social inclusion through the enhancement of intangible heritage linked to viticulture within public spaces and places of culture (Museo Divino);
2. Develop innovative methods of heritage-making and restitution, through curating, artistic, performative, and community practices, about the agricultural knowledge concerning viticulture.

The research project will be developed in cooperation with the municipality of Vignarello (VT) as host organization (six months). A six-month training and research period abroad will be held at the Universitat de Barcelona (Facultat de Geografia i Història, Departament d'Antropologia Social).

- **n. 1** position type 4 with scholarship funded by the **Polytechnic University of Milano**.
- **n. 1** position type 1 with scholarship D.M. n. 118/23, Inv. 4.1- PNRR, funded by **University of Studies of Cagliari** focusing on the following topic:

Project PNRR 4.1 Patrimoni Culturali

Call for tender [D.M.118/23: PNRR 4.1 Patrimoni Culturali]

Title Scholarship: Nuragic Sardinia. Architecture, archaeology and landscape

Research activity description: Sardinia's archaeological heritage, distinguished by the very dense permanence of architectural and landscape forms dating back to the Nuragic period, constitutes the central theme of readings that today are interested in interpreting antiquity not so much as a collection of precious elements arranged in the territory, but as signs of a harmonious integration between resources and sustainable settlement.

The research aims to reconstruct the relationships between archaeology, architecture and landscape as an active field of principles and material for the contemporary project. The articulations of Nuragic architectures in natural environments, in harmony with the landscape units of reference, and their formal and compositional declinations, constitute the basic materials for the mending of relations between the past and contemporaneity, in the perspective of a renewal of the models of fruition. In particular, the research will have to develop an in-depth study of the archaeological history of Sardinia, of its successive historical phases, aimed at contributing to the UNESCO candidature of the Nuragic heritage.

There will be a 6-month research period at SABAP Cagliari and a 6-month period at Departamento de Arquitetura, Universidade de Évora (Pt).

- **n. 1** position type 4 with scholarship funded by the **National Research Council (CNR)**.

Admission procedure:

The selection will be made following the art. 6 typology B of the call.

The examination will be based on the evaluation of the qualifications, the research project proposed by the candidate and an interview, with verification of knowledge of the following foreign language: English or French or Spanish. The interview will take place preferably in person or also by videoconference at the candidate's motivated request. The applicant may also submit with the application two reference letters from scholars specialised in the proposed field of research to accompany the research project.

Projects must be contained within 16,000 characters and must include: 1.1 Title; 2.1 Key words (no. 5); 2.2 Description of the research project; 2.2.a) State of the art; 2.2.b) Objectives; 2.2.c) Methods; 2.2.d) Expected results; 2.3 Bibliographic references.

Candidates may choose to participate in the awarding of one of the PNRR grants on specific themes and also a free-theme grant.

There will be only one examination and a single ranking list of merit. The places offered in the competition will be allocated, among the three curricula, according to the order in the merit list, until the places are exhausted; the PNRR fellowships will be allocated following the single ranking list on the basis of the options made by the candidates.

Admission tests for foreigners:

Foreign candidates may choose to take the entrance examination in Italian, English, French or Spanish.

The selection will take place on the basis of the evaluation of the qualifications, the research project proposed by the candidate and an interview. Foreign candidates will have to demonstrate knowledge of a language other than that of their own country and also sufficient knowledge of Italian. The applicant may also submit with the application two reference letters from scholars specialised in the proposed field of research, to accompany the research project.

The interview of foreign candidates may take place by videoconference, in accordance with the procedures set out in the call for applications.

Access requirements:

“Laurea magistrale” or “Laurea specialistica” (second cycle university degree, e.g., M.A., M.Sc.) in:

LM-1 Cultural anthropology and ethnology

LM-2 Archaeology

LM-3 Landscape architecture

LM-4 Architecture and building engineering-architecture

LM-4 c.u. Architecture and building engineering-architecture (five-year)

LM-5 Archival and library science

LM-10 Conservation of architectural and environmental heritage

LM-11 Science for the conservation of cultural heritage

LM-14 Modern Philology

LM-15 Philology, literature and history of antiquity

LM-23 Civil engineering

LM-24 Building Engineering systems

LM-35 Environmental and land use engineering

LM-43 Information technology methodologies for the humanities

LM-48 Urban and environmental spatial planning

LM-49 Planning and management of tourism systems

LM-50 Educational services planning and management

LM-75 Science and technology for the environment and territory

LM-76 Economic sciences for the environment and culture

LM-80 Geographical sciences

LM-84 Historical sciences

LM-88 Sociology and social research

LM-89 History of art

LMR/02 Conservation and restoration of cultural heritage

1/S (master's degree in cultural anthropology and ethnology)

2/S (master's degree in archaeology)

3/S (master's degree in landscape architecture)

4/S (master's degree in architecture and construction engineering)

5/S (master's degree in archival and library science)

10/S (master's degree in conservation of architectural and environmental heritage)

12/S (master's degree in conservation and restoration of historical and artistic heritage)

13/S (master's degree in publishing, multimedia communication and journalism)

15/S (master's degree in philology and literature of antiquity)

16/S (master's degree in modern philology)

24/S (master's degree in computer science for the humanities)

28/S (master's degree in civil engineering)

54/S (master's degree in urban and environmental planning)

55/S (master's degree in planning and management of tourism systems)

93/S (master's degree in ancient history)

95/S (master's degree in art history)

97/S (master's degree in medieval history)

98/S (master's degree in modern history)

Degree taken under the old Italian university system (prior to the one introduced by the Italian Ministerial Decree No. 509/99) in Humanities, Architecture, Engineering

Access requirements for graduates from foreign universities:

Equivalent foreign degree in the same scientific fields

Admission exam dates and time:

Qualification: July 26-27 , 2023

Proposed project: July 27-28, 2023

Oral interview: July 31-August 2, 2023; Department of Humanistic Research and Innovation, University of Bari 'Aldo Moro', (venue: Santa Teresa dei Maschi, strada Torretta, città vecchia), Time: 9 a.m.

For more information see the website:

<https://www.uniba.it/it/ricerca/dipartimenti/dirium/postlaurea/dottorati/dottorato-in-patrimoni-archeologici-storici-architettonici-e-paesaggistici-mediterranei>

ANNEX 19)

Information SHEET

Ph.D IN HISTORICAL AND PHILOSOPHICAL HERITAGE FOR SUSTAINABLE INNOVATION

Areas CUN: 10 Antiquities; Philology; Literary Studies; Art History 11 – History, Philosophy, Pedagogy and Psychology; 13 – Economics and Statistics

Academic disciplines list for Italian University Research and Teaching: L-ANT/02; L-ANT/03 ; M-FIL/01 ; M-FIL/02 ; M-FIL/04 ; M-FIL/05 ; M-FIL/06 ; M-FIL/08 ; M-STO/01 ; M-STO/02 ; M-STO/04 ; M-STO/05 ; M-STO/07 ; M-STO/09 ; SECS-P/12

Director: ELISABETTA TODISCO

Lead Department: DIPARTIMENTO DI RICERCA E INNOVAZIONE UMANISTICA

E-MAIL: Elisabetta.todisco@uniba.it

PhD length 3 years

Curricula:

1) PHILOSOPHICAL DISCIPLINES (Academic disciplines list for Italian University Research and Teaching: M-FIL/01 ; M-FIL/02 ; M-FIL/04 ; M-FIL/05 ; M-FIL/06 ; M-FIL/08 ; M-STO/05)

2) HISTORICAL DISCIPLINES (Academic disciplines list for Italian University Research and Teaching: L-ANT/02 ; L-ANT/03 ; M-STO/01 ; M-STO/02 ; M-STO/04 ; M-STO/07 ; M-STO/09 ; SECS-P/12)

Total number of positions: **14** of which:

- **n. 1 position, funded by University of Bari, reserved to candidates with degrees from foreign universities (not distributed among the curricula);**

- **n. 5: curriculum 1: Philosophical Studies, as follows:**

- n. 1 of grant-assisted position funded by the University of Molise;
- n. 1 position under D.M. n. 117 of 2 March 2023, innovative doctorates with an industrial connotation, funded by Space S.p.A. (Prato), on the topic “**(Expressive) forms of work: art, cinema and literature in the cultural history of the Cittadella dell’Ospitalità di Assisi: study, digitalization and shared use**”: The “Cittadella dell’Ospitalità” di Assisi, founded in 1939, has always been characterized by its collection of works of high artistic and social value (volumes, magazines, artworks, antique prints, engravings, videos). This impressive collection - surprising for quantity, quality and variety - ignited the curiosity and interest of central figures in the Italian and international culture of the second half of the 20th century, such as Pasolini and Bergman. Such a wealth, however, has never been catalogued, either in terms of archiving or digitalization and dissemination. This project, therefore, intends to do research, study and organize part of this material, focusing on photographic testimonies and (artistic, cinematographic or literary) works that have “work” as their dominant theme;
- n. 1 position under D.M. n. 117 of 2 March 2023, innovative doctorates with an industrial connotation, funded by University of Foggia and Società Agricola Manduano S.r.l. (Cerignola-FG), on the topic: “**The philosophy of wine between history and territory**”: This project intends to follow two closely related themes 1) a historical-philosophical study of the territory and the authors who have stimulated viticulture and oenology in the province of Foggia (it is assumed that “classic method” sparkling wine was already being produced in Cerignola at the end of the 19th century); a historical reconstruction of the wine-making tradition from the Romans to the present day; 2) a study of the

winemakers' business philosophy from the end of the 19th century to the present day in order to understand how it has evolved over time thanks not only to scientific research but also to a new narrative of wine;

- n. 1 position, D.M. n. 118 of 2 March 2023, doctorates for the Public Administration, on the topic: “**The Industrialization and the Ecological Impact in Apulia**”: This project aims to reconstruct the political and media debate which since the 1970s in Apulia has focused on ecological issues. Attention will be paid to technical and health inquiries related to cases of environmental disasters (e.g., the 1976 explosion of the Anic factory in Manfredonia) or infrastructure projects, industrial plants, etc. established while ignoring the characteristics and vocation of the territory, and which have showed the negative effects of an economic development blind to the needs of the life and health of the population;
- n. 1 position, D.M. n. 118 of 2 March 2023, doctorates PNRR, on the topic: “**The Experience of Beauty as a Constitutive Function of the Intangible Heritage of Culture in the Context of Contemporary Digitization**”: The project will focus on the phenomenon of beauty in the contemporary perspective of digital culture, studying the ways and forms by which it gives meaning to a representation of reality that would otherwise remain “statistical” and automated. In the experience of beauty, philosophy intertwines with cognitive science, sensory perception and conceptual representation, calculative thinking and metaphysical reflection, globalization, and localization of culture. Particular attention will be given to the history of thought, regarding the foundations of 'beauty,' the evolution of taste and the aesthetic (and meta-aesthetic) canon in the countries of the Mediterranean area with special regard to the collective imagination and intangible heritage of Italy and the Iberian Peninsula;

- **n. 8 curriculum 2: Historical Studies**, as follows:

- n. 1 position, D.M. n. 117 of 2 March 2023, innovative doctorates with an industrial connotation, funded by Ferrovie del Sud Est e Servizi automobilistici S.r.L. (Bari), on the topic: “**Archives and historical-cultural routes along the railroad. The University and the Southeast Bari Railways**”. The project has a twofold purpose: to initiate a path of study, digitization and enhancement of the historical archives of the company Ferrovie del Sud Est Barese; to merge historical knowledge and the redevelopment and renewal of the cultural-tourist offer in terms of technological innovation. The goal is the elaboration of innovative solutions for an eco-sustainable and accessible cultural tourism based on the conception of historical-cultural paths and itineraries along the more than 400 km of the railway lines of the Southeast;
- n. 1 position, D.M. n. 118 of 2 March 2023, doctorates for the Public Administration, on the topic: “**Migrations in the Province of Bari from the Post-World War II Period to Current Times: Historical Enquiries in a Euro-Mediterranean Perspective**”: This project aims at developing an historical enquiry on migratory flows in the province of Bari since 1945, with a focus on the turn occurred around the Seventies, when Italy increasingly became a land of net intake of migrants. The historical perspective of the project shall focus on the social, cultural and political impact of the migration flows as well as on the governance put in place to control and integrate foreigners from the Seventies until today. The study shall look at the peculiarities of the province of Bari and check them in the framework of migration in Puglia and South Italy with a view to the EU policies. The research activity includes a data implementation in existing databases
- n. 1 position, D.M. n. 118 of 2 March 2023, doctorates for the Public Administration, on the topic: “**Women’s Violence and Patterns of Female Criminality**” For the past few decades, the study of violence has fully entered historical research and historiographical debate as an autonomous category of analysis, even in its gendered declination. However, violence acted out by women has remained at the margins of analysis and reflection. Drawing on criminal sources, printed sources and treatises from the Modern era, this project will investigate the patterns of violent crimes committed by women. In particular, it will focus on infanticide, a crime that has undergone different judicial considerations and treatments over time, which will need to be reconstructed and contextualized. Once a case history for the modern age has been defined and analysed, it will be compared with current legislation and some contemporary case studies
- n. 1 position, D.M. n. 118 of 2 March 2023, doctorates for the Public Administration, on the topic: “**Material Religiosity and the Cure: The Role of “Sacred Objects” in the Process of Healing from Ancient Sanctuaries to Modern Therapeutical Spaces**”: Material aspects of religion are currently recognized as of the utmost importance not only from a historical perspective (continuity/discontinuity and change from paganism to traditional religions, from Judaism to Christianity), but also from the “emic” perspective of the individuals and groups. The project proposal should focus

on the role and the value attributed to “sacred” objects and object-related healing practices (amulets, thermal therapies, herbal therapies, metamorphosis of the element), connecting them to bodily behaviours and mental attitudes developed in the context of sacred and therapeutic spaces, especially in the Mediterranean context. The starting point of the research should be the Late Antiquity, but the investigation may be developed up to Modern and contemporary times;

- 1 position, D.M. n. 118 of 2 March 2023, doctorates PNRR, funded by the University of Naples “L’Orientale” on the topic: “**Patterns of Political and Judicial Decisions in the Greek Poleis of the Classical and Hellenistic Ages**”: The project proposal will engage with a study of the patterns and types of political and judicial decisions in the Greek communities of the Classical and Hellenistic Ages. A special consideration should be dedicated to the voting systems adopted in the institutions (assembly, council, courts), as well as the ways of counting the votes, in order to highlight the peculiarities of the practice of voting in Greek societies, comparing and contrasting them with the later periods. The research, which may focus on specific case studies, requires an interdisciplinary expertise that combines epigraphy, history of political institutions and archaeology;
- n. 1 position, D.M. n. 118 of 2 March 2023, doctorates PNRR, on the topic: “**Facing the crises. Recovery and resilience strategies in the Late Roman Republic**”: The aim of this project is to study how the functioning of the institutions in ancient Rome is influenced by social, cultural or political occurrences, either as a result of long-term processes or disruptive events. The period to be investigated is the Roman Republican age, in particular from the end of the 2nd century BC to 27 BC. The research will focus on one of the Roman institutions or on specific political themes and events (articulated in their complexity), and requires an interdisciplinary competence that combines advanced knowledge of Roman ancient history and knowledge of classical philology, Roman law and institutions. The project should also contribute to a diachronic historical reflection about the relationships investigated;
- n. 1 position, D.M. n. 118 of 2 March 2023, doctorates PNRR, on the topic: “**Migrations, Mediterranean, Femininity: Paths of Research on the Historical-Religious Heritage from Antiquity to Contemporary Times**”: The project proposal should focus on the role of religious traditions as a triggering factor in the context of migrations, during a chronological timespan covering Antiquity, Late Antiquity, Middle Ages, with a potential engagement with contemporaneity. From a geographical perspective, the context of the research should focus preferably on the Mediterranean, perceived as a sacred space of “crossing” and “salvation”. Project proposals should also address the nexus between religion and gender, analyzing aspects of female religiosity in the framework of migrations.;
- n. 1 position, D.M. n. 118 of 2 March 2023, doctorates for cultural heritage, on the topic: “**Paleography in the Third Millennium. Knowing, protecting and enhancing the manuscript heritage in the digital transition between cultures, societies and religions**”: The project aims to explore the connections between manuscript book sciences (paleography and codicology) and digital humanities. The focus is on historically coherent collections or corpora of manuscripts related to the history of the Apulian territory. The integrated study of these manuscripts (texts, scripts, material aspects, decoration) must exploit digital technologies both for research and for the elaboration of innovative solutions for the valorization and fruition of book heritage.

Selection procedure will be different for each curriculum and within this by type of position or project. The final ranking list of each curriculum are dealt with separately and then they will feed into one general ranking list.

For each curriculum, according to the type of position or project, PhD posts will be allocated based on the ranking list.

Non allocated posts due to a lack of successful candidates in one curriculum will be attributed to another curriculum, always following the general ranking list of these positions.

Candidates must indicate the choice of one curriculum, **under penalty of exclusion**. Candidates who do not specify the curriculum they apply for will be excluded from the competition, even if they do not compete for a scholarship already allocated to one of the curricula (position reserved to candidates with degrees from foreign universities). Furthermore, whoever intends to compete for a scholarship on a specific topic must specify the title of the research project for which she/he is competing.

Admission criteria:

The exam procedures will be taken in accordance with art. 6 lett. B).

Selection of candidates will be based on qualifications, research project (to be sent together with the application), oral examination and on the foreign language skills assessment on the basis of what has been indicated in the application (English, French, German or Spanish).

Procedures for the exam for foreign candidates:

Foreign candidates can choose to take the entrance examination in Italian or English.

Calendar for admission procedures:

Evaluation of qualifications: 26 July 2023

Evaluation of Proposed project: 27 July 2023

Oral interview: 28 July 2023, Classroom 10 (Sala Riviste di storia), Palazzo Ateneo, second floor, P.zza Umberto I, 70121 Bari; at 10:00 A.M.

For the place reserved for graduates from foreign universities, the exam will take place online using the Microsoft Teams platform; the access code to the platform will be communicated to the candidates on the PhD website in Historical and Philosophical Heritage for sustainable innovation.

For more information, see:

<https://w3.uniba.it/ricerca/dipartimenti/dirium/postlaurea/dottorati/dottorato-in-patrimoni-storici-e-filosofici-per-uninnovazione-sostenibile/a-a-2022-2023-xxxviii-ciclo>

PROFILE

PhD PROGRAMME IN ANIMAL HEALTH AND ZOOSES

CUN Scientific Areas: 07 Scienze Agrarie e Veterinarie, 06 Scienze Mediche

Scientific Subject Codes: VET/02, VET/03, VET/04, VET/05, VET/06 and MED/42

Coordinator: Prof.ssa Maria Tempesta

Administrative office: Department of Veterinary Medicine

PEC: direttore.dimev@pec.uniba.it

Duration: 3 years

Curricula: NO

Total positions with scholarship available: n. 4

- n. 3 positions supported by the University of Bari (UNIBA)
- n. 1 position supported by the PNRR program based on DM 117/23 (one), for:

- **Project:** Degradation of mycotoxins by Cold Atmospheric Pressure Plasma (CAPP)
- **Call:** D.M.117/23 – innovative doctorates
- **Fellowship title:** Application of Cold Atmospheric Pressure Plasma (CAPP) technology for mycotoxin risk management in animal feed.
- **Description of research activity:** Cold Atmospheric Pressure Plasma (CAPP), called Cold Plasma, is an emerging and eco-sustainable technology having different applications in agri-food companies. CAPP allows treating food contaminated by mycotoxins avoiding heat treatments, with relative energy savings and reduction of environmental impact. Several studies have already shown the technique's efficacy in the degradation of aflatoxins in cereal products. The study aims to widen the use of CAPP for mycotoxin risk management (Ochratoxin, Fumolisine) in animal feed, to ensure animal welfare and public health from a holistic One Health perspective.

Total positions without scholarships available n. 1

Admission procedure:

The selection will be made following the art. 6 typology B of the call.

The examination will be based on the evaluation of candidate qualification, proposed project written in English, oral interview on curriculum and project, and foreign language knowledge checking (English).

Admission tests for foreigners:

The videoconference interview of foreign candidates will be in English.

Admission exam dates and time:

Qualification : 26th July 2023

Proposed project: 26th July 2023

Oral interview: 28th July 2023 hr 9.30 a.m. (CET) for Italian candidates onsite at the library of the Section of Infectious Diseases of the Department of Veterinary Medicine, sp 62 Casamassima km 3, Valenzano (BARI). The videoconference

interview of foreign candidates will be held online on Skype platform, at an agreed time.

For more information see the website:

<http://www.uniba.it/ricerca/dipartimenti/dipmedveterinaria>

PROFILE

PhD PROGRAM IN PUBLIC HEALTH, CLINICAL MEDICINE, AND ONCOLOGY

CUN Scientific Areas: 05 – Biological Sciences / 06 – Medical Sciences / 12 – Legal Sciences

Scientific Subject Codes: BIO/14 - MED/01 – MED/06 - MED/09 - MED/12 – MED/16 – MED/17 - MED/18 - MED/38 - MED/40 - MED/42 – MED/45 - MED/46 – IUS/09

Coordinator: Prof. Jean-François Desaphy

Administrative office: Department of Precision and Regenerative Medicine and Ionian Area

PEC: direzione.dimeprej@pec.uniba.it

Duration: 3 years

Curricula: NO

Total number of available positions: n. 5, as follows

- n. 1 position with scholarship according to MD 117/23
- n. 2 positions with scholarship according to MD 118/23 (PNRR 4.1)
- n. 1 position with scholarship according to MD 118/23 (Public Administration 4.1)
- n 1 position without scholarship

The available positions will be awarded according to the order in the merit ranking, until the positions will be exhausted.

Description of the research project relative to the scholarship according to MD 117/23:

Title: GutMet - Human GUT Microbiome From Health To Metabolic Dysfunctions

Metabolic disorders including obesity, type 2 diabetes, metabolic syndrome, metabolic-associated fatty liver disease (MAFLD) are increasing worldwide. The gut microbiota plays a key role in steps like nutrient absorption, caloric control, control of chronic metabolic inflammation, and maintenance of healthy gut barrier and gut-liver, gut-brain axes. Since trillions of bacteria, 12 phyla and >10,000 microbial species are populating the human gut, very little is known about the ultimate microbial profile in health and in a number of metabolic abnormalities, namely obesity, type 2D and MAFLD. Furthermore, the role of gut microbiota manipulation by lifestyle, dietary changes and use of pre-biotic, probiotics, and synbiotics is poorly known. GutMet is an ambitious project aimed to study the profile of human gut microbiota (16S analyses, metabolome etc.) with respect to location (Italy, Austria, Spain) in a group of healthy individuals and in subgroup of obese individuals with or without T2D and MAFLD before and after intervention (lifestyle, and probiotics). The established collaboration with top industrial (Allergosan, Austria) and academic partners (University of Navarra, Spain) will allow the fellow to gain experience in the field of microbioma, metabolome, innovative tests (gut permeability, gastrointestinal function, metabolic parameters dietary recording, quality of life). This project will perfectly fill within ongoing projects at the proposing research unit (e.g., Horizon Pas Gras, 2023; PRIMA, 2023, Euroseeds, UNIBA 2022) and will produce a major impact in the scientific literature in the field (Di Ciaula et al. Contribution of the microbiome for better phenotyping of people living with obesity. *Rev Endocr Metab Disord* 2023;1-32 doi 10.1007/s11154-023-09798-1)

Description of the research projects relative to scholarships according to MD 118/23 (PNRR 4.1):

Title 1: TroiCam Translational Research in Oncoematology and Immunology: novel approaches through Cellular and Animal Models

Rare diseases in oncohematology and immunology represent an area of great interest in medical research, as they are often poorly understood and difficult to diagnose and treat. These diseases, with a prevalence of less than 5 cases/10,000 people,

present a high degree of multi-organ medical-biological complexity, requiring the involvement of multidisciplinary scientific expertise. The research project aims to use a translational approach to study these diseases, with the goal of improving the quality of life of patients. The investigational part of the doctoral research will focus on the use of cellular and animal models. These models will be employed to test the efficacy of new pharmacological therapies, such as immunotherapy. The translational approach will aim to translate the results obtained from preclinical-models into patient care. Scientific and/or cultural expertise from different disciplines will be useful in developing new effective therapies. Basic knowledge of immunology, cellular biology, and pre-clinical animal models is required. The established collaboration with the Interdisciplinary Center for Clinical Research Laboratory for Experimental Stem Cell Transplantation, Würzburg University Medical School, will perfectly place the fellow in a scientific horizon of renowned international fame (Solimando AG, et al. Leukemia. 2018, PMID: 29064484). This experience will produce a significant impact on the scientific literature of the reference sector.

Title 2: Digital health literacy in health care setting

The PhD program will be focused on improving the digital health literacy of health professionals in order to reduce inequalities and promote social inclusion to ensure a high level of equity in national welfare systems and across the EU, which will then be able to rely on a digitally literate health workforce. The aim is to improve the quality of care provided to patients by health professionals and to develop new health professionals with advanced digital skills that could be transferred to patients, improving patient empowerment and satisfaction. The benefits would also be felt in the interprofessional context, with a better integration of new technologies into clinical care practice and positive spillover effects in the transfer of information between different health services.

Description of the research projects relative to scholarships according to MD 118/23 (Public Administration 4.1):

Title: Health data flows as support for the management dashboard of Health Trust

The field of the PhD course is the analysis of the tools for the implementation of dashboard for the management of the Health Trust, with particular regard to the use of data flows (both sanitary data and administrative data). The PhD training program regards observational and evaluative epidemiology. Observational epidemiology methods and contents are needed to better define the burden of diseases and the health profile of the population, while evaluative epidemiology is useful to study the effectiveness of health intervention planned and implemented by welfare organizations. The use of informative flows required a multidisciplinary approach, not only by the Public Health perspective but also in the view of legal and management sciences.

Admission procedures: The examination procedures will be performed according to art. 6 letter B.

The selection will be made based on scientific qualifications, examination of an original research project coherent with the PhD topics, and an interview including the discussion of the project.

The research project (max. 10.000 chars including spaces, either in Italian or in English) has to be previously sent by the candidate together with the admission application. This is mandatory: missing of the project will be cause of exclusion from the competition.

The interview will focus on random questions regarding topics of the PhD course and on the discussion of the research project provided for by the candidate, taking in consideration originality, scientific rigor, and relevance to the PhD topics. Knowledge of English language will be also verified.

Specificity for foreign candidates:

Foreign candidates will have the opportunity to take the examination in Italian or English.

Place and schedule of the examination:

Qualification: 26/07/2023

Examination of proposed project: 28/07/2023

Interview: 01/08/2023

The interview will take place in the Pharmacology Classroom, Biological Institute, Bari Polyclinic

For more information, please visit the website:

<https://www.uniba.it/it/ricerca/dipartimenti/dimepre-j/ricerca/dottorato/spmco>

ANNEX 22)

PROFILE

PhD PROGRAMME IN CHEMICAL AND MOLECULAR SCIENCE

Scientific area CUN: 03 Chemical Science

Scientific Subject Codes: CHIM/01, CHIM/02, CHIM/03, CHIM/06, CHIM/10 and CHIM/12

Coordinator: Prof. Pietro Favia

Administrative location: Dipartimento di Chimica

PEC: direttore.chimica@pec.uniba.it

Duration: 3 years

Curricula:

- 1) Advanced chemical processes (Scientific Subject Codes CHIM/01, CHIM/02, CHIM/03, CHIM/06)
- 2) Chemistry of innovative materials (Scientific Subject Codes CHIM/01, CHIM/02, CHIM/03, CHIM/06)
- 3) Chemistry of biological systems (Scientific Subject Codes CHIM/01, CHIM/02, CHIM/03, CHIM/06, CHIM/10 and CHIM/12)

Total number of available positions n. 16:

- n. 2 positions with a scholarship from the University;
- n. 1 positions with a scholarship financed by CNR-Istituto di Cristallografia:

Project: PNRR - Rafforzamento e creazione di Infrastrutture di Ricerca – Missione 4 - Linea di investimento 3.1
Titolo: “Potentiating the Italian Capacity for Structural Biology Services in Instruct - ERIC” - ITACA.SB, IR0000009,
CUP: B53C22001790006

Avviso PNRR: D.D. MUR n. 3264 del 28/12/2021

Research projects: Nanoscale and molecular structural analysis of biological materials such as proteins and transport vesicles for drug development and structural biology studies using bioSAXS and USAXS

DESCRIPTION: The aim of the research project is to characterize nanomaterials with low-angle (SAXS) and high-angle (WAXS) X-ray scattering techniques, which can provide a complete picture of the material structure from the supra-molecular scale (SAXS) to the sub-molecular one (WAXS). SAXS and WAXS techniques will be applied to nanocrystals/nanoparticles/nanofibers dispersed in solution or in solid state. Laboratory equipment, available at the Crystallography Institute of the CNR/Bari, will be used. In addition, experiments will be realized also at selected synchrotron radiation beamlines, after presentation of proposals. SAXS/WAXS contrast scanning microscopy will be used, aimed at exploring extended areas of a material, and studying the heterogeneity of specific characteristics, at the microscopic scale. The structural investigations will concern nanomaterials of interest for Pharmaceuticals and Regenerative Medicine.

- n.7 positions with a scholarship financed under DM 117/23:
 1. n.1 scholarship co-financed by SCA SERVIZI CHIMICI AMBIENTALI SRL for the research project “Innovative methodologies for studying the biodegradability of new biobase materials”

DESCRIPTION: The goal of project is this sustainability and circular economy into the enhancement of industrial process waste through their use in innovative strategies for the production of new materials, with particular reference to the abatement of CO₂ and the development of an innovative method for the determination of the biodegradability of materials.

2. n.1 scholarship co-financed by ENI SPA for the research project “Study of eco-sustainable methods for the abatement of the organic fraction responsible for the Chemical Oxygen Demand in the wastewater of industrial plants”

DESCRIPTION: The primary objective is to identify innovative and eco-sustainable protocols aimed at reducing the oxidizable organic pollutant component present in wastewater both from industrial sources and in plants for the treatment or storage of urban waste. The chemical oxygen demand (Chemical Oxygen Demand, COD) is an indirect index of the presence of these undesired oxidizable substances and represents a key parameter for assessing the degree of risk of wastewaters and, consequently, the possibility of their disposal or re-discharge into aquifers. The evaluation of various treatment approaches of such wastewaters based on large-scale oxidation reactions using environmentally friendly oxidizing agents and metal catalysts from waste materials (e.g. disused electronic circuits or car bodies) will be carried out with the purpose of giving new life to waste, transforming it into precious resources for the purification of waste water.

3. n.1 scholarship co-financed by ENI SPA for the research project “Study of innovative methods of biofuel extraction from organic waste of the agri-food chain via the use of green solvents and carbon dioxide in the supercritical fluid state”

DESCRIPTION: The aim of the research study is to identify eco-sustainable protocols for the production of biofuels using agri-food organic waste as the raw material (for example dairy waste, fish or slaughterhouse processing waste, waste oil, urban organic waste). The biofuels derived from these organic waste materials are seen as a valid alternative to the use of petroleum which is at this point an energy source that is running out. The production of biodiesel from waste involves a first phase of extraction of the lipid component and a subsequent trans-esterification of these extracted lipids. Green extraction methods of lipid compounds will be developed by evaluating the effectiveness of carbon dioxide in the supercritical state as an extraction fluid. The performances and efficiency of this extraction process will be compared with those of traditional methods. The novelty of the research study includes on one hand, the valorisation of waste as functional materials and on the other hand, the potential of offering a solution to the abatement, capture, recovery and recycling of greenhouse gases, enhancing it as a green extractor fluid that can be used in the future in closed-cycle extraction plants that do not require the use of solvents to be disposed of.

4. n.1 scholarship co-financed by JABER Innovation srl for the research project “Development and characterization of new Plastic-Free Super Absorbent Polymers for the manufacture of sanitary devices”

DESCRIPTION: The research activity involves the development of plastic-free superabsorbent polymers (SAP) which represent the new frontier in the manufacture of sanitary devices. Given the global trend towards banning the use of disposable plastic products in the future and limiting the generation of persistent microplastics, the development of biodegradable polymers represents the ecological solution to be pursued. Currently, SAPs are mainly based on non-biodegradable polyacrylates, therefore, the aim of the project will be the synthesis and characterization of new SAP, starting from cellulose, alone or mixed with other natural polymers, to produce hydrogels “bio” whose raw materials fall within the concept of Circular Economy.

5. n.1 scholarship co-financed by Catalisi Innovativa per il Riciclo del Carbonio e Biopolimeri-CIRC srl for the research project “Conversion of carbon dioxide and water into energy products under visible light irradiation” **DESCRIPTION:** The Research Project is part of the EU DESIRED Project (2022-2026) of which IC2R is partner. DESIRED aims at the conversion of CO₂ and H₂O into energy products and chemicals, such as CH₃OH and C₂₊ molecules under irradiation with Visible solar light in a new concept Reactor. Hydrogen, CO and methane are not targets of this Project. Catalysts (photo-, photo-electro-catalysts) should be developed under inert atmosphere conditions and photo-, photo-electro-chemical techniques will be used. For the characterization of the catalysts and reaction mixtures equipment such as GC, GC-MS, EDX will be used. Photoreactors and pressure reactors will also be used.

6. n.1 scholarship co-financed by Fater S.p.A for the research project “Environmental sustainable degreasing formulations”

DESCRIPTION: Solid surfaces run the gamut from high-energy (ceramic and metal) to low-energy (plastic) surfaces. Soils, also, can vary, from very nonpolar (motor oil) to very polar (lime scale), and combinations of everything in between. The tenacity of the soil adherence will therefore vary according to the combination of soil and surface. There is an ongoing need for effective hard surface cleaning compositions that exhibit superior cleaning performance but that are environmentally friendly and avoid undesirable residues. The aim of this project is to develop tools capable of predicting phase behaviour and other properties of formulations for degreasing purpose.

7. n.1 scholarship co-financed by HANGAR LAB srl for the research project “From biomass production to green organocatalysis: integrated approaches under modulated light”

DESCRIPTION: The research activity is focused on the use of new platforms of modulated light aiming to support the production of algal and bacterial biomass, and light-related chemical reactions. Topics covered by the PhD program are: 1. production of siliceous and carbonaceous biomass by microalgae in response to modulated light via conventional and solid-state sources; 2. synthesis of new organic fluorophores and their incorporation in microorganisms to produce hybrid multifunctional materials; 3. use of light-related methods for the green synthesis of organic molecules and polymers. The collaboration with HANGAR LAB ensures the availability of hi-tech LED platforms, and the use of specific softwares for control and data management, for large-scale chemical and biotech production.

- n.7 positions with a scholarship financed under DM 118/23:
 1. **PNRR 4.1:** n.1 scholarship for the research project “Enhancement of agri-food by-products for the development of innovative materials in tissue engineering: development, analytical characterization and biofabrication.”

DESCRIPTION: The research activity involves the development of printable biomaterials which represent the new frontier in the manufacture of implants and 3D in vitro models thanks to a porous structure suitable for tissue growth. The use of biodegradable biomaterials deriving from agri-food waste offers the advantage of eliminating waste by creating a circular economic model. The objective of the project is to use agri-food waste, with particular attention to the Apulian products (i.e., waste deriving from the olives’ processing), both to extract valuable nutraceutical substances with antioxidant and/or antimicrobial action and to obtain materials to create polymeric scaffolds for tissue engineering, through 3D printing.

2. **PNRR 4.1:** n.1 scholarship for the research project “Development of osteoinductive biomaterials and their functionalization for targeting and delivery of metal-based antitumor drugs in the treatment of bone cancer and metastases”

DESCRIPTION:

The research project aims to the development of inorganic matrices based on synthetic hydroxyapatite functionalized to obtain a controlled and prolonged release (by chemical, physico-chemical or biological activation) of clinically used platinum-based anticancer drugs or opportunely designed for increasing their loading onto the biomaterials. Skills will be acquired in the field of synthesis and characterization of metal-based antitumor compounds, in the production of inorganic biomaterials for pharmaceutical use and the related preclinical pharmacological investigations necessary to evaluate the antitumor activity, in collaboration with the group of Prof. Sander Leeuwenburgh at the Radboud University (Nijmegen, The Netherlands).

3. **PNRR 4.1:** n.1 scholarship for the research project “Development of green and scalable super-(nano)-antimicrobials fighting emerging and well-known biological threats (viruses, fungi, antibiotic-resistant bacteria and biofilms)

DESCRIPTION: Novel antimicrobial materials combining two or more synergistically active phases will be developed following green chemical and/or electrochemical processes. The composite materials will be developed either in the form of coatings or self-standing films. The inorganic (nano)phases will not be ultrafinely dispersed to limit, a priori, nanotoxicology issues. A multi-technique analytical characterization approach will afford for structure/composition/properties correlations, elucidating in details the bioactivity mechanisms. Different target microorganisms and biofilms will be tested. The international secondment will provide insights into mechanistic and nanotechnology aspects. Industrial applications of the developed materials include biomedical, automotive and food-packaging fields.

4. **PNRR 4.1 P.A.:** n.1 scholarship for the research project “New methods and technologies for the diagnostics, conservation and restoration of cultural heritage”

DESCRIPTION: The research aims to design, develop, and test new protocols for the diagnostics, conservation, and restoration of cultural heritage, with special emphasis on the implementation of advanced analytical methods for archaeometric analysis.

Research activities will be aimed at designing, implementing, and testing new diagnostic approaches for precise identification of the characteristics and degradation state of component materials of artifacts of historical, artistic, and archaeological value. Innovative analytical methodologies will be developed and skillfully integrated; already established procedures will be further optimized to be performed for the chemical and physicochemical characterization of ancient materials.

5. **PNRR 4.1 Patrimoni Culturali:** n.1 scholarship for the research project “Minimally invasive protocols for mass spectrometric analysis of ligands and organic pigments in artistic artefacts”

DESCRIPTION: The PhD project aims at the characterization of pigments and pictorial binders used for the works of art to design the appropriate ensuing restoration and conservation strategies. Organic binders or mediums will be examined by advanced mass spectrometry techniques with soft ionization sources coupled with liquid chromatography. A simple method for the micro-extraction of the medium directly from the object based on the use of highly retentive functionalized hydrogels and/or organogels will be developed. First, fresh, and aged specimens mimicking the most common materials and artistic techniques will be tested; afterwards, artworks selected from the State Archives involved in the project as cultural promoter will be investigated.

6. **PNRR 3.4. Transizioni Digitali:** n.1 scholarship for the research project “Nanostructured materials for the production and storage of energy from renewable resources”

DESCRIPTION: The project points at developing sustainable materials, systems and processes for the realization of components and devices for the production and storage of energy from renewable sources. The research aims to design, prepare, investigate and test nanostructured materials with different compositions (e.g. perovskites, oxides, semiconductors, carbon-based, organic-inorganic hybrids and biohybrids) suitably modified. These materials will be specifically engineered for their integration into components and devices for converting light radiation into energy - solar cells o photocatalytic systems - and in innovative batteries.

Arrangements for admission (ordinary candidates)

The exam procedures will be taken in accordance with art. 6 lett. B

The selection process will include the evaluation of the titles, of the research project and oral exams as well as a verification of the knowledge of English language.

The exams are unique and the ranking list will be unique.

The available positions will be assigned according to the ranking list.

Admission tests for foreigners:

The interview of foreign candidates will be in English.

Admission exam dates and time:

Qualification : July 26th, 2023 at 09:00 a.m.

Proposed project and Oral interview: July 27th, 2023 at 09:00 a.m.

Venue: Dipartimento di Chimica – Aula 1 – Ground floor - Campus Universitario - Via Orabona, 4 – 70125 Bari (Italy)

For more information see the website:

<https://www.uniba.it/it/ricerca/dipartimenti/chimica/ricerca/dottorato-di-ricerca/scienze-chimiche-e-molecolari>

ANNEX 23)

PROFILE

PHD PROGRAMME IN VETERINARY INTERNAL, SURGICAL AND OBSTETRICAL CLINICAL SCIENCES

CUN Scientific Areas: 07 Agrarian and Veterinary Sciences

Scientific Subject Codes: VET/07, VET/08, VET/09, VET/10

Coordinator: Prof. Andrea Zatelli

Administrative office: Department of Veterinary Sciences, UNIBA

PEC: direttore.dimev@pec.uniba.it

Duration: 3 years

Curricula: NO

Total positions with scholarship available: n. 4

— n. 3 positions supported by the PNRR program based on DM 117/23 (one) and 118/23 (two)

— n. 1 position sponsored by the University of Bari (UNIBA)

The available positions will be assigned based on the order of classification, up to the end of the available candidates. The positions with scholarship will be primarily assigned based on the order of classification. Thereafter positions without scholarship will be assigned.

Project: Efficacy of domperidone in improving the clinical picture of dogs with chronic kidney disease and potential impact on owners' well-being in a one-health perspective.

Call for tender: DM 117/2023

Title Scholarship: medical, pharmaceutical and veterinary medical sciences

Research activity description: The efficacy of dopaminergic antagonists in improving renal plasma flow and glomerular filtration rate has been demonstrated in dogs since the '90s. In recent years, domperidone (a dopaminergic receptor antagonist) has been shown to be effective in slowing the progression of renal disease in the CanL affected with chronic kidney disease. It is of current interest to assess whether the proposed efficacy model can also be extended to the non-leishmaniotic dog. Furthermore, as chronic kidney disease can have a negative impact on the patient's and owner's quality of life, the evaluation of improved survival time and well-being is also of interest from a one-health perspective.

Project: Near-infrared / Indocyanine green (NIR/ICG): a new navigation system in veterinary surgery.

Call for tender: DM 118/2023

Title Scholarship: medical, pharmaceutical and veterinary medical sciences

Research activity description: The project aims to further investigate the employment of Near-infrared / Indocyanine green (NIR/ICG) technology as a navigation system in veterinary surgery as a translational model for human medicine to provide real-time visualization of anatomical structures during surgical procedures.

The research is based on the study of this innovative technology in a multi-disciplinary view with ONE-Health approach in order to expand the knowledge about the technique, efficacy and safety in spontaneous small animal disease models in order to implement the possibilities of use in guided surgery in precision medicine, improving the care of both human and animal patients. The objectives of the study will be: identification of tumor margins and metastatic lymph nodes; evaluation of tissue perfusion and flow monitoring; and mapping of the lymphatic system.

Project: Innovative interventions and therapies to improve fertility in farm animals reducing the use of antibiotics.

Call for tender: DM 118/2023

Title Scholarship: medical, pharmaceutical and veterinary medical sciences

Research activity description: It is now well known that antibiotics, anti-inflammatories and hormones are widely used in animal husbandry, both for prevention and treatment of common diseases, such as mastitis, metritis...but 50-80% of the active ingredient ends up in milk, meat and soil, posing health risks to consumers. The drugs and/or hormones are, in fact, eliminated with animal dejections, which is also often used as fertilizer for agricultural use. This results in the wider contamination of both surface and deep waters through leachate, dispersion and runoff. This project, therefore, aims to develop innovative therapies that can reduce the use of antibiotics, anti-inflammatories and hormones, in livestock farms, with a view to One Health.

Admission requirements:

LM-42 Veterinary medicine

Admission tests: The selection will be based on titles, the evaluation of the research project regarding the themes of the doctorate, and an oral examination. The research project will be preventively sent by the candidate together with the admission documents. The research project (maximum 3000 words excluding the bibliography) is mandatory for the admission to the oral examination and should include at least the following fields: scientific background, aim of the study, methodology (including the statistical analysis), expected results, perspectives and possible advantages. The candidate will be admitted to the oral examination only if the evaluation of the titles and research project got a positive evaluation. During the oral examination, the knowledge of the English language, will be also evaluated.

Admission tests for foreigners:

Foreign candidates can choose to take the entrance exam in Italian or English

Admission exam dates and time:

Qualification: 28/07/2023 at 09.30 am Proposed

project: 28/07/2023 at 03.00 pm

Oral interview: 31/07/2023 at 09.30 am Aula V Anno Campus di Medicina Veterinaria (UNIBA)

For more information see the website:

www.uniba.it/it/ricerca/dipartimenti/dipmedveterinaria/post-laurea/dottorato-di-ricerca/sc-clinic-chirurgi-ostetric

PROFILE

PhD PROGRAMME IN: PHARMACEUTICAL SCIENCE

CUN Scientific Areas: 03 Scienze Chimiche, 05 Scienze Biologiche.

Scientific Subject Codes: CHIM/06, CHIM/08, CHIM/09, BIO/14 CHIM/01

Coordinator: Prof. Nicola Antonio Colabufo

Administrative office: Dipartimento di Farmacia – Scienze del Farmaco

PEC: direzione.farmacia@pec.uniba.it

Duration: 3 years

Curricula: NO

Projects

- **n. 1 position granted from:**
- **European Research Council Executive Agency Project 101040383**

Title Scholarship:

“A BINARY SENSOR WITH SINGLE-MOLECULE DIGIT TO DISCRIMINATE BIOFLUIDS ENCLOSING ZERO OR AT LEAST ONE BIOMARKER- NoOne”

Research activity description:

Aim of project is the development of technologies “point of care” (POC) with high performance

(LOD single molecule, false positive and false-negative < 1%) to detect plant pathogens by immunometric approach. The Platform will be functionalized with specific antibody and the assays will be carried out with Surface Plasmon Resonance (SPR).

- **n. 1 position granted from:**

Istituto di Scienze delle Produzioni Alimentari (ISPA-CNR)

Title Scholarship: **Toxicological study of microbial toxins in animal model and related approach to reduce the risk**

The microbial toxins, mycotoxins and bacterial toxins have toxicological significance for animals of zootechnical interest and also for humans.

- Research activity description:
- The development of new cytoprotectors against the toxicity of bacterial and mycobacterial toxins and the evaluation of substances with scavenger and sequestering activity against the toxicity caused by the administration of mycotoxins in small rodents represents the first objective of the project.
- The development of more manageable animal models such as rodents as alternatives to large animals for the evaluation of the toxicological effects of bacterial and fungal toxins is the second objective of the present project.

- **n. 1 position granted from:**

Campione Nazionale 3, CN3: Development of Gene Therapy and Drugs with RNA technology (Selected SPOKE: Genetic Diseases).

Title Scholarship: Development of RNA-based therapies using microfluidics and 3D printing techniques.

Research activity description:

the aim of the project provides for a broad integration of interdisciplinary skills (technological formulations, biology, genetics and molecular biology). The development of nanotherapies carrying nucleic acids using pharmaceutical technology platforms

such as microfluidics and 3D printing and their evaluation of efficacy and efficiency fall within the objectives of the PNRR – CN3 proposal (Selected SPOKE: Genetic Diseases)

- **n. 4 fellowships granted by D.M. No. 117 2023/2024, PNRR - Mission 4, component 2 "From Research to Business" - Investment 3.3 "Introduction of innovative doctorates that respond to the innovation needs of companies and promote the recruitment of researchers from companies"**

- **1) Title Scholarship**
- **Development of drug candidates with neurotrophic and neuroprotective activity**

Research activity description:

the research project satisfies the issues envisaged by the PNRR PE Neurosciences and in particular the WP1: D1.1. Identification of druggable mechanisms of neurodegeneration as well as the Milestone M1.3 which specifically provides for the development of neurotrophic and neuroprotective molecules.

- In collaboration with the Dompè Pharmaceutical Company

- **2) Title Scholarship:**
- **Development of Radiotracers for neurodegenerative diseases**

Aim:

This research project fits perfectly into the research topics envisaged by the PNRR PE Neurosciences WP4: D4.3 "Identification of novel imaging markers and tracers of neurodegeneration".

In collaboration with ITEL TELECOMUNICAZIONI Ltd.

- **3) Title Scholarship:**
- **Development of potential drugs for molecular targets involved in the immune response in neurodegenerative diseases and cancer**

Research activity description:

the proposal responds to the Health thematic area with the training of a highly qualified figure in the field of artificial intelligence methodologies applied to the development of new drugs. Artificial intelligence is part of the Key Enabling Technologies under the Horizon Europe programme

In collaboration with the contract research organization ZS Associates.

- **4) Title Scholarship:**
- **Development of new extraction methodologies for the valorisation of processing waste from the chemical and agri-food industry**

Research activity description The innovative doctoral program with an industrial connotation will have to concern disciplinary and thematic areas consistent with the needs of the country, as well as the regional territories involved in the programme, in terms of highly qualified figures oriented towards satisfying the innovation needs of the companies referred to in PNRR. In particular, in accordance with Mission 2 of the PNRR, Green Revolution and ecological transition, Mission 4, Education and research, and Mission 6, health, the doctoral project aims to develop innovative processes for the extraction and analysis of high-value substances chemical and pharmaceutical products from industrial waste and processing wastewater from agri-food plants. As part of the project, pilot-scale demonstrators will be built for the reuse of purified wastewater, sampling techniques and analysis of emerging contaminants and microplastics will be investigated, technologies developed for the valorisation of concentrated flows, verifying the methods of use of secondary raw materials resulting in the agro-industrial and energy supply chains. The results achieved will support the integration of an industrial symbiosis software platform aimed at encouraging the closure of cycles at a territorial level and the development of new business models and professionalism.

In collaboration with Services, Environmental Analysis Consulting S.C.A. s.n.c, PIP Marconia area (MT)

- **n. 4 fellowships granted by D.M. 118 2023/2024, PNRR - Mission 4, component 1 "Enhancement of the offer of education services: from nursery schools to the University": M4C1 - Investment 3.4 "Didactics and advanced university skills"**

- **1) Title Scholarship:**
- **Development of eco-sustainable and industrially scalable synthesis of one or more APIs (Active Pharmaceutical Ingredients)**

Research activity description:

Investment 3.4 "advanced university teaching and skills" - Digital and environmental transitions. Green revolution and ecological transition. The aim of the project is to make familiar the rules of scalability of an eco-sustainable process and set up at an academic level related to the production and marketing of an API in GMP in an industry authorized by AIFA.

- **2) Title Scholarship:**

Design, synthesis and early-ADME studies of "multitarget" ligands for the treatment of neurodegenerative diseases.

Research activity description:

Neurodegenerative diseases are multifactorial diseases linked to aging in which neuroinflammation and oxidative stress play a key role in both the onset and course. Many of them, such as Alzheimer's disease, are currently being treated with non-disease-modifying symptomatic drugs. The project to act on multiple targets involved in neuroinflammation (type 2 cannabinoid receptor CB2R, BChE butyrylcholinesterase, COX cyclooxygenase, nitric oxide synthase NOS and other targets involved) with a single molecular entity could lead to the development of multipotent neuroprotective compounds.

- **3) Title Scholarship:**

Development of new selective ligands of orphan G protein-coupled receptors in the endocannabinoid system for the treatment of neurodegenerative syndromes

Research activity description:

Investment 4.1 "Extension of the number of research doctorates and innovative doctorates for public administration and cultural heritage"

The aim of the project falls within the objectives set by the PNRR proposal - Extended Partnership "A multiscale integrated approach to the study of the nervous system in health and disease, Mnesys", SPOKE 7- NEUROIMMUNOLOGY and NEUROINFLAMMATION, and foresees the discovery and development of potential new drugs and re-proposition of pharmaceutical active ingredients to counteract neuroinflammation.

- **4) Title Scholarship:**

Evaluation of the effects of new autophagic modulators in Batten disease, by in vitro and ex-vivo preclinical studies

Research activity description:

Investment 4.1 "Extension of the number of research doctorates and innovative doctorates for public administration and cultural heritage"

The aim of the project provides for a broad integration of interdisciplinary skills of pharmacology, cellular and molecular biology, biochemistry, genetics and histology, as well as use of biobanks, databases and computational analysis. The methodological approach and scientific objectives fall within the areas of interest of the PNRR with particular reference to the issues of

Extended Partnership 12: Neuroscience and Neuropharmacology.

Total number of positions with fellowships n. 11

The selection will be made following the art. 6 typology B of the call.

Modality of admission:

The examination will be based on the evaluation of candidate qualification, proposed project, oral interview, and foreign language knowledge checking (English).

Admission tests for foreigners:

The videoconference interview of foreign candidates will be in English.

Admission exam dates and time:

Qualification : July 26, 2023, at 9:30 a.m CET

Proposed project: July 26, 2023, at 11:30 a.m CET

Oral interview: July 27, 2023, at 11:30 a.m. CET

Calendar of admission exams:

Where: Room 3, Department of Pharmacy, Campus E. Quagliariella, via E. Orabona 4, Bari

Calendar of admission exams for places reserved for graduates in foreign universities:

Oral Proofs: July 26, 2022, at 12:00 a.m.

For further information, please consult the following Web address:

<https://www.uniba.it/it/ricerca/dipartimenti/farmacia/ricerca/dottorati-di-ricerca/dottorato-di-ricerca-in-scienze-del-farmaco/bando-di-concorso-per-lassegnazione-di-borse-di-studio-di-dottorato-di-ricerca-xxxviii-ciclo-finanziate-da-nextgenerationeu-nellambito-del-piano-nazionale-di-ripresa-e-resilienza-pnrr-missione-4-componente-2-dalla-ricerca-allimpresa-a-a-2023-2024>

ANNEX 25)

PROFILE

PhD PROGRAMME IN SOIL AND FOOD SCIENCE

CUN Scientific Areas: 02 - Physical Sciences, 03 – Chemical sciences, 05 – Biological Sciences, 06 – Medical sciences, and 07 – Agriculture and veterinary sciences

Scientific Subject Codes: AGR/01, AGR/02, AGR/04, AGR/09, AGR/13, AGR/15, AGR/16, AGR/19, BIO/11, BIO/12, CHIM/01, CHIM/10, FIS/07, MED/09, MED/12, MED/38

Coordinator: Prof. Fabio MINERVINI

Administrative office: Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti

PEC: disspa@pec.uniba.it

Duration: 3 years

Curricula:

- 1) Food microbiology, technology, safety and chemistry; Scientific education sectors AGR/01, AGR/04, AGR/09, AGR/15, AGR/16, AGR/19, BIO/11, BIO/12, CHIM/01, CHIM/10, FIS/07, MED/09, MED/12, and MED/38)
- 2) Agricultural chemistry (Scientific education sectors: AGR/01, AGR/02 and AGR/13)

Total number of positions with fellowships n. 7:

Fellowship n. 1

- Project: Use of selected microorganisms to develop innovative biotechnological processes for the production of bioplastics from waste from the agri-food chains (**curriculum 1: Food microbiology, technology, safety and chemistry**)
- Call for tender D.M.117
- Title Scholarship: Investment 3.3 "Introduction of innovative Ph.D. course that respond to the innovation needs of companies and promote the recruitment of researchers from companies"
- Research activity description: Development of biotechnological protocols for the production of bioplastics on waste substrates from the agri-food industry, with high-producing microorganisms as a strategy with multiple objectives: (i) obtaining sustainable alternatives to petroleum-derived plastics; (ii) reduce waste from the agri-food industry with a reduction of the environmental impact; (iii) valorizing waste through sustainable processes that lead to the production of molecules with high added value, such as bioplastics.

Fellowship n. 2

- Project: Formulation of innovative dairy products from milk of minor species (**curriculum 1: Food microbiology, technology, safety and chemistry**)
- Call for tender D.M.117
- Title Scholarship: Investment 3.3 "Introduction of innovative Ph.D. course that respond to the innovation needs of companies and promote the recruitment of researchers from companies"
- Research activity description: The research will concern the creation of a professional figure capable of carrying out the technological transfer to companies of solutions proposed by research, with particular reference to innovation in the dairy sector.

Fellowship n. 3

- Project: New regulatory areas for safety and quality in the agri-food sector (**curriculum 1: Food microbiology, technology, safety and chemistry**)

- Call for tender D.M.117
- Title Scholarship: Investment 3.3 "Introduction of innovative Ph.D. course that respond to the innovation needs of companies and promote the recruitment of researchers from companies"
- Research activity description: The research will deal with formulation of novel regulatory schemes and evaluation of their impact, with the aim to guarantee higher quality and safety standards of agri-food products and to make novel competitive tools available to the producers, in order to differentiate and valorize agri-food products on the market.

Fellowship n. 4

- Project: Experimental attempts to increase the performance and shelf-life of oils for food use in cooking and limit the formation of artifacts harmful to health (**curriculum 1: Food microbiology, technology, safety and chemistry**)
- Call for tender D.M.117
- Title Scholarship: Investment 3.3 "Introduction of innovative Ph.D. course that respond to the innovation needs of companies and promote the recruitment of researchers from companies"
- Research activity description: The objective of the research is to develop and transfer innovation to the oil industry by supporting it in the definition and development of innovative products and/or processes. The Ph.D. project will aim, more specifically, at the training of a highly qualified scientific figure who will be able to translate business problems, mainly the stability of oils during cooking, into suitable and coherent research activities aimed at satisfying the needs highlighted.

Fellowship n. 5

- Project: Improving nutritional value of food through use of bioprocessed agri-food by-products and/or wastes (**curriculum 2: Agricultural Chemistry**)
 - Call for tender D.M.118 (PNRR, 4.1)
 - Title Scholarship: Investment 4.1 "Extension of the number of research doctorates and innovative doctorates for public administration and cultural heritage"
 - Research activity description: The research will concern, in particular, the use of microorganisms in the treatment or pre-treatment of agro-food by-products and waste to obtain food ingredients characterized by a better nutritional value, intended as an increase in the concentration and/or availability of certain nutrients, or as a decrease in the concentration and/or availability of anti-nutritional factors.

Fellowship n. 6

- Project: Omics-based characterization of novel food items targeted for reaching the Goal of Responsible Consumption and Production (**curriculum 1: Food microbiology, technology, safety and chemistry**)
- Call for tender D.M.118 (PNRR, 4.1)
- Title Scholarship: Investment 4.1 "Extension of the number of research doctorates and innovative doctorates for public administration and cultural heritage"
- Research activity description: The research activities will concern, in particular, the characterization, through "omics" technologies (genomics, transcriptomics, proteomics, metabolomics, etc...) of innovative foods from the point of view of sustainability, since they are obtained from raw materials that currently either are scarcely used (e.g., local plant varieties) or considered as waste and as such represent an economic and environmental cost.

Fellowship n. 7

- Project: Enhancement of local varieties of vegetables and horticultural products included in the national list of Traditional Agro-Food Products of Puglia (**curriculum 1: Food microbiology, technology, safety and chemistry**)
- Call for tender D.M. 118 (P.A., 4.1)
- Title Scholarship: Investment 4.1 "Extension of the number of research doctorates and innovative doctorates for public administration and cultural heritage"
- Research activity description: The research activities will aim to support the maintenance and reintroduction on the territory of the cultivation of local varieties naturally adapted to the regional pedoclimatic conditions

threatened by genetic erosion, in order to prevent their extinction and to protect the regional agricultural biodiversity.

Application Requirements:

The selection will be made following the call.

The examination will be based on the evaluation of candidate qualifications, proposed project, oral interview, and foreign language knowledge checking (English).

Admission tests for foreigners:

Foreign candidate may choose to use English or Italian language during the oral interview.

FOR ALL THE CANDIDATES, the exams will be distinct for each curriculum and the respective rankings will merge into a single final ranking that will give the title to access.

The places available will be assigned, among the various curricula, according to the order in the ranking of merit, until the places are exhausted.

All the candidates must indicate, while filling the application, the choice of curriculum under penalty of exclusion from the competition.

Admission exam dates and time:

Qualifications: 26th July 2023

Proposed project: 27th July 2023

Oral interview: 28th July 2023 at 9:30 am (CEST), in the room n. X of the Department of Plant, Soil and Food Sciences, Via Amendola 165/A. 70126, Bari

ON-LINE oral interviews (ONLY UPON MOTIVATED REQUEST BY THE CANDIDATE) at <https://meet.google.com/wpf-kjtm-avo>

For more information see the website:

<https://w3.uniba.it/ricerca/dipartimenti/disspa/dottorato-di-ricerca/scienze-del-suolo-e-degli-alimenti>

ANNEX 26)

**PROFILE
PhD PROGRAMME IN HUMAN RELATION SCIENCES**

CUN Scientific Areas: 06 Scienze Mediche; 10 Scienze dell'antichità, filologico-letterarie e storico-artistiche; 11A Scienze Storiche, filosofiche, pedagogiche; 11B psicologiche; 13A - Scienze economiche e statistiche; 14 Scienze politiche e sociali

Coordinator: Prof. Andrea Bosco

Administrative Office: Dipartimento di Scienze della Formazione, Psicologia, Comunicazione (Department of Education, Psychology, Communication)

Duration: 3 years

Curricula:

- 1) Intercultural dynamics of communication (scientific sectors: L-ART/05, L-LIN/03, L-LIN/04, L-LIN/10, L-LIN/12, M-FIL/01, M-FIL/05, M-GGR/02, SPS/07)
- 2) Educational dynamics and education to politics (scientific sectors: M-PED/01, M-PED/02, M-PED/03, M-PED/04, SECS-S/01)
- 3) Psychology: cognitive, emotional and communicative processes (scientific sectors: M-PSI/01, M-PSI/02, M-PSI/03, M-PSI/04, M-PSI/05, M-PSI/06, M-PSI/08, MED/43)

Positions with scholarship on specific topics: nr. 3

CURRICULUM 1 (AREA 10, 11a; SS.SS.DD. L-LIN/10, L-LIN/03, M-FIL/05)

Project: The digital transition is nothing without the environmental transition: the Green Economy, smartphones and their polluting potential. A study on institutional and commercial communication and associated good practices.

Reference: investment 3.4 "advanced university teaching and skills"

Grant thematic title: digital and environmental transitions

Description of research activity: The study aims to complete an in-depth analysis of the logical algorithmic mechanisms, which are the basis of the so-called ICT (Information and Communication Technologies), to go to the real heart/engine that regulates the functioning of means of institutional communication (institutions in the sector), commercial (mass technology industry). The point of application in detail will then be to study the controversial issue of the diffusion of mass technologies, increasingly media of the digital transition, and the potential conflict that this diffusion has with the environmental and ecological transition.

CURRICULUM 2 (AREA 11a; S.S.D. M-PED/01)

Project: Dig-bate. Training communication and digital skills in study and work groups

Reference: Investment 4.1 "Extension of the number of research doctorates and innovative doctorates for public administration and cultural heritage"

Grant thematic title: PNRR, "innovation in the scientific and educational field"

Description of research activity: the project aims to promote communication and collaboration skills in digital environments in adolescents and young people (area 2). Starting from the research hypothesis according to which the ways in which digital media are used have a significant influence on communication within groups (from the classroom to the team), the promotion of digital skills should in fact make it possible to improve the effectiveness of interpersonal relationships in communities, organizations, educational and training contexts. The project will be aimed primarily at secondary school students and will involve schools in Puglia and other Italian regions.

CURRICULUM 3 (AREA 11b; SSD M-PSI/04)

Project: People Analytics: new application frontiers of gamification

Reference: Investment 4.1 "Extension of the number of research doctorates and innovative doctorates for public administration and cultural heritage"

Grant thematic title: Innovation in digital teaching

Description of research activity: the research project presented here has the objective of deepening and applying the theory of People Analytics in contexts of online games to obtain data on people. People data can be recognized as a form of evidence, which is important for improving decision-making by professionals, including human resources. Evidence-based practice recognizes people's data as part of "internal organizational data", together with professional scientific evidence and stakeholder values and concerns.

Positions with grant on non-specific topics nr. 1

CURRICULUM 1

Project: free topic

Reference: University budget

grant thematic title: free topic

Description of research activity: free topic

Positions without grant on non-specific topics n. 1

CURRICULUM 3

Project: free topic

Reference: no grant

grant thematic title: no grant

Description of research activity: free topic

The examinations will be differentiated for each project and the respective rankings will merge into a single final ranking that will make the candidate eligible for the grant.

Candidates must indicate in attachment A), which represents integral part of this call, the choice of a single project and curriculum. Candidates who do not specify the project and curriculum they apply for will be excluded from the competition. In the case of the position with grant on a non-specific topic and the one without grant, the candidates will present the project on a topic of their choice but will still have to indicate the curriculum for which to compete. For the purposes of awarding grants, if there are no candidates considered suitable i

n each curriculum, it is possible to select candidates from other curricula if they are found to be suitable, according to the general ranking.

Admission procedure:

Scientific qualifications + original research project to be attached to the registration form + oral examination.

The selection will be based on scientific qualifications, original research project, to be attached to the application, and oral examination on theoretical and methodological insights inherent in the contents of the project presented, and the assessment of the knowledge of a foreign language: English. The must have a maximum length of 15000 characters, spaces and bibliography included. The project must include four sections: 1) state of the art / rationale and aims of the project, 2) method, 3) expected results, 4) potential threats to project success.

The oral examination will be held face-to-face (or remotely in the case of non-resident candidates) and provides for the simultaneous verification of knowledge of the foreign language: English.

The candidates' admission to the oral examination will be conditional upon a positive evaluation of the original research project.

Examination for foreign candidates:

Foreign candidates can choose to take the exam either in Italian or English.

Calendar of the examination:

Selection procedures start (for the panel members only): August 2nd 2023 at 9.00 a.m.

Publication of the admitted candidates to the oral examination: (within) August 3rd 2023, on the following website:
<https://www.uniba.it/ricerca/dipartimenti/forpsicom/didattica/formazione-postlaurea/dottorato>

Oral examination: August 4th, 2023 at 9.00 a.m., Hall Nelson Mandela, 1st Floor, Palazzo Chiaia-Napolitano. Via Crisanzio, 42 Bari

Examination calendar for non-resident candidates:

Oral interview: August 4th, 2023 at 9.00 a.m., on the ZOOM platform ZOOM

<https://us02web.zoom.us/j/87876810274?pwd=c1lYRGRFMlBpczdKMDgzaElxcUtNUT09;>

ID riunione: 878 7681 0274; Passcode: 090451.

For more information, visit the website:

<https://www.uniba.it/ricerca/dipartimenti/forpsicom/didattica/formazione-postlaurea/dottorato>

<http://www.uniba.it/ricerca/dipartimenti/disspa/dottorato-di-ricerca>

PROFILE

PHD PROGRAMME IN POLITICAL AND SOCIAL SCIENCES FOR SECURITY AND DEVELOPMENT

CUN Scientific Areas: Area 10; Area 11; Area 12; Area 13; Area 14

Scientific Subject Codes: SPS/02; SPS/06; SPS/08; SPS/09; SPS/11; SPS/12; IUS/01; IUS/07; IUS/11; IUS/14; IUS/20; SECS-P/02; SECS-S/04; SECS-P/06; M-PSI/04; M-STO/04; L-LIN/04; L-LIN/12; M-PED/01

Coordinator: Prof. Giuseppe Cascione

Administrative office: Department of Political Sciences

PEC: direzione.scienzepolitiche@pec.uniba.it

Duration: 3 years

Curricula:

1) Politics, institutions and rights (Scientific Subject Code: SPS/01; SPS/02; SPS/06; SPS/08; IUS/11; IUS/14; IUS/17; IUS/20; M-STO/04; L-LIN/04; L-LIN/12)

2) Social and inclusion policies (Scientific Subject Code: SPS/07; SPS/08; SPS/11; SPS/12; M-PSI/04; M-PED/01)

3) Policies for work, development and innovation (Scientific Subject Code: SECS-P/02; SECS-P/06; SECS-S/04; IUS/01; IUS/07; SPS/09)

- Project: Strategies and social tools for human resources management and sustainable business development in the digital sector
- Call for tender D.M.117/23 (3.4 Transizioni Digitali)
- Title Scholarship: Strategies and social tools for human resources management and sustainable business development in the digital sector
- **Research activity description:** Enterprises in the digital sector are faced with a twofold challenge: on the one hand, having to cope with an ever-changing environment and, on the other hand, having to ensure long-term sustainable development. In this context, human resources management plays a key role, being able to provide strategies and tools to support the achievement of these objectives. The project aims at **i)** investigating labour market mobility in the digital sector; **ii)** analysing the dynamics of talent attraction and retention, with particular reference to companies operating in peripheral areas and characterised by high rates of youth unemployment; **iii)** identifying and dealing in depth with digital levers and variables within the value production chain; **iv)** reflecting on the development of collaborative platforms and online professional networks that enable the creation of connections and knowledge sharing, since the ability to interact in an effective and constructive manner is a fundamental matter for business development.

- Project: **Non-repressive strategies against organized crime: comparing models and experiences.**
- Call for tender D.M.118/23 Public administration

- Title Scholarship: **Non-repressive strategies against organized crime: comparing models and experiences**
Research activity description: The research will involve a comprehensive analysis of the impact of the non-repressive strategic model for combating organized crime, developed by the “Agenzia per la lotta non repressiva alla criminalità organizzata” (Agency for the Non-Repressive Fight against Organized Crime) of the Municipality of Bari. It aims to identify an effective methodology and appropriate indicators for evaluating this critical area of public policy. This evaluation will be carried out by conducting a comparative analysis of various models and approaches used for combating and preventing organized crime. The ultimate objective is to establish clear guidelines that can enhance and advance the working methods and interventions in this field, ensuring continuous improvement.

- **Project: Return policies: safeguarding rights and monitoring practices.**
- **Call for tender D.M.118/23 Public administration**
- **Title Scholarship: Return policies: safeguarding rights and monitoring practices**
- **Research activity description:** The research will focus on analyzing the costs and effectiveness of return policies, while also providing an evaluation of the impact that the use of coercive measures within these policies has on the rights and well-being of migrants. The objective is to propose a more humane and sustainable model of return policy, and develop appropriate methodologies for monitoring the most critical stages of the return procedure, particularly those sensitive to human rights concerns, such as detention and forced repatriation.

Call for tender D.M.118/23 Public administration

- **Project:** Theoretical models and welfare practices between new social needs and evolving theories of the state
- **Call for tender:** D.M. 118/23 (4.1 P.A.)
- **Title Scholarship:** Theoretical models and welfare practices between new social needs and evolving theories of the state
- **Research activity description:** During the 20th century, the creation of the welfare state was one of the major innovations in the organisation of states and their legitimisation. There have been many turning points in social policies in the West since the 1980s; the economic crisis of 2008 and the pandemic of 2020 have then led to the emergence of new social needs, triggering the elaboration of new theoretical models and new welfare practices. The project aims at investigating the welfare theories and practices that have emerged or are being developed in this context at the local, national and European levels, enucleating their theoretical assumptions - explicit or implicit - of the theory of the State, examining their effectiveness and their deficit aspects, their continuity and discontinuity with the European social model, as well as their coherence with the universalist perspective of social rights outlined by the Italian Constitution.

Call for tender D.M.118/23:(PNRR 4.1, 4.1 P.A., 4.1 Patrimoni Culturali, 3.4 Transizioni Digitali): Public administration

- **Project:** Designing social innovation in territories: public policies, minors and combating early school leaving.
- **Call for tender:** D.M. 118/23 (4.1 P.A.)
- **Title Scholarship:** Designing social innovation in territories: public policies, minors and combating early school leaving.
- **Research activity description:** Territories are increasingly the protagonists of social policies, laboratories for experimenting new welfare practices and the first terminal where criticalities, strengths and new needs emerge. Public policies addressed to minors, with particular reference to the fight against school drop-out, represent an extremely relevant field to build the preconditions to ensure full citizenship and fight social exclusion and marginality. The project aims to investigate the link between schooling and citizenship, the causes of early school leaving, the good welfare practices that succeed in combating it and the criticalities that instead prevent the achievement of this objective, which is vital for democracy.

Call for tender D.M.118/23 Public administration

- **Project:** University education and territorial development
- **Call for tender:** D.M. 118/23 (4.1 P.A.)
- **Title Scholarship:** University education and territorial development
- **Research activity description:** The research project aims to reconstruct the role of universities in fostering regional development and the policies that influence it. The analysis will be organised along the three traditional missions: a) teaching, with particular reference to school/university transitions, the geographical mobility of students and adult education; b) research, with particular reference to its specialisations and the dynamics of the production system; c) third mission, with reference both to joint activities with businesses and to the more general dissemination of knowledge. This will lead to assessments of the factors that most favour positive impact and policies, both Italian and European.

- **Project:** PNRR cohesion policies and reduction of territorial disparities in Italy
- **Call for tender:** D.M. 118/23 (PNRR 4.1)

- **Title Scholarship:** PNRR cohesion policies and reduction of territorial disparities in Italy
- **Research activity description:** The analysis will focus on a broad critical reconstruction of the dimensions, characteristics, and impacts of cohesion policies in Italy and Europe. Then to an assessment of the territorial impacts of the PNRR. Finally, an analysis of the integration between the PNRR and the 21-27 cohesion policies. This will result in assessments and implications for policy design.
- **Project:** Technological and organisational innovation and development of the entrepreneurial system
- **Call for tender:** D.M. 118/23 (PNRR 4.1)
- **Title Scholarship:** Technological and organisational innovation and development of the entrepreneurial system
- **Research activity description:** The analysis will cover: a) a comprehensive critical review of the diffusion processes of innovations in the business system and the related policies; b) an analysis of the barriers to the adoption of digitally driven innovations in particular, also from a territorial perspective c) a critical analysis of policies with particular reference to Italian and European measures of the Industry 4.0 strand. This will result in evaluations of dissemination processes and implications for policies.
- **Project:** The impact generated by youth policy.
- **Call for tender:** D.M. 118/23 (4.1 P.A.)
- **Title Scholarship:** The impact generated by youth policy.
- **Research activity description:** The project aims to support the Public Administration by developing and implementing a model and toolkit for assessing the impact of youth policies. Particular attention will be paid to the participation and learning experiences made in urban spaces renewed by public policies (regional, national, European) that act as culture-based community centres, and spaces of integration between the contexts of formal (school, university, vocational training), non-formal (youth work) and informal education (leisure, club life). The research project will develop a tool to assess and validate the skills developed by young people and to evaluate the impact on the territory at multiple levels (cultural, economic, social, institutional, etc.).
- **Project:** The social theater and the legislative theater to fight violence against women and gender-based violence
- **Call for tender:** D.M. 118/23 (4.1 Patrimoni Culturali)
- **Title Scholarship:** The social theater and the legislative theater to fight violence against women and gender-based violence.
- **Research activity description:** The research intends to analyze the artistic tools of cultural change that act on the development of the territory and its political transformation, focusing in particular on the application of "Social Theatre" and "Legislative Theatre" – specific methodologies of the Theatre of the Oppressed used for inclusion by Augusto Boal – against gender inequality and violence against women. The research work will be carried out mainly in the territory of Bitonto through the collaboration between the municipal authority of that city and the artistic production company "Ipazia production" based in Bucharest.
- **Project:** The social theater and the legislative theater to fight violence against women and gender-based violence
- **Call for tender:** D.M. 118/23 (4.1 Patrimoni Culturali)
- **Title Scholarship:** The social theater and the legislative theater to fight violence against women and gender-based violence.
- **Research activity description:** The research intends to analyze the artistic tools of cultural change that act on the development of the territory and its political transformation, focusing in particular on the application of "Social Theatre" and "Legislative Theatre" – specific methodologies of the Theatre of the Oppressed used for inclusion by Augusto Boal – against gender inequality and violence against women. The research work will be carried out mainly in the territory of Bitonto through the collaboration between the municipal authority of that city and the artistic production company "Ipazia production" based in Bucharest.
- **Project:** Determinants and consequences of population structural change
- **Call for tender:** D.M. 118/23 (4.1 P.A.)
- **Title Scholarship:** Determinants and consequences of population structural change

- **Research activity description:** The project falls within Disciplinary Area 13 and SSD SECS-S/04 Demography. The project aims at an in-depth study of welfare policies through a qualitative/quantitative survey and the elaboration of ad hoc indicators. The purpose is the study of the impact, already performed so far and foreseeable for the future, of specific strategies partly already implemented by the Regional Strategic Agency for Health and Social Affairs (AReSS), which has been engaged for years in several programmes addressing the problem of the structural change of the population, including healthy and active ageing policies that are part of the broader framework of programmes promoted by the European Union.

Admission procedures:

The selection will be made in accordance with the call (ART. 6 LETT B).

The examination will be based on the evaluation of candidate qualification, proposed project, oral interview, and foreign language knowledge checking (English).

Admission tests for foreigners:

The videoconference interview of foreign candidates will be in English.

Admission exam dates and time:

Qualification : 31 July 2023;

Proposed project: 1 August 2023;

Oral interview: 2 August 2023, 9.00 am o'clock, aula I, Palazzo Del Prete, piazza Cesare Battisti.

For more information see the website:

<https://www.uniba.it/it/ricerca/dipartimenti/scienze-politiche/didattica/postlaurea/dottorato>.

ANNEX 28)

PROFILE

PhD PROGRAMME IN “SUSTAINABLE TECHNOLOGIES FOR THE INDUSTRIAL DEVELOPMENT OF MEDICINAL AND DIAGNOSTICS – TeSSMeD - XXXIX cycle”

CUN Scientific Areas: 03 Scienze Chimiche, 05 Scienze Biologiche, 06 Scienze Mediche, 02 Scienze fisiche.

Scientific Subject Codes: CHIM/09, CHIM/08, CHIM/06, CHIM/01, BIO/15, BIO/14, BIO/10, MED/42, MED/07, FIS/07

Coordinator: Prof. Nunzio Denora

Administrative office: Dipartimento di Farmacia-Scienze del Farmaco

PEC: <mailto:direzione.giurisprudenza@pec.uniba.it>
direzione.farmacia@pec.uniba.it

Duration: 3 years

Total number of positions with fellowships **n. 11**:

1) Project: Investment 3.3 "Introduction of innovative PhD programs that respond to the innovation needs of enterprises and promote the recruitment of researchers from enterprises" - INNOVATIVE RESEARCH DOCTORATES WITH INDUSTRIAL CONNECTION

- **Call for tender:** [D.M.117/23]
- **Title Scholarship:** “Study and development of environmental-friendly technologies for the improvement of extraction and purification processes of intermediates and active pharmaceutical ingredients of industrial interest”
- **Research activity description:** The research activity hinges on the scientific disciplinary field SSD CHIM/08 and will be conducted in collaboration with the company EUROAPI Italy srl (Active Solutions for Health), (Brindisi, BR, Italy).

2) Progetto: Investment 3.3 "Introduction of innovative PhD programs that respond to the innovation needs of enterprises and promote the recruitment of researchers from enterprises" - INNOVATIVE RESEARCH DOCTORATES WITH INDUSTRIAL CONNECTION

- **Call for tender:** [D.M.117/23]
- **Title Scholarship:** “Rational computer-aided design of novel bioactive molecules”
- **Research activity description:** The research activity hinges on the scientific disciplinary field SSD CHIM/08 and will be conducted in collaboration with the company InSilicoTrials Technologies SpA (Trieste, TS, Italy).

3) Progetto: Investment 3.3 "Introduction of innovative PhD programs that respond to the innovation needs of enterprises and promote the recruitment of researchers from enterprises" - INNOVATIVE RESEARCH DOCTORATES WITH INDUSTRIAL CONNECTION

- **Call for tender:** [D.M.117/23]
- **Title Scholarship:** “Qualification of advanced drug production processes”
- **Research activity description:** The research activity hinges on the scientific disciplinary field SSD CHIM/09 and will be conducted in collaboration with the company MERCK Serono S.p.A. (sito Merck di Modugno).

4) Progetto Investment 3.3 "Introduction of innovative PhD programs that respond to the innovation needs of enterprises and promote the recruitment of researchers from enterprises" - INNOVATIVE RESEARCH DOCTORATES WITH

INDUSTRIAL CONNECTION

- **Call for tender:** [D.M.117/23]
- **Title Scholarship:** “Application of processes based on low-pressure and atmospheric pressure plasma technology, aimed at identifying innovative and sustainable methods for the development of products intended for health care”
- **Research activity description:** The research activity hinges on the scientific disciplinary field SSD CHIM/09 and will be conducted in collaboration with the company Plasmaapps srl (Modugno, Bari, Italy)

5) **Progetto:** "Introduction of innovative PhD programs that respond to the innovation needs of enterprises and promote the recruitment of researchers from enterprises" - INNOVATIVE RESEARCH DOCTORATES WITH INDUSTRIAL CONNECTION

- **Call for tender:** [D.M.117/23]
- **Title Scholarship:** “Development and optimization of innovative methods for the synthesis of biologically active compounds”
- **Research activity description:** The research activity hinges on the scientific disciplinary field SSD CHIM/06 and will be conducted in collaboration with the company Dompé farmaceutici S.p.A. (Napoli, NA, Italy)

6) **Progetto:** Investment 4.1 "Expanding the number of PhDs and innovative PhDs for public administration and cultural heritage" - PNRR

- **Call for tender:** [D.M.118/23- PNRR 4.1]
- **Title Scholarship:** “Efficacy and safety evaluation of tissue-selective RNA-based therapies using integrated platforms for preclinical translational studies of inherited myopathies”
- **Research activity description:** The research activity hinges on the scientific disciplinary field SSD BIO/14 and involves the development of advanced therapies based on gene transfer and/or transcript modulation.

7) **Progetto:** Investment 4.1 "Expanding the number of PhDs and innovative PhDs for public administration and cultural heritage" - PNRR

- **Call for tender:** [D.M.118/23- PNRR 4.1]
- **Title Scholarship:** “Quantum Machine Learning for the prediction of human health and environmental endpoints”
- **Research activity description:** The research activity hinges on the scientific disciplinary fields CHIM/08, FIS/07 e CHIM/06.

8) **Progetto:** Investment 4.1 "Expanding the number of PhDs and innovative PhDs for public administration and cultural heritage" - PNRR

- **Call for tender:** [D.M.118/23- PNRR 4.1]
- **Title Scholarship:** “Development of fluorescent probes as useful tools for the industrial process of 'drug discovery': reducing cost, time and environmental impact”
- **Research activity description:** The research activity hinges on the scientific disciplinary field SSD CHIM/08.

9) **Progetto:** Investment 3.4 "advanced university teaching and skills" - digital and environmental transitions

- **Call for tender:** [D.M.118/23- PNRR 3.4]
- **Title Scholarship:** “Sustainable solutions for the production of new supplements made from food industry wastes”
- **Research activity description:** The research activity hinges on the scientific disciplinary field SSD CHIM/08.

10) n.1 position covered by a higher education and research apprenticeship contract funded by Farmalabor srl (Canosa Di Puglia, BAT, Italy):

- The higher education and research apprenticeship contract provides for the technology transfer activities and on the co-development of technologies, know-how and solutions, in which apprentice/trainee will play a pro-active role in the creation and invention of innovative technologies, starting from clear business needs, in order to support and to accelerate innovation processes and business growth, strengthening synergies and relationships with the industrial research ecosystem;

11) n.1 position covered by a higher education and research apprenticeship contract funded by Beforpharma Srl (Bari, BA, Italy)

- The higher education and research apprenticeship contract provides for the technology transfer activities and on the co-development of technologies, know-how and solutions, in which apprentice/trainee will play a pro-active role in the creation and invention of innovative technologies, starting from clear business needs, in order to support and to accelerate innovation processes and business growth, strengthening synergies and relationships with the industrial research ecosystem;

Modalities of admission:

The selection will be made following the art. 6 LETT B of the call.

The examination will be based on the evaluation of candidate qualification, proposed project, oral interview, and foreign language knowledge checking (English).

Admission tests for foreigners:

The videoconference interview of foreign candidates will be in English.

Admission exam dates and time:

Qualification : Wednesday, July 26

Proposed project:.

Oral interview: (date and venue) Thursday, July 27, 2023, 3:00 pm at Classroom 3, ground floor of the Department of Pharmacy - Pharmaceutical Sciences, E. Quagliariella Campus, via E. Orabona 4, Bari

For more information see the website:

<https://www.uniba.it/it/ricerca/dipartimenti/farmacia/ricerca/dottorati-di-ricerca/dottorato-201cindustriale201d-in-forma-associata-ai-sensi-dellart-10-dm-226-2021-in-tecnologie-sostenibili-per-lo-sviluppo-industriale-di-medicinali-e-diagnostici-tessmed-xxxix-ciclo-anno-accademico-2022-2023-nuova-istituzione>

ANNEX 29) PROFILE

PhD PROGRAMME IN ORGANS AND TISSUES TRANSPLANTATION AND CELLULAR THERAPIES

CUN Scientific Area: 06 Medical Sciences, 07 Agrarian and Veterinary Sciences, 05 Biological Sciences

Scientific Disciplinary Sectors: AGR/18, BIO/13, BIO/17, VET/09, MED/15, MED/12, MED/13, MED/14, MED/18, MED/19, VET/01, MED/41 and MED/15

Coordinator: Prof. FRANCESCO STAFFIERI

Administrative office: Department of Precision Medicine and Regenerative and Ionic Area

PEC: direzione.dimeprej@pec.uniba.it

Duration: 3 years

Curricula: NO

Total positions with scholarship available: n. 4

- n. 3 positions supported by the PNRR program based on DM 118/23
- n. 1 position sponsored by the University of Bari

Total positions without scholarships available n. 1

The available positions will be assigned based on the order of classification, up to the end of the available candidates. The positions with scholarship will be primarily assigned based on the order of classification. Thereafter positions without scholarship will be assigned.

Short description of projects with a specific theme

DM 118/23

1) Study of molecular mechanisms of damage to human cardiac progenitor cells and pancreatic beta-cells in type 2 diabetes mellitus: metabolic and pharmacological regulation

About 422 million people worldwide suffer from diabetes mellitus and 1.5 million deaths are directly attributed to diabetes each year. In addition, according to the World Health Organization, the prevalence of diabetes mellitus has been steadily increasing in recent decades, especially with regard to type 2 diabetes, which accounts for about 90 percent of cases and is strongly linked to excess weight, which in turn is due to both overeating and low physical activity. Loss of functional beta-cell mass is a necessary and early condition in the development of type 2 diabetes mellitus, so restoring the physiological number of pancreatic beta-cells and their function is the only strategy that can prevent the onset or progression of diabetes. To date, none of the anti-diabetes drugs on the market are able to achieve these goals consistently and sustainably over time. The Proponent has many years of experience in isolating and culturing human pancreatic islets from pancreas biopsies derived from patients undergoing duodenal-cephalus-pancreasectomy surgery.

In addition, diabetes is the major risk factor for the development of cardiovascular disease, and these at the same time are the leading cause of death in the diabetic patient. It has been amply demonstrated that the human heart has a compartment of cardiac progenitor cells (CPCs), located predominantly in the right auricle and capable of ensuring

proper myocardial cell turnover. The Proponent has many years of experience in setting up primary cultures of human CPCs from the right auricle of patients undergoing cardiac surgery for valve replacement and/or coronary artery bypass. These cells have been characterized and in addition to expressing markers typical of human cardiac stem and progenitor cells, they are multipotent in that they are able to differentiate in vitro, in the presence of appropriate culture media, into osteocytes, chondrocytes or adipocytes.

The Proponent has shown that both pancreatic beta-cells and CPCs undergo apoptosis when exposed to stressogenic stimuli (hydrogen peroxide, the saturated fatty acid palmitate, pro-inflammatory cytokines), through the involvement of specific molecular mechanisms, including activation of stress kinases and synthesis of toxic intermediates. In addition, the Proponent sought to understand whether drugs used for the treatment of type 2 diabetes, especially drugs belonging to the incretin-mimetic class, were also able to protect pancreatic beta-cells and CPCs from diabetic milieu-induced damage by virtue of GLP-1 (Glucagon-Like Peptide-1) receptor expression.

2) Implantable Devices For The Reconstruction Of Osteochondral Defects In Articular Surfaces, Customized Solutions And Possible Standardization In The Human And Veterinary Sector

It is well known that the optimal state of a joint depends on the good quality of the cartilage, the state of the subchondral bone, and the vitality of the synovial membrane, factors that influence the regeneration of a cartilage defect that varies greatly depending on the age of the patient. A young person has a good chance of repair because of the reactive capacity of the synovial membrane and subchondral spongiosa, whereas an elderly person has a poor chance because of the poor biological and mechanical quality of the bone and the poor reactivity of the synovial membrane. For this reason, the reconstruction techniques and prosthetic material used in young patients should not be the same as that used in older people. This project proposes the development of a new generation of joint implants that are not dense but porous and fabricated from biopolymer-coated trabecular titanium. The implants will be custom-designed from a CT scan of the patient and will fit perfectly to the defect present on the article, will be fabricated with 3D printing technology and will have the function of a scaffold with mechanical characteristics very close to those of adjacent tissues. Thus, it is expected that mechanical stimuli applied to the joint and the scaffold can stimulate mesenchymal cells to produce extracellular matrix that induces tissue regeneration. The project aims to develop trabecular titanium scaffolds initially fabricated to size, featuring a joint surface covered with a biopolymer and reconstructing an osteochondral defect. Trabecular titanium will be responsible for regenerating the missing bone portion of the defect, while two strategies will be used for cartilage: - in very young patients (< 20 years), the use of resorbable polymers such as polycaprolactone will try to stimulate the formation of new cartilage tissue.

3) Green chemistry for sustainable innovation of production processes for animal feed

The food and agriculture sector, in accordance with the EU, includes livestock farming among the biggest impacts on the environment. Therefore, there is a need to encourage innovation in production processes and the valorization of industrial waste. Circular economy and sustainable development are the necessary implementation method of potential process innovation. In this sense, industrial symbiosis, or the synergy between agribusinesses that produce by-products, is relevant. In Apulia, about 3.5 million t/year of agrifood waste residues are produced, which can be reused by the feed sector and valorized in supply chains. Innovation applied to the reuse of agrifood by-products in the feed sector is a win-win situation for several aspects: 1. Recovering the nutritive value of the by-product as a livestock feed; 2. Improving the functional and nutraceutical properties of meat; 3. Reducing the environmental impact.

Modalities of admission:

The exam procedures will be taken in accordance with art. 6 lett. A of the call

The selection will be based on titles, a written examination on the topics covered by the PhD Course and an oral examination with the discussion of the research project. The research project will be preventively sent by the candidate together with the admission documents. The research project (maximum 3000 words excluding the bibliography) should include at least the following fields: scientific background, aim of the study, methodology (including the statistical considerations), expected goals, perspectives and possible advantages.

Admission to the oral test is subject to successful evaluation of the written test.

During the oral examination, the knowledge of the English language, will be also evaluated.

Examination of foreign candidates:

Foreign candidates can choose to perform the admission examination in Italian or English language.

Positions reserved to candidates graduated in foreign universities:

The exam procedures will be carried out in accordance with art. 17 procedure 2 of the call.

Selection will be based on titles and oral examination with the discussion of a project regarding the themes of the doctorate, preventively sent by the candidate together with the admission documents. The research project (maximum 3000 words excluding the bibliography) is mandatory for the admission to the oral examination and should include at least the following fields: scientific background, aim of the study, methodology (including the statistical considerations), expected goals, perspectives and possible advantages. The oral examination will be performed through a telematic platform (Microsoft Teams) based on the criteria contemplated in the call. A separated list will be formulated for the candidates graduated in foreign countries. If these positions will be not assigned to foreign candidates, they will be assigned to regular candidates.

Calendar and location for the admission examinations:

Written examination : July 27th 2022

Oral Examination July 28th 2022

Location and time:

The examinations will take place at the section of Veterinary Clinics and Animal Production of DIMEPRE-J, at 9:30

Calendar and location for the position reserved to candidates graduated at foreign universities

Oral examination: July 28th at 2 pm

For further information please check the website

<https://www.uniba.it/it/ricerca/dipartimenti/dimepre-j/ricerca/dottorato/trapianti-di-tessuti-e-organi-e-terapie-cellulari>