



UNIVERSITÀ
DI SIENA
1240

Selection notice for admission to the PhD of national interest – 39th ciclo
Annex 1



Finanziato
dall'Unione europea
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Ministero
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Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA

PhD of national interest in	Innovation in the diagnosis, prevention and treatment of infections at epidemic-pandemic risk
Coordinator	Prof.ssa Donata Medaglini, donata.medaglini@unisi.it
Department	Biotechnologie Mediche
Attendance	mandatory
Positions	31
of which:	

	n.	Funding institution(s)/partner university	Research topic
Positions with DM 118 scholarships			
A.	1	MUR/Università della Campania	PNRR research as of DM 118 or 2 March 2023: Technologies for novel antimicrobial drugs (3) (6 months abroad)
B.	1	MUR/Università del Salento	PNRR research as of DM 118 or 2 March 2023: Technologies for novel antimicrobial drugs (3) (6 months abroad)
C.	1	MUR/Università di Sassari	Public administration as of DM 118 of 2 March 2023: Biomarkers of the immune response (7) (6 months abroad, 6 months traineeship/internship)
Positions with DM 117 scholarships			
D.	11	MUR/Università di Siena - Fondazione Biotechopolo di Siena	Innovative technologies for vaccines, drugs, diagnostics and immunological biomarkers for pandemic preparedness. (1-7) (6 months abroad, 6 months traineeship/internship)
E.	2	MUR/Università di Firenze - Fondazione Biotechopolo di Siena	Strategies to counter the emergence and spread of antibiotic-resistant bacteria at epidemic-pandemic risk (6) Biomarkers of the immune response (7) (6 months abroad, 6 months traineeship/internship)
F.	2	MUR/Università di Pisa - Fondazione Biotechopolo di Siena	Technologies for novel antimicrobial drugs (3) (6 months abroad, 6 months traineeship/internship)
G.	2	MUR/Università di Bologna - Fondazione Biotechopolo di Siena	Biomarkers of the immune response (7) Mathematical models to predict the response to vaccination, the development of resistance to antimicrobial drugs and the spread of pathogens (8) (6 months abroad, 6 months traineeship/internship)
H.	2	MUR/Università di Padova - Fondazione Biotechopolo di Siena	Technologies for novel antimicrobial drugs (3) (6 months abroad, 6 months traineeship/internship)
I.	2	MUR/Università di Torino - Fondazione Biotechopolo di Siena	Drug delivery systems (5) (6 months abroad, 6 months traineeship/internship)
J.	2	MUR/Università di Catania - Fondazione Biotechopolo di Siena	Innovative technologies for diagnosis (1) Strategies to counter the emergence and spread of antibiotic-resistant bacteria at epidemic-pandemic risk (6) (6 months abroad, 6 months traineeship/internship)
K.	2	MUR/ Humanitas University - Fondazione Biotechopolo di Siena	Biomarkers of the immune response (7) (6 months abroad, 6 months traineeship/internship)
L.	2	MUR/ Sapienza Università di Roma - Fondazione Biotechopolo di Siena	Technologies for novel antimicrobial drugs and diagnostics (1, 3) (6 months abroad, 6 months traineeship/internship)
M.	1	MUR/Università di Siena – Istituto di Ricerche Biomediche di Bellinzona - IRB	Monoclonal antibodies (4) Biomarkers of the immune response (7) (6 months abroad, 6 months traineeship/internship)

Research topics
<p>The PhD course offers multidisciplinary training in the field of epidemic-pandemic infections addressing the following research topics:</p> <ol style="list-style-type: none"> 1. Innovative technologies for diagnosis: development of innovative diagnostic techniques for rapid and accurate detection of pathogens, such as viruses, bacteria, fungi and parasites, at epidemic-pandemic risk 2. Vaccine Technologies: design and development of new vaccines, based on innovative technology platforms, against pathogens at epidemic- pandemic risk 3. Technologies for new antimicrobial drugs: research and development of new antimicrobial drugs, including antibiotics, antivirals, antifungals and antiparasitics, for infections at epidemic-pandemic risk. 4. Monoclonal antibodies: design and development of monoclonal antibodies 5. Drug delivery: study and development of advanced drug delivery systems, such as lipid particles, vesicles and other nanoparticles, to improve the efficacy and safety of vaccines and antimicrobial drugs. 6. Strategies to counter the emergence and spread of antibiotic-resistant bacteria at epidemic-pandemic risk 7. Biomarkers of the immune response: discovery and validation of biomarkers of the immune response associated with infections and vaccinations 8. Mathematical models to predict the response to vaccination, the development of resistance to antimicrobial drugs and the spread of pathogens. <p>The PhD program aims to provide in-depth knowledge of the most advanced technologies for the development of diagnostics, vaccines and therapeutics for pandemic preparedness.</p> <p>An important opportunity for the training of doctoral students is offered by the support of the Fondazione Biotecnopolo di Siena (https://www.biotecnopolo.it/), which co-finances 30 doctoral scholarships and acts as an anti-pandemic hub for research, development and production of vaccines and monoclonal antibodies against epidemic-pandemic infections.</p>

Ranking	<ul style="list-style-type: none"> ● Single ranking list for all positions (A-M)
Documents required for evaluation (to be attached during online application)	<ul style="list-style-type: none"> ● Curriculum vitae et studiorum, containing a statement of the access title held with the issuing institution in addition to a list of any publications ● Research project, max. 3 pages in English ● Reference letters (no more than two) of Italian and international academics and/or research professionals (letters shall not be uploaded, but e-mail addresses of the contact persons are to be provided) ● Thesis abstract of <i>Laurea Magistrale/Specialistica/vecchio ordinamento</i> or equivalent foreign degree translated into Italian or English (max. 1 page) ● English language certification, level B2, if available (optional) <p>The candidate may indicate in the research project a priority between the partner universities (positions A-M) and between the research topics (1-8); the preferences expressed will not be binding for the purposes of the assignment of positions.</p> <p>Eligibility of foreign degrees (to be translated into Italian, English or French) is ascertained by the selection committee in accordance with relevant regulations and international agreements on the recognition of qualifications for further studies.</p> <p><u>Candidates who achieved (or will achieve by 31 October 2023) the diploma di laurea at an Italian university have to specify, in their curriculum, all the data on the university path and the title of admission, in particular:</u></p> <ol style="list-style-type: none"> 1. University issuing the title 2. type of <i>laurea – vecchio ordinamento/specialistica/magistrale</i>; 3. degree course name 4. list of examinations with votes 5. date of obtaining the title and final vote or expected date of obtaining the title (by 31 October 2023).

	<p>Candidates who achieved (or will achieve by 31 October 2023) their degree at a foreign university (with a duration of at least four years) must specify in their curriculum:</p> <ol style="list-style-type: none"> 1. University issuing the title 2. type of degree (min. duration four years) – <i>Bachelor’s degree/ Master’s degree</i> 3. date of obtaining the title and final vote or expected date of obtaining the title (by 31 October 2023). <p>Candidates with a foreign degree must attach to the online presentation also the following documentation:</p> <ul style="list-style-type: none"> ● transcript – certification of the title with the list of exams and votes – with a translation in Italian or English ● Diploma supplement (if available).
Web site for further information	https://www.unisi.it/ricerca/dottorati-di-ricerca/dottorati-di-ricerca-39-ciclo
Selection modalities	<ol style="list-style-type: none"> 1. Evaluation of qualifications 2. Oral examination
Admission requirements	All master’s degrees
Exam procedures	<p>The overall score is the sum of the scores obtained in the evaluation of qualifications and the interview. The minimum score for eligibility is 60/100.</p> <p>Evaluation of qualifications: minimum score 20 points, maximum score 40 points. A minimum of 20 points is required for admission to the oral examination.</p> <p>Oral examination: minimum score 40 points, maximum score 60 points. The examination will consist of the candidate's presentation of his or her research project in English. English language abilities will be assessed during the test. The presentation should ideally be completed in 7 minutes, but may last up to a maximum of 10 minutes.</p> <p>The results of each test will be published on the doctoral website (https://www.unisi.it/ricerca/dottorati-di-ricerca/dottorati-di-ricerca-39-ciclo/)</p>
Dates of evaluation and exam(s)	<p>Evaluation of qualifications: 1-7 September 2023</p> <p>Oral examination: from 11 to 15 September 2023, by videoconference (http://meet.google.com/jiw-tjvd-wts). The schedule of the examinations will be published on the PhD website by 8 September 2023.</p>
Selection committee	The composition of the committee will be published after the deadline for application.