

## Annex 2

**Disclaimer:** *This document is a non-official version of the PhD course selection notice meant to provide information in English – only the Italian version approved with Rector's Decree n. 1081/2024, Prot. N. 114402 17/06/2024 shall be legally binding.*

### **Selection notice for the PhD course of national interest in Innovation or the diagnosis, prevention and treatment of infections at epidemic-pandemic risk**

Deadline for applications:

16 July 2024, 14:00 (Central European Summer Time)

Schedule with description of typology of positions and modalities of selection

<b>PhD of national interest in</b>	<b>Innovation in the diagnosis, prevention and treatment of infections at epidemic-pandemic risk</b>
Coordinator	Donata Medaglini, <a href="mailto:donata.medaglini@unisi.it">donata.medaglini@unisi.it</a>
Department	Biotechnologie Mediche
Attendance	mandatory
Open positions	<b>31</b>
Of which:	

	<i>n.</i>	<i>Funding institution(s)/partner university</i>	<i>Research topic</i>
<b>Positions with scholarships</b>			
A.	2	Università degli Studi di Siena	Innovative technologies for vaccines, drugs, diagnostics and immunological biomarkers for pandemic preparedness, Mathematical models to predict the response to vaccination, the development of resistance to antimicrobial drugs and the spread of pathogens (1-8)
B.	1	Università degli Studi della Campania "Luigi Vanvitelli"	Technologies for novel antimicrobial drugs (3)
C.	12	Fondazione Biotechopolò di Siena	Innovative technologies for vaccines, drugs, diagnostics and immunological biomarkers for pandemic preparedness, Mathematical models to predict the response to vaccination, the development of resistance to antimicrobial drugs, the spread of pathogens, and the economic impact of infections at epidemic/pandemic risk (1-8)
D.	1	Istituto Superiore di Sanità	Biomarkers of the immune response (7)
<b>Positions with DM 630 scholarships</b>			
E.	2	MUR/ Università degli Studi di Firenze-Fondazione Biotechopolò di Siena	Strategies to counter the emergence and spread of antibiotic resistance (6) Diseases transmitted by sandflies in Tuscany. One Health approach (8) (6 months abroad, 6 months traineeship/internship)
F.	1	MUR/ Università di Pisa- Fondazione Biotechopolò di Siena	Technologies for novel antimicrobial drugs (3) (6 months abroad, 6 months traineeship/internship).
G.	5	MUR/Università degli Studi di Siena-Fondazione Biotechopolò di Siena	Innovative technologies for vaccines, drugs, diagnostics and immunological biomarkers for pandemic preparedness, mathematical models to predict the response to vaccination, the development of resistance to antimicrobial drugs and the spread of pathogens (1-8) (6 months abroad, 6 months traineeship/internship)
H.	2	MUR/ Università degli Studi di Torino-Fondazione Biotechopolò di Siena	Mass spectrometry as a methodology for the molecular investigation of pharmaceutical pollutants: an aid to infection prevention (6) (6 months abroad, 6 months traineeship/internship) Mucosomes and muco-gels: new multifunctional platforms for the prophylaxis/diagnosis and therapy of bacterial and viral infections (5) (6 months abroad, 6 months traineeship/internship)
I.	2	MUR/ Humanitas University-Fondazione Biotechopolò di Siena	Biomarkers of the immune response (7) (6 months abroad, 6 months traineeship/internship)
J.	1	MUR/ Università del Salento-Fondazione Biotechopolò di Siena	Technologies for novel antimicrobial drugs (3) (6 months abroad, 6 months traineeship/internship)
K.	1	MUR/Università degli Studi di Napoli Federico II- Fondazione Biotechopolò di Siena	Vaccine Technologies (2) and "Drug delivery" systems (5) (6 months abroad, 6 months traineeship/internship)

L.	1	MUR/Università degli Studi di Urbino Carlo Bo- Fondazione Biotechopololo di Siena	Vaccine Technologies (2) (6 months abroad, 6 months traineeship/internship)
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Tematiche di ricerca
<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"> <li>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</li> <li>2. Vaccine Technologies: design and development of new vaccines, based on innovative technology platforms, against pathogens at epidemic- pandemic risk</li> <li>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.</li> <li>4. Monoclonal antibodies: design and development of monoclonal antibodies</li> <li>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.</li> <li>6. Strategies to counter the emergence and spread of antibiotic-resistant bacteria at epidemic-pandemic risk</li> <li>7. Biomarkers of the immune response: discovery and validation of biomarkers of the immune response associated with infections and vaccinations</li> <li>8. Mathematical models to predict the response to vaccination, the development of resistance to antimicrobial drugs the spread of pathogens, and the economic impact of infections at epidemic-pandemic risk.</li> </ol> <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 Biotechopololo di Siena (<a href="https://www.biotechopololo.it/">https://www.biotechopololo.it/</a>), 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	Single ranking list for all positions (A-L)
Documents required for evaluation (to be attached during online application)	<ul style="list-style-type: none"> <li>• <b>Curriculum vitae et studiorum</b> containing a statement of the access title held with the issuing institution in addition to a list of any publications</li> <li>• <b>Research project</b> (max. 3 pages) in English</li> <li>• <b>Reference letters</b> (NOT MANDATORY) (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 v. art. 3 comma 2)</li> <li>• <b>Thesis abstract</b> of Laurea Magistrale/Specialistica/vecchio ordinamento or equivalent foreign degree translated into Italian or English (max. 1 page)</li> <li>• English language certification, level B2, if available (optional)</li> </ul> <p>The candidate may indicate in the research project a priority between the partner universities/funding institutions (positions A-L) 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 2024) the <b>diploma di laurea at an Italian university</b> have to specify, in their curriculum, all the data on the university path and the title of admission, in particular:</u></p> <ul style="list-style-type: none"> <li>• University issuing the degree</li> <li>• type of <i>laurea – vecchio ordinamento/specialistica/magistrale</i></li> <li>• degree course name</li> <li>• list of examinations with votes</li> </ul>

	<ul style="list-style-type: none"> <li>• date of obtaining the title and final vote or expected date of obtaining the title (by 31 October 2024).</li> </ul> <p><u>Candidates who achieved (or will achieve by 31 October 2024) their <b>degree at a foreign university</b> (with a duration of at least four years) must specify in their curriculum:</u></p> <ul style="list-style-type: none"> <li>• University issuing the degree</li> <li>• type of degree (min. duration four years) – <i>Bachelor’s degree/ Master’s degree</i></li> <li>• date of obtaining the title and final vote or expected date of obtaining the title (by 31 October 2024).</li> </ul> <p>Candidates with a foreign degree must attach to the online presentation also the following documentation:</p> <ul style="list-style-type: none"> <li>• <b>transcript</b> – certification of the title with the list of exams and votes – with a translation in Italian or English</li> <li>• <b>Diploma supplement</b> (if available).</li> </ul> <p>ATTENTION: candidates with a foreign degree admitted after selection <b>MUST</b> present a copy of the original degree and <b>proof of authenticity</b> of the degree (DOV, CIMEA or diploma supplement) upon matriculation; please carefully read art. 5, paragraph 8 of the selection notice).</p>
Web site for further information	<a href="https://phd-dptip.unisi.it/">https://phd-dptip.unisi.it/</a>
Selection modalities	<ol style="list-style-type: none"> <li>1. Evaluation of qualifications</li> <li>2. Oral examination</li> </ol>
Admission requirements	All master’s degrees ( <i>lauree magistrali, specialistiche, a ciclo unico e vecchio ordinamento</i> )
Exam procedures	<p>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.</p> <p>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: <a href="https://phd-dptip.unisi.it/">https://phd-dptip.unisi.it/</a></p>
Dates of evaluation and exam(s)	<p><b>Oral examinations: from 2 to 6 September 2024</b> by videoconference (<a href="http://meet.google.com/jiw-tjvd-wts">http://meet.google.com/jiw-tjvd-wts</a>).</p> <p>The schedule of exams will be published on the PhD website by 30 August 2024.</p>
Selection committee	The composition of the committee will be published after the deadline for application.