



**"Annex 4" updated on 8<sup>th</sup> April 2019**  
(The updates are highlighted in red colour)

**ANNEX 4**

**CALL FOR PHD POSITIONS – 35 cycle**  
**PHD PROGRAMME IN EXPERIMENTAL MEDICINE AND THERAPY**

<b>PhD Programme Coordinator</b>	Prof. Giuseppe Saglio
<b>Department</b>	Clinical and Biological Science
<b>PhD Programme Length</b>	4 years
<b>PhD web site</b>	<a href="http://dott-mts.campusnet.unito.it/cgi-bin/home.pl">http://dott-mts.campusnet.unito.it/cgi-bin/home.pl</a>
<b>Course start date</b>	1 <sup>st</sup> November 2019
<b>Departments involved in PhD programme</b>	Dipartimento di Scienze Cliniche e Biologiche, Dipartimento di Scienze della Vita e Biologia dei Sistemi, Dipartimento di Biotecnologie, Molecolari e Scienze per la Salute, Dipartimento di Oncologia, Dipartimento di Scienze Mediche, Dipartimento di Neuroscienze "Rita Levi Montalcini", Dipartimento di Scienze Chirurgiche

<b>Positions offered<sup>1</sup></b>	
n. 7 positions with scholarship, of which n. 1 position reserved to candidates with international qualifications	of which: -n. 6 scholarships funded by the University -n. 1 position supported by Department of Medical Sciences, project: "Cannabis and methodological aspects in mass spectrometry"
<b>n.2 positions without scholarships</b>	

***Titles of Research Projects / Research Fields***

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<sup>1</sup> All additional scholarships and apprenticeship contracts (Legislative Decree n. 81/2015 art.45), which may become available after the publication of this Call, will be announced on the University websites <http://www.unito.it/ricerca/fare-ricerca-unito/dottorati-di-ricerca> and <http://en.unito.it/research/phd/phd-programmes> until Call's deadline.



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The list of research projects is available at the end of this PhD Programme's annex. This list may be updated until Call's deadline.

## *Calendar of entrance examinations*

The calendar with information on dates and venues of entrance examinations shall be published on the websites: <http://www.unito.it/ricerca/fare-ricerca-unito/dottorati-di-ricerca> and <http://en.unito.it/research/phd/phd-programmes> starting from **9<sup>th</sup> April 2019**.

## *Useful information for applicants*

**Application fee: €50.00 for each application submitted** Candidates with international qualifications are exempted from paying the application fee.

**Application fee deadline: 16<sup>th</sup> April 2019 (mandatory deadline)** Candidates who do not pay the application fee within the deadline will be excluded from the competition.

<b>CALL FOR NON-RESERVED/ORDINARY POSITIONS</b>	
<b>Admission procedure for non-reserved/ordinary positions</b>	
Assessment of qualifications, written examination and interview	
<b>Qualifications to be uploaded on the on-line application:</b>	
<ul style="list-style-type: none"> <li>• Application form (duly signed and including identification document/passport)</li> <li>• For applicants with international qualifications: submit on-line documentation as specified in Art. 4 of this Call;</li> <li>• For applicants under condition: provision of Bachelor's degree grade, certificate or self-certification with a complete list of academic transcripts concerning the 1<sup>st</sup> cycle degree (Laurea Triennale) and 2<sup>nd</sup> cycle degree (Laurea Magistrale) with marks, weighted average and credits. For applicants applying under condition, please also check Art. 5 of the Call.</li> <li>• Thesis Abstract</li> <li>• Publication (max 2.)</li> <li>• Letters of references signed by professors or qualified researchers (see art. 5 of the Call)</li> <li>• Research project (max 600 words, bibliography included) written by the candidate choosing among those listed and offered by the Doctorate.</li> </ul>	
<b>Assessment criteria (for non-reserved/ordinary positions)</b>	<b>maximum score 100 points</b>
<b>Assessment of qualifications:</b>	<b>maximum score 15 points</b>
Final grade of Laurea/2 <sup>nd</sup> cycle degrees (or list of examinations taken during the Italian Laurea Triennale/1 <sup>st</sup> cycle degree and Laurea Magistrale/2 <sup>nd</sup> cycle degree for candidate applying under condition)	maximum score 4 points
110-110L	<b>4 points</b>



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<p>Da 107 a 109 <b>3,5</b> points          Da 104 a 106 <b>3</b> points          Da 100 a 103 <b>2</b> points          =&lt; a 99 <b>1</b> point</p>	
Thesis abstract	maximum score 3 points
<p>Publications</p> <p>0.5 points for each publication. Max 2 already published papers will be assessed, only if relevant to the Programme and with well-recognised scientific dimension.</p>	maximum score 1 point
<p>Other qualifications:</p> <ul style="list-style-type: none"> <li>- Second/additional Master degree: 0.5 points</li> <li>- Italian specialising master 1<sup>st</sup> and 2<sup>nd</sup> level degree if relevant: 0.5 points</li> <li>- Specialising courses if relevant 0.5 points</li> <li>- Participation to the Erasmus project 0.5 points</li> </ul> <p><i>Titles or traineeships relating to merely professional skills will not be evaluated.</i></p>	Maximum score 2 points
Letters of reference signed by professors or qualified researchers (0.5 points for each letter)	Maximum score 1 point
Research project	Maximum score 4 points
<i>Minimum threshold for admission to the written examination</i>	<i>6 points</i>
<b>Written examination</b>	<b>Maximum score: 40 points</b>
<i>Minimum threshold for admission</i>	<i>25 points</i>
<b>Oral interview</b>	<b>Maximum score: 45 points</b>
<i>Minimum threshold for passing the interview</i>	<i>30 points</i>
<p><b>Further information on examinations:</b></p> <p>The <b>research project</b> (max 600 words, bibliography included) choosing a title among those offered by the PhD Programme, should be divided in such sections: Rational, Scientific Bases, Objectives, Methods, Results, References (max 2).</p>	



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The **written test** consists in the detailed presentation of the research project that the candidate aims to develop within the theme he/she chooses among those offered by the PhD Programme. The written test should allow to evaluate the candidate's actual knowledge of the research project proposed, its rationale and scientific bases. The acquisition of the fundamental concepts of the scientific method by the candidate should also emerge.

The **oral examination** will deal with presentation and discussion of the research project. Under assessment will be the scientific value of the project, its feasibility during the duration of the Doctorate, the anticipated objectives, the scientific impact of the expected results. Last but not least, the candidate's precedent practical experience in the specific research field will be highly considered.

A good knowledge of scientific English is requested.

Candidates may, on request and upon authorisation of the Board, sustain the interview via Skype. (See Art. 8 of the Call).

## CALL FOR POSITIONS RESERVED TO CANDIDATES WITH INTERNATIONAL QUALIFICATIONS

### Admission procedure for positions reserved to candidates with international qualifications

Assessment of qualifications and research project

### Qualifications to be uploaded on the on-line application

- Application form (duly signed and including identification document/passport)
- For international qualifications: submit on-line documentation as specified in Art. 4 of this Call. For applicants applying under condition please check Art. 5
- Research project (max 4000 words, bibliography included) written by the candidate choosing among those listed and offered by the Doctorate.

### Assessment criteria for positions reserved to applicants with international qualifications

**maximum score 100 points**

Curriculum studiorum and vitae (as by the information provided in the Application Form (Annex 1)

maximum score 40 points

Thesis Abstract

maximum score 10 points

Publications

maximum score 6 points

2 points for each publication. Max 3 already published papers will be assessed, only if relevant to the Programme and with well-recognised scientific dimension.



Research Project	maximum score 40 points
Other qualifications: <ul style="list-style-type: none"><li>- Second/additional Master degree: 2 points</li><li>- Italian specialising master 1<sup>st</sup> and 2<sup>nd</sup> level degree if relevant: 2 points</li></ul>	Maximum score 4 points
<i>Minimum threshold for admission</i>	<i>65 points</i>
<b><i>Additional information about the assessment of reserved positions</i></b>  The <b>research project</b> (max 4000 words, bibliography included) written by the candidate choosing a title among those listed and offered by the Doctorate. The project should be divided in such sections: Rational, Scientific Bases, Objectives, Methods, Results and References. The examining board will evaluate the scientific dimension of the project, its feasibility related to the length of the PhD, the target setting, the scientific impact of outcomes. Last but not least, the candidate's precedent practical experience in the specific research field will be highly considered.  Courses are partially in English.	

**Titoli progetti di ricerca**  
**Dottorato di Ricerca in MEDICINA E TERAPIA SPERIMENTALE**  
**Titles of research projects**  
**PhD Programme in EXPERIMENTAL MEDICINE AND THERAPY**

- 1) Infiammazione e progressione di malattia. / Inflammation and progression of disease processes. (*supervisor: Biasi Fiorella*)
- 2) Stress ossidativo in patologia umana. / Oxidative stress in human pathophysiology. (*supervisor: Leonarduzzi Gabriella*)
- 3) Segnali cellulari di funzionamento, proliferazione e morte cellulare. / Normal and pathological cell signals involved in cell function, proliferation and death. (*supervisor: Racca Silvia*)
- 4) Meccanismi di condizionamento in modelli in vitro e pre-clinici di danno miocardico. / Conditioning mechanisms in in vitro and in preclinical models of myocardial injury. (*supervisor: Pagliaro Pasquale*)
- 5) Meccanismi che determinano la fragilità cardiovascolare legata all'età. / Mechanisms determining cardiovascular age-related frailty. (*supervisor: Pagliaro Pasquale*)



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- 6) Effetti dei nutraceutici sulla funzione cardiovascolare. / Nutraceutical effects on cardiovascular function. (supervisor: *Penna Claudia*)
- 7) Nuove strategie cardioprotettive basate sugli effetti metabolici dei peptidi derivati dalla cromogranina A. / Novel cardioprotective strategies based on metabolic effects of Chromogranin A related peptides. (supervisor: *Gallo Maria Pia*)
- 8) Controllo della perfusione muscolare a riposo e nell'esercizio. / Control of muscle blood flow at rest and during exercise. (supervisor: *Roatta Silvestro*)
- 9) Biologia molecolare, farmacologia, farmacogenetica e terapia sperimentale dei tumori emolinfopoietici. / Molecular biology, pharmacology, pharmacogenetics and experimental therapy of hemolymphopoietic tumors. (supervisor: *Saglio Giuseppe*).
- 10) Biologia molecolare, metabolismo, farmacologia, farmacogenetica e terapia sperimentale di tumori solidi. / Molecular biology, pharmacology, pharmacogenetics and experimental therapy of solid tumors. (supervisor: *Terzolo Massimo*)
- 11) Biologia molecolare, farmacologia, farmacogenetica e terapia sperimentale di malattie infettive. / Molecular biology, pharmacology, pharmacogenetics and experimental therapy of infectious diseases (supervisor: *Giovanni Di Perri*)
- 12) Biologia molecolare, farmacologia, farmacogenetica e terapia sperimentale di malattie cardiovascolari e metaboliche. / Molecular biology, pharmacology, pharmacogenetics and experimental therapy of cardiovascular and metabolic diseases. (supervisor: *Giustetto Carla*)
- 13) Biologia molecolare, metabolismo, farmacologia e terapia sperimentale di malattie degenerative del sistema nervoso, epatiche, etc. / Molecular biology, pharmacology, pharmacogenetics and experimental therapy of degenerative diseases of brain, liver, etc. (supervisor: *Tamagno Elena*)
- 14) Meccanismi molecolari di resistenza ai farmaci antitumorali. / Molecular mechanisms of resistance to anticancer drugs. (supervisor: *Muzio Giuliana*)
- 15) Infiammazione e cachessia. / Inflammation and cachexia. (supervisor: *Costelli Paola*)
- 16) Recenti progressi sulla patogenesi e sul trattamento della cachessia neoplastica. / Recent advances in the pathogenesis and treatment of neoplastic cachexia. (supervisor: *Costelli Paola*)
- 17) Displasie e tumori del cavo orale: patogenesi e trattamento. / Pathogenesis and treatment of oral dysplastic and neoplastic lesions. (supervisor: *Pentenero Monica*)
- 18) Recenti progressi in ortognatodonzia. / Recent advances in orthognatodontics. (supervisor: *Piancino Maria Grazia*)
- 19) Trattamenti ortognatodontici conservativi e chirurgici. / Orthognatic medical and surgical treatments./ (supervisor: *Piancino Maria Grazia*)



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- 20) Impiego dell'ingegneria tessutale nella riparazione neurale. / Tissue engineering in neural repair. *(supervisor: Geuna Stefano)*
- 21) Neuro-plasticità e rigenerazione nel sistema nervoso periferico. / Neuroplasticity and re generation in the peripheral nervous system. *(supervisor: Geuna Stefano)*
- 22) Modelli di tecnologia avanzata per la somministrazione di farmaci. / Advanced technologies for drug administration. *(supervisor: Barrera Giuseppina)*
- 23) Nutrizione e invecchiamento. / Nutrition and aging. *(supervisor: Costelli Paola)*
- 24) Ormoni in patofisiologia e oncologia umana. / Hormone-related human pathophysiology and cancer. *(supervisor: Terzolo Massimo)*
- 25) Alterato metabolismo lipidico e malattia. / Altered lipid metabolism and disease. *(supervisor: Aragno Manuela)*
- 26) Prodotti di ossidazione del colesterolo in fisiopatologia umana. / Cholesterol oxidation products in human pathophysiology. *(supervisor: Biasi Fiorella)*
- 27) Nuove strategie di Farmacoterapia / New advances in Pharmacotherapeutics. *(supervisor: Berta Giovanni)*
- 28) Progressi in immunopatologia clinica / Progress in clinical immunopathology (Supervisor: *Rolla Giovanni*)
- 29) Meccanismi molecolari, patogenesi, diagnosi e terapia sperimentale delle malattie dell'apparato respiratorio / Molecular mechanisms, pathogenesis, diagnosis and experimental therapy of respiratory diseases. (Supervisor: *Rolla Giovanni*)
- 30) Progressi in diagnostica per immagini / Progress in diagnostic imaging (Supervisor: *Veltri Andrea*)
- 31) Studio degli eventi cellulari e molecolari e dei meccanismi patogenetici coinvolti nella progressione delle epatopatie croniche in condizioni di steatosi epatica non-alcolica (NAFLD) e steato-epatite non alcolica (NASH) / To investigate cellular and molecular events as well as pathogenic mechanisms involved in the progression of chronic liver disease in condition of non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH) (Supervisor: *Parola Maurizio*)
- 32) Cannabis e aspetti metodologici nella spettrometria di massa / Cannabis and methodological aspects in mass spectrometry (Supervisor: *D'Avoglio Antonio*) *(titolo abbinato alla borsa di studio finanziata dal Dipartimento di Scienze Mediche / research project linked to the PhD scholarship funded by Dipartimento di Scienze Mediche)*
- 33) Meccanismi fisiopatologici nella sepsi in relazione alle alterazioni cardiovascolari / Pathophysiological mechanisms in sepsis in relation to cardiovascular alterations (Supervisor: *Montrucchio Giuseppe*)



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- 34) Potenziale ruolo delle vescicole extracellulari nell'alterazione cardiovascolare nella sepsi / Potential role of extracellular vesicles in cardiovascular alteration in sepsis (Supervisor: *Montrucchio Giuseppe*)
- 35) Comprensione dei meccanismi molecolari e identificazione di trattamenti sperimentali per la deplezione muscolare indotta da tumori e/o chemioterapia / Understanding the molecular mechanisms and identification of prospective therapies for tumor- and chemotherapy-induced muscle wasting. (Supervisor: *Penna Fabio*)
- 36) Nuove strategie cardioprotettive con metaboliti bioattivi vegetali / Novel cardioprotective strategies with plant-derived bioactive metabolites. (Supervisor: *Gallo Maria Pia*)
- 37) Una piattaforma chirurgica preclinica per l'identificazione e la validazione di nuovi bersagli terapeutici nei tumori gastrointestinali. / A surgically-based preclinical platform for discovery and validation of new therapeutic targets in gastrointestinal tumors. (Supervisor: *Degjuli Maurizio*)