



DOCTORAL PROGRAM

IN

CLINICAL SCIENCES

Director prof. Lorenzo Cosmi

Industrial Doctoral Programme

XXXVI cycle – academic year 2020/2021

BIOMEDICAL AREA	
ADMINISTRATIVE OFFICE	Department of Experimental and Clinical Medicine
CURRICULA	<ol style="list-style-type: none"> 1. Clinical Pathophysiology and Pathophysiology of Aging, Emergency Medicine, and Nursing Sciences 2. Clinical and Experimental Medicine and Radiology 3. Clinical Pathology, in Musculoskeletal Diseases and Calcified Tissues 4. Anesthesiology, Pain Therapy and Surgical Sciences 5. Psychology 6. Global Health, Occupational Health, and International Cooperation on Mobile Populations
<p>AVAILABLE POSITIONS: 12 + 1 industrial doctoral position</p> <p>Positions with Scholarship: 10 Positions without Scholarship: 2* * standard ranking only</p>	
RANKING LIST FOR STANDARD POSITIONS SCHOLARSHIPS AVAILABLE: 9	<p>6 -University of Florence</p> <p>3 - Department of Experimental and Clinical Medicine – Ministerial Project "Departments of Excellence 2018-2022" with the following topics:</p> <ol style="list-style-type: none"> 1. "Phenotypic and functional characterization of immune system cells in patients with Sars-cov-2 and Sars-Cov-2-like infections" 2. "Prothrombotic diathesis in coronavirus infections: role of biohumoral, genetic and endothelial dysfunction markers" 3. "Covid-19: development of clinical-diagnostic strategies to face possible new outbreaks of epidemia and the spread of other emerging infectious diseases"
RANKING LIST FOR SPECIFIC RESEARCH TOPICS SCHOLARSHIPS POSITION AVAILABLE: 1	Tuscan Transplantation Organization – Careggi University Hospital "Development of research and teaching regarding organ donation and transplantation"
RESERVED POSITION INDUSTRIAL DOCTORAL PROGRAMME: 1	Reserved for Baxter S.p.A. employees
STUDY/RESEARCH PERIODS ABROAD	Not required
DOCUMENTS REQUIRED FOR THE ADMISSION (under penalty of exclusion)	<ul style="list-style-type: none"> • Copy of the Identification Document • <u>Replacement Declaration Form</u> self-declaration for:

	<ul style="list-style-type: none"> - Italian Degree required for the access - transcript of records with marks <i>(for those candidates whose degrees will be awarded within the 31st October 2020)</i> - acknowledgment of compliance for any other qualification documents enclosed with the application <ul style="list-style-type: none"> • Foreign Degree required for the access <i>(those candidates whose degrees will be awarded within the 31st October 2020 shall enclose the list of the examinations completed with marks)</i> 												
DOCUMENTS REQUIRED FOR THE EVALUATION	<p>MANDATORY</p> <ul style="list-style-type: none"> • Curriculum Vitae et Studiorum (European Format) • Research Project <p>OPTIONAL</p> <ul style="list-style-type: none"> • Publications and qualification documents (if any) • List of exams taken for the achievement of the Master of Science (M.Sc.) degree (or equivalent) and related final score • Copy of the M.Sc. Thesis (or equivalent) 												
RESEARCH PROJECT	The Research Project must be written in English in a document containing a maximum of 12,000 characters, including spaces, it must include abstract, introduction, methods, expected results, and references. The Project must be attributable, in a specific way, to one or more of the topics listed in the "Thematics" section or to the topic of the tied scholarship.												
EVALUATION PROCEDURE	<ul style="list-style-type: none"> • Evaluation of the research project, the curriculum, the publications (if any), other qualification documents (if any). • Interview <p>According to the scoring detailed in the section below "Evaluation Marks".</p>												
OTHER LANGUAGE FOR THE INTERVIEW	English												
INTERVIEW MODE	For candidates residing in Italy: in person For candidates residing abroad: by Google Meet or Skype												
EVALUATION MARKS	<table border="1"> <thead> <tr> <th>parameter</th> <th>minimum score</th> <th>maximum score</th> </tr> </thead> <tbody> <tr> <td>curriculum vitae - research project – publications and other qualification documents (if any)</td> <td>40/120</td> <td>60/120</td> </tr> <tr> <td>Interview: discussion of the Project. The following items will be examined: quality, exposing, innovation, internationalization, motivation.</td> <td>40/120</td> <td>60/120</td> </tr> <tr> <td colspan="3" style="text-align: center;">Eligibility is achieved with a minimum score of 80/120</td> </tr> </tbody> </table>	parameter	minimum score	maximum score	curriculum vitae - research project – publications and other qualification documents (if any)	40/120	60/120	Interview: discussion of the Project. The following items will be examined: quality, exposing, innovation, internationalization, motivation.	40/120	60/120	Eligibility is achieved with a minimum score of 80/120		
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THEMATICS	<p style="text-align: center;">Curriculum Clinical Pathophysiology and Pathophysiology of Aging, Emergency Medicine, and Nursing Sciences</p> <p><u>Nursing area</u></p> <ol style="list-style-type: none"> 1. Organ donation in nursing sciences. 2. Clinical risk in nursing sciences. 3. Nursing Management of signs and symptoms. 												

Medical Area

1. Pathogenetic and Therapeutic Mechanisms of immunovascular diseases.
2. Pathogenetic and Therapeutic Mechanisms of pulmonary obstructive diseases
3. Pathophysiology of atherosclerosis.
4. Mechanisms of action, efficacy and safety of antithrombotic therapy.
5. Pathophysiology of acute coronary syndromes.
6. Atherogenic dyslipidemias: from genetic diagnosis to treatment.
7. Venous thromboembolism: new pathogenetic mechanisms.
8. Biomolecular mechanisms of aging and age-related diseases.
9. Pathophysiology and clinical epidemiology of age-related fragility and disability.
10. Aging of cardiovascular system and age-related cardiomyopathies.
11. Pathophysiology and clinical epidemiology of the cognitive decline in the elderly.
12. The management of major traumas in Italy and Europe.
13. Development of new methodologies of advanced simulation for the implementation of the trauma team efficiency.
14. Pathophysiology of, and new rehabilitation approaches to, freezing of gait in Parkinson's disease.
15. Rehabilitation interventions based on powered exoskeleton in subjects with spinal cord injury.
16. Rehabilitation approaches to rheumatoid arthritis in older subjects
17. Innovative approaches to rehabilitation of subjects with stroke: action observation therapy, motor imagery, mirror therapy.

Curriculum in Clinical and Experimental Medicine and Radiology

1. Biological basis (cellular, molecular, genetic, metabolic, microbiologic, hormonal) of immune dysregulation (chronic inflammatory diseases, immunodeficiencies, cancer, autoimmunity).
2. Biomarkers, phenotyping, gender and precision therapies in immune dysregulatory diseases.
3. The role of the new MRI (Diffusion, Perfusion) and CT parameters (Perfusion with techniques of reduction of the dose in MultiSlice-CT and ConeBeam-CT) in the pre and post therapy evaluation of the different anatomic areas (neuro and head, heart and chest, abdomen and pelvis)
4. New Imaging techniques in the evaluation of microcirculation of fibrosing autoimmune diseases (skin, lung, musculoskeletal system)
5. Radiomics
6. Genetic basis and clinical/laboratory stratification of common variable immunodeficiency as prototype of immune dysregulation diseases, infections, autoimmunity and tumors.
7. Predisposing factors, physiopathology, organ involvement and therapeutic approaches to autoimmunity.
8. Predisposing factors, physiopathology, and innovative therapeutic approaches in allergic diseases.
9. Predisposing factors, physiopathology, and innovative therapeutic approaches in fibrosing autoimmune diseases.
10. Correlation between the immune system and the microbiota in the genesis of chronic inflammatory diseases and neoplasias.
11. Study of the intratumor and peripheral immune response in solid tumors.
12. Translational aspects of chronic hepatopathies and primitive tumors of the liver.

13. Cancer immunotherapy: strategies of treatment implementation and personalization.
14. Oncogenesis and biomarkers of neoplastic evolution secondary to hepatic viruses.
15. Crioglobulinemic syndromes and lymphoproliferative disorders in hepatic virus infections.
16. Immunotherapy in autoimmunity and rare immune mediated diseases.
17. New classification and organ involvement in rheumatic diseases.

Curriculum in Clinical Pathology, in Musculoskeletal diseases and calcified tissues

1. Computer- and robotic-assisted orthopaedic surgery for joint replacement.
2. New biomaterials for orthopedic surgery and traumatology.
3. Analysis and evaluation of the interaction between biomaterials and bone in orthopaedic surgery and traumatology.
4. Mineral and bone metabolism alterations in clinical models and calcified tissues diseases.

Curriculum in Anesthesiology, Pain Therapy and Surgical Sciences

Surgical area

1. New mini-invasive technology in general, urologic and e vascular surgery.
2. Molecular precision medicine in gastrointestinal oncology.
3. Guided surgery guided by the virtual reality in 3D- D.
4. New technologies in the mini-invasive and conservative surgery in Crohn disease.
5. Optimization of the surgical procedure in the pre-, intra- e postsurgical phase in IBD.
6. Role of simulation in the learning of new surgical techniques.
7. The development of renal trapiantology: from immunotherapy to surgery.
8. Technological innovations in the surgical treatment of benign prostate hypertrophy.
9. Gender dysphoria: from psychological to surgery problems.
10. The role of neuronal and non-neuronal TRP channels in inflammatory neuropatic and oncologic pain.
11. Molecular bases of the GGRP dependent mechanism in the genesis of pain in headache.
12. Advanced surgical treatments for acute and chronic cardiac failure.

Anesthesiology Area

1. Advantges and limits of the use of long term central venous catheterism
2. The pathways of perioperative medicine.
3. Perioperative acute renal damage perioperatorio in high complexity interventions.

Curriculum in Psychology:

1. Psychological and psychosocial mechanisms underlying the onset and the maintenance of psychological distress, psychiatric disorders, and organic disease.
2. Research methods in clinical and health psychology.
3. Psychological interventions in psychological distress, psychiatric disorders, and organic disease.

	<p align="center">Curriculum in Global Health, Occupational Health, and International Cooperation on Mobile Populations</p> <ol style="list-style-type: none"> 1. Epidemiology and clinics of emergent/re-emergent infections in countries with a medium/low income and in mobile/migrant populations. 2. Diagnostic approach of emergent/re-emergent infections in countries with a medium/low income and in mobile/migrant populations. 3. Parasitoses and allergic diseases in developing countries and in mobile populations. 4. Tuberculosis and host response in countries with a medium/low income and in mobile/migrant populations. 5. Allergic diseases in mobile populations. 6. Emerging and Re-Emerging Occupational Risks: Innovative Strategies for Health and Safety Protection of Workers. 7. Workplace Health Promotion (WHP): from Evidence-Based Medicine to Practice.
<p>Further information available at the following web page: https://www.dmsc.unifi.it/vp-26-dottorato-di-ricerca-in-scienze-cliniche.html</p>	

EXAMINATION SCHEDULE			
	DATE	TIME	PLACE
INTERVIEW	September 14 th 2020	9:00 a.m.	Cubo Viale Pieraccini, 6 - Florence "Aula Grande"
<p>The list of the candidates admitted to the interview and the final ranking will be published online at the following web page: https://www.unifi.it/p11741.html</p>			