

## Research options available

Research topic(s) offered by every Doctoral Course involved in UNIPhD are frameworks within which every applicant has to present an original research project in collaboration with a Supervisor at the University of Padua.

Potential Supervisors at Unipd have proposed the following detailed research options, which are related to the research topic. They are offered as a guideline and should facilitate your contact with potential Supervisors. Supervisors' e-mail is specified in every research option table. You are welcome to contact them directly.

Note that this research option list is not at all exhaustive and, within the topic you have chosen, you are free to propose a different research project.

<b>Doctoral Course</b>	<b>TRANSLATIONAL SPECIALIST MEDICINE "G.B. MORGAGNI"</b>
<b>Macro-area</b>	Medical and Biomedical Sciences
<b>Department name</b>	Department of Cardiac, Thoracic, Vascular Sciences and Public Health
<b>Webpage</b>	<a href="http://phdmorgagni.dctv.unipd.it/phd/index.php">http://phdmorgagni.dctv.unipd.it/phd/index.php</a>
<b>Research topic</b>	<p><b>Diabetes and its chronic complications</b></p> <p>Cardiovascular diseases (CVD) are the major causes of death in patients with diabetes. With the increase in worldwide prevalence of diabetes, cardiovascular complications will impose a tremendous burden to affected people and healthcare services. New opportunities are offered by modern treatments and novel pathways responsible for the development vascular disease in patients with diabetes are under investigation. The research project will set the general objective to elucidate the mechanisms that drive cardiovascular risk in diabetes and explore the biological basis underlying myocardial and vascular damage associated with dysmetabolism.</p>
<b>Link to the UNIPhD Call (Academic Year 2023/2024)</b>	<a href="https://uniphd.eu/">https://uniphd.eu/</a>
<b>Latest Update</b>	02.12.2022
<b>#Number of available Research Options</b>	1 <i>Scroll down to see all the Research Options</i>

**# 1 Research Option Description**

<b>Doctoral Course</b>	<b>Translational Specialist Medicine “G.B. Morgagni”</b>
<b>Department name</b>	Department of Cardiac, Thoracic, Vascular Sciences and Public Health
<b>Research topic</b>	Diabetes and its chronic complications
<b>Research option</b>	Hemato-immune cell pathways to metabolic derangement and diabetic vascular disease
<b>Supervisor</b>	Supervisor: Angelo AVOGARO <a href="mailto:angelo.avogaro@unipd.it">angelo.avogaro@unipd.it</a> Members of Research Group: Gian Paolo FADINI, Saula Vigili de KREUTZENBERG
<b>Webpage</b>	<a href="https://www.dctv.unipd.it/corsi/dottorato-di-ricerca">https://www.dctv.unipd.it/corsi/dottorato-di-ricerca</a> <a href="http://www.vimm.it/scientific-board/gian-paolo-fadini/">www.vimm.it/scientific-board/gian-paolo-fadini/</a>
<b>Context of the research activity and objectives</b>	Prevention and treatment of cardiovascular disease in people with diabetes is top one priority of diabetes care and a major focus of diabetes research. We have a long-standing tradition of “cardio-diabetology” with prominent ramifications in research and clinical care. In the last 20 years, our research team contributed to a new understanding of vascular diabetic complications based on the exhaustion of regenerative cells from the hematopoietic system. Nourished by the close physical connections between the diabetes outpatient clinic, the Hospital inpatient ward, and the Laboratory, the Centre has always pursued a strong contamination between routine clinical care and translational research. Over these years, we ping-ponged between pathophysiology, treatment, and epidemiology, trying to fill the many knowledge gaps that still prevent us from effectively tackling cardiovascular disease in diabetes. Within the PhD program, this project has the general objective of shedding more light on the mechanisms that drive cardiovascular risk in people with diabetes and on the biological process that promote myocardial and vascular damage in diabetes. To this end, we envisage pre-clinical (in vitro and in vivo) and clinical (observational and experimental) approaches to this problem, which the PhD candidate will be joining.
<b>Infrastructures</b>	Cell biology laboratory; Molecular biology laboratory; Flow cytometry; Animal house; Diabetes inpatient and outpatient clinics
<b>Skills and competencies for the development of the activity</b>	Biomedical laboratory (cell biology, molecular biology, tissue analysis; flow cytometry); animal experimentation (drafting projects and working with mice); bioinformatics analyses (including epidemiology, comparative effectiveness research); clinical research (observational and experimental).
<b>Training offer</b>	Theoretical courses on endocrinology, diabetology, cardiovascular disease, methodology of research, animal models of disease, statistics and epidemiology. Seminars will be held on these topic covering the specific objective of the project within the PhD program. Tutoring and supervision activity in the laboratory and clinical settings.
<b>Possible Secondments</b>	Bristol Heart Institute (UK) VIMM – Veneto Institute of Molecular Medicine (I)