

Research options available for topic B

Research topics a) and b) 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.

Doctoral Course	TRANSLATIONAL SPECIALIST MEDICINE "G.B. MORGAGNI"
Macro-area	Medical and Biomedical Sciences
Department name	Department of Cardiac, Thoracic, Vascular Sciences and Public Health
Webpage	http://phdmorgagni.dctv.unipd.it/phd/index.php
Research topic B	<p>Translational research in arrhythmogenic cardiomyopathies: from animal models to clinics</p> <p>Researches on sudden death in the young demonstrate that 40% of cardiovascular diseases at risk of cardiac arrest are genetically determined and arrhythmogenic cardiomyopathy is one of the main causes. Specific interventions potentially able to reduce life-threatening arrhythmias including pharmacologic agents remain to be established. The understanding of pathogenesis can prevent disease progression in mutation carriers and a specific therapy provided by translational research is needed.</p>
Link to the UNIPHD Call (Academic Year 2022/2023)	https://www.unipd.it/en/uniphd
Latest Update	11.01.2022
#Number of available Research Options	2 <i>Scroll down to see all the Research Options</i>

1 Research Option Description

Doctoral Course	Translational Specialist Medicine “G.B. Morgagni”
Department name	Department of Cardiac, Thoracic, Vascular Sciences and Public Health
Research topic B	Translational research in arrhythmogenic cardiomyopathies: from animal models to clinics
Research option	Arrhythmogenic cardiomyopathies and genetic programming for prevention of sudden death.
Supervisor	BASSO Cristina cristina.basso@unipd.it Members of Research Group: PERAZZOLO MARRA Martina, BAUCE Barbara, PILICHOU Kalliopi, ZAGLIA Tania, TISO Natascia, CORRADO Domenico
Webpage	https://www.dctv.unipd.it/corsi/dottorato-di-ricerca
Context of the research activity and objectives	Arrhythmogenic Cardiomyopathy (AC) is a familial cardiac disease, mainly caused by mutations in genes encoding desmosomal proteins, accounting for most sudden deaths (SD) in the young and athletes. Currently, the new classification of AC includes the right ventricular, biventricular and left ventricular variants. The AC pathogenesis is unknown and there are no therapies to counteract disease progression and the risk of SD. Specific interventions that have potential to reduce life-threatening ventricular arrhythmias include pharmacologic agents. Unfortunately, these pharmacological therapies are unable to prevent the sudden death in AC patients, and the real current therapy to prevent it is the implantation of ICD. The ICD implantation in primary prevention remains a challenging clinical issue since a definite risk assessment is lacking and the implantation in young patients remain a problem for long-life possible complication device-related. On this basis pharmacologic agents that could directly target the underlying disease mechanism in the various forms of AC are under investigation focusing on specific drug-target.
Infrastructures	Cardiovascular Pathology Laboratory; Molecular Biology Laboratory; Animal house; Zebrafish facilities; Cardiology inpatient and outpatient clinics, Cardiac Magnetic Resonance Laboratory.
Skills and competencies for the development of the activity	Biomedical laboratory (cell biology, molecular biology, tissue analysis); Gene sequencing; animal experimentation (drafting projects and working with mice and zebrafish); bioinformatics analyses (including epidemiology, comparative effectiveness research); clinical research (observational and experimental).
Training offer	Theoretical courses on, cardiovascular disease, genetics, methodology of research, animal models of disease, cardiac magnetic resonance, statistics and epidemiology. Seminars will be held on these topics covering the specific objective of the project within the PhD program. Tutoring and supervision activity in the laboratory and clinical settings.
Possible Secondment	Mayo Clinic, Cardiovascular Research Center, USA VIMM – Veneto Institute of Molecular Medicine (I)

2 Research Option Description

Doctoral Course	Translational Specialist Medicine “G.B. Morgagni”
Department name	Department of Cardiac, Thoracic, Vascular Sciences and Public Health
Research topic B	Translational research in arrhythmogenic cardiomyopathies: from animal models to clinics
Research option	Genetic programming and cardiac disease
Supervisor	BASSO Cristina cristina.basso@unipd.it Members of Research Group: PERAZZOLO MARRA Martina, BAUCE Barbara, PILICHOU Kalliopi, ZAGLIA Tania, TISO Natascia, CORRADO Domenico
Webpage	https://www.dctv.unipd.it/corsi/dottorato-di-ricerca
Context of the research activity and objectives	Arrhythmogenic Cardiomyopathy (AC) is a familial cardiac disease, mainly caused by mutations in genes encoding desmosomal proteins, accounting for most sudden deaths (SD) in the young and athletes. Currently, the new classification of AC includes the right ventricular, biventricular and left ventricular variants. The AC pathogenesis is unknown and there are no therapies to counteract disease progression and the risk of SD. Specific interventions that have potential to reduce life-threatening ventricular arrhythmias include pharmacologic agents. Unfortunately, these pharmacological therapies are unable to prevent the sudden death in AC patients, and the real current therapy to prevent it is the implantation of ICD. The ICD implantation in primary prevention remains a challenging clinical issue since a definite risk assessment is lacking and the implantation in young patients remain a problem for long-life possible complication device-related. On this basis pharmacologic agents that could directly target the underlying disease mechanism in the various forms of AC are under investigation focusing on specific drug-target.
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