

1. Prof. Lino Ferreira is Investigator Coordinator (equivalent to Full Professor) at the Faculty of Medicine University of Coimbra and affiliated with the Center of Neurosciences and Cell Biology (CNC) a research unit at the same University. In the last 5 years, the lab has done significant contributions at the interface of engineering with biology, in particular, in the development of advanced nanoformulations for medical applications (<https://doi.org/10.1002/anie.201911398>; <https://doi.org/10.1021/acsnano.7b07538>; <https://doi.org/10.1038/ncomms15204>), tissue models for screening and disease modeling (<https://doi.org/10.1073/pnas.1617451114>; <https://doi.org/10.1038/s41467-017-00746-7>), particularly in the area of ageing (<https://doi.org/10.1038/s41467-020-17901-2>) and in the use of extracellular vesicles as delivery systems (<https://doi.org/10.1002/jev2.12111>; <https://doi.org/10.1021/acsnano.9b00376>). In the last 5 years, he attracted 10 million euros of competitive funding including 1 ERA Chair project, 1 Twinning project, 1 Marie Curie ITN project, 5 Marie Curie International fellowships, 4 Horizon projects as well as several FCT and industry projects. In the last 5 years, he has: (i) published more than 70 articles in international peer-reviewed journals and 4 book chapters, (ii) disseminated his work in more than 50 international conferences, (iii) acted as co-chair organizer of 6 symposia in high profile conferences (TERMIS, ESB, ESCI), and (iv) contributed for several outreach activities including 5 Science festivals (total audience of 8000 individuals) and 6 training activities for a total of 120 high-school students. Since the beginning of his career he gathered more than 12500 citations by peers, endowing him an h-index of 58. Members of his group have founded companies (e.g. Tissium, Exogenous Therapeutics, Matera, Curemat) that attracted more than 50M € in venture capital. He is the inventor of more than 20 international patents (10 licensed to companies). He has successfully supervised 20 PhD students (12 in the last 5 years) and 15 post-docs (5 in the last 5 years). Four of the previous members are now independent Principal Investigators; two members have launched companies; 10 members have started positions in industry; the remaining are in research. He was the recipient of innumerable awards/prizes including Bluepharma innovation (2016), FCT Investigation (2013 and 2015) and the Crioestaminal prizes (2008). He was President of the Portuguese Society of Stem cells and Cell Therapies (2013-2015). He is the associate editor of the journal Biomaterials Science (since 2019). He is the coordinator of the collaborative laboratory called Colab4Ageing (since 2021) that joins several stakeholders in the chain value, to develop, test and implement innovative products and services in the area of ageing. He is member of the Scientific Counsel of 3Is and Faculty of Medicine and Member of the board of the Center of Neurosciences and Cell Biology, University of Coimbra.

LF research group has a long experience in nanomedicine, particularly (i) in the development of methods for engineering extracellular vesicles (EVs), both the content and surface, to act as drug delivery systems, (ii) to scale up EV production by the use of bioreactors, and (iii) more recently, in collaboration with a company, he is making progresses to isolate and modify EVs under GMP conditions for clinical trials.

2. Prof. Serena Zacchigna, MD, PhD is Head of the Cardiovascular Biology Laboratory at ICGEB, Italy and Associated Professor at the University of Trieste, Italy. She is a former MSCA postdoc fellow at VIB in Leuven. Her work focuses on the cross-talk between the various cell types residing in the heart. In particular, she is dissecting the mechanisms mediating the communication between endothelial cells and CMs, with the goal of promoting cardiac regeneration and re-vascularization. She has solid experience in the development of novel biotherapeutics for cardiovascular disorders, collaborating with multiple industrial partners and hospitals to bring innovative products to the market and to clinical use. Recent studies by the group have led to the discovery of new biologics, which have been patented and include microRNAs for the induction of cardiac regeneration, anti-microRNAs for the therapy of uterine fibroids and a protein exerting potent anti-cancer activity (“microRNAs for cardiac regeneration through induction of cardiac myocyte proliferation” (RBW12595-PCT); “EMID2 protein as anti-cancer treatment” (MBP16915-EP); “anti-microRNAs for the treatment of leiomyoma” (102019000017234). She has ample experience in supervising graduate, PhD and postdoc researchers (currently 20 researchers in her lab; > 40 PhD students and postdoc supervised so far, multiple prizes awarded to her group members (i.e. Young Investigator Award at the 2022 FVCB meeting of the ESC to R. Vuerich), and in implementing EU projects, in particular as Lead Partner of Interreg Projects (TRAIN - Big Data and disease models: a cross-border platform of validated kits for the biotech industry; INCardio -Innovative Therapies for Cardiovascular Disorders). She represents the ICGEB at the UN Agency Committee for Bioethics, with particular interest in the regulatory and ethical aspects governing the use of gene therapy and genome editing. She is a Nucleus Member of the WG on Myocardial Function of the ESC and acts as a panel member of the LS7 ERC Starting Grant. She regularly reviews scientific manuscripts for international journals in the fields of cardiac development, angiogenesis, cancer and cardiovascular disorders, she has published >110 full papers in peer-reviewed journals, including Nature, Cell, Cancer Cell, Nature Genetics, Nature Medicine, Circulation, Nature Communications and others (h-index 42; sources: SCOPUS). She has presented her research results in over 100 national and international meetings. She regularly contributes articles to national newspapers and popular science magazines

and is the organizer of the science public engagement program “Science & the City”, a series of public conferences on cutting-edge scientific topics in Trieste and around Italy.

Main Research Support:

2023 Beneficientia Stiftung (CAGE, PI), 45,000€; TiiLT Horizon RIA (co-PI) 400,000€; PRIN – McHeart (Mechanotransduction in the HEART), 106,000€ (coordinator); Italian Foundation for Cystic Fibrosis, GenDelCF, Gene Delivery for Cystic Fibrosis, 314,000€ (co-PI); PRIN-PNRR – Dissecting the role of Nova2 in tumor angiogenesis, 125,000€ (co-PI)
2022 MOIRE program from Mochida Therapeutics, 50,000\$
2021 Associazione Italiana per la Ricerca sul Cancro IG2020 Id24529 (PI) 489,000€; Beneficientia Stiftung (AMATEUR, PI), 45,000€
2020 Interreg ITA-AUS InCARDIO - 1.132.876€ (coordinator); Beneficientia Stiftung (EMERITA, PI), 25,000€; Bayer Grants4Targets (PI), 20,000€
2019 Roche Prize for Research, 50,000€; Regione FVG, Clinical Research (CURIO SA, PI), 84,000€
2018 Fondazione CRTrieste, miRNAs for Pulmonary Fibrosis (co-PI), 100,000€; PREFER POR-FESR (co-PI), 719,000€
2017 Interreg ITA-SLO TRAIN (high Throughput screening and big data Analysis for INnovation) - 1.057.147€ (coordinator); LaSerNET 2017-2019, Support to the laser therapy as a treatment of oral mucositis/stomatitis/dermatitis in oncological patients in Serbia, 92.000€ (coordinator).

3. **Manel Sabaté, MD, PhD** is Chief of the Interventional Cardiology Department at the Clinic University Hospital in Barcelona and Associate Professor of the Central University of Barcelona. From a professional point of view, Manel Sabaté’s experience includes diagnosis and treatment of ischemic heart disease and other cardiac disorders and he is specifically trained at cardiac catheterization and percutaneous coronary intervention and treatment of congenital and acquired structural heart disease including transcatheter aortic valve implantation and mitralclip implantation. From the research point of view, Manel Sabaté is author of more than 350 papers (**h index 52**), >20 book chapters and is the editor of 4 books. He is member of the editorial Board of several journals in the specialty and has been the recipient (as a Principal Investigator or Collaborator) in several competitive grants. It is also evaluating grants and projects from various agencies and he has received numerous awards.

Specialisations:

- Ischemic heart disease.
- Acute coronary syndrome ; diabetes and coronary heart disease.
- Drug-eluting stents
- Percutaneous treatment of: 1) Structural heart disease (atrial septal defect, foramen ovale, ductus arteriosus, coarctation of the aorta). 2) Severe aortic stenosis (TAVI). 3) Severe mitral regurgitation (MITRACLIP). 4) Refractory hypertension (renal denervation). 5) Severe tricuspid regurgitation. 6) Heart failure (ventricular device); 7) Left atrial appendage closure; 8) Paravalvular leak closure; 9) Chronic total occlusions
- Success rates:
 - >3.500 annual diagnostic catheterizations for coronary artery disease.
 - >1.500 annual percutaneous coronary interventions
 - >550 annual primary angioplasties in acute myocardial infarction.

Ana Paula Dantas, PhD

Research Interests : Molecular and cellular basis of cardiovascular disease: unraveling the mechanisms that control vascular function and morphology by environmental and genetic factors. - Development of biotechnological approaches to modify vascular cell phenotype towards tissue regeneration: role of extracellular vesicles and miRNA in angiogenesis and arteriogenesis. - Development and assessment of new strategies to optimize the therapeutic potential of endothelial progenitor stem cells.

She received a PhD in Pharmacology from the University of Sao Paulo, Brazil in 2002, followed by two years of post-doctoral fellowship at Harvard Medical School. During this period, the results of her work have been published in top-level journals. Several Awards and Mentions: International Society of Hypertension; American Heart Association; Council for High Blood Pressure/Merck; Brazilian Society of Hypertension/Bayer, Brazilian Society of Pharmacology/Eli Lilly. After training, in 2004 she became appointed Assistant Professor at Georgetown University (Washington, DC, USA) and director of the Vascular Biology core of the Centre for the Studies of Sex Differences in Health, Aging and Disease. In February 2007, she joined the Atherosclerosis and Coronary Disease group at IDIBAPS with a Miguel Servet fellowship and became a scientific member of the RETIC HERACLES Network (RIC - Cardiovascular Research Network). At IDIBAPS she have established a totally new and independent research line focusing on the elucidation and modulation of vascular signal transduction involved in the pathophysiology of vascular disease, more specifically concerning the modulation of resident and progenitor endothelial function. Over the past years, she have been particularly interested in determining how environmental and genetic factors may interfere with vascular cell phenotype and function during aging to create new biotechnological rejuvenating strategies to modify vascular cell phenotype favoring tissue regeneration. This line of research has created basic and fundamental support for the existing clinical lines at Atherosclerosis and Coronary Disease group and has opened new frontiers and networks to improve main strategic objective: "to identify the pathophysiological mechanisms, and to improve the diagnostic methods and results of the new treatments for acute and chronic ischemic heart disease". Since arrival at IDIBAPS, her research has been supported by the main competitive research projects (PI08/00176, PI13/00091, PI16/00742, PI19/00264 and PIE15/00027) and the funds of the Spanish Society of Cardiology (SEC/2010; SEC/2015; SEC/FECINV-BAS20/012; SEC/FECINV-BAS23/29). She published 78 articles and 2 book chapters, by the quality of publication as a main author in top-level journals in area of expertise (80% in Q1, 20% in D1), by the number of citations (**h index: 29**) and for several invitations to speak at international conferences. Her work has been presented in scientific meetings of national and international societies (13 invited lectures, 22 peer-reviewed oral presentations, and 42 peer-reviewed poster presentation). In many of these meetings she has been recognized by renown awards such as "Paul Dudley White International Scholar Award – Council on Basic Cardiovascular Science, American Heart Association"; "Best Research at American Heart Association Specialized Conferences "; and "Gendiag / Heracles Award" for the best publication of the HERACLES / RIC network in 2010 and 2012. In addition, her work as a young investigator has been recognized with the Gold Medal of the "IUPHAR Young Investigator Award" out of more than 1,000 candidates from around the world. She is s a mentor to many young scientists, directing 2 doctoral and 8 master's theses.

SEC/FECINV- BAS 23/29 Dantas AP (PI) Oct/2023-Dec/2026

Spanish Society of Cardiology 15.000,00 €

Role of non-coding RNA in Progenitor Endothelial to Mesenchymal Transition in ischemic heart disease: potential outcome biomarkers and therapeutic target.

SEC/FECINV- BAS 20/012 Dantas AP (PI) Oct/2020-Dec/2023

Spanish Society of Cardiology 20.000,00 €

Potential of EXosomes derived from Progenitor endothelial cells to improve REvascularization in murine model of myocardial infarction: EXPlORE Study.

PI19/00264 Dantas AP (PI) Jan/2020-Jun/2024

FIS - Health Institute Carlos III, Spanish Government 183.920,00 €

Impact of novel lipid- and inflammation-lowering Therapies on phenotype and functional profile of ENDothelial progenitor cells in coronary artery disease: TREND Study.

Past Research Support

PI16/00742 Dantas AP (PI) Jan/2017-Dec/2020

FIS - Health Institute Carlos III, Spanish Government 183.315,00 €

Potential prognostic and therapeutic role of exosomal miRNAs derived from circulating cells (Endothelial Progenitor, Platelets and Neutrophils) in acute coronary syndrome.

PIE15/00027 Dantas AP (PI) Jan/2016-Jun/2020

Integrated Projects of Excellence - Institute of Health Carlos III 720.500,00 €

Targeting endothelial dysfunction in highly prevalent diseases: characterization and validation of prognostic biomarkers and identification of potential therapeutic strategies

SEC/2015 Dantas AP (PI) Nov/2015-Jun/2018

Spanish Society of Cardiology 20.000,00 €

Anti-micro-RNA therapy for cardiac reprogramming and repair in murine model of myocardial infarction.

RD12/0042/0006 Roque M (PI); Dantas AP (Collaborator) Jan/2013-Dec/2018

RETIC – Institute of Health Carlos III 205.000,00 €

HERACLES Programme: Research programme on prevention of cardiovascular diseases and study of hypertension mechanisms.

PI13/00091 Dantas AP (PI) Jan/2014-Dec/2016

FIS - Health Institute Carlos III, Spanish Government 78.000,00 €

Circulating and vascular levels of miRNAs in arterial stenosis: molecular basis and clinical implications.

HBP-2011-0054 PC Vila E (PI); Dantas AP (Collaborator) Jan/2012-Dec/2013

Ministry of economy and competitiveness - Spain

Epigenetic Changes Associated with Cardiovascular Disease: Role of metabolic changes and Aging.

SEC/2010 Dantas AP (PI) Nov/2010-Oct/2011

Spanish Society of Cardiology / Novartis 12.000,00 €

Role of Renin Angiotensin System (RAS) in vascular aging and its complications.

PI080176 Dantas AP (PI) Jan/2009-Dec/2011

FIS – Health Institute Carlos III, Spanish Government 104.302,00 €

Hormonal regulation of proteomic profile and vascular function in aging and the development of cardiovascular disease.

RD06/0009/0008 Heras M (PI); Dantas AP (Collaborator) Jan/2007-Dec/2012

RETIC – Institute of Health Carlos III 204.018,22 €

HERACLES Network: Genetic and Environmental Determinants of Vascular Dysfunction in Hypertension and Ischemic Heart Disease.

CP06/00308 Dantas AP (PI) Feb/2007-Jan/2010

Miguel Servet Fellowship – Health Institute Carlos III, Spanish Government 99.085,00 €

Molecular mechanisms for cardiovascular regulation by selective modulators of estrogen receptors (ER)

AP131/10 Segarra G (PI); Dantas AP (Collaborator) Jan/2010-Dec/2010

Department of Health, Generalitat Valenciana. 10.000,00 €

Role of TXA2 on vascular changes induced by aging and estrogen withdrawn in senescent-accelerated mice.

0530337N Dantas AP (PI) Jul/2006-Jun/2007

American Heart Association, USA US\$ 65.000

Modulation of NO and O2-balance in the vasculature by conjugated equine estrogens.

AWD2790032 Dantas AP (PI) Jul/2006-Jun/2007

Fund Discovery in Aging Research, USA US\$ 20.000

Age-associated modulation of estrogen effects on nitric oxide and superoxide generation in the spontaneously hypertensive rat.