

PI	UMC	Dept	Mission	Expertise
Jolanda van der Velden	VUmc	Physiology	Improve risk stratification and (preventive) treatment of mutation carriers and patients with hypertrophic cardiomyopathy (HCM)	
Barbara Mulder/Berto Bouma	AMC	Cardiology	To reduce the burden of cardiac disease in adults with congenital heart disease	<ul style="list-style-type: none"> • PAH • Heart failure • Epidemiology • Genetics • Imaging • Marfan • eHealth • Arrhythmias • Percutaneous interventions
Pieter Koolwijk/ Victor van Hinsbergh	VUmc	Physiology	To investigate the effect of cardiac microvascular endothelial cells on cardiomyocyte ontractile properties	<ul style="list-style-type: none"> • Vascular aspects of Tissue Engineering • Human microvascular endothelial cells • Angiogenesis (in vitro) • (longterm) Hypoxia/normoxia/hyperoxia and metabolism • 3D in vitro microvessel flow model • Interaction cardiac MVEC and cardiomyocytes
Gerard Boink	AMC	Medical Biology	Improve heart rhythm management by novel regenerative therapies to prevent or cure cardiac arrhythmias.	<ul style="list-style-type: none"> • Cardiac Arrhythmias • Translational Gene and Cell Therapy • Vector Engineering: Adenovirus, AAV, Lentivirus • Direct Reprogramming • hiPSC-CMs: Models & Therapeutics • Animal models
Dop Simonides	VUmc	Physiology	Reduce the burden of chronic heart failure	<ul style="list-style-type: none"> • In vivo analysis of cardiac TH transcriptional activity • Conditional, cardiac specific knock-out of Diodinase type 3 (Dio3) • Standard molecular biological and tissue analyses

Vincent Christoffels	AMC	Medical Biology	To explore the transcriptional regulation of heart development, rhythm and regeneration	<ul style="list-style-type: none"> • (Heart) Development • Transgenesis / CRISPR-based genome editing in vivo • Transcriptional regulation • Epigenomics (RNA-seq, ChIP-seq, ATAC-seq, 4C-seq)
Marco Götte/Cor Allaart	VUmc	Cardiology	To translate EP procedures from X-ray into a fully integrated MRI guided process	<ul style="list-style-type: none"> • Precise, non-ionization, non-invasive, 3D diagnostics for electropathology • Personalized, specific, therapy-stratification • Accurate peri-procedural guidance and precise, real-time feedback on interventions • Predictable clinical outcomes and improved therapeutic success
Yigal Pinto	AMC	Cardiology	to understand the driving mechanisms in therapy-resistant heart failure	<ul style="list-style-type: none"> • RNA sequencing, bioinformatics • Standard molecular biological techniques • Cardiac phenotyping in mice • hiPS-cell derived cardiomyocytes
Bianca Brundel	VUmc	Physiology	<p>Improve AF patient-tailored drug treatment and diagnostics by:</p> <ul style="list-style-type: none"> • Uncovering key molecular mechanisms which underlie electropathology and AF onset and progression • Identify novel pharmacotherapeutics which target electropathology and test drugs in clinical AF studies • Design diagnostic instruments to determine stage of electropathology 	<ul style="list-style-type: none"> • Early diagnosis of AF: structural and electrical AF Fingerprint • AF model: Tachypaced Drosophila prepupae • AF-induced proteostasis derailment & druggable targets
Connie Bezzina	AMC	Experimental Cardiology	Understanding the genetic architectures of inherited cardiac disorders to enable:	<ul style="list-style-type: none"> • (Cardio)genetics • Whole Genome Sequencing (WGS)

			an increased understanding of the underlying mechanisms & improved prevention and care	<ul style="list-style-type: none"> • Genome Wide Association Studies (GWAS) • Systems genetics in rodents • Bioinformatics • Electrophysiology • Mouse and hiPSC-CM models of cardiac disease
Carol Ann Remme	AMC	Experimental Cardiology	To identify novel disease mechanisms underlying (inherited) arrhythmias and sudden cardiac death	<ul style="list-style-type: none"> • Basic and translational electrophysiology • In vivo/whole heart electrophysiology (ECG, optical/electrical mapping, arrhythmia inducibility) • Cellular electrophysiology (patch clamp, calcium fluorescence) • Histology, immunofluorescence, molecular analyses • Disease models: transgenic mice, human iPSC-derived cardiomyocytes, human atrial cardiomyocytes (AF)
Deli Zhang	VUmc	Physiology	To uncover the molecular mechanism underlying progression of atrial fibrillation (AF): focus on Microtubule mediated SR-Mitochondria contacts (Microtubule -SMCs pathway)	<ul style="list-style-type: none"> • In vitro cellular model for AF <ul style="list-style-type: none"> ○ HL-1 cardiomyocytes ○ Adult rat atrial cells • In vivo Drosophila model for AF • Molecular biology techniques: Biochemical and Imaging