Interventional Cardiac MRI & Advanced Electrophysiology

- WHAT YOU SEE IS WHAT YOU GET; NO INSIGHT: UNPREDICATBLE OUTCOMES -

PI iCMR: Marco Götte
PI Advanced EP: Cor Allaart

Dept. Cardiology, AUMC – VUMC

Research group:
- 2 PI’s
- 3 Post-docs
- 2 Fellows
- 4 PhDs
- 1 Physicist
- 2 MR techs
- 2 Cath.lab techs

MISSION
To translate EP procedures from X-ray into a fully integrated MRI guided process.

VISION
In 2023 AUMC will be a top-leading iCMR center, sharing unique expertise and knowledge to cure more patients from their electropathology than today. iCMR helps more people to stay fit and healthy.

DELIVERABLES
- 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
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Current expertise:

- Dept. Cardiology AUMC-VUMC: 2 PhD
  - MR-compatible equipment
  - Tremendous efforts of multiple co-workers

Current funding

- Several applications submitted / in preparation
Future plans

Phase I – iCMR 2017 - 2019

- Atrial function
- LA scar
- Atrial fibrillation - flutter
- Right Heart Cath.
- Myocardial biopsy
- Patient selection
- Therapeutic stratification
- Feed-back on intervention
- 3D modelling
- Scar mapping
- Sphericity
- 4D flow sim.
- 3D LGE
- High spat. resol.
- 4D flow

Multi-disciplinary team
- MR techs.
- Cath. lab techs.
- Physicists
- Interv. Card.
- Imaging Card.

Phase II – iCMR 2019 - 2021

- Left atrium
- Cryo ablation
- RF ablation
- Chemo ablation

3D FCDP
High Spat. Resol. Imaging
High Resol. Mapping

- Atria
- Ventricles
  - Endo
  - Epi

- Devices
  - Pacemaker
  - Dual
  - CRT
  - Leadless
  - ICD
  - MEMS

- PV loop
- MV insuff.
- RV function
- HFPEF
- ASD
- PH

- HCM
- Myocarditis
- Systemic diseases
- Cardiotoxic

Dept. Cardiochir.
Dept. Intensive Care
Dept. Pulm.
Dept. Radiol.

Dept. Hematology
Dept. Rheuma.
Dept. Physiol.

Heart Failure & Arrhythmias
Pulmonary Hypertension & Thrombosis
Atherosclerosis & Ischemic Syndromes
Diabetes & Metabolism
Microcirculation