Interventional Cardiac MRI &
Advanced Electrophysiology
- WHAT YOU SEE IS WHAT YOU GET; NO INSIGHT: UNPREDICATBLE OUTCOMES -

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PI Advanced EP: Cor Allaart

RESEARCH GROUP:
2 PI’s, 1 Physicist
3 Post-docs, 2 MR techs
2 Fellows, 2 Cath.lab techs
4 PhDs

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 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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Expertise:

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

Based on preliminary results several grant applications in preparation
Future plans

Phase I – iCMR 2017 - 2019
- Atrial function
- LA scar
- Atrial fibrillation - flutter
- Right Heart Cath.
- Myocardial biopsy

- 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.

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

- HCM
- Myocarditis
- Systemic diseases
- Cardiotoxic

Dept. Cardiochir.
Dept. Pulm.
Dept. Intensive Care
Dept. Radiol.
Dept. Hematology
Dept. Rheuma.
Dept. Physiol.

Phase II – iCMR 2019 - 2021
- RF ablation
- Chemo ablation

- Left atrium
- Cryo ablation
- RF ablation

3D ECGI
- High Spat. Resol. Imaging
- High Resol. Mapping

P.P. iCMR Consortium in prep.

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

- Structural heart
  - TAVI
  - Mitraclip
  - ASD closure
  - ASD opening

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