

The course will offer:

Lectures – Up to 162 hours

Personal attendance – Minimum 120 cases

Hands-on scanning – 36 h

Clinical reporting – Minimum 150 cases

Specific clinical application project

Log book to be kept of cases attended

### FTGM Faculty

Lamia AIT ALI' MD, Ph.D  
Giovanni Donato AQUARO MD  
Andrea BARISON MD, Ph.D  
Valerio BARRA, TR  
Michelangelo BERTASI, TR  
Daniele DE MARCHI TR  
Pier Luigi FESTA MD  
Petra KEILBERG TR  
Antonella MELONI Ph.D  
Alessia PEPE MD, Ph.D  
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Fondazione Toscana  
Gabriele Monasterio



## Three-months training course in CMR

4<sup>th</sup> May - 13<sup>th</sup> June and  
24<sup>th</sup> August - 2<sup>nd</sup> October 2015

Magnetic Resonance Lab  
Area della Ricerca CNR di Pisa  
Via Moruzzi, 1

This program is intended for cardiologists and radiologists wishing to gain in-depth knowledge of and experience in the principles of cardiac MR, its practical implementation in a clinical environment, and reading and interpretation of CMR images. In our MR Lab more than 2500 patients are clinically scanned every year in the whole field of the cardiology. Training is sufficient to obtain level 2 accreditation within 3 months.

### Objective

This program is intended for cardiologists and radiologists wishing to gain on basic cardiovascular magnetic resonance.

### Setting

The CMR Unit in Pisa is an international referral centre, performing more than 2500 cardiovascular CMR studies per year covering a wide range of clinical issues.

### The fee will cover:

- Tutor assistance
- Hands on CMR acquisitions and analysis
- Case reading
- Stress CMR and multimodality lectures
- Teaching material
- Lunch ticket
- Social dinner
- Attendance certificate



### Cost

€ 4500 euros + 22% VAT for each physician, € 4500 + 22% VAT for each accompanying technical radiologist or nurse Maximum 2 participants. CME credits will be provided if required with an extra-fee of € 1000 + 22% VAT for each participant.

### Location

Magnetic Resonance Lab  
Area della Ricerca CNR di Pisa  
Via Moruzzi, 1 Pisa, Italy



### Topics to be covered include:

#### *Serena Tomassi, Nurse – 2 h*

MRI Safety  
MRI patient's preparation (basal and stress)

#### *Antonella Meloni, PhD – 7 h*

Basic principles of MRI  
MRI hardware  
Image quality (SNR, CNR and resolution)  
Image artefacts  
Heart, liver and pancreatic T2\* MR assessments

#### *Vincenzo Positano, MsC - 7 h*

Introduction to CMR image analysis and DICOM standard  
Heart function assessment by CMR  
3D visualization  
Flow analysis  
Myocardial perfusion analysis  
LGE image analysis  
CMR relaxometry



#### *Daniele De Marchi, TR - 7 h*

Sequence design  
K-space strategies and rapid imaging  
Quality in CMR

#### *Petra Keilberg, TR - 7 h*

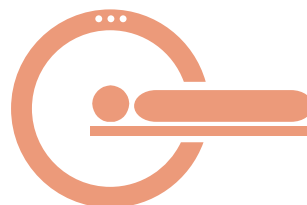
Cardiac anatomy, imaging planes and appearances  
Quality in MR  
CMR Acquisition protocol: Thalassemia, Stress, Cardiomyopathy

#### *Valerio Barra, TR - 1h*

CMR Acquisition protocol: myocarditis

#### *Michelangelo Bertasi, TR - 1 h*

CMR Acquisition protocol: ARVC



#### *Giovanni D Aquaro, MD – 9 h*

Physic for dummies  
Ventricular volumes, mass and function  
Myocardial perfusion imaging  
Contrast medium and LGE quantification  
ARVC  
Stress MRI using dobutamine  
Cardiac tumor and pericardial masses

#### *Andrea Barison, MD, PhD – 5 h*

T1 mapping  
Laminopathies  
Cardiac Amyloidosis  
Thoracic Aorta



#### *Alessia Pepe, MD, PhD – 9 h*

Stress MRI using dipiridamole and adenosine  
Iron overload cardiomyopathy  
Liver and pancreatic iron quantification by MR  
T1, T2, T2\* map  
Multimodality imaging comparison in CAD  
CMR in LV non compaction  
CMR in rheumatologic disease  
CMR in oncology



#### *Giancarlo Todiere, MD – 6 h*

Hypertrophic cardiomyopathies  
Myocarditis  
Ischemic CMP  
LGE in non ischemic cardiomyopathy: prognostic value

#### *Pierluigi Festa, MD, PhD and Lami Ait Ali, MD – 10 h*

Congenital heart disease: an overview  
Bicuspid aortic valve and CMR study of aortic wall  
Aortic coarctation and aortic arch anomalies  
Dilatation of the right ventricle and anomalous pulmonary venous return  
Post repaired Tetralogy of Fallot  
Systemic right ventricle  
Functionally Univentricular heart CMR evaluation pre and post palliation  
CMR in congenital heart disease: Tips and tricks  
CMR in pre and post interventional cardiac catheterization in congenital heart disease  
Cases presentation of congenital heart diseases