

**Advanced Cardiovascular Magnetic  
Resonance Imaging Course-  
Hands on training  
(SCMR Workshop)**

**Programme**

**19-21 September 2025**

Onassis Hospital  
Athens, Greece



## Advanced Cardiovascular Magnetic Resonance Imaging Course-Hands on training

(Level 1 plus SCMR Workshop)

### Organizers

**Evangelia Nyktari, M.D.**

Cardiologist-Deputy Director, CMR Unit Adult Clinical Lead, Onassis Hospital, Athens, Greece

**Thomas Vrachliotis, M.D.**

Director, Department of Radiology, Onassis Hospital, Athens, Greece

### Directors

**Professor Vassilios Vassileiou, M.D.**

Professor in Cardiac Medicine, University of East Anglia, Norwich, U.K.

**Professor Theodoros Karamitsos, M.D.**

Professor of Cardiology, Aristotle University of Thessaloniki, Thessaloniki, Greece

**Evangelia Nyktari, M.D.**

Cardiologist-Deputy Director, CMR Unit Adult Clinical Lead, Onassis Hospital, Athens, Greece

### Description

Onassis Hospital Advanced Cardiovascular MR Imaging Course-Hands on Training

A SCMR (Society of Cardiovascular magnetic resonance) certified course

### Expectations and Goals

#### About the Course

This is a 3-day advanced course on CMR for Cardiology and Radiology trainees and clinicians. The course objective is to outline the role of CMR in diagnosis and clinical management of heart disease, including ischemia and heart failure, cardiomyopathies, congenital heart disease, in guiding medical treatment, coronary intervention and the use of medical devices. Lectures, interactive mentored interpretation of clinical CMR cases, live cases and post-processing sessions will link the theoretical knowledge with the application of CMR in daily clinical routine. **The course is given in Greek and English. Hands-on training on 50 cardiac MRI cases** will be included. A logbook of 50 cases will be reviewed and offered to all delegates.

Endorsed by



**SCMR**

Society for Cardiovascular  
Magnetic Resonance

## The following subjects will be covered:

- CMR safety: magnetic fields, contrast agents, and contraindications
- MRI contrast agents; mechanisms and applications
- Flow imaging and quantitative analysis of velocity-encoded images
- CMR of cardiovascular structure and anatomy
- CMR of right and left ventricular function
- CMR of myocardial infarction, scarring, and viability assessment
- CMR of myocardial fibrosis and edema
- Pharmacologic stress testing with CMR
- CMR of vascular pathology, including aortic disease
- CMR of valvular heart disease
- CMR of pediatric and adult congenital heart disease
- CMR in cardiomyopathies and heart failure
- CMR in arrhythmia
- CMR of pericardial disease
- CMR for cardiac masses and tumors



## DAY 1 – Friday 19<sup>th</sup> September 2025

09:00 - 09:30	<b>Registration and coffee</b>
09:30 - 09:45	Welcome <b>Th. Vrachliotis, J. Papaparaskevas</b>
	<b>Back to the basics</b> Moderator: <b>Thomas Vrachliotis</b>
09:45 - 10:15	CMR safety: magnetic fields, contrast agents, and contraindications <b>Panagiotis Rozos, Spyridon Zarkadoulas</b>
10:15 - 10:45	Imaging sequences for cardiovascular anatomy, function, viability, perfusion, flow and angiography <b>Marousa Douskou</b>
10:45 - 11:00	Basic CMR Protocol <b>Theodoros Karamitsos</b>
11:00 - 11:15	Late gadolinium enhancement (LGE) for myocardial tissue characterization <b>Eirini Velegraki</b>
11:15 - 11:30	CMR parametric mapping (T1/T2/ECV) for myocardial tissue characterization <b>Theodoros Karamitsos</b>
11:30 - 11:45	<b>Coffee Break</b>
	<b>How we do it: The analysis</b> Moderators: <b>Evangelia Nyktari, Dimitra Antonakaki, Eirini Velegraki, Vassilios Vassiliou, Theodoros Karamitsos, Angeliki Zacharakis, Theodoros Efremidis</b>
11:45 - 12:15	CMR 42 post processing tools-Introduction of the software <b>Circle CMR 42</b>
12:15 - 12:45	CMR as an Imaging gold standard for assessment of cardiac structure and function- how to do measurements on CMR 42- showing live <b>Theodoros Karamitsos</b>
12:45 - 13:30	Hands on: How to do measurements (small groups) LV and RV contouring (6 cases) 2D flow analysis (6 cases) <b>All mentors on site</b>
13:30 - 13:40	T1/T2/ECV analysis showing live <b>Evangelia Nyktari</b>
13:40 - 14:00	Hands on: How to do measurements (small groups of 6) T1/T2/ECV Analysis <b>All mentors on site</b>
14:00 - 15:00	<b>Lunch &amp; Satellite Lecture</b> <b>How we do it: The reporting and logbook</b>
15:00 - 15:20	CMR reporting – structured approach-results <b>Evangelia Nyktari</b>

**Advanced Cardiovascular Magnetic Resonance Imaging Course-Hands on Training**  
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15:20 - 16:20	CMR reporting- every group of 4 presents their dedicated case (a workflow scheme will be given) <b>All mentors on site</b>
16:20 - 16:50	Scanning patients with implantable electronic devices: When and how in AI era <b>Evangelia Nyktari, Dimitris Verganelakis</b>
16:50 - 17:05	Q+A, closing remarks, feedback <b>All mentors on site</b>

**DAY 2 – Saturday September 20<sup>th</sup> 2025**

**Basic Physics**

Moderator: **Raad Mohiaddin**

09:00 - 09:30	Physics - basic principles <b>Dominik Gabbert</b>
09:30 - 10:00	Basic physics for the clinician-image formation and basic pulses <b>Vivek Muthurangu</b>
10:00 - 10:30	Recognizing and minimizing common CMR artifacts <b>Dominik Gabbert</b>
10:30 - 10:45	<b>Coffee Break</b>
10:45 - 11:00	Welcome and Introduction to SCMR Advanced Workshop-How to get Certified in different levels of training <b>Theodoros Karamitsos, Evangelia Nyktari, Vassilios Vassiliou</b>
	<b>Congenital Heart Disease</b>
	Moderators: <b>John Papagiannis, Maria Drakopoulou</b>
11:00 - 11:20	Congenital aortic/vascular cases-Case-based training (reporting session of 4 cases) <b>Claudia Montanaro</b>
11:20 - 11:30	Congenital aortic/vascular cases-key slides <b>Claudia Montanaro</b>
11:30 - 11:50	CMR in shunts and most common simple lesions-Case-based training (reporting session of 3 cases) <b>Vivek Muthurangu</b>
11:50 - 12:00	CMR in shunts and most common simple lesions-key slides <b>Vivek Muthurangu</b>
12:00 - 12:20	CMR in most common complex lesions-Case-based training (reporting session of 2 cases) <b>Inga Voges</b>

12:20 - 12:30	CMR in most common complex lesions-key slides <b>Inga Voges</b>
12:30 - 12:45	CMR in children/anaesthesia/simulation/challenges <b>Sylvia Krupickova</b>
12:45 - 13:15	<b>Quiz</b> Moderators: <b>Evangelia Nyktari, Theodoros Karamitsos, Angeliki Zacharaki</b>
13:15 - 13:45	CMR phase contrast/flow 2D and 4D flow analysis <b>Vivek Muthurangu</b>
13:45 - 14:05	CMR in VHD-Case based training (reporting session of 4 cases) <b>Vassilios Vassiliou</b>
14:05 - 14:15	CMR in VHD-key slides <b>Vassilios Vassiliou</b>
14:15 - 15:15	<b>Lunch &amp; Satellite Lecture</b>  <b>Cardiomyopathies</b> Moderators: <b>Monika Radike, Dimitra Antonakaki</b>
15:15 - 15:35	Myocarditis case-based training (reporting session of 4 cases) <b>Vassilios Vassiliou</b>
15:35 - 15:45	Myocarditis presentation-key slides <b>Vassilios Vassiliou</b>
15:45 - 16:05	Infiltrative cardiomyopathies (amyloid, sarcoid, iron overload) case-based training (reporting session of 4 cases) <b>Theodoros Karamitsos</b>
16:05 - 16:15	Infiltrative Cardiomyopathies-key slides <b>Theodoros Karamitsos</b>
16:15 - 16:35	DCM/NDLVC/ARVC case-based training (reporting session of 4 cases) <b>Evangelia Nyktari</b>
16:35 - 16:45	DCM/NDLVC/ARVC-key slides <b>Evangelia Nyktari</b>
16:45 - 17:00	<b>Coffee Break</b>
17:00 - 17:20	Hypertrophic cardiomyopathy case-based training (reporting session of 4 cases) <b>Dimitra Antonakaki</b>
17:20 - 17:30	HCM-key slides <b>Dimitra Antonakaki</b>
17:30 - 17:50	Cardiomyopathies in children case-based training (reporting session of 4 cases) <b>Sylvia Kuprichova</b>
17:50 - 18:00	Cardiomyopathies in children-key slides <b>Sylvia Kuprichova</b>

18:00 - 18:10 Q+A, closing remarks, feedback  
**Vassilios Vassiliou, Evangelia Nyktari, Theodoros Karamitsos, Thomas Vrachliotis**

## DAY 3- Sunday September 21<sup>st</sup>, 2025

### **CMR in Vascular/Aortic cases and Tumors of the Heart**

Moderators: **Theodoros Karamitsos/Thomas Vrachliotis**

09:00 - 09:20 CMR of vascular pathology, including aortic disease-Case based training (reporting session of 4 cases)  
**Raad Mohiaddin**

09:20 - 09:30 Key slides  
**Raad Mohiaddin**

09:30 - 10:00 CMR for cardiac masses and tumours-Case based training (reporting session of 6cases)  
**Raad Mohiaddin**

10:00 - 10:10 Key slides  
**Raad Mohiaddin**

10:10 - 10:30 Pericardium and extracardiac findings case-based training (reporting session of 4 cases)  
**Monika Radike**

10:30 - 10:40 Key slides  
**Monika Radike**

### **Satellite Lecture & Coffee Break**

#### **Quizzes**

Moderators: **Vassilios Vassiliou, Evangelia Nyktari, Monica Radike, Inga Voges, Claudia Montanero**

11:30 - 11:45 Quiz 1

11:45 - 12:00 Quiz 2

12:00 - 12:15 Quiz 3

12:15 - 12:30 Quiz 4

Prize: CMR textbook

### **Ischaemic Heart Disease**

Moderators: **Inga Voges/Eva Nyktari**

12:30 - 12:50 CMR in acute and chronic myocardial infarction-viability – Case-based training (reporting session of 4 cases)  
**Theodoros Karamitsos**

12:50 - 13:00	CMR in acute and chronic myocardial infarction-viability – key slides <b>Theodoros Karamitsos</b>
13:00 - 13:20	MINOCA/INOCA Case-based training (reporting session of 4 cases) <b>Evangelia Nyktari</b>
13:20 - 13:30	MINOCA/INOCA Key slide <b>Evangelia Nyktari</b>
13:30 - 13:50	Assessment of myocardial ischemia with MRI – perfusion studies and pharmacological stress testing – Case-based training (reporting session of 4 cases) <b>Theodora Zaglavara/Ioannis Palios</b>
13:50 - 14:00	Assessment of myocardial ischemia with MRI-key slides <b>Theodora Zaglavara/Ioannis Palios</b>
14:00 - 14:15	Gender difference in response to adenosine stress perfusion CMR <b>Ioannis Palios</b>
14:15 - 14:45	<b>Lunch</b> <b>CMR in arrhythmia</b> Moderator: <b>Michalis Efremidis</b>
14:45 - 15:15	CMR in planning EP procedures <b>Konstantinos Letsas, Evangelia Nyktari</b>
15:15 - 15:30	CMR in planning EP procedures-key slides <b>Konstantinos Letsas</b>
15:30 - 16:00	Clinical case based MCQ <b>Evangelia Nyktari, Dimitra Antonakaki, Monika Radike</b>
16:00 - 16:10	Safety in the MRI environment MCQ <b>Dimitros Verganelakis</b>
16:10 - Q+A	Closing remarks, feedback and certificates <b>All mentors on site</b>



## Course Material

Handouts of presentations

Recommended reading

1. Myerson, S.G., Francis, J., & Neubauer S. (Eds), (2010). Oxford Specialist Handbooks in Cardiology. Cardiovascular Magnetic Resonance. Oxford University Press
2. Danias, P. G. (2008). Cardiovascular MRI: 150 Multiple-Choice Questions and Answers. Humana Press
3. Varghese A., Pennell, D.J., (2007). Cardiovascular Magnetic Resonance Made Easy. Churchill Livingstone Elsevier
4. Syed, M.A., Mohiaddin, R.H. (Eds), (2012). Magnetic Resonance Imaging of Congenital Disease. Springer
5. Vassiliou, V.S., Cameron, D., Prasad, S.K., Gatehouse, P.D. (2018). Review paper: Magnetic Resonance Imaging: Physics basics for the cardiologist.

## Useful links

<https://scmr.org/>

<https://www.escardio.org/Guidelines/Recommended-Reading/Cardiovascular-Imaging/CMR>

## Faculty Members

**Antonakaki Dimitra**, M.D., Consultant-Cardiologist, Inherited Cardiac Conditions, CV Imaging & Sports Cardiology, CMR Unit Consultant, Onassis Hospital, Athens, Greece

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**Montanaro Claudia**, Consultant Cardiologist, Lead of Adult Congenital Heart Disease, Bambino Gesù Hospital, Rome, Italy

**Muthurangu Vivek**, M.D., Professor of Cardiovascular Imaging and Physics at UCL ICS, Head of the Research Department, Children's Cardiovascular Disease at Great Ormond Street Hospital (GOSH), London, UK

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**Zarkadoulas Spyridon**, Senior Cardiac MRI radiographer, CMR Unit, Onassis Hospital

### UEMS/EACCME Accreditation:

An application has been made to the EACCME® for CME accreditation of this event.

### Venue:

Onassis Hospital,  
Stelios Papadimitriou Seminar Room (7th floor), 356 Sygrou Ave, Athens, Greece

### Information

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