## Overview

**Monday, 10 October 2016**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
<th>Affiliation</th>
<th>Learning objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00 - 09:30</td>
<td>Opening remarks</td>
<td>Diana Paez</td>
<td>IAEA Coordinator</td>
<td></td>
</tr>
</tbody>
</table>
| 09:30 - 10:00 | Key note: Sustainable Development Goals - Role of the UN Organizations | Oyere K. Onuma   | WHO               | 1. Discuss the importance of the UN Organizations within the framework of Sustainable Development Goals (SDGs)  
2. Recognize the burden of cardiovascular disease and its relation to the SDGs                                                                 |
| 10:00 - 10:30 | What the cardiologists need to know from medical images               | Gerald Maurer    | MUV, Austria      | 1. Discuss the complementary roles of information that can be derived from clinical data, biomarkers and imaging  
2. Examine the roles of different types imaging techniques and how they impact on patient care and clinical outcome |
| 10:30 - 11:00 | IAEA Coordinator                                                      | Maurizio Dondi   | Chairperson       |                                                                                                                                                    |
| 11:00 - 11:25 | Imaging ischemic heart disease: role of SPECT and PET                | Hein Verberne    | EANM              | 1. Discuss the application of appropriate use criteria for SPECT and PET in ischemic heart disease: state of the art  
2. Examine new insights in myocardial perfusion imaging: future                                                                 |
| 11:25 - 11:50 | Imaging ischemic heart disease: role of CCTA                          | Florian Wolf     | ESR               | 1. Examine the role of CCTA in the management of ischemic heart disease  
2. Discuss the indications for using CCTA in the management of ischemic heart disease                                                                 |
| 11:50 - 12:15 | Imaging ischemic heart disease: role of cardiac MRI                  | Chiara Bucciarelli Ducci | EACVI          | 1. Integrate clinical information provided by stress echo cardiology for the management of patients with suspected coronary artery disease  
2. Discuss the appropriate use of stress echo cardiology in the context of multimodality imaging in patients with suspected coronary artery disease |
| 12:40 - 13:00 | Synthesis and Q&A                                                     |                  |                  |                                                                                                                                                    |
| 13:00 - 14:30 | IAEA Coordinator                                                      | Thomas Pascual   | Chairperson       |                                                                                                                                                    |
| 14:30 - 15:15 | Nuclear cardiology in ischemic heart disease                          | Barry Elison     | ANZSNM            | Discuss the role of nuclear cardiology in ischemic heart disease using actual case images for further interpretation and discourse |
| 15:15 - 16:00 | CCTA and cardiac MRI in ischemic heart disease                        | Florian Wolf     | ESR               | Discuss the role of CCTA and cardiac MRI in ischemic heart disease using actual case images for further interpretation and discourse |
| 16:00 - 17:00 | Meet-the-Author - Poster Review                                       | IAEA Coordinator | Thomas Pascual   | 1. Discuss the different application of cardiac imaging and its usefulness in clinical management of patients with CVDs  
2. Propose novel methodologies in medical imaging that would impact patient management                                                                 |

**Tuesday, 11 October 2016**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
<th>Affiliation</th>
<th>Learning objectives</th>
</tr>
</thead>
</table>
| 08:30 - 09:00 | Lecture: How to Read an ECG and Perform a Stress Test                | Nathan Better    | ANZSNM            | 1. Discuss how to read an ECG and recognize significant abnormalities  
2. Discuss how to perform different types of stress tests, including essential things to have in the room  
4. Discuss how to incorporate the ECG and stress data into a nuclear medicine report - is it important? |
| 10:30 - 11:00 | IAEA Coordinator                                                      | Rodolfo Nuñez Miller | Chairperson       |                                                                                                                                                    |
| 11:00 - 11:25 | Imaging ischemic heart disease: role of SPECT and PET                | Hein Verberne    | EANM              | 1. Discuss the application of appropriate use criteria for SPECT and PET in ischemic heart disease: state of the art  
2. Examine new insights in myocardial perfusion imaging: future                                                                 |
| 11:25 - 11:50 | Imaging ischemic heart disease: role of CCTA                          | Florian Wolf     | ESR               | 1. Examine the role of CCTA in the management of ischemic heart disease  
2. Discuss the indications for using CCTA in the management of ischemic heart disease                                                                 |
| 11:50 - 12:15 | Imaging ischemic heart disease: role of cardiac MRI                  | Chiara Bucciarelli Ducci | EACVI          | 1. Integrate clinical information provided by stress echo cardiology for the management of patients with suspected coronary artery disease  
2. Discuss the appropriate use of stress echo cardiology in the context of multimodality imaging in patients with suspected coronary artery disease |
| 12:40 - 13:00 | Synthesis and Q&A                                                     |                  |                  |                                                                                                                                                    |

**Overview**

- **Monday, 10 October 2016**
  - **Opening Session**
  - **Keynote Session**
  - **What the cardiologists need to know from medical images**
  - **IAEA Coordinator**
  - **Chairperson**
  - **Plenary Session I - Setting Up the Scene**
  - **Plenary Session II - Ischemic Heart Disease**
  - **POSTER REVIEW - SESSION I**
  - **Welcome Reception**
  - **Tuesday, 11 October 2016**
  - **BASICS I: How to Read an ECG and Perform a Stress Test**
  - **Plenary Session III - Appropriate Use Criteria**

**International Conference on Integrated Medical Imaging in Cardiovascular Diseases (IMIC 2016)**

**IAEA Headquarters - Vienna, Austria, 10 - 14 October 2016**
Evidence-based medicine in cardiac imaging

1. Examine the need for evidence-based medicine in cardiac imaging
2. Recognize the limitations of evidence-based cardiac imaging

Cardiovascular Diseases in the female population

1. Discuss the cardiovascular disease profile within the female population
2. Examine the appropriate diagnostic/imaging tests for this population

10:10 - 10:35

Imaging congestive heart failure: role of SPECT and PET

Chairperson: Marcus Hacker
Affiliation: EANM

1. Examine the role of SPECT and PET in the management of congestive heart failure
2. Discuss the indications for using SPECT and PET in the management of congestive heart failure

10:35 - 11:00

Imaging congestive heart failure: role of CCTA

Chairperson: Gianluca Pontone
Affiliation: SCCT

1. Examine the role of CCTA in the management of congestive heart failure
2. Discuss the indications for using CCTA in the management of congestive heart failure

11:00 - 11:25

Imaging congestive heart failure: role of cardiac MRI

Chairperson: Chiara Buccianelli Ducci
Affiliation: EACVI

1. Examine the indications of cardiac MRI in patients with heart failure
2. Discuss the principles of cardiac MRI image interpretation

11:25 - 11:50

Imaging congestive heart failure: role of echocardiography

Chairperson: Bogdan Popescu
Affiliation: EACVI

1. Examine the role of echocardiography in the management of congestive heart failure
2. Discuss the indications for using echocardiography in the management of congestive heart failure

11:50 - 12:10

Synthesis and Q&A

OECD-NEA

Tuesday, 11 October 2016

FUNDAMENTALS I: CCTA

IAEA Coordinator: Thomas Pascual
Chairperson: Gianluca Pontone, SCCT

13:30 - 14:15

Current status of CCTA in cardiology

Chairperson: Michelle Williams
Affiliation: SCCT

1. Discuss current research into the application of CT coronary angiography for patients with suspected coronary artery disease including stable chest pain and in the emergency department
2. Understand the advantages and limitations of CT coronary angiography in the diagnosis of suspected coronary artery disease
3. Examine the current status of CCTA in the management of CVDs
4. Discuss different CCTA protocols available for appropriate patients

READ WITH THE EXPERTS II

IAEA Coordinator: Enrique Estrada Lobato
Chairperson: Victor Kalff, WFNMB

14:15 - 15:00

Challenging cases: CCTA and Cardiac MRI

Chairperson: Gianluca Pontone
Affiliation: SCCT

Discuss the role of CCTA and cardiac MRI using actual case images for further interpretation and discourse

15:00 - 15:15

COFFEE/TEA BREAK

15:15 - 16:00

Pitfalls and artefacts in nuclear cardiology

Chairperson: Brian G. Abbott
Affiliation: ASNC

1. Examine the common attenuation and reconstruction artifacts in SPECT and PET myocardial perfusion imaging
2. Discuss how image processing can improve image quality

POSTER REVIEW - SESSION II

16:00 - 17:00

Meet-the-Author - Poster Review

IAEA Coordinator: Thomas Pascual

1. Discuss the different application of cardiac imaging and its usefulness in clinical management of patients with CVDs
2. Propose novel methodologies in medical imaging that would impact patient management

Wednesday, 12 October 2016

Time
08:30 - 09:00
09:00 - 09:45
09:45 - 10:25
10:25 - 10:40
10:40 - 11:10
11:10 - 11:40
11:40 - 12:10
12:10 - 13:30
13:30 - 13:50

Title
BASICS II: GETTING FAMILIAR WITH INTERVENTIONAL CARDIOLOGY
FUNDAMENTALS II: CARDIAC MRI
Current status of MRI in cardiology
Cardiac MRI: Case review
COFFEE/TEA BREAK
Software and hardware advances in nuclear cardiology
Software and hardware for CCTA
PET/CT or PET/MR: Who should PET partner with?
LUNCH BREAK
OEC and the supply of medical radioisotopes

Speaker
Ganesan Karthikeyan
IAEA Coordinator
Matthias Gutberlet, ESR
IAEA Coordinator
IAEA Coordinator
Gian Luca Poli, Harry Debs
IAEA Coordinator
Roger Fulton
Isabel Castellano
Thomas Beyer
Kevin Charlton

Affiliation
India
Ravi Kashyap
Marcus Hacker, EANM
Matthias Gutberlet, ESR
Manuel Areosa, USA
Australia
UK
Austria
OECD-NEA

Learning objectives
1. Review the basics and indications of using interventional cardiology in the management of patients with CVDs
2. Recognize common imaging findings seen in interventional cardiology studies
1. Examine the current status of MRI in the management of CVDs
2. Discuss different MRI protocols available for appropriate patients
Discuss the role of cardiac MRI using actual case images for further interpretation and discourse
1. Discuss current research into the application of CT coronary angiography for patients with suspected coronary artery disease including stable chest pain and in the emergency department
2. Understand the advantages and limitations of CT coronary angiography in the diagnosis of suspected coronary artery disease
3. Examine the current status of CCTA in the management of CVDs
4. Discuss different CCTA protocols available for appropriate patients
Discuss current software and hardware advances in nuclear cardiology and its advantages over current technology
1. Integrate an overview of the CT technical developments that underpin coronary CT angiography
2. Discuss the impact of these developments on image quality and radiation dose to the patient
1. Discuss the quantitative nature of PET imaging in either modality
2. Examine key applications and advantages/disadvantages of each modality
3. Discuss protocol standardization and key elements of high quality clinical imaging protocols
4. Integrate the principles of PET/CT and PET/MRI into clinical practice
Discuss the current market demand and projected production capacity of 99Mo supply
2. Discuss gaining awareness about the 99Mo supply challenge in 2016 and beyond
3. Examine the range of measures available for mitigating future supply risk and the challenges of implementing them, including the NRU reactor 99Mo contingency capacity
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
<th>Affiliation</th>
<th>Learning objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 - 09:00</td>
<td>Basics III: Getting familiar with CT Coronary Angiography</td>
<td>Michelle Williams</td>
<td>SCCT</td>
<td>1. Understand the basics of how CT coronary angiography images are acquired including methods to optimize image quality and reduce radiation. 2. Discuss how to assess CT coronary angiography images and communicate results. 3. Review the basics and indications of using CT coronary angiography in the management of patients with CVD. 4. Recognize common imaging findings seen in CT coronary angiography studies.</td>
</tr>
<tr>
<td>09:00 - 09:25</td>
<td>Nuclear cardiology in evaluation of coronary flow reserve and implantable device infections</td>
<td>Denis Agostini</td>
<td>EANM</td>
<td>1. Discuss how to use cardiac MIBG scintigraphy in heart failure to obtain a prognostic index. 2. Discuss how to use cardiac 99mTc-DPD scintigraphy to stratify cardiac amyloidosis.</td>
</tr>
<tr>
<td>09:25 - 09:50</td>
<td>Nuclear cardiology in evaluation of sympathetic innervation</td>
<td>Victor Kaff</td>
<td>WFNMB</td>
<td>1. Define current need for assessment of cardiac sympathetic innervation. 2. Outline how current conventional planar &amp; SPECT/CT tracers as well as PET/CT radionuclide studies are performed. 3. Define how these radiotracers are being used/evaluated in disorders of cardiac innervation. 4. Discuss current status of the clinical role of nuclear cardiology in assessing cardiac sympathetic innervation.</td>
</tr>
<tr>
<td>09:50 - 10:15</td>
<td>Other indications for cardiac MRI</td>
<td>Matthias Gutberlet</td>
<td>ESR</td>
<td>Review other indications for cardiac MRI and its relevance in clinical practice.</td>
</tr>
<tr>
<td>10:20 - 10:35</td>
<td>Coffee/Tea Break</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:35 - 10:55</td>
<td>Ethical issues faced in nuclear cardiology: Principles and case discussion</td>
<td>Andrew Ross</td>
<td>CANM, Canada</td>
<td>1. Examine ethics as it relates to nuclear cardiology practice. 2. Discuss specific issues which may be faced in the day to day practice. 3. Discuss how a nuclear medicine physician can ensure a high level of ethical practice is maintained.</td>
</tr>
<tr>
<td>10:55 - 11:15</td>
<td>Leadership: Case in point</td>
<td>Sobhan Vinjamuri</td>
<td>BNMS</td>
<td>1. Discuss leadership themes for imaging. 2. Examine motivations for decision making as a leader.</td>
</tr>
<tr>
<td>11:15 - 11:35</td>
<td>Education: Case in point</td>
<td>Henry Bom</td>
<td>ADFNMB</td>
<td>1. Examine the challenging issues of education in nuclear cardiology. 2. Discuss the case-based approach for education of nuclear cardiology. 3. Discuss how to collaborate with referrers.</td>
</tr>
<tr>
<td>11:35 - 11:55</td>
<td>New challenges in nuclear cardiology practice</td>
<td>Brian G. Abbott</td>
<td>ASNC</td>
<td>1. Examine the challenges in terms of training and education with respect to emerging technologies in nuclear cardiology. 2. Discuss trends in utilization, appropriate use, and reimbursement for nuclear cardiology procedures.</td>
</tr>
<tr>
<td>11:55 - 12:15</td>
<td>Research from a question to a paper</td>
<td>Naima Al-Bulushi</td>
<td>ARSNM</td>
<td>1. Discuss the importance of research in today's evidence-based clinical practice. 2. Examine the different types of studies that can be done and their main components. 3. Discuss the importance of copy writes and plagiarism. 4. Examine the structure and components of a good research verse a weak one.</td>
</tr>
<tr>
<td>12:15 - 12:30</td>
<td>Round Table Discussion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:30 - 14:00</td>
<td>Working Lunch Session</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:00 - 14:20</td>
<td>Radiation burden in cardiac imaging</td>
<td>David Sutton</td>
<td>UK</td>
<td>1. Discuss levels of radiation doses given to patients in cardiac imaging examinations. 2. Discuss the radiation burden of cardiac imaging vis-a-vis overall radiological exposures to patients. 3. Examine safety implications for individual patient radiation burden.</td>
</tr>
</tbody>
</table>
14:20 - 14:40 Appropriate use criteria
Sharmila Dorbala
SNMMI
1. Discuss multimodality appropriate use criteria in the evaluation and management of individuals with stable ischemic heart disease
2. Examine the various tools available for the evaluation of appropriate use criteria of radionuclide myocardial perfusion imaging

14:40 - 15:00 8 best practices as recommended by INCAPS
Joao Vitola
ASNC
1. Examine opportunities for optimization of nuclear cardiology protocols and improving practice
2. Discuss patient safety and compliance with ALARA principle

15:00 - 15:20 Quality management and clinical audits in nuclear medicine
Maurizio Dondi
IAEA
1. Identify the principles of Quality Management (QM) systems and Clinical Audits (CA)
2. Recognize the added value of implementing QM and CA to improve the quality of clinical practice

15:20 - 15:30 Syntheses and Q&A

15:30 - 15:45 COFFEE/TEA BREAK

PARALLEL SESSION - READ WITH THE EXPERTS III
IAEA Coordinator
Enrique Estrada Lobato
Chairperson
Vikram Lele, AOFNMIB

15:45 - 16:25 Read with the expert: Interesting cases in nuclear cardiology
Jean Luc Urbain
CANN, Canada
Discuss the role of nuclear cardiology using actual case images for further interpretation and discourse

16:25 - 17:00 Read with the expert: Reporting nuclear cardiology studies
Jerry Obaldo
ARCCNM
1. Discuss how to write structured nuclear cardiology scan reports
2. Recognize common pitfalls in nuclear cardiology scan reports

PARALLEL SESSION - MEDICAL PHYSICS
IAEA Coordinators
Gian Luca Pelli, Harry Dells
Chairperson
Hilde Boistsmans, Belgium
15:45 - 17:00 IAEA Doctoral Coordinated Research Projects on Advances in Medical Imaging Techniques

PARALLEL SESSION - RADIOPHARMACY
IAEA Coordinator
Joao Osso
Chairperson
Adriano Duatti, Italy

15:45 - 16:10 Cardiac radiopharmaceutical development, including peptides and nanoparticles
Sally Schwarz
SNMMI
1. Discuss new areas of cardiac radiopharmaceutical development including peptides and nanoparticles
2. Examine applications for cardiac radiopharmaceuticals such as myocardial perfusion imaging and atherosclerosis
3. Discuss cardiac imaging agents moving towards commercialization

16:10 - 16:35 82Sr production using high energy cyclotron
Adriano Duatti
Italy
1. Discuss possible nuclear routes to Sr-82 production
2. Discuss current production and separation methods of Sr-82
3. Examine the current global network of high-energy accelerators for the production of Sr-82
4. Discuss the issue of good-manufacturing practice with Sr-82 production (GMP)
5. Examine the role of the US Department of Energy (DOE) and Nordion
6. Discuss potential future technological developments of high-energy, high-power targets

16:35 - 17:00 IAEA assistance in RI production and supply: 99Mo case
Joao Osso
IAEA
1. Recognize the importance of Mo-99 and the issues related to Mo-99 supply
2. Discuss alternative methods for the production of Mo-99 and/or Tc-99m
3. Examine the role of IAEA in supporting Mo-99 and/or Tc-99m production by Member States

Friday, 14 October 2016

Time
Title
Speaker
Affiliation
Learning objectives

08:30 - 09:00 BASICS IV: HOW TO MAKE AN EXCELLENT NUCLEAR CARDIOLOGY REPORT
Vikram Lele
AOFNMIB
1. Recognize essential elements of a good nuclear cardiology report
2. Discuss all the data which need to be incorporated in an excellent report
3. Examine things that must be included, should be included and may be included
4. Discuss format and sequence of an excellent Nuclear Cardiology report

PLENARY SESSION IX: THE (HE)ART OF IMAGING - TECHNIQUES MATTER
IAEA Coordinator
Diana Paez
Chairperson
Leslie Shaw, SCCT

09:00 - 09:30 Not all that shines is gold
Raffaele Giubbini
Italy
1. Examine how to recognize artefacts and pitfalls in myocardial perfusion imaging
2. Discuss how artefacts and pitfalls interfere with quantification in myocardial perfusion imaging
3. Recognize how artefacts and pitfalls impact on diagnostic process and risk stratification

09:30 - 10:00 It’s all in numbers
Nathan Better
ANZSNM
1. Discuss the quantitation of perfusion and function - how and when to do it
2. Discuss the need to report perfusion in a standardized fashion
3. Examine how essential is quantitation and what to include in the report

10:00 - 10:30 PET to the future
Sharmila Dorbala
SNMMI
1. Discuss the current PET based molecular imaging research in cardiovascular diseases
2. Examine ongoing molecular imaging studies in cardiovascular diseases

10:30 - 11:00 COFFEE/TEA BREAK

PLENARY SESSION X - CLOSING CEREMONY
IAEA Coordinator
Thomas Pascual

11:00 - 11:15 Highlights & Trends
Joao Vitola
ASNC
Synthesize the relevant issues discussed on the role of integrated medical imaging in the management of patients with cardiovascular diseases and highlight key issues that would affect best practices

11:45 - 12:15 Poster Awards
Diana Paez
IAEA

12:15 - 13:00 Closing remarks
Diana Paez
IAEA