



**International Atomic Energy Agency
Department of Technical Cooperation**

And

**Department of Nuclear Sciences and Applications,
Division of Human Health, Section of Nuclear Medicine and Diagnostic
Imaging**

VME-RAS6091-EVT1906777

**Workshop on Cardiac SPECT, SPECT/CT and PET/CT
in Clinical Practice including image processing and
interpretation.**

November 2-6, 2021

**Nagoya Congress Center (Web Seminar),
Nagoya, Japan**

Local Organizer

Dr. Hiroshi Toyama

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PROGRAM

Tuesday, 2 November 2021

Rm 141+142(Building 1, 4F)

14:00-14:30	Registration	
14:30-15:30 (60 min)	Opening remarks Self-Introduction Pre-Course Evaluation	Moderator: Tadashi Watabe, MD, PhD (Osaka University) Mr. Erique Estrand-Lobato (Technical Officer, IAEA) Prof. Nakao Iwata (Dean, Fujita Health University School of Medicine) Prof. Jun Hatazawa (President, Asia Oseania Foundation of Nuclear Medicine and Biology) Prof. Hiroshi Toyama (Course Director)
<p>SESSION 1</p> <p>Basic Cardiovascular Science 1</p> <p>Chair: Prof. Takashi Nihashi, MD, PhD National Center for Geriatrics and Gerontology NCGG), Obu, Japan</p>		
15:45-16:30 (45 min)	Basis of cohort study of ischemic heart disease LO: 1. Review the cohort study of ischemic heart disease 2. Understand the utility of the cohort study of ischemic heart disease	Prof. Hiroshi Yatsuya, MD, PhD (Department of Public Health, Nagoya University, Nagoya, Japan)
16:30-17:15 (45 min)	A Basic primer on systematic review and meta- analysis of imaging of ischemic heart disease LO: 1. Review the published systematic review and meta- analysis reports on imaging tests of ischemic heart disease 2. Understand the basic methodologies of systematic review and meta-analysis of imaging tests	Prof. Teruhiko Terasawa, MD, PhD (Department of Emergency and General Internal Medicine, Fujita Health University, Toyoake, Japan)
End of Session 1		

SESSION 2		
Basic Cardiovascular Science 2		
Chair: Prof. Tadashi Watabe, MD, PhD Osaka University, Osaka, Japan		
17:30-18:15 (45 min)	Basis of cardiac CT diagnosis of ischemic heart disease LO: 1. Review the cardiac CT imaging for ischemic heart disease 2. Understand the utility of CT imaging of ischemic heart disease	Prof. Sadako Motoyama-Tanizawa, MD, PhD (Department of Cardiology Fujita Health University, Toyoake, Japan)
18:15-19:00 (45 min)	Basis of Nuclear cardiology LO: 3. Review the cardiac SPECT diagnosis of several kinds of heart disease 4. Understand the utility of cardiac SPECT of several kinds of heart disease	Prof. Masayoshi Sarai, MD, PhD (Department of Cardiology, Fujita Health University, Toyoake, Japan)
End of Session 2		

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Wednesday, 3 November 2021

Rm 141+142(Building 1, 4F)

SESSION 3

Basic Cardiovascular Science 3

CHAIR: Prof. Masayoshi Sarai, MD, PhD

Fujita Health University, Toyoake, Japan

14:00-14:30 (30 min)	Radiation protection of cardiac SPECT and PET imaging LO: 1. Importance of radiation protection of cardiac SPECT and PET imaging 2. Understand the utility of radiation protection of cardiac SPECT and PET imaging	Prof. Takashi Kudo MD, PhD (Department of Radioisotope Medicine, Nagasaki University, Nagasaki, Japan)
14:30-15:00 (30 min)	Basis of SPECT, SPECT/CT, PET and PET/CT instrumentation LO: 1. Review the basis of SPECT and SPECT/CT instrumentation 2. Review the basis of PET and PET/CT instrumentation 3. Understand their utility of SPECT, SPECT/CT, PET and PET/CT for Nuclear Cardiology.	Visiting Prof. Takashi Ichihara, PhD (Department of Radiology, Fujita Health University, Toyoake, Japan)
15:00-15:30 (30 min)	Myocardial Ischemia: Anatomical, Electrical, Physiological Aspects LO: 1. Review the myocardial ischemia for anatomical, electrical, physiological aspects. 2. Understand the myocardial ischemia for anatomical, electrical, physiological aspects.	Visiting Prof. Takeshi Kondo, MD, PhD (Department of Cardiology, Fujita Health University, Toyoake, Japan)

End of Session 3

SESSION 4

Basic Cardiovascular Science 4

CHAIR: Prof. Kenichi Nakajima, MD, PhD

Kanazawa University, Kanazawa, Japan

15:45-16:15 (30 min)	<p>Basis of in vivo molecular imaging for biomedical analysis and therapies</p> <p>LO:</p> <ol style="list-style-type: none">1. Review the in vivo molecular imaging such as nuclear imaging with PET, SPECT and optical imaging for biomedical analysis and therapies.2. Understand their utility for precision medicine.	<p>Prof. Mikako Ogawa, PhD (Laboratory for Bioanalysis and Molecular Imaging, Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo, Japan)</p>
16:15-16:45 (30 min)	<p>Cardiac MRI</p> <p>LO:</p> <ol style="list-style-type: none">1. Review the role of MRI in the evaluation of myocardial ischemia2. Discuss the new MRI insights with cardiac mapping	<p>Prof. Noriko Oyama-Manabe (Jichi Medical University, Saitama Medical Center, Saitama, Japan)</p>

End of Session 4

SESSION 5

Interactive case analysis of Cardiac SPECT, PET, CT and MRI on several kinds of cardiac disease 1

Rm 141+142(Building 1, 4F)

Chair: Prof. Nagara Tamaki, MD, PhD

Department of Radiology,

Kyoto Prefectural University

17:00-17:30 (30 min)	Interactive case analysis of cardiac SPECT and PET 1 LO: 1. Demonstrate the role of cardiac SPECT and PET	Prof. Yasutaka Ichikawa, MD, PhD (Department of Radiology, Mie University, Mie, Japan)
17:30-18:00 (30 min)	Interactive case analysis of cardiac SPECT and PET 2 LO: 1. Demonstrate the role of cardiac SPECT and PET	Prof. Shinro Matsuo, MD, PhD (Matsuo Medical Clinic, Osaka, Japan)
18:00-18:30 (30 min)	Interactive case analysis of cardiac CT and MRI LO: 1. Demonstrate the role of cardiac CT and MRI	Prof. Hajime Sakuma, MD, PhD (Department of Radiology, Mie University, Mie, Japan)

End of Session 5

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Thursday, 4 November 2021

Rm 141+142(Building 1, 4F)

SESSION 6

SPECT and PET imaging for ischemic heart disease

Chair: Prof. Junichi Taki, MD, PhD

Kanazawa University

Kanazawa, Japan

14:00-14:30 (30 min)	<p>Basis: cardiac SPECT and PET imaging of ischemic heart disease</p> <p>LO:</p> <ol style="list-style-type: none">1. Review the cardiac SPECT and PET imaging for ischemic heart disease2. Understand the utility of cardiac SPECT and PET imaging for ischemic heart disease	<p>Prof. Nagara Tamaki, MD, PhD Department of Radiology, Kyoto Prefectural University, Kyoto, Japan)</p>
14:30-15:00 (30 min)	<p>Case review: cardiac SPECT and PET imaging of ischemic heart disease</p> <p>LO:</p> <ol style="list-style-type: none">1. Review the cardiac PET imaging for ischemic heart disease2. Understand the utility of cardiac PET imaging for ischemic heart disease	<p>Prof. Teruhito Mochizuki, MD, PhD (Department of Radiology, Ehime University, Ehime, Japan)</p>
15:00-15:30 (30 min)	<p>Interactive case analysis: cardiac SPECT and PET imaging of ischemic heart disease</p> <p>LO:</p> <ol style="list-style-type: none">1. Illustrate the role of cardiac SPECT and PET imaging of ischemic heart disease2. Understand the role of cardiac SPECT and PET imaging of ischemic heart disease	<p>Prof. Satoru Oshima, MD, PhD (Department of Cardiology, Nagoya Radiological Diagnosis Foundation, Nagoya, Japan)</p>

End of session 6

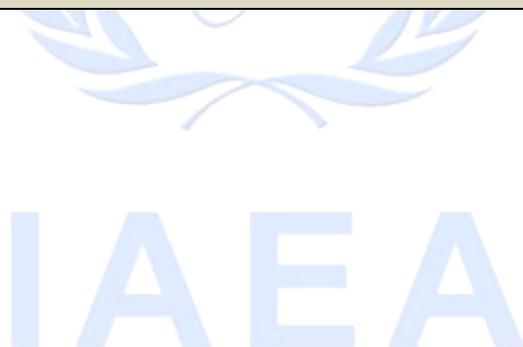
SESSION 7:

SPECT and PET imaging for cardiomyopathy

Chair: Prof. Shigeki Nagamachi, MD, PhD
Fukuoka University, Fukuoka, Japan

15:45-16:15 (30 min)	<p>Basis: cardiac SPECT imaging of cardiomyopathy</p> <p>LO:</p> <ol style="list-style-type: none">1. Review the cardiac SPECT imaging for cardiomyopathy2. Understand the utility of cardiac SPECT imaging for cardiomyopathy	<p>Prof. Kenichi Nakajima, MD, PhD (Department of Nuclear Medicine, Kanazawa University, Kanazawa, Japan)</p>
16:15-16:45 (30 min)	<p>Case review: SPECT imaging of cardiomyopathy</p> <p>LO:</p> <ol style="list-style-type: none">1. Illustrate the role of SPECT imaging of cardiomyopathy2. Understand the role of PET imaging of cardiomyopathy	<p>Prof. Junichi Taki, MD, PhD MD, PhD (Department of Nuclear Medicine, Kanazawa University, Kanazawa, Japan)</p>

End of session 7



SESSION 8
SPECT and PET imaging for cardiac Sarcoidosis

Chair: Prof. Teruhito Mochizuki, MD, PhD
Ehime University
Matsuyama, Japan

17:00-17:30 (30 min)	Basis: FDG PET/CT in diagnosis of cardiac sarcoidosis LO: 1. Review the FDG PET/CT imaging for cardiac sarcoidosis 2. Understand the utility of FDG PET/CT imaging for cardiac sarcoidosis	Prof. Masao Miyagawa, MD, PhD (Department of Radiology, Ehime University, Ehime, Japan)
17:30-18:00 (30 min)	Case review: cardiac SPECT, PET and MRI imaging of cardiac sarcoidosis LO: 1. Imaging of cardiac Sarcoidosis with Cardiac PET and MRI 2. Understand the utility of cardiac Sarcoidosis with Cardiac PET and MRI	Prof. Osamu Manabe, MD, PhD (Jichi Medical University, Saitama Medical Center, Saitama, Japan)
18:00-18:30 (30 min)	Interactive case analysis: cardiac SPECT, PET and MRI imaging of cardiac sarcoidosis LO: 1. Illustrate the role of SPECT, PET and MRI imaging of cardiac sarcoidosis 2. Understand the role of SPECT, PET and MRI imaging of cardiac sarcoidosis	Prof. Hideki Kawai, MD, PhD (Department of Cardiology, Fujita Health University, Toyoake, Japan)

End of session 8

SESSION 9
Key Note lecture of JSNM (Video)

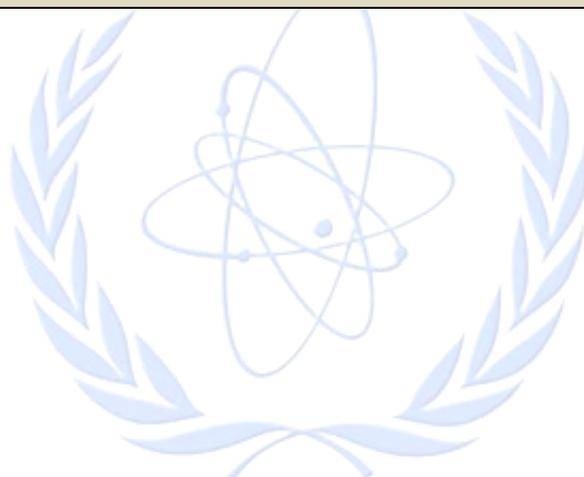
18:45-19:45 (60 min)	"Radiopharmaceutical Clinic Translation @ Stanford"	Dr. Bin Shen, PhD (Stanford University, CA, USA)
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End of session 9

SESSION 10
Invited lecture of EANM(Video)

20:00-21:00 (60 min)	<ol style="list-style-type: none">1. Theranostics: past, present and future2. Nuclear imaging of the cardiovascular system: the world outside ischemia	Prof. Jolanta Kunikowska, EANM President Prof. Paola Anna Erba, EANM Education Chair
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End of session 10



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Friday, 5 November 2021

Rm 141+142(Building 1, 4F)

SESSION 11
Asian Cardiology Session (Video)

14:00-15:00 (60 min) 15:00-16:00 (60 min) 16:00-17:00 (60 min)	<p>Session 1</p> <ol style="list-style-type: none">1. Comprehensive assessment of coronary calcium score, clinical information and nuclear myocardial perfusion imaging in stable coronary artery disease2. Early FDG PET for prediction of radiation-related cardiac events following CCRT in non-small-cell lung cancer3. Association of coronary plaque characteristics with myocardial perfusion in chronic total occlusion <p>Session 2</p> <ol style="list-style-type: none">1. Quantitative assessment for the detection of coronary stenosis on dynamic SPECT2. Comparison of deep learning-based attenuation map generation and direct attenuation correction for myocardial perfusion SPECT3. Nuclear Cardiology in China <p>Session 3</p> <ol style="list-style-type: none">1. Diagnostic performance of stress 201Tl myocardial perfusion imaging by cadmium-zinc telluride SPECT in patients with suspected coronary artery disease using big data and artificial intelligence approaches2. Role of myocardial perfusion imaging in patients with Kawasaki disease3. 99m Tc-MIBI rest Myocardial Perfusion Imaging (MPI) and 18F-FDG Cardiac PET for viability assessment before revascularization following Myocardial Infarction: Experience in Bangladesh	<p>Yasuyuki Suzuki Japan</p> <p>Sang-Geon Cho 1 Korea Sang-Geon Cho 2 Korea</p> <p>Naoto Kawaguchi Japan Yu Du Macau Min-Fu Yang China</p> <p>Yen-Wen Wu Taiwan</p> <p>Chow Tsz Kit Hong Kong Shankar Kumar Biswas Bangladesh</p>
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END OF SESSION 11

SESSION 12 Invited lecture of SNMMI(Video)		
17:30-18:30 (60 min)	Precision Nuclear Oncology: Diagnosis and Therapy	Prof. Richard Wahl, MD, PhD Mallinckrodt Institute of Radiology, USA
End of session 12		

SESSION 13 PET/MRI Symposium (Video) “Clinical PET/MRI: Frontiers and Future Possibilities”		
18:45-20:45 (120 min)	<ol style="list-style-type: none"> 1. "Pinpointing the location of musculoskeletal pain using PET/MRI." 2. Liver and bile duct tumor imaging using PET/MRI 3. "The essence of simultaneous PET/MRI: A perfect match for the moving organs" 4. “Added value of PET/MRI to brain, breast and pelvis” 5. "PET/MR in Head and Neck & Miscellaneous” 	<p>Sandip Biswal (Stanford University, USA)</p> <p>Hongcheng Shi (Zhongshan Hospital, Fudan University, China)</p> <p>Munenobu Nogami (Kobe University, Japan)</p> <p>Tetsuya Tsujikawa (Biomedical Imaging Research Center, University of Fukui, Japan)</p> <p>Tetsuro Sekine (Nippon Medical School, Musashikosugi Hospital, Japan)</p>
End of session 13		

Saturday, 6 November 2021

Rm 141+142(Building 1, 4F)

SESSION 14

PET imaging for inflammation of large vessel vasculitis

CHAIR: Prof. Kazuo Kubota, MD, PhD

Department of Radiology, Southern TOHOKU General Hospital, Fukushima , Japan

14:00-14:30 (30 min)	Basis: FDG accumulation in inflammation LO: 1. Review the mechanisms of FDG accumulation in inflammation 2. Understand their utility of PET imaging for inflammation of large vessel vasculitis	Prof. Kazuo Kubota, MD, PhD (Department of Radiology, Southern TOHOKU General Hospital, Fukushima , Japan)
14:30-15:00 (30 min)	Case Review: PET/CT/MRI imaging for inflammation of large vessel vasculitis LO: 1. Review the typical cases of PET/CT/MRI imaging for inflammation of large vessel vasculitis 2. Understand their complementary roles of each modality for assessing inflammation	Prof. Jun Hashimoto, MD, PhD, (Department of Radiology, Tokai University, Isehara, Japan)
15:00-15:30 (30 min)	Interactive case analysis: PET imaging of large vessel aortitis LO: 1. Illustrate the role of PET imaging for inflammation of large vessel vasculitis 2. Understand the role of PET imaging for inflammation of large vessel vasculitis	Prof. Tadashi Watabe, MD, PhD (Department of Nuclear Medicine, Osaka University, Osaka, Japan)

End of session 14

SESSION 15

Interactive case analysis of Cardiac SPECT, PET, CT and MRI on several kinds of cardiac disease 2

CHAIR: Prof. Hiroshi Toyama, MD, PhD
Fujita Health University, Toyoake, Japan

15:45-16:15 (30 min)	Interactive case analysis of cardiac SPECT and PET LO: 1.Demonstrate the role of cardiac SPECT and PET	Prof. Itta Kawamura, MD, PhD Gifu Heart Center, Gifu, Japan)
16:15-16:45 (30 min)	Interactive case analysis of cardiac SPECT, CT and MRI LO: 1.Demonstrate the role of cardiac SPECT, CT and MRI	Prof. Hideki Kawai, MD, PhD (Department of Cardiology Fujita Health University, Toyoake, Japan)
End of Session 15		
16:45-17:15 (30 min)	Closing Remarks Post course evaluation	Mr. Erique Estrand-Lobato (Technical Officer, IAEA) Prof. Hiroshi Toyama (Course Director)

This workshop is accredited by the UEMS- EACCME (European Union of Medical Specialists - European Accreditation Council for Continuing Medical Education) with 15 European CME credits.

