

**12th Congress of the World Federation of Nuclear Medicine
and Biology**

20-24 April 2018

Melbourne Convention and Exhibition Centre

TRACK: Physics

16-Mar-18

Saturday 21 April 2018

14:00-15:30 Physics 1: PET Instrumentation			
Chair: Dr Suleman Surti, University of Pennsylvania, USA			
14:00-14:30	The EXPLORER Project: Total-Body Positron Emission Tomography Learning Objectives: 1. Distinguish between whole-body PET and total-body PET 2. To be able to describe three ways in which the additional sensitivity of total-body PET can be used 3. To be able to list three major applications for total-body PET	Prof. Simon Cherry, University of California, Davis, USA	30 mins
14:30-15:00	PET/MRI - Global Warming Ahead 1. To understand the phases of appreciation of PET/MRI from its inception: enthusiasm, expectations, disillusionment, productivity 2. To highlight the opportunities for PET/MRI in clinical practice and research 3. To discuss the barriers for clinical PET/MRI and possible solutions.	Prof. Thomas Beyer, Medical University of Vienna, Austria	30 mins
15:00-15:30	Digital PET and Improvements in Time-of-Flight PET Learning objectives: 1) Describe the latest technological developments that enable clinical TOF PET systems. 2) Describe the clinical advantages arising from TOF PET imaging.	Dr Suleman Surti, University of Pennsylvania, USA	30 mins

Sunday 22 April 2018

16:15-17:45 Physics 2: Quantification			
Chair: Prof. Paul Kinahan, University of Washington, Seattle, WA, USA			
16:15-16:45	Quantitative SPECT: state of the art and current issues Learning Objectives: Participants will gain knowledge on 1. The essential components in image acquisition and reconstruction required for SPECT quantification 2. Techniques for quantitative SPECT validation and incorporation into a QC programme 3. Current pitfalls and potential workarounds for quantitative SPECT issues 4. Current and future possibilities for applied quantitative SPECT in the clinic	Dr Kathy Willowson, The University of Sydney, Sydney, Australia	30 min
16:45-17:15	Tracer Kinetic Modeling in Brain PET Learning Objectives: 1. Understand the principles of tracer kinetic modeling of PET radiopharmaceuticals that are used to study the brain. 2. Learn about approaches to simplify methods for tracer kinetic modeling, to facilitate their translation to clinical research and clinical applications. 3. Learn about some applications of tracer kinetic modeling of PET radiopharmaceuticals to study pathophysiology of neuropsychiatric disease.	Dr. Peter Herscovitch, National Institutes of Health Clinical Center, Bethesda, MD, USA	30 mins
17:15-17:45	Standardization of Molecular Imaging Data in Clinical Trials Intended learning objectives: 1. Integrate the concepts of quantitative medical imaging in clinical trials of new therapies. 2. Summarize current initiatives and knowledge in quantitative molecular imaging. 3. Recommend approaches that characterize and improve the role of quantitative imaging biomarkers in clinical trials.	Prof. Paul Kinahan, PhD. Department of Radiology, University of Washington, Seattle, WA USA	30 mins

Monday 23 April 2018

Monday 23 April 2018			
10:30-12 noon	Physics 3: Radiation Dosimetry and Risk		
	Chair: Dr Frederic Fahey, Boston Children's Hospital and Harvard Medical School, Boston, USA		
	Tetrahedral-mesh Counterparts of ICRP Reference Computational Phantoms learning objectives: (1) To learn about the recent developments in computational human phantoms, (2) To learn about the fast Monte Carlo dose calculation with tetrahedral mesh geometry, (3) To learn about the deformation of phantoms for stature and posture change		
10:30-11:00		Dr. Yeon Soo Yeom , Hanyang University, Seoul, Korea	30 min
	Dosimetry in Paediatric Nuclear Medicine After this presentation, attendees will be able to • List 2 factors that potentially affect radiation dosimetry in children from radiopharmaceuticals that differs from that for adults • Discuss how the risk of carcinogenesis may be different in children compared to adults • Describe 3 factors that affect the radiation dose from CT • List 3 approaches that could lead to improved dose optimization in children		
11:00-11:30		Dr Frederic Fahey, Boston Children's Hospital and Harvard Medical School, Boston, USA	30 mins
	Effectively Communicating Radiation Risks: The Toughest Task Objectives: 1. Discuss the pro and cons of the LNTH. 2. Lists factors that make even small risks unacceptable 3. Describe the unintended consequences of fear.		
11:30-12:00		Dr Henry Royal, Mallinckrodt Institute of Radiology, St Louis, USA	30 mins