

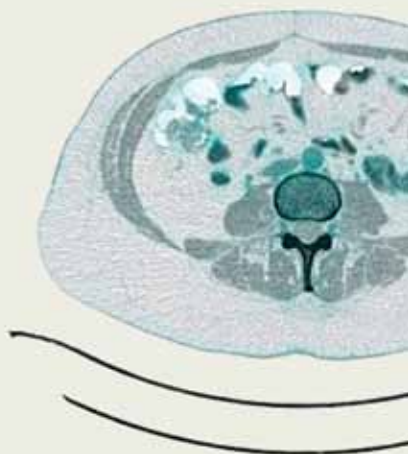
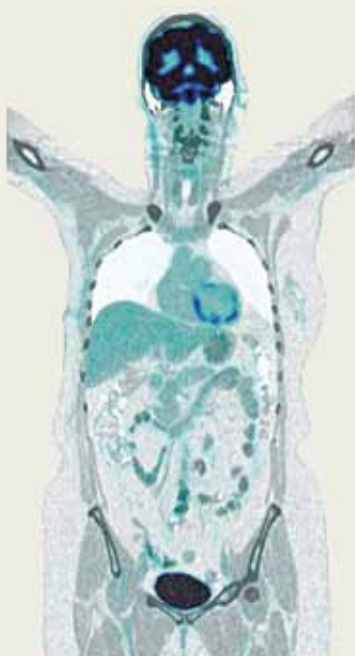


National  
Imaging  
Facility

# FOUNDATIONS OF PET-CT

Sixth annual comprehensive training  
course for nuclear medicine professionals

## 2013



THE UNIVERSITY OF  
**SYDNEY**

  
Australian Government

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# About the PET-CT program

As integrated imaging technologies develop rapidly, the need for continuing education to update the knowledge and skills of nuclear medicine professionals is in much demand. The National Imaging Facility, at the University of Sydney node, and in collaboration with Australian Nuclear Science and Technology Organisation (ANSTO) offers a professional development course on Positron Emission Tomography-X-ray Computerised Tomography (PET-CT) designed to integrate the most recent knowledge and skills related to safety, and technical and clinical practice.

This comprehensive 10-day training course is suitable for physicians, scientists and technologists. Through lectures, workshops and clinical sessions the course will provide essential strategies for creating quality assurance and best practice for a safe environment and an efficient clinical service. The course also promotes team coordination for effective application of the technology.

## PROGRAM OBJECTIVES

At the completion of this program, participants will be able to:

- Explain the principles of PET and CT scanning and issues of PET-CT integration;
- Understand radiation safety and dosimetry considerations in PET-CT;
- Describe the Quality Assurance required to ensure optimal performance of PET-CT scanners;
- Identify common and new radiopharmaceuticals used in PET-CT and production methods;
- Recognise normal image appearance and possible sources of artifacts in acquisition and processing;
- Relate practical aspects of image interpretation of PET and PET-CT studies, focusing on cancer and other diseases;
- Discuss the underlying physical principles of F-18 FDG PET and its application to patients with emphasis on practical imaging protocols and methodology;
- Explain the basics in interpretation of PET images, recognise normal and abnormal radiopharmaceutical distributions and avoid common pitfalls and artifacts;
- Develop strategies and protocols applicable to participants' own organisational settings which enables good and safe clinical practice;
- Explain principles of PET-CT workflows.

## CURRICULUM

During the 2013 program, participants will explore the following key modules:

### Module 1: Physics Fundamentals

- Principles of PET and CT
- Quality Assurance
- Image Formation
- Quantitative Corrections
- Multimodality / Fusion Imaging

### Module 2: PET Chemistry and Physiology

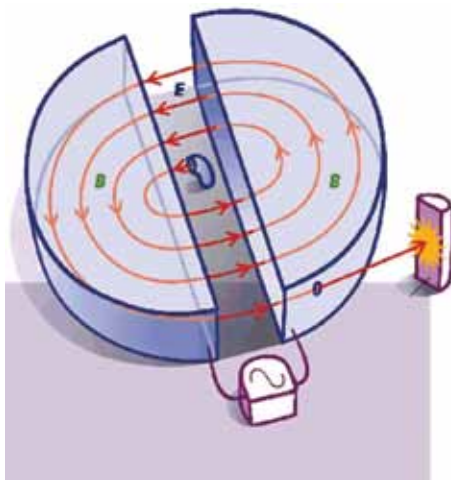
- PET Isotope Production
- PET Radiopharmaceuticals
- Fluoro-2-deoxy-D-glucose (FDG) Kinetics
- Other PET-tracers

### Module 3: Clinical Practice and Workflow

- Oncological and Non-oncological Applications
- Read with the Experts
- Protocols and Scheduling

### Module 4: Radiation Protection and Safety

- Patient and Staff Dosimetry
- CT Dosimetry
- Departmental Design and Shielding



## FACULTY

The PET-CT Program is developed by the University of Sydney; the Australian Nuclear Science and Technology Organisation; the University of Sydney's Faculty of Health Sciences; the University of Sydney's Brain & Mind Research Institute (BMRI); Westmead Hospital's Department of Nuclear Medicine and PET; Royal North Shore Hospital's Department of Nuclear Medicine and PET; the University of Sydney's Faculty of Science and Austin Hospital's Centre for PET.

## TRAINING METHODOLOGY

Training will be delivered through:

1. Lectures and Workshops at the University of Sydney in collaboration with selected PET-CT clinical and research centres in Sydney. The lectures and workshops will provide the participants with cutting edge knowledge to advance their understanding of best PET-CT practice.
2. Observation of Practice (clinical site visits) linked to lecture themes. The site visits will enable participants to learn and observe physical and practical approaches to PET-CT applications.



**Ms. Heather Patterson**  
International Education Project Manager, ANSTO/University of Sydney, Australia, Co-Developer, IAEA Distance Assisted Training programme for Nuclear Medicine Professionals



**Prof. Steve Meikle**  
Co-Director, Ramaciotti Centre for Molecular Imaging, Brain & Mind Research Institute, University of Sydney, Australia



**Prof. Dale Bailey**  
Principal Physicist, Department of Nuclear Medicine & PET, Royal North Shore Hospital, Sydney, Australia



**Adj. A/Prof. Roger Fulton**  
Adj. A/Prof. School of Physics, Faculty of Science, and Conjoint A/Prof. in the Discipline of Medical Radiation Sciences, University of Sydney, Australia  
Principal Hospital Scientist in the Department of Medical Physics, Westmead Hospital



**Dr. David Farlow**  
Director, Nuclear Medicine, Ultrasound and PET, Westmead Hospital, Sydney, Australia



**Prof. Richard Banati**  
Foundation Chair of Medical Radiation Sciences at the University of Sydney, Co-Director Ramaciotti Centre for Molecular Imaging, Brain & Mind Research Institute and Director University of Sydney node of the National Imaging Facility.



**Prof. Andrew M. Scott**  
Director, Ludwig Institute for Cancer Research, Melbourne Centre for Clinical Sciences, Melbourne, Australia  
Director, Centre for PET, Austin Hospital, Melbourne, Australia



## PARTICIPANTS PROFILE

Participants will be nuclear medicine professionals who are new PET-CT users or plan to implement PET-CT in their organisation. They will have a good understanding of radiation safety and prior experience in a clinical nuclear medicine environment. Whilst the program is designed for participants from developing countries, a proficiency in written and spoken English is essential.

## SUPPORT SERVICES

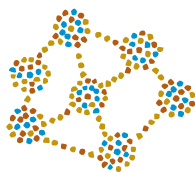
The National Imaging Facility will provide a support service to the program participants, including advice with domestic and international travel, transport, visas to Australia, health insurance, accommodation and recreational activities.

DATES	PROGRAM FEE
11-22 November 2013	<b>AU\$3500</b> (Excluding travel, accommodation and living expenses)  <i>Please note: Program dates, fees, faculty and curriculum are subject to change.</i>
LOCATION	HOW TO APPLY
Sydney, Australia	Admission is selective, and the number of participants for each course will be restricted to 20. Interested applicants should complete the application form and return it by mail, email or fax.  Application deadline is <b>30th September 2013</b> .

For more information and an application form please visit:  
[www.ansto.gov.au/research/lifesciences/professional\\_development/](http://www.ansto.gov.au/research/lifesciences/professional_development/)

**Heather Patterson, National Imaging Facility**

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This program is endorsed by the Australian and New Zealand Society of Nuclear Medicine (ANZSNM) as part of its commitment to supporting Education and Training in developing countries.



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