Radiopharmacy / Radiochemistry

This is a 2 week course for scientists with a pharmacy, chemistry or physics background wishing to work in a nuclear medicine/PET department dispensing diagnostic radiopharmaceuticals at GMP level. A chemistry, physics or pharmacy qualification or equivalent is a prerequisite for this course, which aims to develop practical and theoretical skills needed for the operation of a radiopharmacy. The course will consist of approximately 31 hours of theory covering the following:

- Radiation physics and radiation safety
- Production of technetium-99m ($^{99m}TcO_4$-generator)
- Introduction to technetium-99m radiopharmaceuticals (chemistry and application)
- Production of fluorine-18 (cyclotron)
- Introduction to fluorine-18 PET radiopharmaceuticals (chemistry and application)
- Techniques for dispensing radiopharmaceuticals
- GMP production and quality control of radiopharmaceuticals

Students will also spend about 35 hours in hospital PET and nuclear medicine departments and train under radiopharmacists as they prepare and dispense the routine radiopharmaceuticals required by the department.

PET Technology

This is a 3 week course for technologists who have a nuclear medicine technologist qualification or experience. The course will consist of 1 week introductory theory section and 2 weeks clinical training. The theory section will consist of:

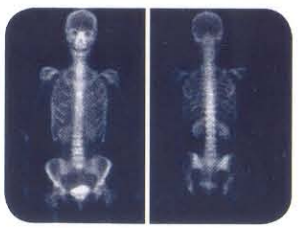
- Radiation physics and radiation safety
- Production of fluorine-18 (cyclotron)
- Introduction to fluorine-18 PET radiopharmaceuticals (chemistry and application)
- Techniques for dispensing radiopharmaceuticals
- GMP and quality control of radiopharmaceuticals

The clinical section will consist of:

- Radiation safety
  - Cannulation training. (arranged offsite)
  - Injection / administration techniques
  - Waste handling
  - Occupational radiation exposure minimisation
- Imaging techniques
  - Positioning and setup of patient
  - Acquisition of whole-body, brain and cardiac imaging
  - Reconstruction and image analysis
  - Co-registration of PET / CT
- Patient workflow:
  - Patient preparation and scheduling
  - Imaging workflow
  - Maintaining a database / PACS

Clinical PET

This four week course is intended to offer the practicing radiologist/nuclear physician an opportunity to observe, learn, perform and discuss procedures in Positron Emission Tomography (PET). The course will involve the visiting physician working within the PET department with staff committed to devoting their time to his/her instruction. The course will cover some of the background theory as for the radiopharmacy/radiochemistry course, such as Production of fluorine-18 (cyclotron) and GMP and quality control of radiopharmaceuticals. The main focus of this course will be on various aspects of clinical PET including normal FDG uptake, PET artifacts, PET & PET/CT in lymphoma, PET & PET/CT in glioma, role of PET & PET/CT in SPN and lung carcinoma. This will include lectures by experienced faculty and practical duties including; interviewing patients, administering doses, checking scans, reporting studies with consultant staff and liaising with referrers.



Background Information

The Australian Institute for Radiochemical Engineering is a not-for-profit incorporated organisation based at the WA PET/Cyclotron Service in Perth whose mission is to develop radiochemistry, radiochemical engineering and nuclear medicine in the Australasian region. This involves developing new radiopharmaceuticals, promoting the use of radiotracer techniques for medical and industrial applications as well as developing training courses in the areas of radiochemistry, radiopharmacy, radiochemical engineering and nuclear medicine.

The WA PET/Cyclotron Service is a busy clinical and research facility doing on average 12 PET studies per day. It has an on-site 18 MeV IBA cyclotron and facilities for the production of a variety of clinical and research radiopharmaceuticals. It has a comprehensive research and clinical database and a number of experienced on site staff including physicists, radiochemists, PET trained technologists and PET accredited physicians/radiologists.

These courses are intended to offer scientists and physicians with appropriate background and qualifications opportunities to observe, learn and practice procedures involved with PET and nuclear medicine.

We are currently offering three streams; Radiopharmacy/ Radiochemistry, PET Technology and Clinical PET.

For further information visit our website:

http://www.chs.ecu.edu.au/org/sons/

or contact:

International and Commercial Office
Faculty of Computing, Health and Science
Edith Cowan University
100 Joondalup Drive
Joondalup WA 6027
Telephone: (61 8) 6304 5887
Facsimile: (61 8) 6304 5577
E-mail: ico_fchs@ecu.edu.au

CRICOS IPC 00279B

ECU EDITH COWAN UNIVERSITY

School of Natural Sciences

AUSTRALIAN INSTITUTE OF RADIOCHEMICAL ENGINEERING (AIRE)

RAPID LABORATORIES
SIR CHARLES GAIRDNER HOSPITAL

WA PET/CYCLOTRON SERVICE

Short Courses for Nuclear Medicine and PET Professionals