

3D and 4D PET/CT for Radiation Oncology

Presented by:
**UPMC Cancer Centers and
University of Pittsburgh
School of Medicine Center for
Continuing Education in the
Health Sciences**

Date Options:
**Thursday and Friday,
September 11-12, 2008
OR
November 20-21, 2008**

Time:
**Thursday – 8am – 5pm
Friday – 8am – 2:30pm**

Location:
**Radiation Oncology
UPMC Shadyside Hospital
5230 Centre Ave.
Pittsburgh, PA 15232**

Course Directors:

Dwight E. Heron, MD, FACRO
Associate Professor,
University of Pittsburgh School of Medicine

M. Saiful Huq, PhD, FAAPM, FInstP
Professor of Radiation Oncology
University of Pittsburgh School of Medicine

Todd M Blodgett, MD
Assistant Professor of Radiology
University of Pittsburgh School of Medicine

Program Description:

This course will cover PET/CT fundamentals, application to radiation oncology treatment planning, assessment of response, surveillance, 4D CT, and 4D PET/CT for oncology imaging.

Target Audience:

This course is designed for Radiation Oncologists, Nuclear Medicine and Radiology Physicians, Physicists, Dosimetrists and others with an interest in learning the specialized skills and techniques to utilize PET/CT for radiation therapy treatment planning.

CME Accreditation:

The University of Pittsburgh School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. The University of Pittsburgh School of Medicine designates this educational activity for a maximum of 13.5 AMA PRA Category 1 Credits™. Each physician should only claim credit commensurate with the extent of their participation in the activity. Other health care professionals are awarded 1.35 continuing education units (CEUs), which are equal to 13.5 contact hours.

Course Objectives:

Upon completion of this offering the participant should be able to:

- Discuss physics of PET imaging including correction techniques used for image reconstruction (attenuation correction, filtering, finite resolution effects)
- Discuss the use of F-18 (FDG) for oncological imaging and other radioisotopes being used or investigated.
- Discuss appropriate use of isotopes for clinical studies.
- Discuss image processing in aiding the interpretation and diagnosis for various disease sites. Discuss use of Standardized Uptake Values (SUV) for PET image interpretation including pitfalls, limitations, and normal variants.
- Interpret various clinical case studies of oncology patients for: head and neck, lung, esophagus, colorectal, and gynecologic. Discuss PET versus CT/MR anatomy.
- Discuss immobilization methods for PET/CT –based planning for radiation. Discuss image registration of PET/CT with Planning CT. Discuss use of PET/CT simulation versus CT simulation. Error evaluation of image registration. “Is it good enough?”
- Registration of PET/CT and Planning CT datasets for selected clinical cases such as brain, head/neck, breast, colorectal, lung and lymphomas.
- Present methods on how to set the Window/Level for PET images. Use of PET/CT volumes and treatment margins. PET/CT volumes and radiation dose prescriptions
- Use of same image registration lab cases, segmentation of target volumes for various disease sites
- Discuss DICOM RT objects and integration of PET/CT with treatment planning systems.
- Exportation of DICOM RT structure sets and examine contents of image objects
- Present the physics of 4D CT simulation using RPM Gating system. Present the respiratory cycle analysis and review methods for coaching patients on breathing techniques. Present breath-hold versus free-breathing CT simulation methods.
- Utilizing 4D CT review software, discuss respiratory phase analysis; phase specific errors; minimum and maximum intensity projection description and analysis; selection of appropriate respiratory phases for treatment.
- Demonstrate methodologies to transfer CT phases into the treatment planning system including exportation of CT images and structure sets. Differentiate free-breathing tumor volumes versus gated tumor volumes.
- Discuss PET/CT phase specific contouring tools and anatomy; use of 4D PET/CT volumes and treatment margins; 4D PET/CT fused volumes and radiation dose
- Discuss literature supporting PET/CT use for: head and neck cancer; lung cancer; esophagus cancer; breast cancer; lymphomas; colorectal; and gynecologic and other cancers.
- Discuss specificity and sensitivity in staging; use of PET/CT in detecting unknown primaries; use of PET/CT in monitoring response of tumor to radiation and/or chemotherapy; correlation of clinical response and pathologic response.

Tuition:

The tuition for this training is \$3000.00.

Included are course materials, continental breakfast, and lunch both days, dinner on Thursday evening, and continuing education credit (CME Category 1).

Lodging is not included. Information on local options will be provided in the confirmation letter.

- Program sponsors reserve the right to make changes for unforeseen circumstances.

Course Faculty:

In addition to course directors, faculty will include:

Edward Brandner, PhD

Regiane Andrade, MD

Yong Yang, PhD

Dariusz Michalski, PhD

Stacey McKenzie, CNMT, R.T. (N), (CT)

Anthony Conte, R.T. (N)

Jonathon Carney, PhD

(All are affiliated with UPMC/ UPMC Cancer Centers)

Faculty Disclosure

In accordance with Accreditation Council for Continuing Medical Education requirements on disclosure, information about relationships of presenters with commercial interests (if any) will be included in materials distributed at the time of the conference.

Registration Deadline:

- Thirty days prior to course start date.

- Cancellation information will be provided in the confirmation letter.

- Course enrollment is limited, early registration is advised.

Questions?

**UPMC Cancer Centers
Professional Education
Phone: 412-623-3652**

REGISTRATION:

3D and 4D PET/CT for Radiation Oncology

Name: _____

Degree: _____ Specialty: _____

Last 5 digits of Social Security Number

(required for CME credit) _____

Address: _____

Phone: _____

E- Mail: _____

Institution/ Practice Site: _____

**Session: September 11-12, 2008 _____
November 20-21, 2008 _____**

Payment options:

Credit card

Name as appears on card:

MasterCard/ Visa/ Discover/ AmEx (circle one)

Card Number: _____

Exp. Date: _____

- or -

GE Order Number (GON)

GON: _____

Sales Representative:

**Please print clearly and fax registration
form to: UPMC Cancer Centers
Professional Education
Fax: 412-623-3650**



Facilities are handicap accessible. We encourage participation by all individuals. If you have a disability, advance notification of any special needs will help us to better serve you. Please notify us of your needs at least two weeks in advance of the program.