

PMOD Training Workshop

April 28/29, 2006
Heidelberg

Course Aims

The aim of this workshop is to provide the participants with theoretical background and practical skills required for the successful quantitative processing of PET or SPECT data. Emphasis will be given on applicability of the material and on hands-on experiences. The didactic approach is to accompany the lectures by on-line demonstrations using real or simulation data, and to allow time for supervised computer exercises. Each participant has a computer available with all modules of the PMOD software installed, and can work on example PET data as well as on own data brought along. A CD will be provided containing the course material as well as the example data.

Lecturers

The main lecturers are

- Alfred Buck, MD (University Hospital, Zürich, Switzerland)
- Antonia Dimitrakopoulou-Strauss, MD (German Cancer Research Center, Heidelberg, Germany)
- Rob deKemp, PhD (Ottawa Heart Institute, Canada)
- Masanori Ichise, MD (Brigham & Women's, Boston, U.S.A.)
- Ludwig Strauss, MD (German Cancer Research Center, Heidelberg, Germany)
- Cyrill Burger, PhD (PMOD Technologies)
- Krzysztof Mikolajczyk, PhD (PMOD Technologies)
- Valerie Treyer, PhD (PMOD Technologies)

Course Contents

Note: We reserve the right for minor changes of the course contents.

Lectures

The lectures present theory of the following course topics:

- The requirements for successful quantitative imaging (Cyrill Burger).
- The concepts of tracer kinetic modeling with compartment models (Alfred Buck).
- Obviating blood sampling by the use of reference models (Masanori Ichise).
- Quantification of myocardium function with PET tracers (Rob deKemp).
- Kinetic modeling, parametric imaging and image fusion in oncology (Antonia Dimitrakopoulou-Strauss).
- Combined assessment of PET parameters and gene array information (Ludwig Strauss).
- Stereotactic normalization of brain images, and normal databases (Valerie Treyer).
- Visualization by 3D image rendering techniques (Krzysztof Mikolajczyk).

Demonstrations

The demonstrations illustrate concepts covered in the lectures and show how the work is done with the PMOD tools.

- Basic PMOD techniques.
- Kinetic modeling with regional time-activity curves.
- Applying pixel-wise models to image data.
- The calculation of cardiac function within the standard heart segments.
- Image fusion, algebra, and stereotactic normalization.
- 3D image rendering of brain and cardiac data.

Computer Exercises

The exercises allow the course participant to get hands-on experiences with the programs. Real data is provided together with a set of questions which can be worked on under the guidance of several tutors. The participants may focus on topics relevant for their work.

- Kinetic analysis of a brain PET study including blood data, a dynamic PET scan, and a MR anatomy scan.
- Kinetic analysis of a brain PET study using the bolus/infusion paradigm.
- Kinetic analysis of a dynamic cardiac PET study.
- Building a normal database from a set of volunteer scans.
- Comparison of the FDG uptake of a patient with suspected Alzheimer's disease with the standard

- uptake pattern.
- Comparison of the SPECT and PET scans of a cardiac patient.
- Combined 3D rendering of the data from a cardiac perfusion PET and an angio CT.

Course Organization

Schedule

Thursday, April 27	Arrival day
Friday, April 28	09:00 until 18:00: Course 19:00 Invited Dinner
Saturday, April 29	08:30 until 17:00: Course

Registration and Costs

Registration is on a first-come, first-served basis for a maximal number of 16 participants. The workshop cost is

- EUR 500 for early registration until Feb. 28, and
- EUR 700 afterwards,

and includes coffee, two lunches and a dinner. The fee must be paid within 30 days after registration. After that, we reserve the right to offer the place to persons waiting for a vacancy.

Accommodation

The accommodation is not included in the course fee and must be booked by the participant. The recommended hotels are:

- Marriott Heidelberg Hotel, Vangerowstrasse 16
<http://marriott.com/property/propertypage/HDBMC>
- Best Western Rega Hotel, Bergheimerstrasse 63
<http://www.rega.bestwestern.de>

Course Location

The course is held in the German Cancer Research Center (dkfz), Heidelberg, Germany. Computers for the hands-on exercises are provided.

- <http://www.dkfz-heidelberg.de/en/dkfz/anfahrt.html>



Cancellation Policy

The course is cancelled if less than 8 participants are enrolled as of March 31. In this case, the registered participants are notified and receive a full refund.