COLLEGE ON MEDICAL PHYSICS

2 - 27 September 2002

(Miramare - Trieste, Italy)

The Abdus Salam International Centre for Theoretical Physics (ICTP) will conduct a College on Medical Physics from 2 - 27 September 2002. It will be directed by **Anna BENINI** (the Abdus Salam ICTP, Trieste, Italy), **Perry SPRAWLS** (Emory University, Atlanta, U.S.A.) and **Slavik TABAKOV** (Kings College, London, U.K.). **Luciano BERTOCCHI** (University of Trieste & the Abdus Salam ICTP, Trieste, Italy) will act as Local Co-ordinator.

Recent years have witnessed a rapid development and increasing use of medical imaging as a diagnostic tool. Imaging techniques contribute appreciably to the saving of life and alleviation of suffering through effective diagnoses that detect diseases, such as cancer, in the early stages when cure is the most possible. They also help in guiding the treatment and care of most major diseases and injury. Today, the medical profession has a choice from a variety of imaging methods such as: radiography and mammography, fluoroscopy, computed tomography (CT), ultrasound, magnetic resonance imaging (MRI), and imaging procedures using radionuclides including SPECT and PET.

The effective and safe use of these imaging procedures usually requires the professional services of a medical physicist. In the clinical setting, the medical physicist with the appropriate education, training and experience provides the knowledge and leadership to manage the scientific, technical and safety aspects of the hospital and clinical medical imaging operations.

Specific functions of the medical physicist include:

- Analysis of clinical imaging requirements, development of specifications and consultation in the selection of imaging equipment for purchase;
- Imaging facility planning, design and development;
- Evaluation and acceptance of newly installed equipment;
- Equipment performance evaluation and maintenance recommendations in the context of quality assurance programmes;
- Contribute to the optimum equipment performance and image quality through consultation and collaboration with other members of the clinical staff;
- Provide education and training for members of the clinical staff (physicians, radiographers, technologists, etc) on the principles of the imaging methods and optimization of imaging procedures;
- Manage patient radiation exposure and dose in relationship to image quality requirements;
- Manage radiation and magnetic field (MRI) safety programmes for clinical facilities;
- Research and development leading to increased utilization and performance of medical imaging as a method for more effective diagnosis in the developing countries.

OBJECTIVE OF THE COLLEGE ON MEDICAL PHYSICS

The objective of the College on Medical Physics is to contribute to the development of competent medical physicists who can make direct contributions to the improvement of health care in their countries through better medical imaging diagnosis and who can lead in the proper and safe applications of radiation for diagnostic imaging purposes. Participation in the four-week programme will provide knowledge and resources enhancing the performance of each of the functions listed above.

PARTICIPATION

Scientists and advanced students from all countries that are members of the UN, UNESCO or IAEA can attend the College on Medical Physics. Participants should hold a university degree in physics, engineering, medical physics or related subjects and have several years of professional experience related to medical physics and/or clinical medical imaging. They are expected to apply acquired knowledge through teaching and working to improve medical imaging in their home countries. The main purpose of the Centre is to help experienced scientists from developing countries through a programme of training activities within a framework of international cooperation. However, students and post-doctoral scientists from developed countries are also welcome to attend. As this activity will be conducted in English, participants should have an adequate working knowledge of that language.

As a rule, travel and subsistence expenses of the participants should be borne by the home institutions. However, limited funds are available for some scientists from developing countries, to be selected by the Organizers. As scarcity of funds allows travel to be granted only in a few exceptional cases, every effort should be made by candidates to secure support for their fare (or at least half-fare) from their home country. It is stressed that participants whose travel expenses are paid by the ICTP are required to attend the entire four-week College. For logistics reasons, the total number of participants is limited. There is no registration fee for this activity.

The closing date for requesting participation is **15 APRIL 2002.** The request for participation form, to be found at the back of the Bulletin (also obtainable via e-mail: smr1424@ictp.trieste.it and by typing on the subject line "get announcement", or via WWW Server: http://www.ictp.trieste.it/), should be completed, signed and sent to:

the Abdus Salam ICTP
(SMR.1424)
Strada Costiera 11
I-34014 Trieste, Italy

The decision of the Organizers will be communicated to all candidates as soon as possible.
If sending your applications by e-mail, please save and send file attachments in RFT format.

Telephone: +39 040 2240346
Telefax: +39 040 2240585
E-mail: smr1424@ictp.trieste.it
www.server: http://www.ictp.trieste.it/

Trieste, November 2001

The Programme of the College will consist of lectures and practical experience on the imaging modalities of:

- ***Radiography***
- ***Mammography***
- ***Fluoroscopy***
- ***Computed Tomography***
- ***Magnetic Resonance Imaging***
- ***Radionuclide Imaging***
- ***Ultrasound***

For each of these modalities, there will be instructions on:

- ***Characteristics of images***
- ***Physics of image formation***
- ***Imaging equipment and technology***
- ***Evaluation of image quality and equipment performance***
- ***Optimization of imaging procedures***
- ***Radiation exposure and dose management***

DEADLINE:

15 APRIL 2002