

THE ICTP COLLEGE ON MEDICAL PHYSICS 2022 WITH A FOCUS ON BUILDING CAPACITY IN DEVELOPING COUNTRIES

Slavik Tabakov^{1,2,3}

¹ King's College London, UK, ² Past President IOMP, ³Coordinating Director of ICTP College on Medical Physics, Trieste, Italy

Abstract: The paper gives a brief description of the organization and delivery of the ICTP International College on Medical Physics 2022 – focused towards supporting the professional growth in the Low-and-Middle Income (LMI) countries. Some statistics of the feedback is presented plus the success of the College focus on building capacity in developing countries and introducing elements of management and leadership in the curriculum.

Keywords – *ICTP, College on Medical Physics, Education in Medical Physics, e-Learning.*

The College on Medical Physics in ICTP, Trieste, Italy (ICTP – the Abdus Salam International Centre for Theoretical Physics) continued its activity in 2022, after the cancellation of this regular biannual College in 2020 due to the pandemic. As it was not sure that all travel and attendance restrictions would be lifted in 2022, the College was organized very close to its time (5-23 Sep 2022). The College participants attended all lectures together with the students of the MSc on Advanced Medical Physics, organized at ICTP with the University of Trieste. This way the overall 52 students were from 40 LMI countries: Angola, Bahamas, Belarus, Burkina Faso, Cameroon, Colombia, Croatia, Dominican Rep., Ecuador, Egypt, El Salvador, Ethiopia, Ghana, Honduras, Indonesia, Jamaica, Kazakhstan, Latvia, Lesoto, Lybia, Madagascar, Malawi, Mexico, Morocco, Namibia, Nepal, Niger, Nigeria, Oman, Palestine, Peru, Philippines, Rwanda, Sudan, Syria, Tanzania, Togo, Tunisia, Ukraine, Zimbabwe.

The lecturers to the unique College included: S Tabakov, F Milano, P Bregant, M Stoeva, S Tipnis, J Oshinsky, V Tabakova, R Padovani, R Longo, L Bertocchi and online lecturers P Sprawls and A Seibert. Traditionally the course is without fees and the lecturers bring various teaching materials for the students. The students receive a full set of teaching materials, e-books and educational images, later to be used in the educational and professional activities in their countries.

This ICTP College focused on medical physics activities in the field of medical imaging and related radiation safety. Additionally, a number of activities were focused on building capacity in developing countries – management of medical equipment, leadership, organizing of departments,

etc. These activities were found of increased importance by the colleagues in LMI countries, where often the medical physicist does not have the immediate support from a local clinical engineer and has to take decision on various stages of the life of a medical device.

The topics on leadership were distributed in all lectures, based on specific examples from the practice of the lecturers. The topics on management had specific lectures and exercises, but elements of these were also distributed in the various parts of the curriculum. As usual a half day Workshop was organized with all students, aimed at increased international interaction and exchange of experience and ideas. Each participant presented a poster from his/her country, describing the main types of medical imaging and radiotherapy equipment in the country, the available workforce and its organization, the education and training, specific problems and solutions. The best posters and presentations received the College “EMERALD AWARD” – these were from: Rwanda (J A Kamanzi) and the Philippines (J Inamarga and M D Marquez). The Runner-up posters were from Syria (M W Al-Masri), Ecuador (M Subia), Lybia (A M Genaw and R F Almjibari) and Tanzania (M J Kumwenda and J Dachi). The presenters of the posters from Rwanda, the Philippines and Syria were encouraged and guided to prepare a joint paper for the MPI Journal, describing the existing equipment management systems and activities in their countries (see the paper further in the Journal).

Traditionally the College includes visits and practicals at the Trieste Hospital ASUGI. Being the first medical physics educational course, which used e-learning (in 1996), the College includes additional practicals based on simulation sessions in the PC rooms of the ICTP.

As usual, after the College end, Questionnaires were used for collecting feedback from the attendees. About half of the students responded. The overall satisfaction from the College type “Train the Trainer” was 100% and all attendees stated that they shall share the received information with the colleagues in their countries. Also 100% of all stated that after the College they see better their place in the healthcare system in their country (87% of them reported existing good interactions with the medical and hospital staff). This was also supported by a mark of 93% given by the students to the College curriculum.

The usefulness of the e-learning materials and educational websites during the College was marked with 92%. Interestingly 26% of the students stated that they have not used e-learning and online learning during the pandemic. This corresponds with the preference of the type of teaching, expressed by the students: 26% prefer classical teaching; 20% prefer e-learning; 54% prefer blended classical plus e-learning.

The long story of the ICTP College has produced a number of local leaders in medical physics – colleagues who have organized societies, built educational courses, support the healthcare in their country and some of them later participated at international fora and organisations dealing with healthcare in LMI countries. In the Annex 1 to this MPI issue, we have presented the History of this unique College on Medical Physics with photographs from all College and other ICTP activities in the field of medical physics in the past 24 years.

During 2022 IOMP re-accredited the other large medical physics activity, associated with the ICTP – the MSc in Advanced Medical Physics, offered by the ICTP and the Trieste University. Additionally, to its founders, this unique MSc is supported by the IAEA, IOMP and the Italian Association of Medical Physics. The MSc is orientated towards students from LMI countries. Following their academic studies, they have practical training (and MSc project) in one of the Italian Hospitals in the consortium.

The MSc students interact with the College participants and attend most of the College lectures. This further increases the international collaboration between these colleagues. The huge network of College participants and MSc students will soon be officially formed.

The 8th cohort of students from this unique MSc graduated in December 2022. This was followed by Certification exams guided by the IMPCB.

Contacts of the corresponding author:
 Prof. Slavik Tabakov, MPI Co-Editor-in-Chief
 Email: slavik.tabakov@emerald2.co.uk



Fig.1 International College of Medical Physics with the staff and students' Awards, September 2022, ICTP Trieste



Fig.2 Graduation of the MSc in Advance Medical Physics with lecturers and supervisors, December 2022, ICTP Trieste