



International Union of Pure and Applied Physics (IUPAP) Affiliated Commission AC4: Medical Physics

Prof. John Damilakis, Chair

Report on Activities from September 2015 till September 2018

Background

The International Organization for Medical Physics (IOMP) represents over 24,000 medical physicists worldwide and has 86 national member organizations, 1 affiliate and 6 regional organizations. The mission of IOMP is to advance medical physics practice worldwide by disseminating scientific and technical information, fostering the educational and professional development of medical physics and promoting the highest quality medical services for patients.

Medical Physics is a branch of Applied Physics that applies scientific principles, methods and techniques in practice and research for the prevention, diagnosis and treatment of human diseases with the specific goal of improving human health and well-being. The profession Medical Physicist has been recognized by the International Labor Organization (ILO) in 2010 as a professional group listed in the ILO classification system ISCO-08 under '*Physicists and Astronomers*'. To strengthen Medical Physics science within IOMP and to link IOMP to IUPAP the International Commission on Medical Physics (ICoMP) has been established which has been approved as IUPAP Affiliated Commission AC4.

Objectives of AC4:

- (1) to promote medical physics in its scientific and professional aspects in the physics community by interaction with the IUPAP commissions,
- (2) to specifically link to IUPAP commissions
- (3) to apply for support of the ICMP congress series,
- (4) to participate in the IUPAP Young Scientist Award program

Mission of AC 4:

The mission of IOMP is to advance medical physics practice worldwide by disseminating scientific and technical information, fostering the educational and professional development of medical physicists, and promoting the highest quality medical services for patients.

Short Report´

1. International Day of Medical Physics (IDMP):

In 2013 the IOMP declared the 7th November, the birthday of Nobel laureate Marie Sklodowska Curie famous for her pioneering work in radiation physics and chemistry, as the annual International Day of Medical Physics (IDMP). All regional and national organizations worldwide are invited to participate by organizing activities such as

scientific and public lectures, special history events and press appearances. The IDMP 2015 was organized under the theme “Better Medical Physics – better Cancer Care in Radiation Oncology”. The IDMP 2016 was focussing at “Education in Medical Physics: The Key to Success” emphasizing the crucial importance of education and training in Medical Physics for an effective and safe use of ionizing and non-ionizing radiation in health care. In 2017, the International Day of Medical Physics (IDMP) marked the 150th birthday of Maria Sklodowska Curie. Due to this reason IOMP decided to dedicate the IDMP to women. The theme of IDMP 2017 was “Providing a Holistic Approach to Women Patients and Women Staff Safety in Radiation Medicine”. This year (2018) the theme is ‘Medical Physics for Patient Benefit’. IOMP announces all festivities related to IDMP at its specially made web site:// [http www.iomp.org/idmp/](http://www.iomp.org/idmp/) Moreover, the IOMP has established the IDMP Award since 2017. This award recognises excellence in Medical Physics with a particular view of promoting medical physics to a larger audience and highlighting the contributions medical physicists make for patient care. The IDMP Award is linked to the International Day of Medical Physics (IDMP) from which it takes its name.

2. Education and Training of Medical Physicists:

The IOMP Education and Training Committee (ETC) has established the IOMP Accreditation Board to evaluate and accredit Medical Physics education and training events. An accreditation manual has been drafted to define the purpose and structures of the Board, describe main operations and the accreditation processes. A website has been created <http://www.iomp.org/?q=content/accreditation-home> to provide information about accreditation and upload the accreditation manual, application forms and related documents. The IOMP Accreditation Board will accredit medical physics degree programs and education and training events including residencies, conferences, seminars, workshops, CPD courses and other education and training events. Initially its work will be limited to accreditation of postgraduate degree courses and Continuous Professional Development programs. The ‘Master of Advanced Studies in Medical Physics’, International Centre for Theoretical Physics (ICTP) has already received full accreditation. To ensure the quality of procedures, the Board will perform accreditation processes for a selected number of events within the next months.

During the last 3 years, the ETC offered several courses in connection with conferences and represented IOMP in many scientific meetings. A new activity ‘IOMP School’ was launched at the International Conference of Medical Physics in Bangkok (2016) and the 2nd edition was organized at AOCMP-AMPICON in Jaipur (2017). The 3rd edition of the ‘IOMP School’ with more than 20 sessions is organized at the World Congress on Medical Physics and Biomedical Engineering in Prague (2018).

ETC sponsored and/or endorsed several scientific events worldwide during the last 3 years. Specifically, the ETC has sponsored the 14th Mexican Symposium on Medical Physics (Mexico City, March 18-21 2016) organized by the Medical Physics Division of the Mexican Physics Society and the Physics Institute of the National Autonomous University of Mexico, the 3rd International Conference on Medical Physics in Radiation Oncology & Imaging organized by the Bangladesh Medical Physics Society, the 17th Asia Oceania Conference of Medical Physics in conjunction with the 38th Annual Conference of Association of Medical Physicists of India (November 2017, organizers: AFOMP and AMPI) and the XIIth National Medical Physics and

Biomedical Engineering Conference organized by the Bulgarian Society of Biomedical Physics and Engineering, the AAPM/ISEP international course of medical physics in Peru, the AAPM/ISEP workshop in South Africa etc.

3. **IOMP Women Subcommittee**

This subcommittee was established to increase female participation in Medical Physics science, education and practising in a clinical environment. We are facing a general understaffing of Medical Physicists at hospitals and universities, particularly in developing countries, and intend to take proper actions to increase recruitment of females to qualify for that most interesting profession. In this framework, IOMP decided to dedicate to women the 150th birthday of Marie Curie which will be celebrated at the 7th November 2017 as the annual International Day of Medical Physics. The IOMP-Women Subcommittee organized two women symposia at the International Conference of Medical Physics held in Bangkok 9-12 December 2016: “Women in medical physics: education and profession” and “Participation of women in medical physics scientific events”. The workshops were well-attended. During the workshops a number of actions have been initiated for the year 2017. Further activities were organized for the Asia-Oceania Congress in Medical Physics during November 2017 in Jaipur India and during the World Congress in Prague (2018). A special issue on Women Medical Physicists that inspire all women around the world was published on 8th March 2017 (International Women's Day).

4. **International Conference on Medical Physics (ICMP), Bangkok, 9-12 December 2016 and World Congress on Medical Physics and Biomedical Engineering, Prague, 3-8 June 2018**

ICMP 2016 attracted about 800 medical physicists, most of these from Asia. Beyond the wide scale of topics of medical physics science 2 events should be mentioned here. The IOMP Subcommittee organized a session on **Women in Medical Physics**, their role and specific problems. The other event which particularly benefits from the IUPAP Congress Sponsoring Program was the workshop on **Building Professional Capacities in Developing Countries**. Against the current trend of a significant increase of medical physicists in the developed countries the status in LMI-countries is far behind, particularly in Central and South America and in Africa. As an example, currently the African continent with population of 1.1 billion (15.5 % of the people on the planet) has about 400 medical physicists (less than 2% of the global number of medical physicists). These geographical areas need the attention of all in our profession and require proper measures to build up capacities in science, education and clinical service. Furthermore, the John Mallard Award was presented at the 22nd ICMP in Bangkok, Thailand. The winner was Prof. Paul Marsden, one of the pioneers of the PET-MR imaging system.

The World Congress, which is held once every three years, is one of the largest gatherings of medical physicists in the world. It brings together medical physicists, biomedical engineers and other professionals in related fields from all over the world. An excellent scientific programme was planned for World Congress 2018 in Prague with 5 plenary and 33 keynote lectures on topics of general interest of medical physics. The Congress had more than 900 oral presentations and over 800 poster presentations covering 23 topics. The Congress was accredited by the European Board for Accreditation in Medical Physics (EBAMP) as CPD event for Medical Physicists at EQF (European Qualification System) Level 7.

5. IUPAP Congress Sponsoring Program:

The IUPAP funding has been used to organize a series of Conferences and Workshops on Medical Physics in the Developing Countries at the IOMP World Congresses and International Conferences on Medical Physics (Toronto 2015, Bangkok 2016, Prague 2018). An application has been submitted to financially support the next IOMP International Conference in Medical Physics, Santiago, Chile, October 2019).

6. IUPAP Young Scientist Medal 2016:

The winners of the IUPAP award have been G.Massillon, Mexico (2015), F.Hasford, Ghana (2016) and A.Nashirudeen Mumuni , Ghana (2017).

September 2018

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