



International Commission on Medical Physics Committee, IComMP International Union of Pure and Applied Physics (IUPAP) Affiliated Commission AC4: Medical Physics

Fridtjof Nüsslin, Chair

Report on Activities from September 2015 till September 2016

Background

The International Organization for Medical Physics (IOMP) represents over 24,000 medical physicists worldwide and has 84 national member 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 (IComMP) 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 the C6 commission "Biological Physics",
- (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.

Members for the term 2015-2017:

Slavik Tabakov (IOMP President)
Madan Rehani (IOMP Vice President)
Kin Yin Cheung (IOMP Immediate Past President)
Virginia Tsapakh (IOMP Secretary General)
Anchali Krisanachinda (IOMP Treasurer)
Geoffrey Ibbott (IOMP Chair Science Com)
John Damilakis (IOMP Chair Education & Training Com)
Yakov Pipman (IOMP Chair Professional Relations Com)
Tae Suk Suh (IOMP Chair Publication Com)
Simone Kodlulovich Renha. (IOMP Chair Awards & Honors Com)
Fridtjof Nüsslin (Chair IUPAP AC4, Past President IOMP)

Aihua Xie (Chair IUPAP C6 Biological Physics)
Sandro Scandolo (Chair IUPAP C13 Physics for Development)
Hideo Nitta (Chair IUPAP C14 Physics Education)
Ana Maria Marques da Silva (Porto Alegre, Brazil)
Eric KT Addison (Kumasi, Ghana).

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 forthcoming IDMP 2016 will focus 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.

2. **Education and Training of Medical Physicists:**

The Global Task Force on Radiotherapy for Cancer Control (GTFRCC), created by the Union for International Cancer Control (UICC), published last year an essential report showing that addressing the global shortfall in radiotherapy could save millions of lives and, at the same time, boost the economy of poorer countries. The report projects that investing in radiotherapy services could bring up to \$365 billion of economic benefits to low and middle income countries (LMICs) alone over the next 20 years. The detailed calculations in the GTFRCC report quantified the needs in equipment and personnel for 2015-2035. To address just the needs of cancer care in LMICs by 2035, along with 13,000 more teletherapy units, there is a need for 22,000 more Medical Physicists. This means that more than 1,000, newly trained Medical Physicists, are needed each year, for twenty years, in LMICs alone (see References 1, 2). On this background, The IOMP initiated over the recent years a series of activities with special focus on the unsatisfactory situation in developing countries like organizing training courses, building partnerships of institutions in industrial and developing countries, supporting the library program and sponsoring the attendance of conferences by scientists and students. IOMP was also partner in the large International projects EMITEL, which prepared a Dictionary of Terms (now translated into 29 languages), aiming to help the development of the profession in various countries (most of these low-and-middle-income countries). The e-Dictionary plus e-Encyclopaedia of Medical Physics are uploaded at www.emitel2.eu

References:

1. Expanding global access to radiotherapy - Rifat Atun et al,- The Lancet Oncology - Volume 16, No. 10, p1153–1186, September 2015
2. Global Task Force on Radiotherapy for Cancer Control - David Jaffray et al. - The Lancet Oncology - Volume 16, No. 10, p1144–1146, September 2015

3. **IOMP Women 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. Other special workshops on the global situation of women in medical physics will be organized at the next International Conference on Medical Physics at Bangkok this December.

4. **International Conference on Medical Physics (ICMP), Bangkok, 9-12 December 2016, “Medical Physics Propelling Global Health”:**

This major triannual gathering of the medical physics community is in its final phase of preparation (see www.icmp2016.org) . Beyond the wide scale of topics of medical physics

science 2 events should be mentioned here. The IOMP Subcommittee organizes a session on **Women in Medical Physics**, their role and specific problems. The other event which particularly benefits from the IUPAP Congress Sponsoring Program is 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 requires proper measures to build up capacities in science, education and clinical service.

5. Master´s of Advanced Studies in Medical Physics:

In collaboration with the ICTP Trieste the ICTP-International Medical Physics College established a Master´s of Advanced Studies in Medical Physics program. Thanks to the support and direct sponsoring of the IAEA the number of students, all coming from LMICs, has been increased now to 30. IOMP is now completing the procedure for accreditation of this MSc course.

6. IUPAP Young Scientist Medal 2016:

The selection process will be closed in September 2016 and the award will be presented to the winner at the ICMP 2016 in Bangkok.

More details about the activities of IOMP can be found in the recent issue of Medical Physics World (eMPW): <http://www.iomp.org/sites/default/files/empw-2016-01.pdf>

Next meeting: to be announced.

Munich, September 2016

Fridtjof Nüsslin
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Past-President IOMP