



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

Fridtjof Nüsslin, Chair

Short Report on Activities from May-to September 2015

Background

Organizational Structure of AC4

The International Organization for Medical Physics (IOMP) represents over near 20,000 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 Kodlulivich (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. World Congress for Medical Physics & Biomedical Engineering in Toronto:

The triannual WC is the key event of the medical physics and bioengineering community. The WC-2015 has been held in Toronto in 7-12 June. The broad spectrum of 19 scientific program tracks attracted more than 2000 delegates from 86 countries around the world. Important global issues have been discussed, e.g., Global Health, Food and Water Safety, Environmental toxins, Personalized Medicine, Brain-Machine interfaces, Education and Outreach, etc. The strong collaboration with national and international organizations, such as the IAEA and the WHO aiming to improve global

health and safety in medicine became visible in various joint events. As in previous congresses a highlight was again an IUPAP sponsored workshop dedicated to the young medical physicists and bioengineers from the developing countries (sect 2). Embedded in the congress was the traditional awards ceremony where the winners of the IUPAP Young Scientist Medal have been honoured.

2. Workshop “Medical Physics Capacity Building in Developing Countries”:

Since several years the International Organization for Medical Physics (IOMP) organizes at its congresses a workshop dedicated to the specific challenges of the developing countries. At the WC-2015 the focus of this workshop was on the Medical Physics capacity building. The IOMP in cooperation with their Regional Organizations initiated various actions aiming to improve the situation for medical physics in the developing countries, specifically to increase the number of qualified clinical medical physicists in the understaffed regions. Partnering with the IAEA and the WHO provides an excellent platform to promote medical physics in the developing countries to advice in equipment operation and dosimetry, and to implement medical radiation protection standards. Thanks to the congress sponsoring program of IUPAP and the travel grant program of the IOMP, among the about 70 attendees many young scientists from developing countries attended this event. The Workshop in Toronto covered presentations from Brazil, Philippines, Bangladesh, Morocco, Uganda, Nigeria and Ghana. It was very encouraging to see that the majority of the presentors were women. As a result the workshop on medical physics capacity building highlighted again the global problem of lacking qualified medical physicists in radiation medicine, particularly in developing countries. This is an even more serious issue when considering the complexity of modern equipment which on the other side is the condition for the evident achievements in health care, both in diagnosis and radiotherapy. In contrast, examples like the progress in some countries like Ghana demonstrate that concerted actions from national authorities, international organizations and the national medical physics community has power to change the adverse situation in less favorable regions. Follow-up workshops are planned for the period ahead, including the International Conference on Medical Physics in Bangkok (December 2016) and the World Congress on Medical Physics and Biomedical Engineering in Prague (June 2018). (See also the AC4-article in the last IUPAP Newsletter.)

3. IUPAP Young Scientist Award:

The International IOMP Conferences are traditionally the appropriate forum for the presentation of the annual IUPAP Young Scientist Medal. At the WC2015 in Toronto the 2014 and 2015 the IUPAP award has been delivered to

Dr. Jan-Bernd Hövener, Medical Physics, Dept. Radiology, University Medical Center Freiburg, Germany. Dr. Hövener is awarded the IUPAP young scientist medal 2014 for his work on hyperpolarization, a method to increase the power of magnetic resonance (MR) significantly.

Dr. Guerda Massillon-JL, Instituto de Física, UNAM, México:
Dr. Massillon is awarded the IUPAP young scientist medal 2015 for her work on dosimetry in high ionization-density radiation. This has important implications for treatment of cancer patients using modern radiotherapy.

The call for the IUPAP YS Medal 2016 will be sent out by the IOMP Awards Committee shortly.

4. IUPAP Interim WG “Accelerator Science”:

The AC4 was invited to nominate 2 scientists with expertise in the medical application of accelerators (medical imaging, radiation therapy, production of radioisotopes) as members of the new IUPAP Interim WG “Accelerator Science”. The following scientists have been nominated:

Geoffrey S. Ibbott, Ph.D., Professor and Chairman Department of Radiation Physics
UT M. D. Anderson Cancer Center, Houston, USA
and

Michael Moyers, Ph.D., Chairman and Professor of the Department of Medical Physics,
Shanghai Proton and Heavy Ion Center (SPHIC).

5. Business Meeting of the AC4:

A short business meeting of the new AC4 has been held in Toronto, 11th June 2015. The reelected Chair welcomed particularly the new members and gave an introduction on the IUPAP. A brief review of the recent activities of the IUPAP, specifically the last C&CC meeting at Trieste in April 2015 have been presented.

6. Next meeting of the AC4:

During the International Congress for Medical Physics 2016 in Bangkok, 2-5th December.

Munich, 16 September 2015

Fridtjof Nüsslin
Chair IUPAP AC-4
Past-President IOMP