

**International Union of Pure and Applied Physics (IUPAP)  
Affiliated Commission AC-4: Medical Physics  
[International Commission on Medical Physics Committee, IComMP]**

**Fridtjof Nüsslin, Chair**

**Membership of AC-4**

The last meeting of AC-4/IComMP took place at the World Congress 2009, 7-12 September 2009 in Munich, Germany.

Due to the new term of IOMP Officers membership of AC-4/IComMP is expected to be finalized by the end of November 2009. So far the following members have been appointed:

IOMP Officers:

- Fridtjof Nüsslin (President IOMP, IComMP/AC-4 Chair)
- Kin Yin Cheung (Vice-President IOMP)
- Barry Allen (Past-President IOMP)
- Madan Rehani (Secretary General IOMP)
- Slavik Tabakov (Treasurer)

IOMP Committee Chairs

- Maria do Carmo Lopes (Education & Training, ETC)
- Harald Paganetti (Science, SC)
- Raymond Wu (Professional, PRC)
- William Hendee (Publication, PC)

Associate Members from IUPAP Commissions:

- Jose Onuchic (C6, Biological Physics):
- Professor Ahmadou Wague (C13, Physics for Development: Université Cheikh Anta Diop in Dakar, Senegal)
- Jolly Pratibha (C14, Physics Education)

3 external scientists co-opted by IComMP:  
to be nominated

**Background**

The International Organization for Medical Physics (IOMP) represents over 18,000 medical physicists worldwide and has 80 affiliated 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 Affiliated Commission AC-4 which is identical with the International Commission on Medical Physics (IComMP) of IOMP aims to strengthen medical physics science by interacting with the physics community represented in IUPAP.

**Recent Activities**

**IOMP International Conferences on Medical Physics (ICMP)**

Beyond the meetings organized by the Regional Organizations the international showcase of the current status of medical physics is the ICMP. Priorities of these events are demonstrating most recent achievements in research, education & training and professional matters of medical physics. With regard to the situation of medical physics in the developing countries, the lack of appropriate research and training infrastructure and the deficits in health care systems, ICMP addresses particularly problems there. The forthcoming ICMP-2011 will be hosted by the Asociación Latinoamericana de Física Médica (ALFIM) jointly with the Brazilian Association of Medical Physics at the Center of Events of the Pontifical Catholic University of Rio Grande do Sul in Porto Alegre,

Brazil on April 17-20, 2011. Main topics are New Strategies in Radiation Shielding calculations and surveys, Modern Radiotherapy: Risks and Benefits, PET/CT Acceptance Testing and Quality Assurance and Quantitative PET/CT Imaging, Radiation Protection for Interventional Radiology and Cardiology, MDCT Dosimetry and Adapting Traditional Clinical Medical Physics to Digital Radiography.

An involvement of IUPAP is planned (e.g. a symposium jointly organized by AC-4 and C6, workshop on Development & Training Medical Physics in Latin America (involvement of AC-4, C13, C14). IUPAP Vice-President Marcia Barbosa from Porto Alegre will liaise with COC. IUPAP Young Scientists award will delivered at the ICMP-2011). AC-4 will apply for IUPAP sponsoring of travel grants for young scientists.

### **Education and Training**

Due to the IOMP mission a number of activities have been developed to improve education & training of medical physics in developing countries. Priorities are fostering the collaboration with the two major international bodies acting in this field, the World Health Organization (WHO) and the International Atomic Energy Agency (IAEA). Based on the IOMP Policy Statements on The Medical Physicist: Role and Responsibilities (PS-1) and on Basic Requirements for Education and Training of Medical Physicists (PS-2). There is an increasing demand from medical physicists for implementing a certification process to all medical physicists practicing in medical institutions on a global basis. IOMP attempts to harmonize the national systems in medical physics worldwide. Currently standards and procedures for accreditation and professional certification are being developed.

### **Medical Physics in Developing Countries**

Recognizing the understaffing of medical physicists in health care and the lack of appropriately qualified research and teaching personnel in developing countries, IOMP is pursuing the establishment of an E&T network. According to the current IOMP focus areas Africa and Latin-America an action plan is under development initiating at selected reference institutions in those regions E&T centers. The concept is based on a close cooperation of local/regional medical physics groups and physics university departments with the major medical physics stakeholders and support by WHO and IAEA. Priorities are E&T based on international standards, interlinkage with local physics research activities and sustainability.

Since education and research activities ideally have to be combined, IOMP is currently exploring opportunities for establishing research centers on medical physics preferably in developing countries. This concept particularly challenges for cooperation with the physics community represented in IUPAP.

At the annual meeting of the AAPM-2010 in Philadelphia a joint session of IOMP & AAPM on "The situation of Medical Physics in the Developing Countries" has been organised by H.Paganetti (Chair Science committee IOMP, member AC-4). Reports have been given from the perspective of the IAEA demonstrating their wide activities including training material available. Surveys from the IOMP's current focus areas Africa and Latin-America provided insight in the deficits, understaffing and on the other side the great efforts undertaken to bridge the gap to the high-tec countries in clinical practice and research. Several initiatives to improve the situation of medical physics in the developing countries have been discussed.

### **International Conference on Biological Physics**

The Commission C-6 on Biological Physics (Chair José Onuchic) organizes the 7<sup>th</sup> ICBP in San Diego on 19-24 June 2011. (see report C-6). Through AC-4 IOMP has been invited to incorporate a symposium "*Molecular Imaging: Bridging Biology, Physics and Medicine*". R.Hofmann (GFP-Optical Imaging), S.Jiang (MSCT/CB) and myself (Molecular imaging in Cancer treatment) agreed to lecture.

### **EMITEL Project**

The international project EMITEL has developed an Encyclopaedia for Medical Physics with Multilingual Dictionary. IOMP was one of the project partners, the others were King's College

London and King's College Hospital, University of Lund and Lund University Hospital, University of Florence, and the AM Studio, Bulgaria. EMITEL was financially supported by the EU Leonardo programme. Dr. Slavik Tabakov (former Chair of ETC and newly elected Treasurer) is the co-ordinator. The final report has been approved. The EMITEL web site ([www.emitel2.eu](http://www.emitel2.eu)) was officially launched at the opening of WC2009. The encyclopaedia is available free on the Internet and includes a Multilingual Dictionary of Terms, which cross-translates the 3000+ specific terms in any of its 25 languages. See [www.emitdictionary.co.uk](http://www.emitdictionary.co.uk). Each term is explained with an article (in English). Many articles include diagrams, images and tables. The overall volume of EMITEL is 2000+ pages.

### Miscellaneous

- **IUPAP Young Scientist Award:** selection process has not yet started, the presentation of the IUPAP Award is planned for the ICMP-2011 in Brazil).
- **Visa denial:** at the last World Congress-2009 in Munich German authorities denied the delivery of visa to a high ranked scientist from Iran. Follow-up of the issue ended in a disclaimer. With regard to this case AC-4 encouraged IUPAP to consider establishing a registry to collect similar cases reported from all members of the Union.

Munich, October 15, 2010

Fridtjof Nüsslin  
Chair AC-4  
President IComMP  
President IOMP  
Munich, October, 2010