

Medical Physics World

International Organization for Medical Physics

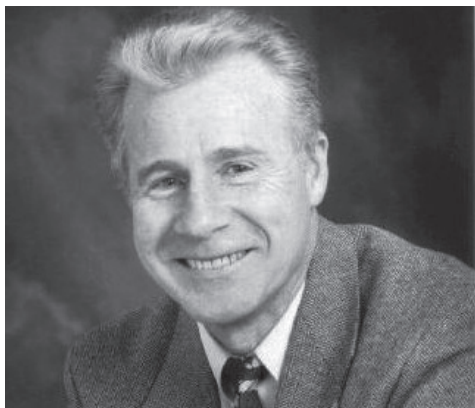


Bulletin of the International Organization for Medical Physics

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Professor Barry J Allen, Ph.D.; DSc; President IOMP

News & Views from the President

Professor Barry J Allen, Ph.D.; DSc; President IOMP

Dear Colleagues,
 Currently I am traveling in the Middle East and Asia, doing what Presidents should do, and that is fly the IOMP flag. The 16th ICMP in Dubai was the first conference to be attended, and will be reported in detail elsewhere in this issue. Clearly, the presidential role was seen to be very important in the opening and closing sessions, and in taking the first concrete steps in forming the Middle-East Federation of Organization in Medical Physics. Delegates were asked to sign Motion of Intent to invite their societies to join MEFOMP. This will be the fifth in the series of regional federations, the others being EFOMP, SEAFOMP, AFOMP and the ALFIM. The next stop was the Asia-Pacific conference on Biomedical Engineering in Beijing. Is there a role for the IOMP in such a conference? Apart from there being a medical physics session, I defy any medical physicist to do his job without a carefully engineered piece of equipment. However, there is much common re-

search ground between medical physics and biomedical engineering, and we have a lot to learn from our colleagues who are setting the pace in the development of new, non-radiative technologies. Apart from participating in the opening session, the occasion also provided an opportunity to discuss WC-2012, to be held in Beijing. My final international conference in this loop is the 6th International Conference on Isotopes in Seoul, Korea. Again, a role in the opening ceremony, and as is Dubai, an invited paper on my favorite topic of systemic cancer therapy with alpha emitting radioisotopes. Please do not see this as pushing my own barrow, but in Dubai there was only one systemic cancer therapy paper (mine) among a host of external beam radiotherapy papers. Given that very few cancer patients succumb to their primary tumor, an important exception being glioblastoma multiforme, the critical issue is the control of systemic disease. This field presents many opportunities for physics-related medical research.

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Secretary-General's Report

Peter H S Smith, B.A., Ph.D., FIPEM; Secretary General, IOMP

A highlight of the IOMP's calendar was the recent IOMP international conference on medical physics held in Dubai in April and hosted by the Emirates Medical Physics Society and the Dubai Health Authority – see separate report for further details. It was also an opportunity for the Executive to meet and supplement the normal 'virtual meetings' with face-to-face contact. I will shortly be sending out invitations to national and regional organisations to bid for the 18th ICMP to be held in 2010 and 2011, approximately half way between the World Congresses in Munich (2009 – see separate article) and Beijing (2012). The idea of these international conferences is to focus on the requirements of a region and the criteria are flexible: for example, the meeting in Dubai had a very strong educational component. The Dubai meeting also provided the opportunity for a number of medical physicists from countries in the region to meet to discuss the formation of a Middle East group and to plan the way forward.

Members will recall that Prof. Azam Niroomand-Rad had to resign as an Officer of IOMP due to ill health. We are delighted that she is now much better and she has offered to take up her duties as Immediate Past President. Council have recently voted to enable her to do so. Dr. Slavik Tabakov has unfortunately had to resign due to other commitments as Chair of the Awards and Honors Committee and Dr. Don Frey has been appointed as Chair. Prof. Fridtjof Nüsslin has taken over as Chair of the International Commission for Medical Physics – which links IOMP to the International Union of Pure and Applied Physics (IUPAP) – from the President.

The Jordanian national society, which has been inactive for a number of years, has been replaced by the Jordanian Association for Physicists in Medicine (JAPM) and adherence to IOMP was recently approved by ExCom (to be ratified by Council). We welcome this new national society and wish it success.

At the last Council meeting, Council approved the formation of a Working Group to prepare an IOMP policy document on *"The Medical Physicist: Role, Education and Training"*. Dr Kin Yin Cheung, chair of the Professional Relations Committee, has kindly agreed to chair the Group and it is planned to have their report ready for discussion at the Council meeting in Munich.

The Irish Radiotherapy Physics Group (IRPG) has kindly donated 7,500 Euros to IOMP to help physicists from developing countries. After some discussion, IRPG requested the funds be used to enable awards to be made to enable medical physicists from developing countries to attend an ESTRO course on treatment planning held in Dublin in April 2008. Forty applicants were received and three selected, one each from Nepal, Bangladesh and Ghana. Unfortunately, visa applications were refused for the two awardees from Bangladesh and Nepal and time ran out for appeals. It is hoped that they will be able to attend another appropriate course later in the year or early in 2009.

Information on Council and ExCom meetings are on the IOMP website: www.iomp.org ●

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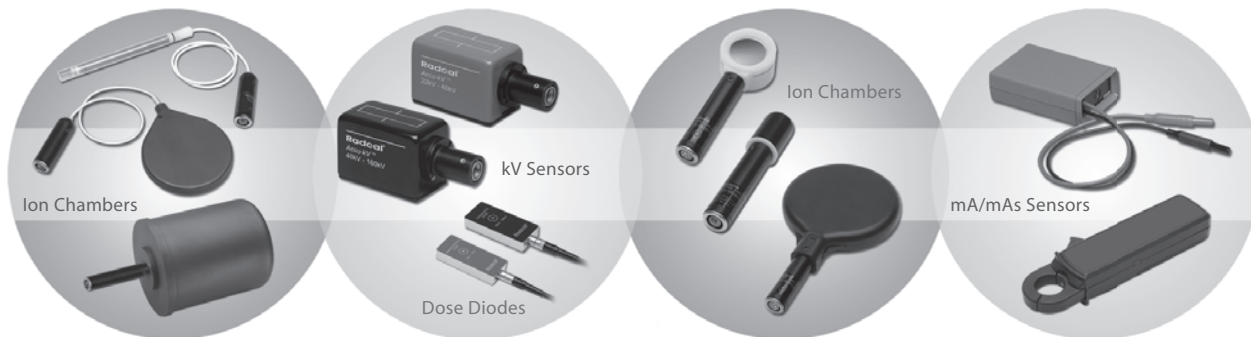
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VICE PRESIDENT'S STATUS REPORT

WORLD CONGRESS ON MEDICAL PHYSICS AND BIOMEDICAL ENGINEERING, MUNICH, GERMANY, SEPTEMBER 7 – 12, 2009

— by: Fridtjof Nuesslin, Ph.D., Vice-President - IOMP

After Hamburg in 1982 the World Congress on Medical Physics and Biomedical Engineering will take place in Germany for the second time. Following Seoul in 2006, Sydney in 2003, and Chicago in 2000, Munich offers in 2009 a fascinating mix of history, innovation, culture and recreation. With a population of over 1.3 million, the city combines delightful traditions with a dynamic and cosmopolitan flair, world-class cultural life, over 4,000 high-tech companies, and the unmatched attraction of nearby lakes, castles, villages and the Alps.

In accordance with IUPESM and its constituting organizations IOMP and IFMBE the mission defined by the hosting societies is to establish the congress as:

- the most important inter- and multidisciplinary platform bringing together people from basic research, R&D, industry and medical applications
- an unique event to experience the presence and the future of Medical Physics, Bio-medical Physics, Clinical Physics, Biomedical Engineering, Clinical Engineering, Bioengineering, Medical Information- and Communication Technique
- the powerful forum to discuss patient safety, systems and process optimization in healthcare
- a unique “selling/presentation point” of intellectual potential through a recruitment area and a job fair

With respect to the actual situation on Medical Physics and Biomedical Engineering in Germany and Europe the organizers expect more than 4,000 visitors to attend.

The program of the congress is structured in 13 Themes each split into several Tracks (Fig.1).

In addition special topics and workshops will be organized in order to build up bridges between themes and to add comprehensive aspects to the matrix structure. Examples are sessions on Linking Proteomics and Genomics with Biomedical Engineering and Medical Physics, Linking Physiome with Patient Needs, Bridging Fundamental Research with Medical Technology, Medical Engineering and Medical Physics in case of Catastrophes, Patient Safety and Process Optimization.

The details of the scientific program are to be developed by the Congress Scientific Committee).

The 1st Call for Papers will be published in May 2008. A 2nd Call for

Papers will follow in November 2008. During the period of time from April to November 2008 the Scientific Committee will work on the programme and its structure. In November the final set of congress themes will be used for the 2nd Call for Papers in order to stimulate the authors to send in their abstracts.

All members of IOMP and the national organizations for medical physics may interact with the organizing committees responsible for the program via the Congress Coordinating Committee (Chair: Barry Allen/IOMP), the Congress Coordinating Committee (Chairs: Wolfgang Schlegel and Olaf Doessel), the Scientific Committee (Chair: Cari Borrás / IOMP-Chair Science Committee, or the IOMP Liaison person (Fridtjof Nuesslin). Any comments and recommendations are very much appreciated at any time. ●

07.09.2009	08.09.2009	09.09.2009	10.09.2009	11.09.2009
Neurology, Neurosurgery, Rehab	Cardiology, Cardiovascular Diseases	Radiology & Nuclear Medicine	Oncology	Surgery & Intervention
1. Radiation Oncology				
2. Diagnostic Imaging				
3. Radiation Protection and Dosimetry, Biological Effects of Radiation				
4. Image Processing, Biological Processing, Modelling & Simulation				
5. Information & Communication in Medicine, Telemedicine & e-Health				
6. Surgery, Min Invasive Interventions, Endoscopy & Image Guided Therapy				
7. Diagnostic & Therapeutic Information, Clinical Engineering				
8. Micro & Nano Systems in Medicine, Active Implants, Biosensors				
9. Neuroengineering, Neural Systems, Rehabilitation & Prosthetics				
10. Biomaterials, Cellular & Tissue Engineering, Artificial Organs				
11. Biomedical Engineering, for Audiology, Ophthalmology, Emergency & Dental Medicine				
12. General Subjects				
13. Special Topics & Workshops				

Figure 1: The program structure of the WC-2009.

REPORT ON THE AAPM/IOMP INTERNATIONAL SCIENTIFIC EXCHANGE PROGRAM (ISEP):

Diagnostic and Therapeutic Physics-Current Practice, Recent and Future Advances Manama, Kingdom of Bahrain, November 18-22, 2007

— by: Muthana Al-Ghazi, Ph.D., University of California, Irvine

The AAPM/IOMP one week course/workshop on Diagnostic and Therapeutic Physics was held successfully in the city of Manama, the capital of the Kingdom of Bahrain November 18-22, 2007. The venue was the Gulf Hotel. The course/workshop was sponsored by the AAPM ISEP and endorsed by the Education and Training Committee (ETC) of the IOMP. Local sponsorship was provided by The Bahrain Ministry of Health, Bahrain Defence Forces Hospital and The University of Bahrain. Local vendors and organizations also contributed to the sponsorship of this activity.

The objectives of this course were to discuss the fundamentals of diagnostic and therapeutic physics as it applies to the practice of medicine,

to present current state-of-the-art technology and their medical applications and future trends. There were over 100 attendees from 12 countries in the region (Cyprus, Iran, Iraq, Jordan, Kuwait, Lebanon, Saudi Arabia, Sudan, Turkey, United Arab Emirates, Yemen and the host country Bahrain). Attendees from Iraq, Jordan, Lebanon, Sudan and Yemen were sponsored by our hosts. Honorary guests were also invited from Kuwait, Saudi Arabia and United Arab Emirates. The attendees were split approximately evenly between locals and those from the neighbouring countries alluded to above. It should be noted that this is only the second time that an ISEP course has been offered in the region in the past decade.

Dr. Najeeb Jamsheer, a Consultant Radiologist and Advisor to the Bahrain Minister of Health was Chair of the Local Arrangements Committee (LAC), while Mr. Adel Mohammed, Chief Physicist at the Salmaniya Medical Complex was the Host Director. AAPM faculty was Drs. Robert Gould (U. of California, San Francisco, UCSF), Faiz Khan (U. Minnesota), Adel Mustafa (New York Medical College, NYMC), Jatinder Palta (U. Florida), Michael Yester (U. Alabama) and the author of this report. A novel innovation introduced in this course was to invite participation of local faculty to emphasize the exchange nature of ISEP programs. Local faculty was Dr. Hakima

EXCHANGE PROGRAM

(Continued on page 15)

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A MESSAGE FROM THE IOMP PUBLICATIONS COMMITTEE

— By: William Hendee, Ph.D., Chair of IOMP Publications Committee

Several months ago IOMP President Barry Allen asked me to write a Bill of Rights for Scientists and Engineers. His request reflected concerns about the intrusion of political, cultural and religious pressures upon the research of scientists and engineers, and upon the dissemination of the results of research to the public at large. The Bill of Rights reproduced below is in response to the President's request, and has been

approved by the IOMP's Council. The Bill of Rights has been sent to the International Federation of Medical and Biological Engineering for its consideration, and will ultimately be submitted to the International Union for Physical and Engineering Sciences in Medicine.

A few months ago the Publications Committee approved an editorial on A Concern About Plagiarism that

has subsequently been published in many of the world's medical physics journals. We intend to propose to the Publications Committee that an editorial in which the Bill of Rights is embedded be considered for publication in medical physics journals. The Publications Committee is composed of the editors of most of the world's medical physics journals, so a proposal to the Publications Committee is in effect a proposal to the editors.

Bill of Rights For Scientists and Engineers

Preamble

A scientist or engineer (S/E) uses understanding, insight and ingenuity to discover new knowledge and to create new technologies that benefit individuals and societies. In pursuing these goals, a S/E must be free to theorize and experiment unimpeded by political pressures, religious dogma or fear of reprisal. Preservation of this freedom is the purpose of the Bill of Rights for Scientists and Engineers. The Bill of Rights is consistent with the Statement on the Universality of Science of the International Council for Science (ICSU).

Articles

1. A S/E is an individual who uses a scientific approach in the pursuit of new knowledge and technologies. A S/E is not required to possess any specific credential such as an academic degree, appointment in an institution, funding by an agency, or membership in an organization.
2. Science and engineering may be

practiced in any location; they are not confined to academic institutions, government facilities, or industrial settings. An individual using a scientific approach in a home laboratory is pursuing science or engineering just as is a S/E employed by an institution, industry or government agency. No prejudice towards the work of a S/E shall be exercised based on an individual's affiliation or lack thereof with a particular institution, organization or agency.

3. A S/E shall not be dissuaded from pursuing scientific inquiry because of political or religious concerns, or because the inquiry deviates from a conventional perspective.
4. A S/E shall be able to use any approach to new knowledge and technologies, limited only by the restrictions that the approach follows sound scientific principles and does not violate societal ethical precepts.
5. A S/E shall be free to collaborate with other individuals in the same or other locations, with the understanding that collaboration may require covenants protecting

confidentiality and intellectual property.

6. A S/E shall not be subject to restraints in the presentation and publication of results that are imposed by political or religious entities or because the findings conflict with traditional knowledge. Scientific and engineering results should always be evaluated on their merits and not because of preconceived notions of "truth".
7. A S/E shall decide who should coauthor scientific publications based on well-established guidelines for co-authorship. Courtesy authorship to senior personnel in a S/E's laboratory or institution is unacceptable.
8. A S/E shall strive to ensure that scientific results are widely accessible to the scientific community.
9. A S/E should object to misuse of research findings for political, ideological or financial purposes.
10. At all times a S/E shall adhere to universal ethical and moral standards. ●



A Mathmagical Correction For Radiochromic Film



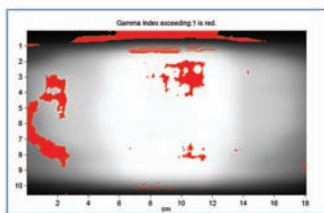
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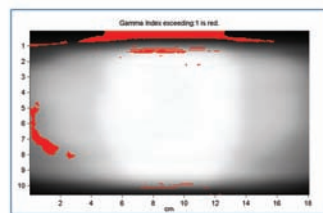
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Gamma Tolerance Before RIT Correction



Gamma Tolerance After RIT Correction



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**Harrison C., et al., "Comparison of Radiographic Film, Radiochromic Film and CR Plates for Intensity Modulated Radiation Therapy Quality Assurance.", AAPM 2007 Poster SU-FF-T-125



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AN EDITORIAL ON PLAGIARISM

— by: William R. Hendee, Ph.D.; Chair, IOMP Publications Committee

All scientific journals, including this journal, are concerned about plagiarism. The Publications Committee of the International Organization of Medical Physics (IOMP) has prepared an editorial on plagiarism. The editorial is reproduced here (with permission of the IOMP) with slight modifications to enhance its relevance to the audience of this journal.

Plagiarism (from the Latin “*plagiare*”, “to kidnap”) is defined as “the appropriation or imitation of the language, ideas, and thoughts of another author, and representation of them as one’s original work.” (The Random House Dictionary of the English Language – unabridged). Plagiarism is a serious breach of research ethics that, if committed intentionally, is considered research misconduct. Plagiarism may result in serious sanctions including public disclosure, loss of research funding, loss of professional stature, and termination of employment. Plagiarism undermines the authenticity of research manuscripts and the journals in which they are published, and compromises the integrity of the scientific process and the public regard for science. Plagiarism violates the literary rights of the individuals who are plagiarized, and the property rights of copyright holders. Violation of these rights may result in legal action against the individual(s) committing plagiarism. Although plagiarism has been present since the beginning of science, it seems to be increasing because the World Wide Web (Internet) facilitates finding and copying the work of others.

It is possible to plagiarize not only the work of others, but also one’s own work through reuse of identical or nearly identical portions of manu-

scripts without acknowledgement and without citation. Simultaneous or subsequent submission of similar manuscripts with only minor differences and without citation between the manuscripts is, unfortunately, a rather common practice by authors hoping to acquire multiple publications from a research project. Scientific journals discourage this practice and usually will not permit it if the facts become known before publication. Occasionally the same (or very similar) article will be published in two journals, because the journals reach different audiences and both would be interested in the article. This practice must be approved by the editors of both journals, and the duplication must be acknowledged in each article.

When the possibility of plagiarism exists (often through an allegation of plagiarism by the original author, a reviewer, or an interested third party), the journal’s editor should act quickly. The editor should examine the original material and the publication alleged to constitute plagiarism. If the editor concludes that no plagiarism has occurred, the accuser should be notified and no further action is necessary. If the evidence suggests that plagiarism may have occurred, the editor should contact the accused author(s), the author(s) whose work may have been plagiarized, and the copyright holder of the original material if different from the author(s). The correspondence should include the alleged plagiarizing language and a copy of the original and suspected work. If all parties agree that plagiarism (whether intentional or unintentional) has occurred, a written letter of apology should be sent promptly by the offending author(s) to the editor and to the author(s)

and copyright holder whose work has been plagiarized. If the offending work has been published, a notice of plagiarism, citing both the plagiarized and the offending articles and containing the exact text that has been plagiarized, shall be published in the next available article of the journal in which the offending article was published. The plagiarizing authors shall agree that all dissemination of the offending article shall be accompanied by the notice of plagiarism.

If the accused author(s) deny that plagiarism has occurred, the editor must explore the accusation further, preferably through a mechanism already established by the journal to investigate allegations of scientific misconduct. All parties to the allegation should be encouraged to submit corroborating evidence, and the accused author(s) should be granted an opportunity (at no expense to the journal) to testify in person in defense against the allegation. The investigation should be concluded within a reasonable period of time (e.g. 3 months).

If the mechanism to investigate the allegation of plagiarism concludes in support of the allegation, then the process for the case where plagiarism is admitted shall be instituted. Further, the editor shall decide whether the plagiarism should be reported to the guilty parties’ supervisor, employer, and/or professional organization. If the mechanism rules against the accusation of plagiarism, a letter stating this ruling shall be provided to the accuser, the author(s) accused of plagiarism, the author(s) of the original work, and the copyright holder if different from the author(s). In either case, these actions should

PLAGIARISM (continued on page 17)

Report Of The Education And Training Committee (ETC)

— by Anchali Krisanachinda, Ph.D. ETC Chair

1. The Education and Training Committee had considered and approved the following activities during the mentioned period:

- 1.1 The Sixth South-East Asian Congress on Medical Physics (SEACOMP), The Eighth Asia Oceania Congress on Medical Physics(AOCMP), 30-31 October 2008, Ho Chi Minh City, Vietnam (www.choray.org.vn/8AOCMP)
- 1.2 ICMP-08, April 14-16, 2008, Dubai UAE. Contact Person is Jamila Salem Al Jawaidi, Ph.D.
- 1.3 The Fifth South-East Asian Congress for Medical Physics (SEACOMP), Nov 21-23, 2007, Manila, Philippines, IOMP Support US \$ 2,000. Contact Person is Agnette Peralta. (www.bijj.org//biomedical-imaging-intervention-journal-resources.asp#2007-seacomp)
- 1.4 Therapeutic and Diagnostic Physics: Current Practice, Recent and Future Advances, Nov 18-22, 2007, Manama, Bahrain, IOMP Co-Sponsor. Contact Person is Muthana Al- Ghazi, Ph.D.
- 1.5 The Seventh Asia Oceania Congress of Medical Physics (AOCMP), August 23-27 2007, Huangshan, China, IOMP Support US \$ 3,000. Contact Person is Hu Yi Min, Ph.D.(www.afomp.org)
- 1.6 The Third Beijing International Conference on Physics and Engineering of Medical Imaging, June 23-27 2007, Peking University, China. IOMP Support US 2,000. Contact Person is Shanglian Bao, Ph.D.

2. IAEA RCA Project on “Strengthening of Medical Physics through Education and Training”. In Asia and Pacific Region, IAEA supports the “Competency Training Programme for Radiation Oncology for Medical Physicist (ROMP)” which the IAEA/RAS 6038 ‘**Regional Meeting for National Trainers to Initiate Trialing of the Programme for Radiotherapy Specialty**’ was held in Bangkok Thailand on 25-26 June 2007. There were 38 participants from 15 countries in Asia and Pacific region. The clinical training programme is a two year programme which the Agency provides:

1. Administrator Guide
2. Clinical Training Guide
3. Competency Assessment Report
4. Handbook for Clinical Supervisors
5. Implementation Guide
6. Resident Handbook

The Clinical Training Guide consists of 8 Modules.

- Module 1. Clinical Introduction
- Module 2. Radiation Safety and Protection
- Module 3. Radiation Dosimetry for External beam Therapy
- Module 4. Radiation Therapy – External Beam
- Module 5. External Beam Treatment Planning
- Module 6. Brachytherapy
- Module 7. Professional Studies and Quality Management
- Module 8. Research, development and teaching

Thailand was selected as a pilot country for this clinical training with 12 residents from 5 training centers. The programme starts in August 2007 and hopefully completed in July 2009. IAEA will continue the education and training for medical physicists in diagnostic imaging in the next phase.

3. AFOMP Symposium on Education and Training for Medical Physicists was organized on Friday 24 August 2007 at Huangshan Convention Center, Huizhou Hall. The symposium was chaired by AFOMP President: Professor Kiyonari Inamura and Co-Chair by AFOMP ETC Dr.K.Y.Cheung. The symposium programme was:

1. Problems in Education and Training of Medical Physicists in the Asia-Oceania Region – Kiyonari Inamura
2. Education and Training of Medical Physics in Latin America – Jose Carlos da Cruz
3. Education and Training of Medical Physics in Thailand – Anchali Krisanachinda
4. Using the Internet for Real-Time Interactive Academic Exchange/Distance Teaching in Medical Physics – Milton Wu
5. Education and Training of Medical Physics in China – Hu Yi Min

There were about 200 participants at the Asia Oceania Congress of Medical Physics. ●

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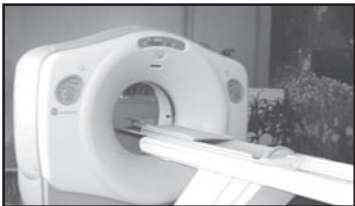
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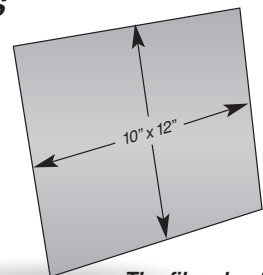
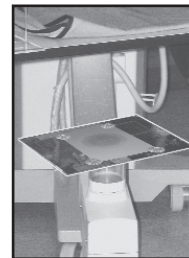


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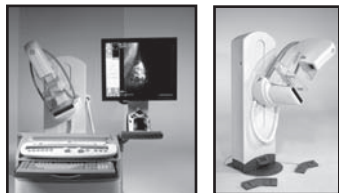
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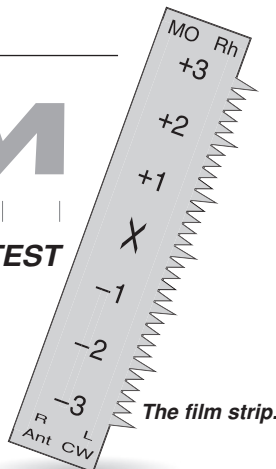
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IOMP represented in a meeting of the BIPM

— Hans Svensson, Ph.D., & Cari Borrás D.Sc., IOMP Science Committee Chair

Background

The BIPM (Bureau International des Poids et Mesures) is responsible for international reference standards in different fields. In external- beam dosimetry (γ and X-rays, electrons, charged particles), a consultative committee CCRI(1), is meeting once every other year at the BIPM to discuss primary dosimetry standards. CCRI(2), and CCRI(3) are handling the measurement of radionuclides and neutrons respectively. In May 2007, IOMP was represented in CCRI(1). This committee is of great importance for medical physicists as we are end- users of the *International Measuring System*, see Figure 1.

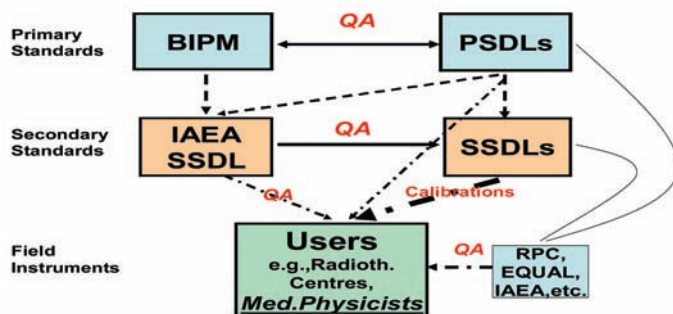


Fig.1. The International Measuring System. Primary Standards Dosimetry Laboratories (PSDLs) are comparing their standards with those of BIPM . In this way a 'safe' and stable international reference standard is established. This standard is then transferred to the users (hospitals) often through Secondary Standards Dosimetry Laboratories (SSDLs). Hospital Dosimetry Quality Audits in many countries are conducted by a special centre, e.g. through RPC in U.S., EQUAL in Europe, and IAEA in some countries. (Figure from the IOMP- observer presentation)

The BIPM has its 50-years anniversary in 2-years time during the next CCRI-meeting. The organization has been a pre-requisite for a safe and accurate radiation dosimetry in the world which is a necessity, e.g. in comparing radiotherapy results.

The CCRI(1) meeting 14-16 May 07

General. The CCRI(1) was attended by delegates from 13 labs and official observers from 2 labs. Also representatives from the ICRU, IAEA, and IOMP (H.S.) participated. The meeting was very effectively conducted by its Chairman P. Sharpe (NPL) and Executive Sec. P. Allisy-Roberts (BIPM). The participants of CCRI(1) are shown in



Participants in CCRI (1) in front of the conference building at the BIPM. In the front row you can see: K.J.Chun, Rep.of Korea; S.A. Fedina, Russian Fed; C.Kessler, BIPM; P.Allisy-Roberts (Executive Sec),BIPM; P. Sharpe (Chairman) NPL; G.Mascati (President of the CCRI); E van Dijk, The Netherlands; H. Svensson, IOMP; K. Shortt, IAEA; M.Seltzer, ICRU.

Figure 2. As much as 54 documents with in total several hundred pages were made available before the meeting. Developments of methods for absolute measurements of absorbed dose and air-kerma were reported as well as inter-comparisons between BIPM and PSDLs using different beam qualities. Future planning was discussed.

From the medical physicists' view. As end-users of the measurement system it must be possible to compare results in radiation therapy between different centers in the world during different time periods. A reliable and stable standard is required. The results from inter-comparisons showed that we have this type of system at least regarding standards for air-kerma and absorbed dose for low- and medium energy x-rays, ^{137}Cs - and ^{60}Co - γ . Deviations to the mean values were for most comparisons within a few tenths of one percent. The extreme deviation between 2 labs for absorbed dose to water using ^{60}Co - γ was 1.3%, which is a somewhat high value also for practical purpose in a radiotherapy department as additional deviations might be introduced e.g. from the use of different national dosimetry protocols.

We (H.S.&C.B.) showed that the postal-TLDs comparisons during a period of 11 years between IAEA (the World), RPC (U.S.), EQUAL (Europe) and one PSDL (France) closely agreed within part of one percent for absorbed dose to water for ^{60}Co - γ . Similar comparisons have been made between the RPC and the EQUAL for 6-25 MV x-Rays with similar good results. This is encour-

SCIENTIFIC COMMITTEE (Continued on next page)

APRIL 2008

Status of IOMP/AAPM Libraries –

— Allan Wilkinson, Ph.D., IOMP Curator of Libraries; wilkina@ccf.org

The IOMP/AAPM library program currently serves 42 developing nations through the maintenance of 75 active libraries. There have been no new libraries established in the past year. All active libraries receive a free copy of the SRP quarterly journals. For 2008, 39 members of the AAPM have donated their subscriptions to Medical Physics to the library program. The journals will be sent to the following countries: Argentina,

Brazil, Brunei Darussalam, Bulgaria, China, Colombia, Costa Rica, Egypt, Hungary, India, Iran, Morocco, Myanmar, Namibia, Nepal, Nigeria, Pakistan, Russian Federation, Sri Lanka, Sudan, Thailand, Turkey, and Ukraine. We have also had private donations of journals and books to libraries in Costa Rica and India.

Following is a list of libraries with which we have had difficulty communicating: Argentina

(Bariloche), Brazil (Sao Paulo), Ecuador (Quito), India (Betul, Bangalore, Srinagar), Pakistan (Lahore), Poland (Poznan), Turkey (Ankara, Istanbul), and Viet Nam (Hanoi). Any information regarding libraries in this list would be much appreciated.

Finally, if you have appropriate textbooks (not just the newest edition), please consider donating them to this program. ●

Scientific Committee

CONTINUED FROM PAGE 12

aging! The medical physicist ought to audit her/his dosimetry. Audit of radiation therapy is indeed regulatory in some countries (e.g. in EU) and should certainly include the dosimetry. It seems that we have a dosimetry system that could be trusted at least for measurement in the reference geometry for the beam qualities reported.

Beam Qualities. Still, the majority of calibrations and inter-comparisons are carried out in the ^{60}Co - γ beam. This is certainly an important reference-beam quality in dosimetry protocols, but ^{60}Co - γ units are often not used in modern radiotherapy centers. Still, the BIPM does not have an accelerator, but hope to get a 25 MV-linac in a few years. Several of the PSDLs had already linacs or had recently bought such units. Protection level and industrial level calibration services are available at some PSDLs. Some PSDLs investigated correction factors for dosimeters to be used with different types of accelerators. For instance, ENEA-INMR (Italy) computed correction factors for

ferrous sulphate dosimetry for different electron beams between 3-24 MeV.

Proton and light-ion therapy are today introduced in many centers. Some PSDLs are now developing methods for dose measurements at these qualities. For instance, the NPL develops a graphite calorimeter for proton dosimetry and investigates together with two Swedish institutes the value of $(W_{\text{air}})_p$.

The organizers had invited G. Caporaso (Lawrence Livermore National Laboratory) to inform on a new type of proton accelerator that would be so compact that a 'one-room unit' could be used in a set-up similar to that of a large medical linac. He stated that the first facility should be ready in four years time and that the same principle could be used for light-ion therapy, e.g. with carbon ions.

Future. The BIPM carries out hard work with a fairly small staff to develop absolute-dosimetry methods. Also a large number of calibrations and comparisons are performed. It is important that a linear accelerator will be available to include photon and

electron beam qualities today in common use in radiotherapy.

S.M. Seltzer (Secretary ICRU) indicated that several reports are on the publication line including recommendations applying modern types of radiation treatments (e.g. Prescribing, Recording and Reporting: a) Conformal Photon Beam Therapy and IMRT, b) Proton Beam Therapy, c) Ion-Beam Radiotherapy).

We (H.S. and C.B.) indicated that it is very important to be prepared for the future to avoid mistakes and accidents as those that took place when electrons and neutrons first were introduced.

Conclusions

- The BIPM has successfully set up an international standard system for measurements of air-kerma and absorbed at some beam qualities. It is very important that this work continues and is extended to beam qualities in common use in radiotherapy today.
- An extensive written documenta-

SCIENTIFIC COMMITTEE

(Continued on page 17)

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POST CONFERENCE REPORT

The 16th IOMP International Conference on Medical Physics (ICMP - 08) “Current and Future Sciences in Radiation Medicine”

— Jamila Salem AlSuwaidi, Ph.D., Chairperson, Emirates Medical Physics Society (EMPS) and ICMP-08 Conference, & Peter HS Smith, Ph.D., Secretary-General, IOMP

This was a very successful and enjoyable conference held at the Dubai International Convention Center, Dubai, UAE over three days in April (14-17), 2008. The congress was the second in the new series of IOMP international conferences held between the World Congresses – the first being held in Nuremberg in 2005.

The ICMP-08 was hosted by the Dubai Health Authority and Emirates Medical Physics Society and organised jointly by these two bodies and the International Organization for Medical Physics (IOMP). The conference theme was “**Current and Future Sciences in Radiation Medicine**”. Other international and regional scientific

and professional organizations that participated in the scientific program were: the European Federation of Organizations for Medical Physics (EFOMP); the International Atomic Energy Agency (IAEA) and the International Commission on Radiation Protection (ICRP).

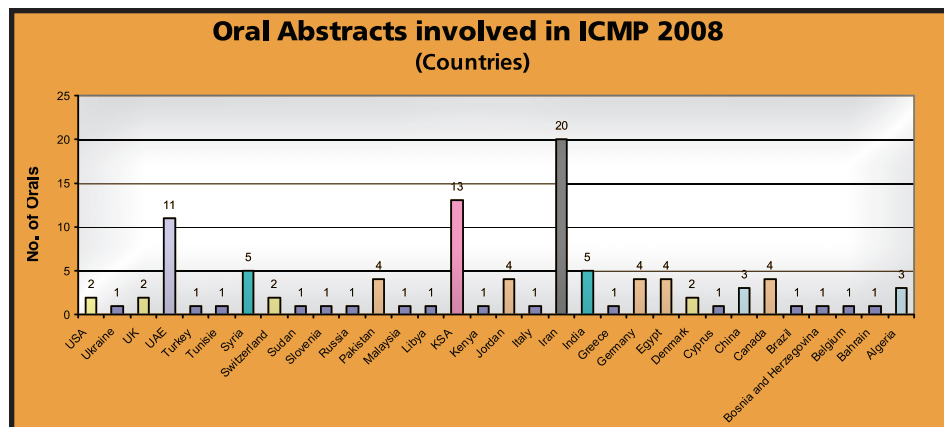
The conference was attended by 407 participants. Grants from the Dubai Department of Health and IOMP allowed 35 participants to attend from developing countries. 271 abstracts were submitted from 50 countries and 265 were accepted (see bar chart). Abstracts considered within the scientific program were 68 Oral Presentations, 34 Interactive Posters

and 60 Posters. There were 5 invited oral presentations in addition to the plenary speakers.

Professor Thomas Mackie from the University of Wisconsin, USA, gave an outstanding Keynote Speech on ‘The Importance of Image Guided Radiotherapy’. There was an excellent IOMP Symposium on ‘New Technologies for Radiation Therapy’ divided into two sessions: ‘The Present and ‘The Future’ with presentations by ten scientists of international standing. A scientific session on the ‘The New ICRP Recommendations’ was organised by ICRP.

Topics covered in lectures, given by invited leading scientists in their specialties, at five plenary sessions were: Diagnostic Radiology, MRI at Ultra High Field, Use of MRI to Exploit the Genetic and Molecular Basis of Breast Cancer, New Horizons in Radiotherapy and Molecular Imaging.

Education formed a major part of the program with 14 sessions (includ-



POST CONFERENCE REPORT

(Continued on page 23)

Exchange Program

CONTINUED FROM PAGE 6

Al-Hashimi, a Consultant Paediatric Radiologist at the Salmaniya Medical Complex and Assistant Professor at the Arabian Gulf University Medical School, Dr. Lama Sakhnini, a Physics Professor at The University of Bahrain and the Host Director, Mr. Adel Mohammed. The presenters' titles are listed in the course website at: <http://www.moh.gov.bh/ISEP/>. The program consisted of 29 lectures on various

aspects of the applications of physics in medicine, and three workshops (one each on diagnostic, therapy and nuclear medicine). Participants filled out a course evaluation form which is being analyzed at the time of writing this article. The results from course evaluations will be reported to the appropriate AAPM committees but the overall picture is a positive one and it appears that the course achieved its objectives.

Twenty-one copies the textbook,

“The Physics of Radiation Therapy” were distributed amongst attendees courtesy of the publisher, Lippincott Williams and Wilkins and the author, Dr. Faiz Khan, who was on hand to personally autograph each copy. The distribution of copies of the book insured that all countries represented at the course obtained an equal number of copies to the extent possible. The lectures were held at the Gulf Hotel

EXCHANGE PROGRAM

(Continued on page 23)

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AWARDS

2007 IUPAP Young Scientist Prize In Biological Physics

Congratulations to **Dr. Habib Zaidi**, Ph.D., the recipient of the prestigious 2007 Young Scientist Prize in Biological Physics given by the International Union of Pure and Applied Physics (IUPAP) for “*outstanding accomplishments in the application of biological physics to the field of medical imaging*”. The prize was awarded at the 6th International Conference on Biological Physics to be held in Montevideo, Uruguay in August 2007.

Dr. Zaidi is senior physicist and head of the PET Instrumentation & Neuroimaging Laboratory at Geneva University Hospital and senior faculty member of the medi-

cal school at Geneva University.

The IUPAP Young Scientist Prize is one of many received by Dr Zaidi in his multifaceted scientific career. His research efforts have been also recognized by the 2003 Young Investigator Medical Imaging Science Award given by the Nuclear Medical Imaging and Sciences Technical Committee of the IEEE society and the 2004 Tetelman Memorial Award given by the Society of Nuclear Medicine. ●



Scientific Committee

CONTINUED FROM PAGE 12

tion was sent out to the participants of the meeting, which included a lot of interesting material that would be of interest for dosimetry research. The distribution of these documents is restricted. We hope

that at least some of that soon will be openly available. We are prepared to share with them our power point presentation.

- At present radiation therapy is in a rapid development including advanced methods as IMRT and new beam qualities (protons and light ions). Co-operation is needed in new

structures as, for instance, BIPM or PSDLs cannot have their own units in some expensive facilities.

- As ‘end-users’, medical physicists need to be involved so that we can express our interests and help to get safe dosimetry in patient diagnosis and treatment and in protection. IOMP, representing medical physicists world-wide, is the only organization which can do that. The BIPM/CCRI could benefit from this association by having their dosimetry protocols field tested prior to their formal adoption and by gaining access to medical facilities with equipment they need, actions which IOMP could facilitate by negotiating with the facilities and medical physicists involved. Of course, these activities are already taking place, but without formal IOMP involvement. To have our name in such negotiations, would help our image as a scientific organization.
- The formal affiliation IOMP-BIPM/CCRI should include not just CCRI(1) but other groups such as CCRI (11), Radionuclide measurements, to which meeting we were also invited this year. EXCOM should consider this proposal, which the Science Committee is willing to undertake, and factor the associated expenses in future budgets. Depending on how the negotiations are done, we could charge facilities ‘brokerage’ fees that in fact could support this activity. ●

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PLAGIARISM

CONTINUED FROM PAGE 9

constitute closure of the allegation of plagiarism.

An allegation of plagiarism is a serious accusation, and should never be made lightly. On the other hand, self-policing is a major strength of the scientific community, and plagiarism should always be reported when it is suspected to have occurred. ●

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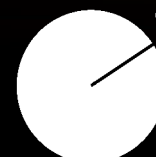
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DONATION OF USED EQUIPMENT –

PRC REPORT FOR JANUARY-JUNE-2008

— Mohammed K. Zaidi, Program Manager, IOMP Professional Relations Committee.

A used ambulance, 1994, Ford E-350; very kindly donated by The James Project, Burnsville, NC. USA from their Birmingham office in Alabama; being shipped to African Christian Care Trust, Garki-Abuja, Nigeria. They operate the clinical services for the poor people of that area.

An Oldelft Simulix MC with x-ray generator and image intensifier, 1995 model; being donated by John B. Amos Cancer Center. We are to locate a home and arrange shipment. We are thankful for the efforts of Dr. Wyndioto Chisela of John B. Amos Cancer Center, Columbus, Georgia, USA for this donation.

Used equipment needed:

Treatment planning systems, Mevatron 67 linear accelerator, Theratron-

ic, Automatic film processor, block cutter, patient dose monitor and ultrasound machine. A clinic in India is requesting for a HDR unit – if you want to donate one, please contact.

Shipping arrangements:

The institutions that need used equipment should mention in their response that they would pay or make arrangements for shipping at a very short notice.


Dr. Ajai Kumar Shukla from India will be helping me in IOMP efforts to deliver quality service in getting and transferring used equipment from generous donors to those who need them badly. He can be reached at Department of Nuclear Medicine, SGPGIMS, Raebarelli Road, Lucknow (UP), 226014, INDIA. His phone

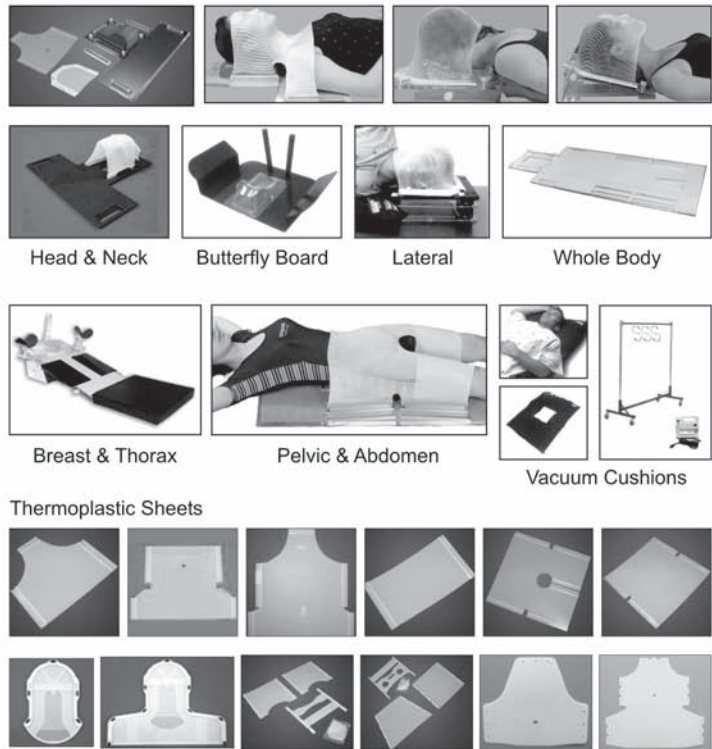
number is 91-0522-2668700 extension 2615 and email address is akshukla@sgpgi.ac.in.


The equipment donated to IOMP Used Equipment Donation Program is generally in good working condition but we don't guarantee its usefulness. The donation of used equipment to IOMP is sometimes tax deductible. IOMP will not be responsible for any warehousing expenses or loss if the used equipment donated couldn't be shipped.

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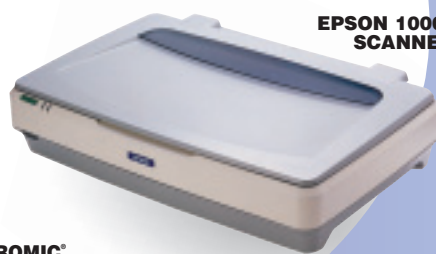
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The Medical Physics Educator's Forum

— by: E. Ishmael Parsai, Ph.D., and William Hendee, Ph.D.

In recent months we have been brainstorming with a number of senior medical physicists in various IOMP chapters around the globe discussing possibilities to further bring to light the issue of education of medical physicists. A number of wonderful ideas were presented for starting such a column and we decided to create this new forum to present to you in each issue ideas related to education and training of medical physicists. We hope to tackle major problems medical physicists are facing today and present ideas, solutions, and resources

to aid our growing international community. Some of the more immediate issues confronting our international body include the accreditation of medical physicists, the manpower need in medical physics, modification of education and training programs to commensurate with future expertise needed in nano-technologies, bio-markers, and target-specific therapeutic agents; and facilities and tools that IOMP can potentially create through a web-based knowledge information to assist physicists in their endeavors worldwide. The first of such articles

is written by Dr. Sprawl, a life-long educator, and we ask all our readers to please send your comments and ideas to discussions presented in this column. You may also send any other new ideas related to this topic or other topics of interest to medical physicists to the MPW editor, Ishmael Parsai at e.parsai@utoledo.edu. We feel open forum discussions on this most important matter will result in much needed structure resulting in advancement in our field and will make the MPW a better communication media for our organization. ●

Shared Resources to Enhance Medical Physics Education, A Global Perspective

— by: Perry Sprawls, Ph.D. sprawls@emory.edu

There are two dynamics that are creating needs for new educational models in clinical medical physics. One is the rapid development of technology and associated methods for both diagnostic imaging and radiation therapy, and the other is the diffusion of the new technologies to virtually every country in the world. The effective and safe use of this technology requires medical physicists in each locality with updated knowledge of the new applications. This is being achieved by using the Internet to transfer knowledge from the centers with experience to local learning environments on a global basis.

The key to the success and value of this approach is that the educational materials be made available as open resources to enhance the work of medical physicists everywhere, as illustrated here.

Several organizations have now moved to the *open resource model* with extensive educational materials available to all.

The American Association of Physicists in Medicine (AAPM) Continuing Education conducts over 50 continuing education courses at the annual meeting each year in addition to a Summer School and a variety of other programs. These are recorded and available online through the AAPM Virtual Library. Access to these courses is available free to medical physicists in any developing country who go to the website: <http://www.aapm.org/>

international and register to become an AAPM Developing Country Educational Associate (DCEA).

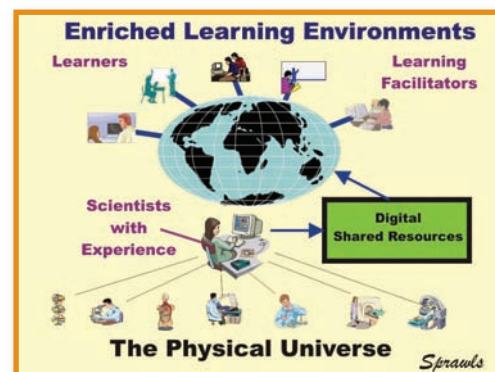
These courses are designed to provide continuing education and updates on the recent advances in both diagnostic imaging and radiation therapy with an emphasis on clinical applications.

Physical Principles of Medical Imaging Online

The Physical Principles of Medical Imaging Online, provided as an open resource by the Sprawls Educational Foundation at <http://www.sprawls.org/resources> is another model that is designed to support local programs and classes with a combination of resources including a curriculum guide, visuals for classroom discussions, modules for individual study, and online texts for reference.

International Atomic Energy Agency (IAEA)

The IAEA provides extensive educational resources on the *Radiological Protection of Patients* at <http://rpop.iaea>.



EDUCATOR'S FORUM (continued on page 23)

Calendar of Events

Carter Schroy, Ph.D., MPW Associate Editor

The following events can be found on the IOMP Calendar at <http://iomp.org/nextmeetings.htm> and on the Medical Physics Calendar at <http://medphys.org/calendar> which has links to other calendars. Please email your international events to the Calendar Editor, Carter Schroy, at eventsed@aol.com (or fax to +01 309.276.7728) for inclusion in MPW. Deadlines are April 1 and October 1 for issues that are mailed several weeks later.

2-3 July 2008

Medical Image Understanding and Analysis; Dundee, Scotland

<http://www.miu.org.uk> || jim.graham@MANCHESTER.AC.UK

27-31 July 2008

AAPM 50th Annual Meeting; Houston, TX USA
American Association of Physicists in Medicine

karen@aapm.org || <http://www.aapm.org/meetings/08AM/>

28-30 August 2008

20th Int'l Conference of the Society for Medical Innovation and Technology (SMIT); Vienna, Austria

<http://www.smit2008.com>

28-30 August 2008

Sino-American Network for Therapeutic Radiology and Oncology (SANTRO); Beijing, China

<http://www.santro.org/santro/meeting.asp?id=1> || Kong@santero.org

2-4 September 2008

IPEM Biennial Radiotherapy Meeting and Annual Scientific Meeting; Bath, U.K.
Institute of Physics and Engineering in Medicine

http://www.ipem.ac.uk/ipem_public/default.asp?id=398 || craig.edwards@uhns.nhs.uk

10-12 September 2008

The 5th Korea-Japan Joint Meeting on Medical Physics; Jeju, Korea
In conjunction with the 37th Meeting of Korean Society of Medical Physics and the 96th Meeting of Japan Society of Medical Physics

<http://www.ksmp.or.kr/index.html> || cool_park@ncc.re.kr

10-13 September 2008

World Molecular Imaging Congress (WMIC 2008); Nice, France
The Academy of Molecular Imaging (AMI) and the Society of Molecular Imaging (SMI)

Co-sponsored by the European Society for Molecular Imaging (ESMI) and the

Federation of Asian Societies for Molecular Imaging (FASMI)

<http://www.wmicmeeting.org/dev/>

15-19 September 2008

XTOP 2008: 9th Biennial Conference on High Resolution X-Ray Diffraction and Imaging; Linz, Austria

<http://www.hlphys.jku.at/xtop2008/xtop2008.html> || julian.stangl@jku.at

17-21 September 2008

European Conference on Medical Physics and Engineering 110 Years After the Discovery of Polonium; Krakow, Poland
Held with the 14th Congress of the Polish Society of Medical Physics and the EFOMP Council and Officers' Meeting

<http://mpekrak08.ftj.agh.edu.pl>

21-25 September 2008

ASTRO 50th Annual Meeting; Boston, MA USA

American Society for Therapeutic Radiology and Oncology

<http://www.astro.org/Meetings/AnnualMeetings/index.asp>

24-26 September 2008

IGRT Vienna 2008; Vienna, Austria

<http://www.meduniwien.ac.at/igrtvienna08> || igrtvienna08@meduniwien.ac.at

29 Sept - 3 Oct 2008

5th Int'l Conference on Radiotherapy Gel Dosimetry; Hersonissos, Crete, Greece

<http://www.dosgel2008.gr> || john@med-physics.com

11-15 October 2008

Annual Congress of the European Association of Nuclear Medicine (EANM'08); Munich, Germany

<http://www.eanm.org> || info@eanm.org

19-24 October 2008

12th Int'l Congress of The International Radiation Protection Association (IRPA); Buenos Aires, Argentina

<http://www.irpa12.org.ar/> || irpa12.committee@gmail.com

2-7 November 2008

Int'l Congress on Neutron Capture Therapy; Florence, Italy

<http://www.pv.infn.it/icnct-13/icnct13.html> || icnct-13@pv.infn.it

3-9 November 2008

Huangguoshu Int'l Interdisciplinary Conference on Biomedical Mathematics; Guizhou, China

"Promising Directions in Imaging, Therapy Planning and Inverse Problems"

<http://iria.pku.edu.cn/HGS08/index.htm> || hgs08@iria.pku.edu.cn

13-15 November 2008

Princess Margaret Hospital IGRT Education Course; Toronto, Canada

<http://www.igrt.ca> || wanita.lambert@rmp.uhn.on.ca

16-20 November 2008

Engineering and Physical Sciences in Medicine and the Australian Biomedical Engineering Conference; Christchurch, New Zealand

<http://www.uco.canterbury.ac.nz/conference/epsm-abec/>

23-26 November 2008

Great Wall 2008 International Congress on Medical Physics; Beijing, China

<http://www.nacmpa.org/nacmpa1/index.htm> || Charlie.Ma@FCCC.EDU

30 Nov - 5 Dec 2008

Radiological Society of North America Annual Meeting; Chicago USA

<http://rsna.org>

11-13 December 2008

The 7th Int'l Conference on Machine Learning and Applications (ICMLA' 08); San Diego, CA USA

Special Session on Applications of Machine Learning in Radiotherapy

<http://www.icmla-conference.org/icmla08/> || sbjjiang@ucsd.edu

Exchange Program

CONTINUED FROM PAGE 15

Auditorium. This is an impressive venue that houses the Gulf Convention Centre, an international standard conference centre. The workshops were held on the afternoon of Tuesday, November 20 at the Salmaniya Medical Complex. This is a comprehensive and well-equipped tertiary care facility that includes a one thousand bed hospital. It serves as the referral facility for the country as well as the teaching hospital for the Arabian Gulf University Medical School. The workshop dealt with linac calibration, diagnostic quality assurance (CT, MR, and mammography) and nuclear medicine quality assurance of SPECT and related equipment. There were a total of 83 attendees at the workshops almost, evenly divided amongst the three concurrent activities.

Meetings were held to discuss development of national medical physics societies in the region. This was attended by delegates from Bahrain, Jordan, Kuwait, Lebanon, United Arab Emirates (UAE), Kingdom of Saudi Arabia (KSA), as well as Dr. Adel Mustafa and this author. We learned that Jordan, UAE, KSA and Bahrain all have national medical physics societies, either already established or at an advanced stage of planning. As of writing of this report (January 2008), Bahrain, Jordan, KSA and UAE have active national medi-

cal physics organizations. This meeting emphasized the need for regional communication, coordination and cooperation as well the need to form a Middle East chapter of IOMP. There is a quorum to do so as the IOMP chapter requires three national medical physics societies. Dr. Aysha Jaber, a Consultant Radiologist at the Bahrain Defence Forces Hospital, and LAC member, worked relentlessly to insure that all arrangements are in place. Mr. Mahdi Al-Sahlawi and his staff efficiently managed registration activities and audiovisual arrangements. Mr. Hamed Al-Hamad of the Ministry of Health Public Relations Department facilitated travel and visa arrangements for international attendees, along with Dr. Jamsheer. Mr. Ja'afar Mattar organized the diagnostic and nuclear medicine workshops. As one would expect, useful information was shared in both directions and was a learning experience for all.

Acknowledgements: The success of an activity of this kind is due to the efforts of many. Those of the local and AAPM faculty and our hosts have been outlined in the body of the report. Thanks are also due to the International Educational Activities Committee (IEAC), International Affairs Committee (IAC), ISEP Committee and Middle East Sub-Committee (MESC) of the AAPM for their help. ETC of the IOMP endorsed the program. The AAPM and IOMP are acknowledged for their support of ISEP programs. ●

Post Conference Report

CONTINUED FROM PAGE 15

ing 3 organised by EFOMP and 1 by IAEA) and there was an interactive session on medical physics education. A commercial exhibition formed part of the conference.

A series of social activities were arranged with the Congress Gala Dinner held on a dhow cruising up and down the Dubai Creek. Other trips were arranged to allow attendees to see both

the historical and modern Dubai.

During the conference, a meeting of medical physics societies from the region was organized by invitation from the President of the IOMP. Fourteen medical physicists from 8 countries attended the meeting and nominated a Regional Medical Physicist Coordinator (Mr. Ibrahim Duhaini from Lebanon - email: duhaini@yahoo.com). Participants signed a "**Motion of Intent**" document to form an IOMP Middle

Educator's Forum

CONTINUED FROM PAGE 21

org. These provide information for both medical physicists and other medical professionals.

Medical Physics Dictionary for International Translation

One of the major challenges in global medical physics education is the many languages that are used. The online dictionary at <http://www.emitdictionary.co.uk/> provides translations of most medical physics and related terms.

Summary and Conclusion

The extensive need for up-to-date medical physics education on a global basis requires new and innovative models of the educational process. Two elements of an effective educational process to meet this need are: 1) *Connectivity*, which uses the Internet to make knowledge and experience available in every global community; and 2) *Shared and Open Resources* that are available to all.

Those are the common characteristics of the four programs described here but each has been designed to serve different needs.

They all serve as models for other educational programs for the international medical physics community. ●

East Group.

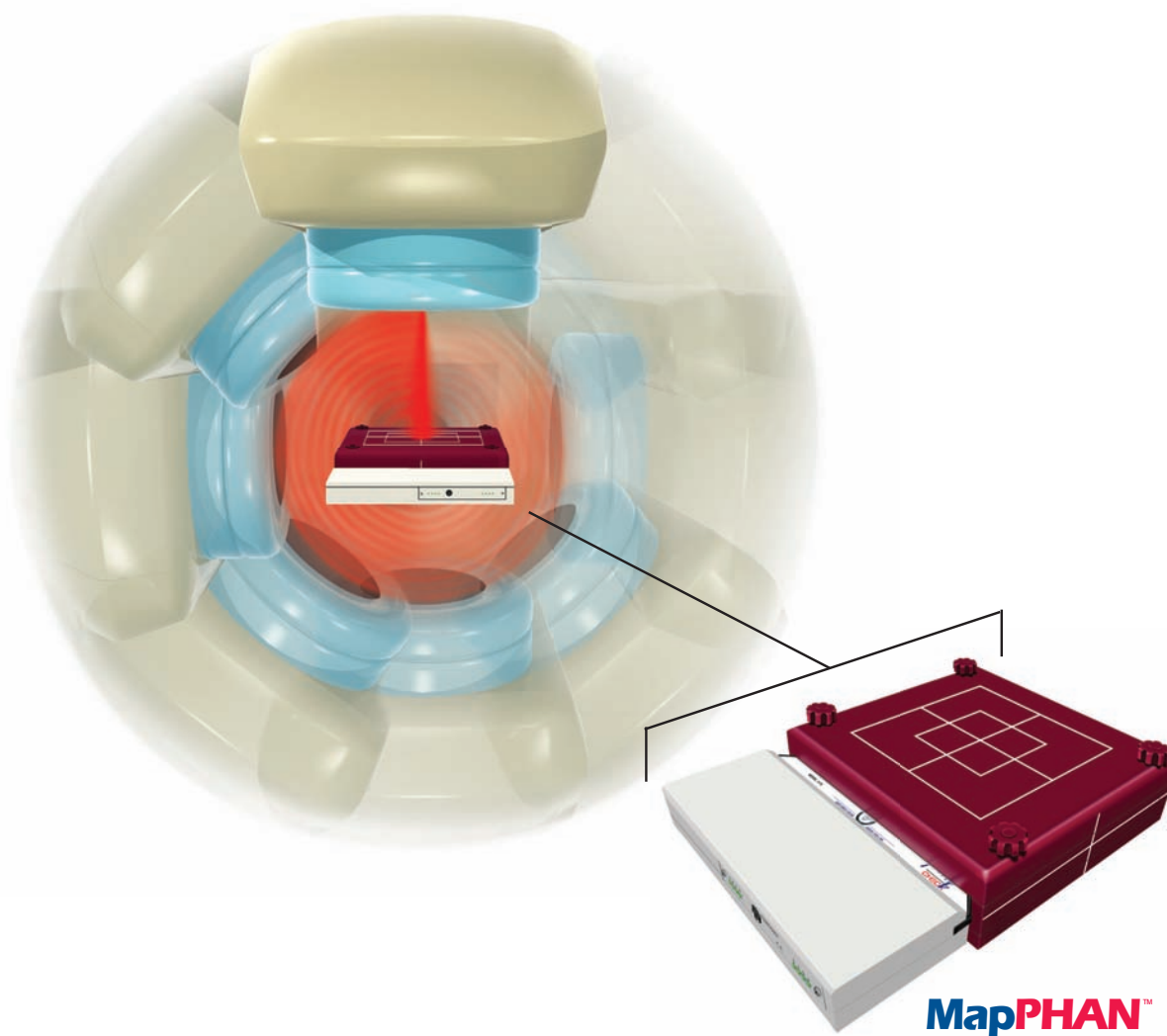
De Jamila AlSuwaidi, Conference Chair, her team and all involved are to be congratulated and thanked for an excellent conference, which has made a significant contribution to the development of medical physics in the Middle East.

Some of the invited speakers at the conference with Dr. Jamila AlSuwaidi, Chair of the conference and Prof. Barry Allen, President of IOMP. ●



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