



**UNSCEAR launches
the latest Global Survey
of Medical Exposure**
Ferid Shannoun, PhD

**Basic Safety Standards:
International & European**
Madan M Rehani, PhD
IOMP Secretary General

EUTEMPE
Prof. Hilde Bosmans
Project Coordinator
EUTEMPE-RX



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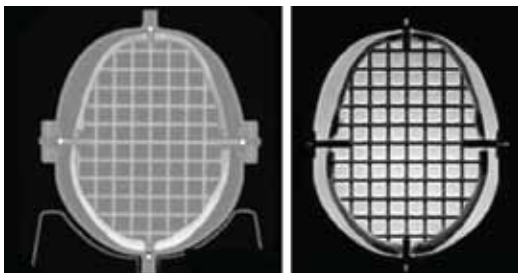
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Medical Physics World

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IOMP NMOs

National Member Organisations

Algeria	Nepal
Argentina	Netherlands
Australia & New Zealand	New Zealand (with
Austria	Australia
Bangladesh	Nigeria
Belgium	Norway
Brazil	Pakistan
Bulgaria	Panama
Cameroon	Peoples Rep. of China
Canada	Peru
Chile	Philippines
Colombia	Poland
Croatia	Portugal
Cuba	Qatar
Cyprus	Rep. of China - Taiwan
Czech Republic	Rep. of Macedonia
Denmark	Rep. of Moldova
Ecuador	Romania
Egypt	Russia
Estonia	Saudi Arabia
Finland	Singapore
France	Slovenia
Georgia	South Africa
Germany	Spain
Ghana	Sri Lanka
Greece	Sudan
Hong Kong	Sweden
Hungary	Switzerland
India	Tanzania
Indonesia	Thailand
Iran	Trinidad & Tobago
Iraq	Turkey
Ireland	Uganda
Israel	Ukraine
Italy	United Arab Emirates
Japan	United Kingdom
Jordan	United States
Korea	Venezuela
Lebanon	Vietnam
Lithuania	Zambia
Malaysia	Zimbabwe
Mexico	
Mongolia	
Morocco	<i>NMO status being reviewed</i>

Message from the Editor

Virginia Tsapaki, PhD, Chair MPW Board



Dear friends and colleagues

Welcome to the December 2014 edition of the eMPW Newsletter. Many of you may wonder what the eMPW front page is devoted to. It is actually the IOMP webpage of the newly founded “Women in Medical Physics Subcommittee” (IOMP-W). A group of women medical physicists around the world are gathered together with a number of initiatives already, in order to popularize the role of the women in medical physics and encourage women colleagues to advance in the profession.

The editorial board has succeeded in gathering a large variety of important news from around the world. Read in page 18 about the launch of the UNSCEAR Global Medical Exposure Survey with the support of WHO. UN Member States are encouraged to submit data on medical radiological exposure from diagnostic and interventional radiology, nuclear medicine and radiation therapy.

In page 8 you can find a lot of information on the new International Basic Safety Standards (BSS) which were released in 2014. It is important for all medical physicists as our profession seems to be highlighted in a number of sections within the document.

IOMP is again having a booth in the European conference of Radiology (ECR). Participants may meet members of the board at the booth and exchange information and ideas for the future. Free issues of eMPW are going to be distributed to show the work of IOMP to radiologists, medical physicists and other professions during the conference. Leaflets on various activities of IOMP are also planned to be distributed all through the conference.

Since e learning is becoming one of the future hot points and is extremely important in every single part of the world just read about the exciting new European projects, EUTEMPE and ENETRAP with e learning modules on various medical physics and radiation protection subjects in pages 19 and 25.

Do not forget that we value your feedback so please do not hesitate to contact us if you would like to make any suggestions or submit brief papers on your scientific or educational work that would be of interest to our members. Let me remind you our Calendar Editor, Ibrahim Duhaini (duhaini@yahoo.com). Please contact him for scientific or international events so as to be included in eMPW. ◀

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We Have Seen Enormous Progress in the Development of Medical Physics!

President's Message

Kin Yin Cheung, PhD



IOMP has just celebrated its 52nd birthday on 1 January 2015. The Organization has grown tremendously from its original membership of 4 when it was formed in 1963. We have seen enormous progress in the development of medical physics in medicine in many countries over these years. The advances in the practice of medical physics ran in parallel with the improvement in the quality standard of radiation medicine. Such achievements in some countries was made possible with the availability of a formal infrastructure for education and professional training of the medical physicists, a system for audit of their professional competence, and an appropriate system for recognition of

their professional status and accountability in the healthcare system. The successful experience in these countries have motivated an increasing number of National Member Organizations (NMOs), many of them are from developing countries, to establish formal training programmes and certification boards for training and professional accreditation of medical physicists in their own countries.

Another main driving force behind the development of the medical physics in these countries, particularly those in developing countries, comes from their demands for more advanced and reliable radiation medicine services, particularly in radiation oncology, and their recognition of the important role of medical physicists in support the running of such services. The joint efforts of the IOMP and its NMOs and Regional Organizations (RO) together with international organizations such as IAEA, WHO and ILO in providing the guidance on defining and publicizing the scope and quality of medical physic services in healthcare, roles and responsibilities of the medical physicists, and the requirements on professional knowledge and competence of medical physicists might have helped sensitizing state officials ▶

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► and healthcare administrators in recognizing the importance of medical physics services in radiation medicine, which in turn might have contributed to the rapid development of such services in these countries. Provision of the platform to facilitate the collaboration and exchanges of experience and expertise in medical physics through a variety of educational, professional and scientific activities in different parts of the world might also helped fostering the process.

There are, however, still many countries in the less developed regions of the world have yet to develop the practice of medical physics in radiation medicine. The common problems encountered in these countries are shortage of medical physicists and lack of infrastructure or opportunity for education and training of more medical physicists when they needed. The problems may become obvious and can have serious clinical consequences when there is an increasing number of the latest generation of sophisticated radiation therapy equipment being introduced in the clinics as these countries start modernizing their healthcare services and building more new hospitals. The problem is not limited to developing countries. Countries where the need for quality medical physics support in modern radiation medicine is not recognized by the healthcare administrators could face the same problem of shortage of qualified medical physicists. This has been and will continue to be a challenge to our colleagues in many countries as well as

to IOMP. Such problems are getting more difficult to resolve due to increasing complexity of the latest radiotherapy equipment technologies and treatment delivery techniques being used in the clinics.

There are other challenges being faced by our colleagues in healthcare. Manpower structure and manning scale for medical physics in the clinics is one of them. The current manpower establishment in medical physics service and the scope of such service in the clinics are often based on a voluntary or personal preference basis rather than on clinical service provision and workload. This can lead to disparity in medical physics service between institutions within a healthcare system, which eventually will affect patient service. An international guideline for estimation and justification of medical physics manpower requirement based on scope, scale and standard of service is essentially required to address this issue.

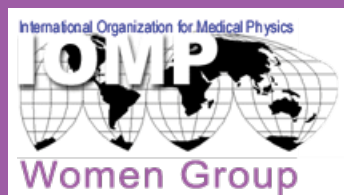
Another challenge is related to the professional status and obligation of the medical physicist in healthcare. As defined by IOMP and IAEA, medical physicists with clinical responsibilities are health professionals. Yet, most if not all of our colleagues in healthcare are not recognized as such. They are probably the least known professional staff in medicine. This is not very helpful in the long term development of our profession in medicine. One of the reasons behind this is that medical physicists are not trained as health

professionals and most of them do not require a licence to practice, i.e. they are not subject to legislative control on their practice, competence and professional ethics like other healthcare professionals. This can have implication on the accountability and liability of medical physicists for the service they provide, which is an important consideration in healthcare. This in turn can also have implications on the development of medical physics in medicine.

These are some of the outstanding issues that need our attention. There is a need to strengthen the collaboration between IOMP and its NMOs and ROs together with international organizations in addressing such issues. These can be some of the discussion items at the forum being scheduled to be held during WC2015 in Toronto, Canada in June 2015.

My term of presidency in IOMP will come to an end in June this year. I shall be handling over the presidency to Dr. Slavik Tabakov during WC2015. I wish to take the opportunity to thank all my colleagues, particularly the chairs of committees and sub-committees in IOMP for their supports, contributions and achievements. The team has done a great job over the past three years. It has been my honour and pleasure working with them. I wish Dr. Tabakov and the new team every success in the coming years ahead.

My best wishes to everyone a Very Happy and Successful New Year! ◀



IOMP WOMEN Celebrate the International Women's Day!
MARCH 8, 2015
 Join us all over the world and show your appreciation for women MP's!
www.iomp.org/IOMP-W

EMITEL Encyclopaedia of Medical Physics - Update 2015

Slavik Tabakov, PhD, EMITEL Coordinator & Vice-President IOMP



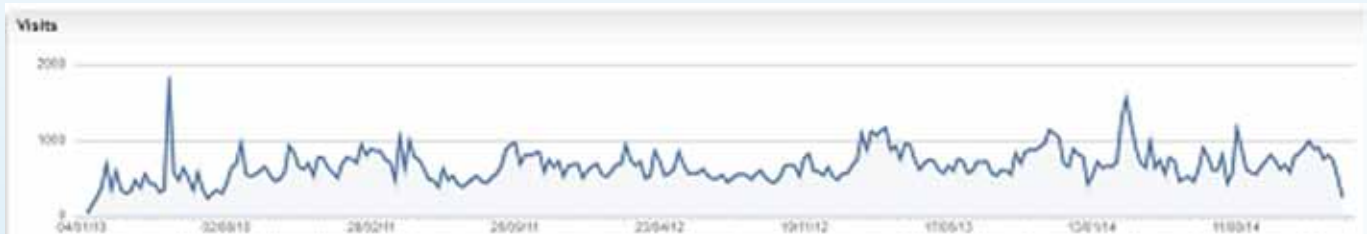
Since its launch in Munich at WC2009 the online Encyclopaedia of Medical Physics (www.emitel2.eu) has become a steady reference source for

the profession. About 5.3 million searches have been made for its 5 years of existence with approximately of 800 unique users per week.

The large volume of the Encyclopaedia (about 3100 entries with 2000+ graphs and images) requires regular updates. Being one of the founding members of the EMITEL project and future host of the Encyclopaedia, IOMP has recently formed a group under the Education and Training Committee aiming to begin the updates of the resource adding new

articles and data about novel methods and equipment.

Sixteen colleagues made the first steps with the updates: Gerard Boyle, Paola Bregant, Asen Cvetkov, John Damilakis, Mario De Denaro, Charles Deehan, Antonio De Stefano, Peter Dunscombe, Geoffrey Ibbott, Lefteris Livieratos, Renata Longo, Renato Padovani, Magdalena Stoeva, Vassilka Tabakova, Sameer Tipins, Slavik Tabakov. The Group will continue to expand aiming at the first update to be ready by the WC2015 in Toronto. ◀



IOMP Science Committee Report

Geoffrey S. Ibbott, PhD, IOMP Science Committee



It is an honor and a pleasure for me to have chaired the IOMP Science Committee for the past year. As readers of eMPW know, the Science Committee was previously chaired by Dr. William Hendee. I am greatly indebted to Dr. Hendee for the mentorship and professional guidance he has given me for the last 47 years; it is no exaggeration to say

that I owe any success I've been fortunate to have experienced to Dr. Hendee. I'm grateful to Dr. Hendee for recommending me to succeed him in the position of SC chairman. During the past year, the Science Committee has contributed to the review of several draft documents. We submitted comments on a draft report by Kessler, Burns and B urmann of a key comparison of air kerma standards for Cs-137 with the BIPM. We also reviewed and commented on a report of a meeting between Dr. Maria Perez of the WHO with Drs. KY Cheung and Slavik Tabakov of the IOMP. The report described a meeting held during the WHO forum on medical devices. The SC also participates in

the selection process for future ICMP meetings, and recently reviewed proposals for a meeting to be held in late 2016 or early 2017.

The Terms of Reference of the SC include goals to promote research in medical physics, explore areas of current interest or importance, and disseminate this information through publication in eMPW and elsewhere. In the past, the Science Committee has written 'white papers', or position statements for the IOMP. Most recently, the SC prepared and published the IOMP Policy Statement in the Risks of Medical Imaging. It is my goal to continue this tradition of productive and useful service to the worldwide medical physics community. ◀

Basic Safety Standards (BSS): International and European

Madan M Rehani, PhD, IOMP Secretary General



International Basic Safety Standards (BSS) is an important document for medical physicists. It provides requirements that countries incorporate into their national legislation. Many countries, in particular developing countries, in the past made it mandatory to appoint medical physicist (MP) in radiotherapy. This arose from requirements in BSS that were translated into national regulations. In fact the speciality of medical physics would either have not born or would not have progressed in many small countries without the requirements being there in national regulatory framework from the point of view of radiation protection. Thus BSS is an important force for MP.

The old BSS which was released in 1996 was replaced by an interim version in 2011 and now the final version has been released in early 2014. It is available for free download from the IAEA website or using the link: http://www-pub.iaea.org/MTCD/Publications/PDF/Pub1578_web-57265295.pdf.

BSS provides definition of medical physicist as: "A health professional with specialist education and training in the concepts and techniques of applying physics in medicine and competent to practice independently in one or more of the subfields (specialties) of medical physics". This is very important as it classifies medical physicist as a health professional. This can help countries that have problem with ILO classification. IOMP had provided this definition to the IAEA and IAEA and large number of co-sponsors of BSS like European Commission, Food and Agriculture Organization of the United Nations, International Atomic Energy Agency, International Labour Organization, OECD Nuclear Energy Agency, Pan American Health Organization, United Nations Environment Programme and World Health Organization accepted it. Moreover BSS is approved by its member states before it is published. Thus your country has already agreed to it.

There are requirements on involvement of medical physicist in BSS. While previously the requirements earlier were strong primarily for radiotherapy, now they are as well for other areas like high dose procedures in radiology, interventional procedure and nuclear medicine. Please go through the BSS to get better picture on the extent of involvement of MP in various activities. The word medical physics occurs almost 22 times in new BSS as there are many actions where the need for MP has been spelled out. Further there is clear assignment of responsibility to Radiation Protection Officer (RPO)

which pertains to overseeing the application of regulatory requirements rather than patient protection. MP can have additional responsibility as RPO whereas the reverse is not true. Also radiation technologists have clear responsibilities and there is no confusion between two professions. There is also a European BSS which is rather mandatory for European member states. It is also available for free download from: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2014:013:0001:0073:EN:PDF>

European BSS goes a step ahead and it requires medical physics expert (MPE) that means an individual or, if provided for in national legislation, a group of individuals, having the knowledge, training and experience to act or give advice on matters relating to radiation physics applied to medical exposure, whose competence in this respect is recognised by the competent authority. There is clear description of requirements for member states for MPE. Similarly, there are requirements for RPO and an operative part states: The radiation protection expert may be assigned, if provided for in national legislation, the tasks of radiation protection of workers and members of the public.

There are much more details that are useful and the above extract provides just a sample.

I think both BSS are very important for MP. Our MP colleagues should utilise the strength provided in BSS for professional development and to improve the services to patients. ◀

IOMP Education and Training Committee Report

John Damilakis, PhD, Chair IOMP Education and Training Committee



This article a) briefly reviews the last 3 years of the Education and Training Committee and highlights a few activities and b) draws attention to important additional activities that should be included in the plans of the next years. At the end of 2012, the committee undertook the responsibility to develop a strategy to promote the International Day of Medical Physics (IDMP) and support IDMP activities of national member organizations. Spreading the word

about Medical Physics is not an easy task. However, colleagues have done excellent work to raise awareness of our profession. The inaugural event (IDMP 2013) was successful and the amount of attention gained was remarkable. On November 7, 2014 we celebrated the second IDMP. Events were organized in so many countries, in all continents – this was an incredibly engaging experience! I would like to heartedly thank colleagues who have sent material from the events they have organized. You can find information about IDMP 2013 and IDMP 2014 activities at <http://www.iomp.org/idmp/>. I am really very happy that our campaign was very successful and IDMP is now an established event.

During the last years, the Education and Training Committee offered courses in connection with conferences, sponsored and endorsed workshops, training courses and conferences, represented IOMP in many forums, updated the IOMP list

of graduate medical physics courses in Europe and Asia and cooperated with International Organizations such as IAEA and WHO to strengthen the educational development of medical physics worldwide. It has been a great pleasure working with every member of the committee and I would like to publicly thank them for their commitment and support.

The above types of activities should continue to be included in the agenda of the Education and Training Committee for years to come. Moreover, the committee should set ambitious but achievable new goals. In my opinion, we should make any effort to a) establish an accreditation board for the accreditation of Medical Physics educational programs, b) provide online educational material, c) provide recommendations and guidelines for quality teaching and learning in medical physics, and d) promote and support continuing professional development programs of national member organizations. ◀

Medical Physics College 2014, ICTP, Trieste

Magdalena Stoeva, PhD, Associate Editor MPW

The Medical Physics College at ICTP is one of the leading contributors for improving healthcare in the developing countries. The objective of the MPC is to improve efficiency and safety of the medical diagnostic procedures. Each one of the participants in the MPC has direct access to teaching materials, practical education and additional resources to increase their efficiency as medical physicists and distribute the knowledge via

teaching activities in their regions.

Medical Physics College Curriculum:

- Digital Image Applications in Each Imaging Modality
- Image Characteristics and Quality Factors
- Optimization of Imaging Procedures and Quality Control
- Dose Management in Medical Imaging and Radiation Protection
- Evaluation and Analysis of Images in Medical Applications

-Development and Delivery of Highly Effective Educational Activities

Medical Physics College Organizers: S. Tabakov, A. Benini, F. Milano, G.D. Frey, L. Bertocchi, P. Sprawls. ICTP Local Organizer: L. Bertocchi

Throughout the 20 years of its existence the Medical Physics College has trained over 1000 young medical physicists. ◀

From the Awards and Honours Committee

Tomas Kron, PhD, Chair Awards and Honours Committee



We all look forward to the 2015 World Congress on Medical Physics & Biomedical Engineering in Toronto June next year. While scientific events clearly take centre stage there will be several awards to be celebrated. Of particular importance for IOMP are

1. The Marie Sklodowska-Curie Award established to honour scientists who have distinguished themselves by their contributions in

- Education and training of medical

physicists, medical students, medical residents, and allied health personnel; and/or

- Advancement of medical physics knowledge based upon independent original research and/or development; and/or

- Advancement of the medical physics profession in the IOMP national and international organizations.

2. The Harold Johns Medal established to honor scientists who have distinguished themselves through excellence in teaching and contributions to international education.

However, also a number of other awards will be given. These include the IUPAP Young Scientist Award in Medical Physics and a best present presentation award for the congress which in 2015 is combined with the Canadian J.R. Cunningham Young Investigators Awards.

Another award of high importance is the IUPESM Award of Merit which is given

for a medical physicist and a biomedical engineer every three years on the occasion of the world congress.

For more details see:

<http://www.iupesm.org/committees/awards-of-merit-recipient/>

Finally, I would like to draw your attention to the IOMP fellowship award which recognises significant activities for the international development of medical physics and is awarded to persons who have made outstanding contributions to IOMP and its regional organisations over a significant period of time. Nominations can be made at any time.

For more details on nominations, past winners and other interesting bits and pieces, please check the IOMP webpage: <http://www.iomp.org/>

Please do not hesitate to contact anyone of the committee if you have any suggestions or questions. We look forward to hearing from you and hopefully catch up in Toronto. ◀

Donation of Used Equipment – PRC. Report Jul-Dec 2014

Mohammed K. Zaidi, PhD, Program Manager IOMP PRC

ASIA: A group of hospitals in Sri Lanka had request UE for the mammographic unit a mammo-graphic machine and books and guide to train nurses. They also need a surgical table. If someone can donate, we will be glad to ship them.

AFRICA: A group from Zambia was advised to use New ACR QC

Requirements for Ultrasound and Breast Ultrasound Accreditation and the article by Pricilla Butler published in AAPM NL Mar/Apr 2014 titled ACP Accreditation FAQs and Practice Quality Improvements (PQI). I received an e-mail message that says "It is very helpful to our practice and will do good. Our group will make good use of it."

Ghana Society for Medical Physics had requested for the Radiological and Medical Sciences Research Institute (RAMSRI), Accra, Ghana: X-ray machine, Gamma Camera, Ultrasound machine, Dose calibrator and Phantoms for Nuclear Medicine QC. Other requested items are a laptop computer and a well counter.

We are looking forward that the donors should come with useable equipment which should be less than 10 year old. Some of the items recently offered and we are looking for a home are: Water tanks, hydraulic lift assembly, dual channel electrometer – this system is controlled by Wellhofer's OmniPro Accept software. TLD reader, former ionization chambers

and stack of ready pack xray films, USG Doppler, Video-EEG equipment and CT machine.

The equipment donated to our Program is in good working condition but we don't guarantee its usefulness. The donations of used equipment are sometime tax deductible. AAPM/IOMP will not be responsible for any warehousing expenses or loss if the used equipment donated couldn't be shipped.

If you want to donate, or want specific used equipment donated to your organization, please contact the UEDP Manager. For more information, email your request to zaidimk@gmail.com. ◀

4th African Regional Congress of the International Radiation Protection Association (AFRIRPA-04), Rabat/Morocco on September 13-17, 2014

Fridtjof Nüsslin, PhD, Past President IOMP



On behalf of IRPA the Association Marocaine de Radioprotection (AMR) hosted the AFRIRPA-04 which was attended by about 200 participants from Africa, Europe, Asia and America. Support was provided by several international organizations (IAEA, WHO, ILO, UNSCEAR, PNS, IOMP). A strong part played the medical physics community: Co-Chair was the president of FAMPO, A.Ibn Seddik. IOMP was invited and represented by Past President who as a member of the Steering Committee was involved in the design of the program. Under the congress heading “Strengthening Radiation Protection Infrastructures for Health and Sustainable Development in Africa” more than 230 presentations covered a wide spectrum of topics from industrial and health aspects of radiation protection. The focus of AFRIRPA04 was promotion of radiation protection culture in all

applications of radiation and nuclear technologies in order

- To enable scientists and professionals from Africa and worldwide to discuss and exchange their expertise in all fields involved with radiation protection,
- To harmonize and coordinate the activities of societies evolving in the field of radiation protection by inspiring from international experience, and
- To strengthen the cooperation between professional societies.

Main coordinator of the congress was Prof. Abdelmajid Choukri (Morocco) in collaboration with Prof. Jason Harris (USA). The scientific program was subdivided into seven main topics: fundamental radiation protection including biological effects, healthcare and medicine, standards and metrics, laws and regulations, NORM industries, security of medical and industrial radioactive sources, and radiation protection culture, education and training. The program included plenary lectures, refresher courses, oral and poster presentations, and workshops. Medical application of ionizing radiation and associated aspects of radiation protection played a rather important role in the entire program. Five plenary lectures were dealing with medical application of radiation. Maria del Rosario Perez from WHO gave an inspiring review on the implementation of the IAEA-BSS specifically in developing countries (“Radiation Protection in

Medicine – Challenges and Opportunities”. My lecture was entitled “Radiation Protection in Clinical Practising: Challenges for the Medical Physicist”. Furthermore, workshops on essential topics have been organized like Education & Training, Data Collection of Medical Exposure, Radon, Security of Radioactive Sources in Medical and Industrial Facilities. A Workshop jointly prepared by IOMP (FN), WHO (M.del Rosario Perez), IAEA (I.Shadad) and FAMPO (A.Ibn Seddik) was entitled “Radiation Protection in the Clinical Environment: Roles and Responsibilities of Health Care Providers”.

With special reference to the health care part of the congress, the results can be summarized as follows (cited from A.Choukri):

- “Updates were given on a variety of new documents and projects of interest to the radiation protection community both internationally and specifically in Africa including the new international radiation basic safety standards (BSS) and IRPA’s project and document on radiation protection culture.
- An overview on the current situation in terms of medical uses of radiation and the associated challenges in radiation safety was presented. The WHO Global Initiative on Radiation Safety in Health Care Settings was shortly described. The main outcome of the International Conference on ▶

► Radiation Protection in Medicine organized by the IAEA in cooperation with WHO is the so-called “Bonn Call for Action” highlighting 10 priority actions to improve radiation protection in health care in the next decade. These 10 actions serve as a basis for international, regional and national bodies to implement plans to enhance protection of patients and health workers.

- Also related to medical uses of radiation, a number of presentations from several countries were given highlighting the challenges as well as benefits of techniques and procedures involving radiation. Ultimately, everyone agreed that justification and optimization is necessary. Decisions and awareness should include radiation protection professionals, medical physicists, doctors, and technicians.

- A number of excellent presentations and discussions were given on topics related to naturally occurring radioactive materials in Africa. Measurements and models were described to estimate the risk and exposures from a variety of radionuclides, like radon, to populations throughout Africa. Examples include radon studies of

honey, sweet drinks, and oil and exposure studies of NORM from cement, oil logging, and mining activities. Cases presented resulted in recommendations for both reducing exposure as well as making no changes. It was also discussed that NORM should be considered a resource and not as waste. Examples were given of where countries have done exactly this.

- Similarly, presentations were given on the effects to human health from manmade activities involving radioactive materials such as releases from nuclear power plants and hospitals. These activities should be ALARA.

- Professors presented education and training in radiation protection from several African countries. It was generally agreed that support of students and young professionals for radiation protection is very important. More must be done to encourage the young (next) generation to consider the fields of radiation protection and become involved in national, regional, and international engagement and collaboration

- Finally, an overview of radiation protection in Africa was given. Africa is emerging as a leader in the safe use

of radiation and radioactive materials in the health care industries, NORM industries, in regulation, and in education and training.

Improvements have been made, especially in the area of education and training. It is important to not be complacent. But for Africa to be successful it must work together through networking and collaboration, regionally and as a whole and find creative solutions to problems. Sustainability will be achieved through cooperation and collaboration.”

An essential addendum from my point of view should be made particularly to the last bullet: the close cooperation between IRPA and IOMP based on the joint Statement of Collaboration between both organizations challenges specifically to address the deficits in the education and training of qualified clinical medical physicists in Africa, and hence to initiate actions to establish specific medical physics education systems and corresponding infrastructures in African countries. In all discussions there was unanimous agreement that this task deserves highest priority and requires bundling forces on an international scale. Looking at the forthcoming ►



AFRIRPOA 04 Steering Committee



AFRIRPA 04 Conference Photo

► events, the IRPA World Congress May 2016 in Cape Town and AFRIRPA 05 2018 in Tunis, this time scale challenges to achieve progress in the infrastructure in African countries and to provide support for improvements in radiation protection culture in the health care sector.

There were stimulating discussions with IRPA Officers and colleagues from international institutions (WHO, IAEA, IRPA, ALEFF-Group) focusing on opportunities for closer cooperation in the whole community dealing with the professional development in Africa. Specifically, based on the Statement of Collaboration between IOMP and IRPA the conference was an appropriate forum to explore ways forward under the joint theme radiation protection culture. A very interesting talk was given by Prof. Julian Hilton (ALEFF Group) opening ways to bring the stakeholders in radiation protection both in the industrial and the health care sector together. In particular, NORM (Natural Occuring Radioactive Materials) is a field

where both sectors may have interfaces, and leaders from the political floor (i.e. regulators, administration, government) as well as from industry could be better engaged with health care topics of the radiation protection culture in Africa. In a still ongoing discussion with J.Hilton we were considering to work on a kind of a joint White Paper.

Another important result from the viewpoint of IOMP was the many fruitful discussions with delegates from African countries including the FAMPO leaders. I very much encouraged them to work on further development of Medical Physics at the various places where already some basic infrastructure exists. We agreed to put all efforts both from IOMP and other international bodies and from the African Medical Physics community itself in establishing more opportunities for education and training. I am rather optimistic that some pilot activities will be launched soon to offer Master programs in Medical Physics. In this context, again quite often questions have been raised on the accreditation of such

courses and most importantly on the problem of individual certification of medical physicists by external institutions including the IOMP. Along the line of the IOMP initiative on the Development of Medical Physics in Africa (see MEDICAL PHYSICS INTERNATIONAL Journal, vol.2, No.1, 2014) it appears essential to explore under the flag of IOMP together with FAMPO and some most experienced members like EFOMP, AAPM, IPEM, and others, pragmatic solutions and smooth procedures for filling this gap in the qualification of medical physicists from developing countries. The role of FAMPO in this particular field is very important and IOMP should even more strengthen the links to FAMPO by regular communication and consultancies.

However, the best take home message from this conference is to acknowledge and admire our African colleagues in what they already achieved, with regard to their scientific as well as to their professional development. Congratulation and go ahead! ◀



Delegates from Cameroon



Rabat - Kasbah

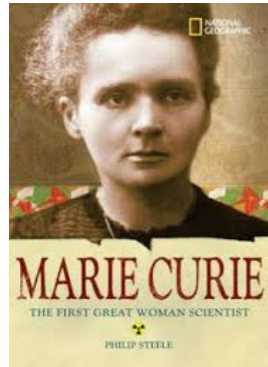


Rabat - Castle

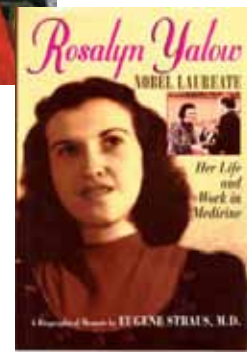
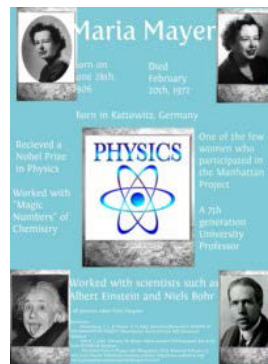


Women Group

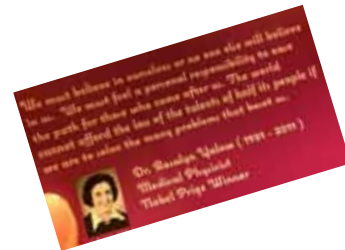
WOMEN: MARVELOUS CREATURES OR MARVELOUS SCIENTISTS?



Madame Marie Curie famously snagged two Nobel Prizes — for Physics in 1903 with husband Pierre and Henri Becquerel, and again in 1911 for Chemistry after discovering radium and polonium



Rosalyn S. Yalow, a medical physicist who persisted in entering a field largely reserved for men to become only the second woman to earn a Nobel Prize (1977) in Medicine, died on Monday in the Bronx, where she had lived most of her life. She was 89.



The IOMP Women Group's objective is in compliance with the main IOMP mission and directives 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.

IOMP Women Group main functions:

- Develop, implement and coordinate tasks and projects related to the role of females in medical physics scientific, educational and practical aspects.
- To disseminate the experiences, good practice and learning within IOMP NMOs and other relevant accessible areas/across the globe.
- Popularize the role of the women in medical physics and encourage female medical physicist to advance in the profession.
- Organize international cooperation in medical physics and related specialities.
- Provide regular status/progress updates to the IOMP on all tasks and projects related to the IOMP Women Group.

- References
- 1.) <http://www.greenleafpress.com/catalog/images/1426302495.jpg>
 - 2.) <http://www.glogster.com/timzim/tim-zimmerman-maria-mayer>
 - 3.) http://chemeducator.org/bibs/0007002/72012igk_gifs/image002.jpg
 - 4.) <http://www.pinterest.com/14njaa/history/>
 - 5.) <http://antinuclear.net/category/christina-themes/>
 - 6.) Radioactive Girl by Captain-Paulo, kidd-p.deviantart.com
 - 7.) <http://www.aip.org/history/curie/radinst3.htm>
 - 8.) <https://www.tumblr.com/search/women%20in%20physics>



CALENDAR OF EVENTS - Ibrahim Duhaini, Calendar Editor

▶ First EUTEMPE-RX Module Course

Application deadline is 9 Dec. 2014
Online phase starts 17 Dec. 2014
Face-to-Face phase Prague 9 – 13 February 2015

Website: <http://www.eutempe-rx.eu/>
Contact: Carmel Caruana:
carmel.j.caruana@um.edu.mt
Eliseo Vano: eliseov@med.ucm.es

▶ SNMMI 2015 Mid-Winter Meeting

January 22, 2015 – January 25, 2015
Where San Antonio, TX, USA

▶ Int'l Conference on Biophysics and Medical Physics - Jeddah

January 26, 2015 – January 27, 2015
Jeddah Saudi Arabia

▶ Digital Mammography and Quality Controls - Prague

January 29, 2015 – January 31, 2015
Prague, Czech Republic

▶ Contrast Study Day and Essential Physics for FRCR

January 29, 2015 – January 30, 2015
Sheffield, South Yorkshire, UK

▶ EFOMP School for Medical Physics Experts – Prague 2015

Digital mammography and quality controls
January 29 – 31, 2015
Prague, Czech Republic
<http://www.csfm.cz/winter2015.html>
Dott. Marco Brambilla:
marco.brambilla@maggioreosp.novar.a.it

▶ 6th Annual Canadian Winter School on Quality and Safety in Radiation Oncology

February 1, 2015 – February 5, 2015
Where Kelowna, BC, Canada

▶ Int'l Conference on Medical Physics, Radiation Protection and Radiobiology (ICMPRPR2K15)

February 20 – February 22, 2015
Jaipur, Rajasthan, India
Website <http://www.ampi.org.in/>
Contact Person: Dr. Arun Chougule
at: arunchougule11@gmail.com

▶ ISEP- AAPM Conference in Iraq in collaboration with IOMP, the Iraqi Ministry of Health and the Iraqi Medical Physics Society (IMPS)

▶ Image-Guided Radiation Therapy Hands-On Course - Holland

March 31, 2015 – April 4, 2015
Where Haarlem, Netherlands

▶ The First International Conference on Radiation Physics and its Application.

11-14 April 2015
Alexandria University, Egypt
Contact: Dr. Mohahmad Gomma at:
radmedphys@yahoo.com
www.sci.alexu.edu.eg/ICRPA-1

▶ Dosimetry and Treatment Planning for Basic and Advanced Applications - Italy

April 13, 2015 – April 24, 2015
Trieste, Italy

▶ Positron Emission Tomography (PET): Technology and Application London, UK

April 20, 2015 – April 22, 2015
3rd ESTRO Forum - Barcelona
April 24, 2015 – April 28, 2015
Barcelona, Barcelona, Spain

▶ ACR 2015 — The Crossroads of Radiology

May 17, 2015 – May 21, 2015
Washington, DC, USA

▶ Int'l Congress of Radiation Research (ICRR 2015) - Kyoto

May 25, 2015 – May 29, 2015
Kyoto, Japan

▶ The Int'l Society for Magnetic Resonance in Medicine Annual Meeting - Toronto

May 30, 2015 – June 5, 2015
Toronto, ON, Canada

▶ World Congress on Medical Physics & Biomedical Engineering - Toronto

June 7, 2015 – June 12, 2015
Toronto, ON, Canada

▶ AAPM 57th Annual Meeting & Exhibition

July 12, 2015 – July 16, 2015
Anaheim, CA, USA

IOMP PRC Report

Raymond K. Wu, PhD, Chair IOMP PRC



There are several news items of interest to the IOMP community. The first one is related to the IOMP Travel Award program which has been announced in the IOMP website since late October. A convenient link is also displayed in the WC2015 Congress Registration & Accommodation webpage. In addition, the announcement was sent to all National Member Organizations by the Secretary General's office. In partnership with conference organizers, IAEA, and WHO, the Travel Award program provided funding to 18 participants to attend the ICMP2013 in Brighton, twelve awardees for WC2012 in Beijing, and eight awardees for WC2009 in Munich. At press time 50 applications and several inquiries had been received. To apply, please visit the IOMP.org or the WC2015.org websites.

Certification Task Group Final Report

In early 2009, IOMP created the Task Group on Certification to explore the following certification issues and come up with a recommendation: (i) Produce general guidance, (ii) Introduce a scheme which accredits the existing national or regional certification boards/bodies. (iii) Implement an International Certification Scheme. The Task Group facilitated several meetings with interested parties during WC2009 in Munich, AOCMP2010 in Taipei, ICMP2011 in Brazil and several other well attended conferences. On May 23rd, 2010 eleven organizations resolved to form the International Medical Physics Certification Board (IMPCB). The work of IMPCB had been published in several past issues of the eMPW. At this time, the Task Group considered the assigned goals had been reached and submitted the Final Report to EXCOM. The leadership of IOMP and IMPCB is currently discussing how to formalize the relationship between the two independent organizations. The IMPCB welcomes national organizations to join as regular members.

Equipment Donation Program

Mohammed Zaidi has an update of the Equipment Donation Program in this issue of the newsletter. Please contact him if you wish to donate any of the requested items, or if you are interested in receiving the available items for free.

Library Program

The IOMP/AAPM International Library Program is working on its website re-design. The goal is to provide at least as much information to visitors from the IOMP portal as from the AAPM portal. In the interim period, one can go to <http://www.aapm.org/international/LibraryProgram.asp> and browse the details on how to create a new library, and view the list of books available for free, the list of existing libraries, and other information. The current plan is to link from "IOMP Programmes" at IOMP.org. Please see the report of Dr. Allan Wilkinson in this issue of the newsletter. IOMP has an agreement with CRC (Taylor and Francis Publisher) to provide ten copies of new medical physics publications in hard copy or electronic format to existing libraries. Please contact Allan if you are interested in more details. ◀



Another success story of the International Atomic Energy Agency (IAEA) – Section of Nuclear Medicine and Diagnostic Imaging, in its efforts to improve health care in all its Member States by continuously contributing to developments in the field of nuclear medicine and diagnostic imaging.

Emphasizing the importance of information and communication technology in professional development, the Human Health Campus of the IAEA provides a unique, user-friendly platform containing invaluable learning resources in a myriad of health areas, including nuclear medicine and diagnostic imaging.

IAEA strongly encourages everyone to navigate periodically through the Human Health Campus (<http://humanhealth.iaea.org>) where high quality educational materials are continuously uploaded.

Report on the AAPM/IOMP Library Program

DA Wilkinson, PhD, Radiation Oncology, The Cleveland Clinic,
Cleveland, OH, USA



The library program is a joint venture of both the AAPM and the IOMP. As such it is administered through a sub-committee of each organization. The chairman of both sub-committees is also the library curator, Allan Wilkinson. Participation in the program is free to institutions in the developing countries that are involved in medical physics activities.

Current participation in the program involves 36 libraries located in 27 countries in 5 continents. Electronic subscriptions to "Medical Physics" for all the libraries are provided each year

through the generosity of members of the AAPM. Additionally, there are individual donations of books and journals. If the donor wishes to name a particular recipient library, that usually can be accommodated.

This year, we have promoted the evolution and coordination of the library information that appears on the websites of the AAPM and IOMP. The location (city and country) of each library is found there. Other tabs list donations available to the libraries and the names of donors. Libraries are apprised of changes by email. ◀

HERMES proposes Centre of Excellence on Physical and Biomedical Sciences

Dr Evangelia Dimovasili, HERMES Technical Coordinator, CERN

The core idea about the HERMES network is to link research strengths and capacities to address challenging and significant research problems in Medical and Health Physics and Technology. Faithful to its mission, HERMES continues its efforts for the development of Education, Training and Research projects in these fields; a consortium of HERMES partners has recently submitted a proposal to the European Commission for the establishment of a Centre of Excellence at Cyprus (CCE), on Physical and Biomedical Sciences.

Cyprus' accession to the European Union has brought forward new challenges towards the establishment

of Cyprus as a regional educational and research centre. Cyprus is considered low-performing with respect to other Member States of the European Union. It is anticipated that a bright future for Cyprus can only be achieved via Research, Innovation and Education. A high-potential and fertile field-of-play is Medical and Health Physics and resulting Technology. More specifically, the proposed Center of Excellence aspires to cover the scientific fields of medical imaging, diagnostic tools, production of radiopharmaceuticals, detector instrumentation for medical applications. These fields are not sufficiently developed in the Southeastern Mediterranean basin.

The CCE will seek to develop them in collaboration with internationally established universities and research institutions, covering not only the area of Research, but also education, vocational training, transfer of new knowledge and skills to the region.

In HERMES we believe that the CCE will be crucial for the establishment of large infrastructure in the country, will contribute to new job creation and will eventually act as a catalyst to offer the Cypriot society a multi-valued investment. ◀



UNSCEAR launches the latest Global Survey of Medical Exposure

Ferid Shannoun, PhD, Scientific Officer of UNSCEAR



The Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) has launched its Global Medical Exposure Survey by inviting the UN Member States to submit data on medical radiological exposure from diagnostic and interventional radiology, nuclear medicine and radiation therapy. The World Health Organization (WHO) supports the new UNSCEAR survey, considering the data on radiological exposure in medicine as public health relevant. The active involvement of WHO enables contact with health authorities as important sources of information. Already in 1955, the General Assembly of the United Nations has established UNSCEAR to assess and report levels, effects and risks of exposure to ionizing radiation from all sources, including those used in medicine. Information on the use of radiation for treatment and diagnosis and the associated doses is obtained by reviewing the scientific literature and through population-based surveys. Over the past 30 years, UNSCEAR has regularly assessed the levels and trends of medical exposures globally and has carried out surveys to collect the required information from UN Member States. It is known today that medical radiation exposure is by far the

largest artificial source of radiological exposure in many countries and it continues to increase considerably. UNSCEAR's surveys are also used to identify gaps in radiation treatment capabilities and possible unwarranted dose variations for similar radiological examinations or procedures.

In recent years, UNSCEAR has developed an improvement strategy to address some existing deficiencies in data quality and collection of former surveys and to increase participation of UN Member States in its new survey. The major elements of the strategy are the:

(1) introduction of UNSCEAR's online platform (www.survey.unscear.org) which fosters secure submission, exchange and archiving of data (figure). Only registered persons will have access to the online platform.

(2) request for nomination of national contact persons — via official channels - to coordinate, at country level, the collection and submission of data on radiation exposure of workers, the general public and patients. Subsidiary technical experts might register on the online platform to assist the national contact person in collecting the requested information .

(3) establishment of an Expert Group on Medical Exposure, who assist the secretariat in the evaluation of the submitted data and the check of their quality.

In summary, UNSCEAR's surveys and evaluations have provided the scientific foundation for improving the basic understanding of the levels of

radiation to which individuals are exposed and of possible radiation-induced health effects. The data and findings provided by UNSCEAR have been used to establish frameworks for radiation protection activities in medicine in the past. Thus, UNSCEAR collaborates closely with the IAEA and WHO to implement Action 6 of the recent Bonn Call for Actions¹, which requests an increase availability of improved global information on medical & occupational exposures in medicine by: (1) improve collection of dose data and trends on medical exposures globally, and especially in low- and middle-income countries, by fostering international co-operation; (2) improve data collection on occupational exposures in medicine globally, also focussing on corresponding radiation protection measures taken in practice; and (3) make the data available as a tool for quality management and for trend analysis, decision making and resource allocation.

1. *Joint IAEA and WHO Position Statement on the Bonn Call-for- Action available on http://www.who.int/ionizing_radiation/about/med_exposure/en/index3.html* ◀



EUTEMPE-RX announces training modules for medical physicists

Hilde Bosmans, PhD, Prof of Medical Physics,

University of Leuven, Belgium, Project Coordinator EUTEMPE-RX

Dear colleague, dear friend,

If you are active in medical physics in radiology and you aim for increasing your expertise, then our EUTEMPE-RX course can be the opportunity you were looking for. The motto of the EUTEMPE-RX project is 'Medical Physics Experts drive technology to advance healthcare. They pro-actively protect patients.' With these tasks in mind, 12 course modules have been set up for you. More information can be found on our website: www.eutempe-RX.eu

The EUTEMPE-RX course modules are unique in several ways: (1) the modules cover high-end and the latest topics in medical physics in radiology; (2) the course modules consist of 2 parts, an on line phase with an educational platform and a face-to-face part for small group, interactive teaching; (3) our courses will be accredited in the EFOMP accreditation system; (4) it will be strived to have participants of many European Member States and beyond. You can find the complete list with module topics on our website. We cover themes like the challenges of our profession, fundamentals of radiobiology, Monte Carlo in radiology, new applications of X-rays such as phase contrast imaging, measurement of system properties and optimization, QA protocols, virtual clinical trials and its anthropomorphic phantoms. Other modules cover specific technologies, like CT, screening, interventional radiology... Finally more modules discuss radiation

protection of personnel, children and pregnant patients.

Here are a few good reasons to attend all or some of the modules during 2015-2016:

(1) they are free of charge NOW (travel & housing costs are obviously yours); if the modules are repeated later on, in a sustained network, it will no longer be for free, but at true costs. Now the development and first run of the teaching activities is covered by EC grant of the EURATOM program, FP7.

(2) the teachers are very enthusiastic and plan to make the courses very interesting, using all modern tools and interactivity possible. It is also your unique chance to visit specific facilities, to work with interesting medical devices, to visit hospitals with the local medical physicist, to visit companies on excursions being organized or to use unique software tools available in the centres. In this run of the modules, the teachers 'play

at home'. This will bring us also to interesting places for tourism.

(3) we allow only 20 participants per module (apart from Module 1, where more participants can join). This guarantees interactivity.

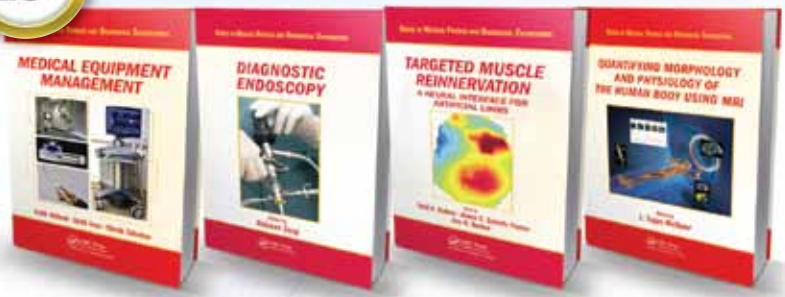
(4) user groups will be constructed with the participants. Be member from the first moment!

You can apply for participation in Module 1 til the end of Dec 2014. This module will address the development of the profession and the challenges for the medical physics expert (in diagnostic and interventional radiology) in Europe and beyond. The online phase starts December 17, 2014. The face-to-face phase will take place in Prague, Feb 9 – 13, 2015.

I would be very happy to see the international physicist coming to Europe and enjoy all the expertise that will be shared by a fantastic team of teachers. ◀

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International Workshop on Modern Clinical Radiotherapy, Cipto Mangunkusumo National Hospital Jakarta, Indonesia, August 27nd – 30th, 2014 endorsed by IOMP, IMPBPA, IROS, AAPM

Cheng B Saw, PhD, International Organizer

Djarwani Soejoko, PhD, National Organizer and Host Committee Chair

Supriyanto Pawiro, PhD, National Organizer and Host Committee Chair

A four-day international workshop with the theme, “International Workshop on Modern Clinical Radiotherapy” was held at the Cipto Mangunkusumo National Hospital, Jakarta, Indonesia on August 27th - 30th, 2014

(<http://iwmcr2014.com>). This international workshop was organized by the University of Indonesia in collaboration with Dr. Cheng B Saw, President, CBSaw Publishing, LLC, USA. Grants were awarded by the Varian Medical Systems Foundation, a corporate advised fund of the Silicon Valley Community Foundation and the International Atomic Energy Agency (IAEA). The program for this international workshop was submitted for review and thereafter endorsed by the International Organization for Medical Physics (IOMP), Indonesian Medical Physics and Biophysics Association (IMPBPA), Indonesian Radiation Oncology Society (IROS), and American Association of Physicists in Medicine (AAPM). Furthermore the program was awarded continuing education credits by the Commission of Accreditation of Medical Physics Educational Programs (CAMPEP) and Medical Dosimetrist Certification Board (MDCB).

The principal objectives of this workshop were (a) to provide an introduction to modern clinical radiotherapy involving the use of 3D treatment planning, (b) the collaborative exchange of information on

modern clinical radiotherapy, (c) to update technological advances in radiotherapy, and (d) to iterate the concern for patient safety using sophisticated modern technology. Additional objectives of the international workshop were to foster a platform for learning and collaboration among the participants, and also with the international experts in the implementation of modern clinical radiotherapy technologies.

The organizers for this international workshop were Cheng B Saw, PhD representing the international committee and Prof. Djarwani S. Soejoko, PhD representing the host or national committee. The programs were coordinated through the host committee members consisting of Djarwani Soejoko, PhD, Supriyanto A. Pawiro, PhD, Lukmanda Evan Lubis, MS, Prof. Soehartati Gondhowiardjo, MD, PhD, Sri Mutya Sekarutami, MD, and Wahyu Edy Wilbowo, BS. The faculty members for this international workshop were

1. Cheng B Saw, PhD, Northeast Radiation Oncology Centers, Scranton, PA
2. David Djajaputra, PhD, University of Maryland – St Joseph Medical Center, Towson, MD
3. Todd Pawlicki, PhD, University of California – San Diego, San Diego, CA
4. Charles Shang, MS, BMed, Lynn Cancer Institute, Boca Raton, FL
5. Dato Ibrahim Wahid, Beacon International Specialist Center, Kuala Lumpur,

Malaysia

6. Soehartati Gondhowiardjo, MD, PhD, Cipto Mangunkusumo National Hospital, Jakarta, Indonesia

The opening ceremony of this international workshop commenced on August 27, 2014 with the welcoming addresses delivered by Professor Dr. Siti Setiati, MD, Deputy Rector, University of Indonesia, Professor Dr. Akmal Taher, MD, Director-General of Health Services, Indonesian Ministry of Health, Dr. Khairul Huda Deputy Director, Indonesian Nuclear Energy Regulatory Agency, Professor Dr. Djarot Sulistio Wisnubroto, Director, Indonesian Nuclear Energy Agency, and Cheng B Saw, PhD. All the dignitaries emphasized the importance of this international workshop as a platform for collaborative sharing of the technical know-how and clinical experiences to ensure the safe management of patients with cancers in Indonesia. This platform is especially important in light of the rapid pace of technological development and implementation in radiotherapy. A press conference was held following the ceremony to explain to the public the rapid technological advancement in modern radiotherapy. Dr. Saw expressed the gratitude of the organizers to the faculty for their long journey to Indonesia and volunteering their times and efforts to participate in the workshop. Dr. Saw also thanked the members of the host ▶

► committee for their times and efforts in conducting the workshop.

The first presentation was given by Dr. Saw on the scope of modern clinical radiotherapy. Dr. Saw began his presentation by stating that we no longer are using single field to treat the spine, bilateral fields to treat the neck, nor box fields to treat prostate. Furthermore, we no longer use mechanical methods of deriving patient contours, and using manual methods of performing dose calculations. The introduction of three-dimensional treatment planning systems (3DTPS) has transformed the practice of radiotherapy, said Dr. Saw. The use of CT images provides exquisite patient anatomical information for target volumes and organs-at-risk delineation. In addition, imaged-based technology preserved the spatial relationship between the target volumes and organs-at-risk for precise targeting to minimize radiation toxicities. This has allowed the implementation of conformal radiation therapy (CRT) and intensity-modulated radiation therapy (IMRT) dose delivery techniques. The targeting tools were further improved with the implementation of image-guided radiation therapy (IGRT). The treatment planning process involves an integration of the components of modern radiotherapy:

patient data acquisition, treatment planning, and dose delivery. The acquisition of image dataset for 3D treatment planning was discussed by Dr. Djajaputra. Dr. Pawlicki discussed the concepts and the requirements of 3D treatment planning. He further examined the strategies of treatment planning for CRT, IMRT, and VMAT, the latest dose delivery technique. A requirement for IMRT is the patient specific quality assurance which was demonstrated in the practical session using the OCTAVIUS phantom system from PTW by Dr. Saw. The current status and development of stereotactic body radiation therapy (SBRT) were presented by Prof. Shang. In addition, he also discussed the challenging issues of patient and tumor motion management during SBRT. To ensure high precision of radiation therapy with high fractional doses, advanced imaging guidance, effective motion control, and rigorous QA are crucial to achieving superior local tumor control and low radiation toxicity. Likewise, patient safety is becoming higher priority when using modern technology because of the mishaps that had reported in the New York Times. Patient safety and how to improve patient safety were discussed by Dr. Pawlicki. A brief mention of future technologies was

made on adaptive radiotherapy and particle beam therapy at the end of the presentation by Dr. Saw. While the thrust of this international workshop was on modern clinical radiotherapy, the fundamentals of beam dosimetry were also examined. Dr. Djajaputra reviewed the AAPM dosimetry (TG-51) protocol and the IAEA dosimetry protocol (TRS-398). In comparison, the difference in the two protocols is less than a percent. Dr. Pawlicki also reviewed several dosimetry systems, their ranges and limits of operations to perform in-vivo dosimetry. CT-simulation quality assurance and linear accelerator quality assurance were demonstrated in the practical sessions. Advances in high-dose rate (HDR) brachytherapy were presented by Prof. Shang including 3D treatment planning and quality assurance. Specialized dose delivery systems were also presented including Tomotherapy, Cyberknife and Gamma Knife. Tomotherapy which are becoming common in the South-East Asia region was presented by Dr. Saw. Dr. Saw described the working principles of this specialized dose delivery system, the unique advantages of treating certain cancer types, and quality assurance of the system. Dr. Djajaputra discussed the ►



► operation and quality assurance on Cyberknife and Gamma Knife. The experiences on patient cancer management were delivered by Dato Ibrahim Wahid, MD and Soehartati Gondhowiardjo, MD, PhD. Dr. Wahid presented his experiences on the use of IMRT in the management of Head and Neck cancers and also using Cyberknife to perform SBRT in Malaysia. Dr. Gondhowiardjo reviewed the management of cancers in Indonesia including the manpower and facilities that are accessible to the radiation oncology community of Indonesia. There are currently thirty-nine external photon beam therapy units of which fourteen are still cobalt-60 units. It is obvious that there is a shortage of both manpower and therapy equipment to support a population of over 230 million. In addition, she also presented the management of the cancer of the cervix which is still the dominant cause of cancer death for women.

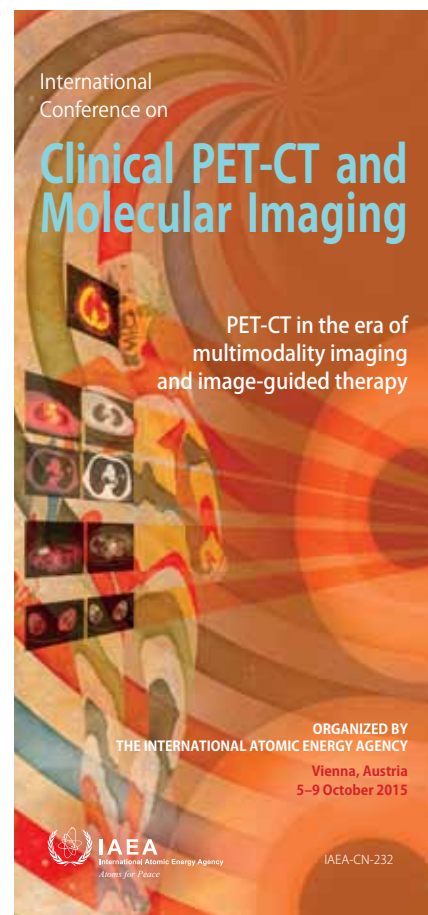
Radiation medicine is a technological driven medical subspecialty and it is prudent to have vendors participated in the presentations. This process allows the attendees to have up-to-date product information directly from the vendors. The committee wishes to thank the following vendors: PTW, Everest/Panacea, Siemens Medical System, Varian Medical Systems, and Transmedic (Accuray, Tomotherapy, Eckert&Ziegler Brachytherapy, Philips Treatment Planning Systems) for their graciousness in arranging speakers to make presentations on their emerging products at this international workshop.

The platform for this international workshop also supported practical sessions where the application specialists can show and demonstrate the use of their treatment planning systems, the use and/or care of the equipment, and the quality assurance. Transmedic had chosen to take advantage of these sessions to demonstrate their latest

tomotherapy treatment planning system and Pinnacle treatment planning system while Indosopha demonstrated the Oncentra brachytherapy planning system. The organizing committee appreciates the participation of these vendors. The practical sessions were also used to demonstrate quality assurance of CT-simulation equipment, quality assurance of medical linear accelerators, patient specific quality assurance, and commissioning of medical linear accelerators.

This international workshop was overwhelming successful with over 130 registrations. About 15% of the registrants are from overseas including Hong Kong, Malaysia, Philippines, Singapore, Sri Lanka, and Thailand. The venue had to be extended to another room across the hall via speaker and projector systems. Overall, there were more than 150 people in the meeting including the members of the vendors and the staff assisting the conduction of the workshop. The attendees were very engaged in particular in the practical sessions where the group number was small, suitable for direct one-to-one conversation. On behalf of the faculty, the international organizer (Cheng B Saw, PhD) wishes to thank the host organizers, Dr. Djarwani Soejoko, Dr. Supriyanto Pawiro, and their committee members for providing such an extraordinary hospitality. The international faculty had the opportunity to visit mini-Indonesia, a national park that shows the cultures of various regions of Indonesia. The willingness of the international faculty to travel to Indonesia to participate in the educational workshop are well-appreciated by the organizers and the local committee members. The organizers wish to express our sincere thanks to the vendors and local distributors for setting up excellent show rooms, the Indonesian Radiation Oncology Society for extending their hospitality to the international

faculty, and Cipto Mangunkusumo National Hospital for allowing us to use their facilities for the meeting including their CT-simulator, medical linear accelerators, and treatment planning system for practical session demonstrations. This international workshop would not be possible without the extra-ordinary efforts of Mr. Teo Kee-Meng who had lobbied and coordinated communications between the organizers for this workshop. We appreciate his dedication to improve the educational level of the radiation oncology community in Indonesia. ◀



Briefing from the President of MEFOMP

Ibrahim Duhaini, President of MEFOMP



Table 1. Conference Program. Topics and Speakers

Topic	Speaker
Open Remarks	Dr. Huda M Al Naemi
Fire Safety Moment	Leo S Dote
The Birth of Medical Physics	Prof. Ilham Al-Qaradawi
Know Your Medical Physicist	Dr. Abdallah Al-Hajj
What is the Role of the Medical Physicist	Nabil Iqeilan
Environment and Radiation	Dr. Abdallah Al-Hajj
The Relation between the Medical Physicist and the Biomedical Engineer	Eng. Hazem El Sayed
OHS - Radiation Safety Section Activities and Achievements	Dr. Antar Saied
Radiation Safety / Do's and Don'ts	Mahmoud Tarbiah
Radiation Safety Award	Dr. Huda M Al Naemi

During the last six months, MEFOMP countries have participated in many activities throughout its territories some of which are listed below:

1. Qatar

The Occupational Health and Safety Department of Hamad Medical Corporation organized for the second time a conference in Doha, Qatar on 7th November, 2014 on the occasion of the International Day of Medical Physics. The conference was attended by Dr. Huda Al-Naemi the Chairperson of the event, Dr. Abdallah Al-Hajj, President of the Saudi Medical Physics Society, Prof. Ilham Al-Qaradawi, Chairman of the Physics Department at Qatar University, Medical Physicists, biomedical Engineers, Radiologists, Technologists and administrative staff from HMC and other hospitals. The conference programme is presented in the Table 1.

With this conference the Qatar Medical Physics Society (QMPS) strongly hope to connect with other colleagues worldwide and involve in activities

focused in raising awareness of the profession. Also this IDMP conference was publicized on the Occupational Health and Safety Department and Hamad Medical Corporation Websites in addition to the local and national press.

Further as part of the celebration the organizing committee under the successful leadership of Dr. Huda Al-Naemi, President of QMPS and Executive Director of OHS awarded staff who achieved and succeeded in making remarkable improvements on themselves as well as providing a significant impact in the department and services they deliver.

2. Iraq

The Iraqi Medical Physics Society (IMPS) celebrated the IDMP by making the opening ceremony for the new Medical Physics Lab in the Al-Mustansiriya Medical University in Baghdad. In this lab, many new modern experiments were added to improve the practical part of this subject by developing the medical application of the physical principles.

The new experiments include:

- Doppler Sonography
- Human Electrocardiography
- Radiation Detection and Protection
- Applications of Pulsed and Continuous Laser
- Spectrum Analyzer Application
- Imaging with X-rays

The inauguration of this lab was attended by Dr. Nabaa Naji, President of the IMPS, university professors, medical physicists, students, governmental officials and other invites from many hospitals in the region.

3. Lebanon

The Lebanese Association of Medical Physicists (LAMP) celebrated the International Day of Medical Physics and Radiology Day by organizing a Symposium on Friday November 7, 2014 at Rafik Hariri University Hospital in Beirut, Lebanon.

The Program included the Following:

1. Welcome Speech.
2. New Horizon of Radiation Use, presented by Ibrahim Duhaini, Medical Physicist at RHUH
3. Innovative Imaging Techniques ▶

► in Radiology, presented by Aline Geara, Radiologist at RHUH
 4. What is Radiation Therapy?

presented by Wassim Jalbout, Medical Physicist at AUMC

5. Buffet Reception and Gathering

This event was attended by more than 70 participants (Medical Physicists, Radiologists, Radiotherapy Technologist, Radiology Technicians, Nurses, Administrative staff, and other hospital staff) from the following hospitals in Lebanon:

1. Rafik Hariri University Hospital

2. The American University Hospital
 3. Middle East Institute of Health, Bsalem

4. Mount Lebanon Hospital

5. North Medical Center, Zgharta

6. Lebanese University

After the symposium, all participants enjoyed the celebration with an open Buffet and gathering. It was the first time that this occasion has been celebrated together especially that the themes of both events this year stress the importance of Imaging in Medicine. A general meeting for all the LAMP

Medical Physicists attended was held afterwards and the following were discussed:

1. Evaluation of the general situation of Medical Physicists in Lebanon

2. Update on the new technologies in the country.

3. Seeking the Ministry of Health to recognize MP as an official profession in the country.

4. Planning for new Election for the LAMP officers in 2015 encouraging the junior physicists and lady physicists to have bigger role and involvement. ◀



ENETRAP III: RPE in the Medical Sector



A Medical Module for Radiation Protection Experts (RPEs) working in the medical field, in compliance with Council Directive 2013/59/Euratom (BSS), is being designed as part of the European Network on Education and Training in Radiation Protection (Part III) (ENETRAP III) EC funded project (Fission-2012-5.1.1). This project also contains three generic modules as pre-registration requirements for the Medical Module (although consideration may be given to Accreditation of Prior Certified Learning (APCL) or equivalent).

The Medical Module is designed to ensure that the knowledge skills and attitudes (KSAs) are obtained by the successful course participant to provide expert radiation protection advice to employers, staff and members of the public that will allow him or her to obtain the status of radiation protection expert (RPE) from an authorised body in the medical fields of radiotherapy, diagnostic & interventional radiology and nuclear medicine.

The Medical Module will contain a one week face-to-face session which will consist of a number of lectures and workshops designed to ensure the KSA requirements are satisfied. The face-to-face session will be delivered during the Summer of 2016.

Around 12 months before the face-to-face session, registered course participants will be tasked to provide portfolios covering: the regulatory framework; measurement of radiation dose, dose rates and contamination measurements; calculation of potential exposures; hazard and risk assessments; control procedures (including the zoning of radiation areas); and, personal and environmental dosimetry. These portfolios will be discussed in the face-to-face session to provide opportunities for improvements and reflective thinking. The successful candidates will have fulfilled the required contents for the portfolios and passed both an oral assessment on their portfolio and a multiple choice examination at the end of the face-to-face session.

The Medical Module is being developed by radiation protection experts of the European Federation of Organisations for Medical Physics (EFOMP).

Stephen Evans
EFOMP Officer, Chair Projects Committee
www.efomp.org

For more information on the ENETRAP III project please visit: <http://enetrap3.sckcen.be/en>



The International Atomic Energy Agency (IAEA) recently announced the issue of two publications produced by the Nuclear Medicine and Diagnostic Imaging Section of IAEA, as part of its continuous efforts to contribute to improving health in all its Member States by supporting developments in the field of nuclear medicine and diagnostic imaging.

'Guided Intraoperative Scintigraphic Tumour Targeting (GOSTT); Implementing Advanced Hybrid Molecular Imaging and Non-imaging Probes for Advanced Cancer Management' (IAEA Human Health Series No. 29),

'Radiolabelled Autologous Cells: Methods and Standardization for Clinical Use' (Human Health Series No. 5).

Report on AAPM/IOMP training course on radiation therapy in Tallinn, Estonia, 2014

Dr. Eduard Gershkevitch, Local organizer



The course was organised in the framework of AAPM International Scientific Exchange Programs Committee (ISEP) and IOMP on 16-20th of June 2014 in the capital of Estonia-Tallinn. The course was endorsed by EFOMP and IAEA that also provided financial assistance and sponsored some participants and speakers bringing the total number of lecturers to 10.

The meeting was attended by 62

clinical physicists and 10 company representatives. Third of participants were from the Baltic States (Estonia, Latvia, Lithuania), another third from the CIS countries (Russia, Ukraine, Belarus, Azerbaijan, Kazakhstan), and the remaining third - from Eastern Europe (Poland, Romania, Serbia, Montenegro, Croatia, Czech Republic, Slovenia, Bulgaria, etc.). Altogether, the participants were from 25 countries.

The main topic of the course was Quality Assurance (QA) and dosimetry aspects of advanced radiotherapy techniques including IMRT, VMAT, SBRT and SRS. IGRT and image dose management was also included in the course. The course topics also covered QA aspects of treatment planning systems, record and verify systems and different delivery systems (linacs, tomotherapy, cyberknife). Also included in the curriculum were such modern topics as small field dosimetry, in vivo dosimetry, Monte Carlo calculations and even QA and dosimetry of proton beams. The course was mainly based on recently published

AAPM Task Group reports and focused on practical aspects to help physicists to implement these activities in their daily practice. For the professional aspect of the meeting, there were talks on International Board certification and harmonization of Medical Physics practice in Europe. There was also a practical workshop organized in a local radiotherapy department with equipment demonstrations, which was highly evaluated by participants and industry representatives. There were continuing educational credits available from both EFOMP and CAMPEP. Despite the intensive schedule of the course, the participants were able to combine their educational activities with some cultural events using the extended daylight hours (white nights) during this part of the year. The organizers arranged a bus tour of the city of Tallinn as well as a guided walking tour of the Old Town.

There were many young participants who found the training course useful and wanted to have similar courses in future. ◀



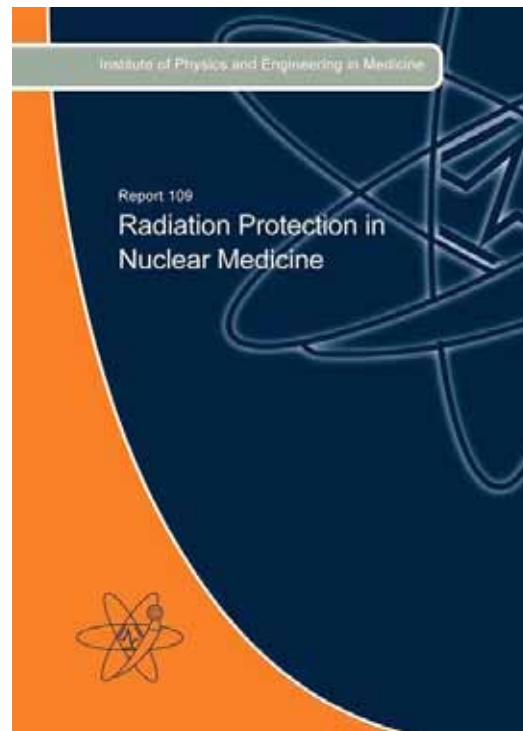
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This report aims to provide comprehensive guidance on the radiation protection requirements for Nuclear Medicine. The current legislative framework is introduced early, with further administrative detail (practical and operational aspects) in each chapter. The therapeutic characteristics of unsealed radionuclides are discussed, followed by all aspects of their use. This includes preparation, dispensing, transport and storage, imaging and associated procedures, monitoring and disposal. Discussion includes PET and cyclotron facilities. Some chapters cover radiation protection for specific clinical areas such as paediatric nuclear medicine. Often practical examples are used, and content covers the handling of clinical incidents and emergencies.

This Report will be of interest to Radiation Protection Advisors/Supervisors who have responsibilities for Nuclear Medicine, or conversely to those who work in Nuclear Medicine departments with an interest in or responsibility for radiation protection. Those involved in teaching and training will also find this Report useful.

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