International Organization for Medical Physics

eMPW

Volume 35 Number 1 June, 2019

IDMP 2019

www.iomp.org/idmp

IT'S A MEDICAL PHYSICS WORLD

November 7

INTERNATIONAL DAY OF MEDICAL PHYSICS

6 REGIONAL ORGANIZATIONS

86 NATIONAL MEMBER ORGANIZATIONS

+25 000 MEDICAL PHYSICISTS

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Safety information: Radiation may cause side effects and may not be appropriate for all cancers.

Medical Physics World

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United Kingdom
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Bangladesh - AFFILIATE

Editorial

Magdalena Stoeva, PhD
Editor IOMP Medical Physics World

Dear Colleagues and Friends,

It is an honor for me to write this editorial which marks the beginning of the 35th year of Medical Physics World.

Our bulletin, the voice of IOMP and the medical physicists worldwide turns 35 this year and I hope it will be a remarkable year for all of us. There are number of activities MPW has planed for this year, including a special issue dedicated to MPW's history, present and future.

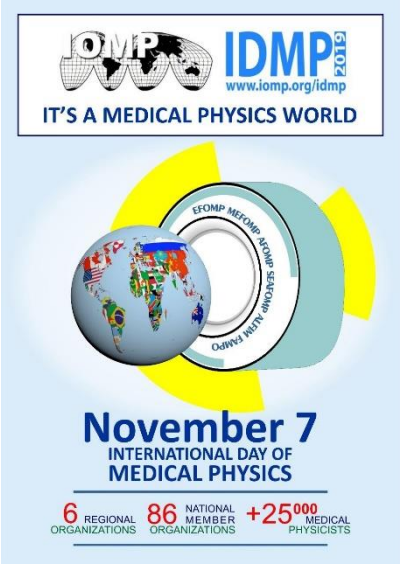
In recognition of Medical Physics World's contribution to medical physics worldwide, IDMP 2019 is also dedicated to MPW. This year's theme "It's a Medical Physics World!" is a reference to the enthusiasm of the pioneers who established MPW 35 years ago and to everyone who served MPW and turned to MPW for the latest updates during all these 35 years.

Medical Physics World is now an integral part of the new IOMP website www.iomp.org/mpw .

The current issue of MPW brings to your attention the most recent news from IOMP, the ExCom, regional organizations, hot topics from the world of medical physics, events reports and announcements.

Medical Physics World has always been a tribune to announce the latest news, achievements and recognitions of Medical Physicists. Please allow me to congratulate Dr. Men and Prof. Mackie who recently received the IUPAP Young scientist award and the John Mallard award.

Enjoy reading Medical Physics World, and be an active part of MPW's important anniversary!



Medical Physics World
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ISSN 2313-4712
IOMP
Fairmount House
230 Tadcaster Road
YORK YO24 1ES, UK

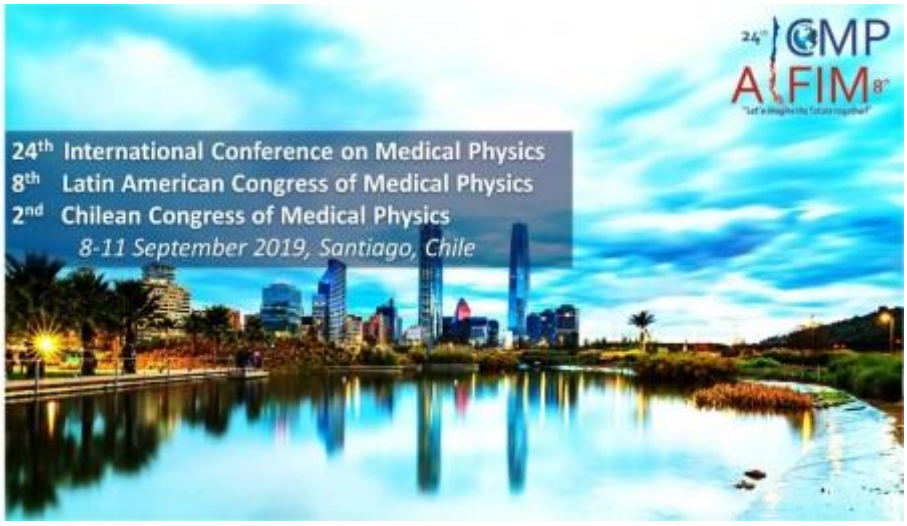
President's Report

Madan M. Rehani, PhD
President of IOMP

Dear Medical Physics Colleagues around the Globe,

I am happy to greet you all through this medium of eMPW.
At the outset, I wish to state that I prefer brief messages acknowledging the fact that people are busy and do not have time to read long text.

IOMP is partnering with societies of other medical professionals to have common actions and programs. A collaboration with Asian Oceania Society of Radiology (AOSR), a MoU with International Society of Radiology (ISR), joint webinars with Cardiovascular and Interventional Radiological Society of Europe (CIRSE) and IAEA are among the recent actions and more to follow in coming months.
A MoU with Physica Medica – European Journal of Medical Physics (EJMP), official organ of EFOMP, AIFM, SFPM, IAPM, CAMP, HAMP, makes this journal the official publication of the International Organization for Medical Physics (IOMP). More information available here.
IOMP upgraded its website www.iomp.org . There are very frequent updates on Latest News page and you are encouraged to regularly look at that.
This year's theme for International Day of Medical Physics (IDMP) has been chosen to be "It is a Medical Physics World", in line with the IOMP's publication eMPW. We wish to encourage you to celebrate IDMP2019 with enthusiasm.
As you may have noticed that IOMP has started Newsletter. Two issues of the Newsletters have been issued as:
IOMP Newsletter issue # 1 issued in mid-April 2019
IOMP Newsletter Issue # 2 issued in mid-June 2019
You are encouraged to subscribe to the Newsletter using the link.
A number of new actions have been announced through the Newsletter and they are not being repeated here.
The International Conference on Medical Physics 2019 https://icmp2019.org is approaching. About 385 abstracts were received and the Program Planning Committee is working hard to develop a stimulating program which will be online soon. You are encouraged to participate in the conference.
Please do send us your articles to let everyone know all the good work that you are doing. We are keen to hear from you.
Happy surfing through eMPW which will provide you comprehensive view of number of activities.



www.IOMP.org

IOMP Strategic Plan
2018-2021

International Organization for Medical Physics
Fairmount House, 230 Tadcaster Road, York, UK

MISSION

To connect with international organizations and medical physicists globally for enhancing patient benefit

VISION

To enhance the professional skills of medical physicists and healthcare professionals

STRATEGIC AGENDA

To interact with international organizations to enhance the visibility and recognition of medical physics in clinical settings

To contribute to the advancement of medical physics in all its aspects, especially in developing countries

To meaningfully connect and maintain links with medical physicists globally

To interact with medical professional societies to enhance the contributions of medical physics and radiation safety for patient benefit

To promote and steer actions directed at professional capability and skill development of medical physicists

www.IOMP.org

International Medical Physics Week (IMPW)

International Organization for Medical Physics
Fairmount House, 230 Tadcaster Road, York, UK

BACKGROUND

The concept of International weeks has been around and accepted by United Nations www.un.org/en/sections/observances/international-weeks
There are 10 weeks listed on UN website. Further there are 7 international weeks by UNESCO: en.unesco.org/commemorations/international-weeks
While these are based on UN observance, professional societies are free to initiate weeks and seek UN approval, if so needed. Thus, it is similar to International Day. We started International Day of Medical Physics (IDMP) and have yet to approach UN for recognition.
IOMP decides to launch International Medical Physics Week (IMPW) somewhat similar to International Day of Medical Physics (IDMP). The purpose is to motivate organization of activities in a defined week that result in the promotion of the subject of medical physics globally, in particular by arranging meetings with official bodies. For more information see www.iomp.org/impw

WHEN?

- Mid-month week in May each year. For 2020 (11-15 May)

HOW AND WHO?

Organization of activities all over the world by medical physicists as:

- Educational sessions (face-to-face or virtual)
- Campaigns
- Meetings with decision making bodies, professionals of clinical specialties
- Chats and social media

PROMOTION

- International Medical Physics Week webpage on IOMP website www.iomp.org/impw

RECORD OF ACTIVITIES AND FEEDBACK

- IOMP-MPW webpage www.iomp.org/impw-activities

Non-ionizing medical radiation protection and safety: An area of great interest for medical physicists

Prof. John Damilakis,
IOMP Vice President and President-elect

Medical equipment based on non-ionizing radiation such as magnetic resonance systems, ultrasound devices and lasers are considered less harmful than those based on ionizing radiation. However, uncertainties remain about possible risks of exposure to both the patients undergoing these examinations and healthcare personnel.

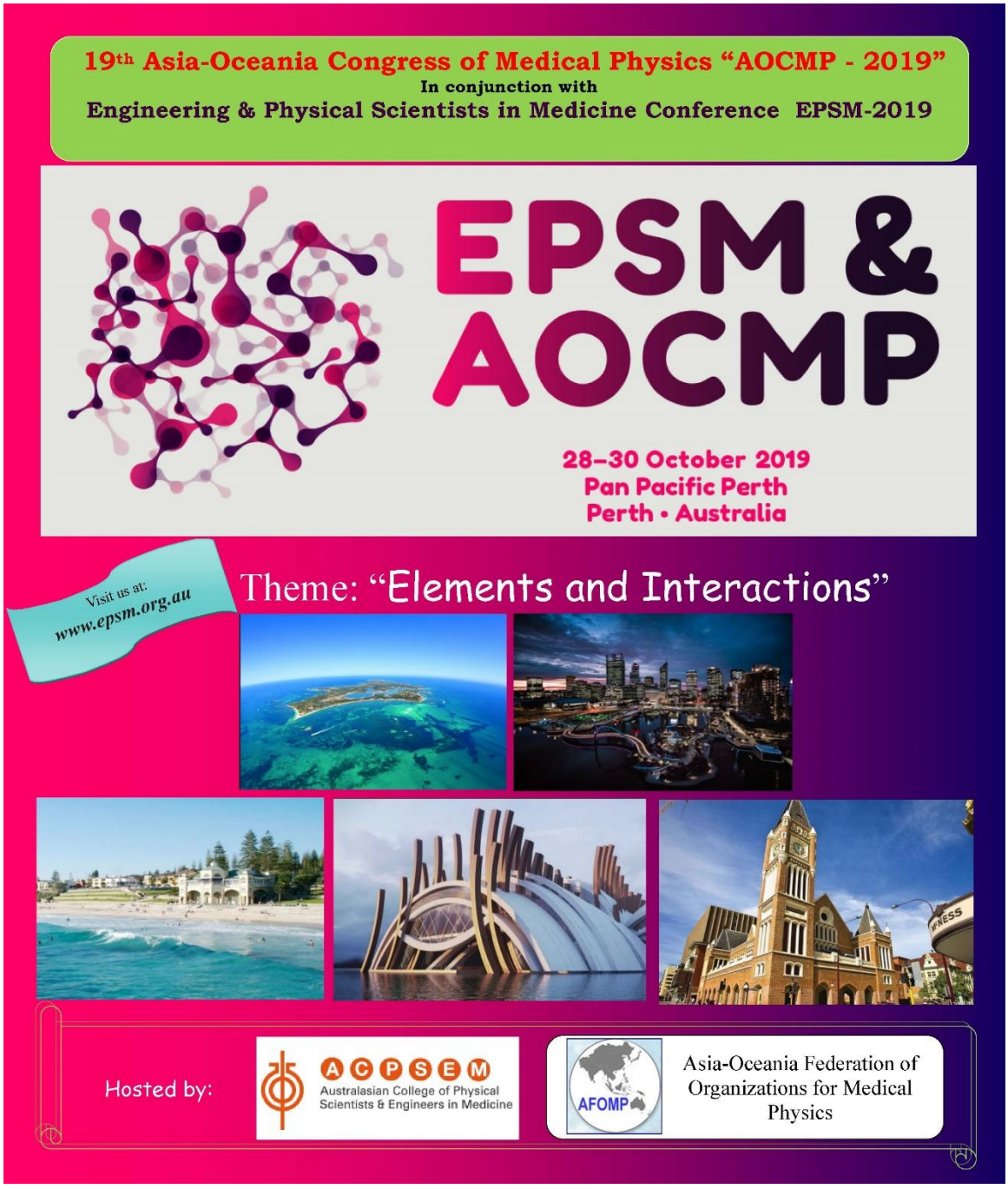
Several national and international organizations provide guidance on the health effects of non-ionizing radiation to protect patients and staff from radiation exposure. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) has published guidance regarding a broad spectrum of diagnostic devices employing non-ionizing radiation, including magnetic resonance imaging. Moreover, the World Health Organization (WHO) provides information about hazards to health posed by the growing number of equipment that uses non-ionizing radiation in medical practice, research and other areas. The WHO is planning to develop basic safety standards (BSS) that will reflect an international consensus on what constitutes a high level of safety for protecting the public, the patients and the environment from harmful effects of non-ionizing radiation. This document will cover the non-ionizing radiation spectrum, including electromagnetic and acoustic radiation.

A meeting was organized by the WHO on non-ionizing radiation in Geneva recently (May 27-29, 2019). The meeting was opened with a brief talk by the meeting organizer Emilie van Deventer. Break-out sessions were scheduled, one for each of the three exposure categories (public, occupational and medical). Meeting agenda included sessions on optical radiation, electromagnetic fields, medical exposures, risk communication etc. A session focused on medical exposures was organized on May 28. This part of the meeting included 'setting the scene' presentations and panel discussion coordinated by Maria del Rosario Perez. The IOMP participated in that session to discuss topics related to non-ionizing medical radiation protection and safety. The key messages of IOMP statements were organized around the following topics:

1) Short description of IOMP (membership, role, objectives, mission, vision)
2) IOMP's expectations from the non-ionizing radiation BSS
3) IOMP's role regarding non-ionizing BSS development and implementation

It was stressed that medical physicists can play a major role in the field of non-ionizing medical radiation protection and safety. Our responsibilities may include quality assurance, safety, optimization of exposure, technical specifications, acceptance testing, management of incidents and accidents, risk assessment, risk communication and education and training. An article can be included in the new BSS on the role and responsibilities of medical physicists similar to article 83 on 'Medical Physics Expert' of the European Union BSS for ionizing radiation. It is true, however, that the number of medical physicists working in healthcare facilities is limited and priority is always given to activities related to ionizing radiation. WHO, IAEA and other international organizations should keep supporting IOMP's efforts to raise awareness about our profession and increase the number of medical physicists

worldwide. Moreover, education and training initiatives are needed to ensure competency of medical physicists in the field of non-ionizing radiation. The role of IOMP regarding the non-ionizing radiation protection and safety was also highlighted during this meeting. We can disseminate information through IOMP's communication vehicles (eMPW, Medical Physics International Journal, website, social media), increase awareness about benefits and potential risks associated with non-ionizing radiation among patients, healthcare personnel and the public, provide education and training and support (endorse or sponsor) education and training events of our national member organizations on this subject.



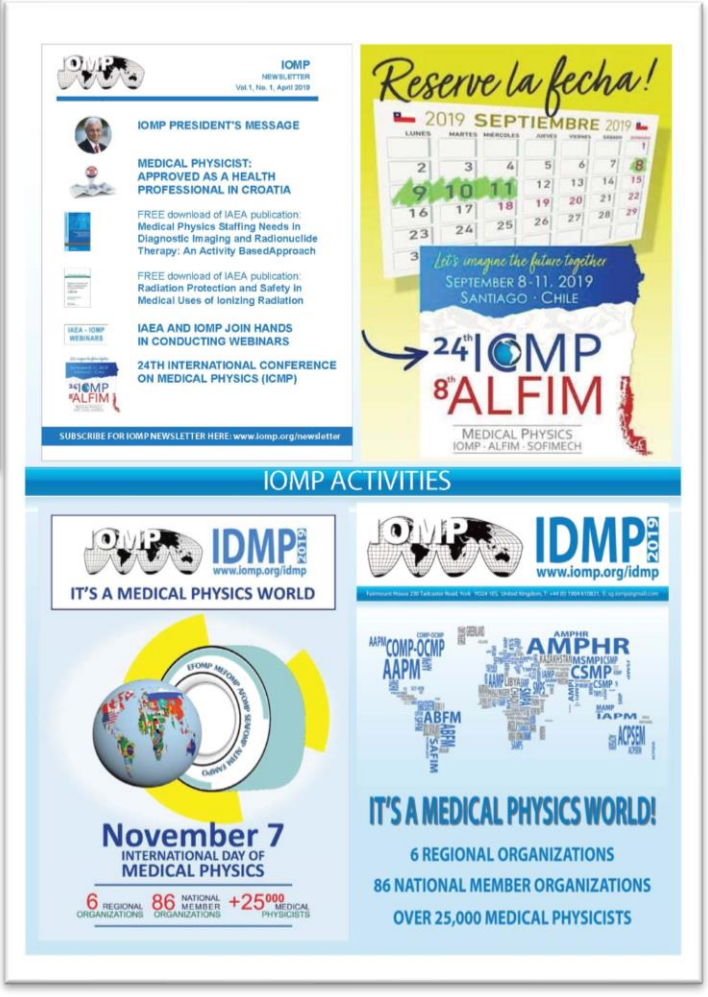
From the desk of the IOMP Secretary General

Virginia Tsapaki
Secretary General of IOMP

The first year of the 2018-2021 International Organization for Medical Physics (IOMP) Executive Committee (ExCom) in now finishing. There are a lot of initiatives coming not only from IOMP but also from National and/or Regional Organizations. Find out more at **News and Events** section of our brand new website: https://www.iomp.org/
We are working very hard the last months for the **next International Conference of Medical Physics** that is going to be held in **Santiago, Chile, 8-11th September 2019**. Regular Conference Organizing Committee meetings are held every month to ensure a successful conference. The Program Planning and the Scientific Committee have evaluated the abstracts and are working on creating an exquisite program for all those coming to Chile. The enthusiastic Local Organizing Committee is very active in **ICMP 2019 social media**. Check it out at:
Facebook:
(https://www.facebook.com/InternationalOrganizationforMedicalPhysics/),
Instagram
(https://www.instagram.com/congreso_fisica_medica_2019/)
and
twitter
(https://twitter.com/hashtag/icmp2019?src=hashtag_click)!
IOMP was present again this year at the **European Congress of Radiology** that was held in Vienna in February 2019 with a beautiful booth and lots of information to share with colleagues and relating professionals coming from various countries of the world. IOMP had meetings with various organizations ending up in a formal relationship with the International Society of Radiology (ISR). **Joint ISR-IOMP sessions** have started last year at the World Congress 2018 in Prague, continued at RSNA 2018 and are also planned for ICMP 2019, in Chile
In October 2017, ICRP announced its intention to **Free the ICRP Annals**. A campaign was launched to raise the € 500 000 needed to offset the expected loss of royalties. The intention was that once a publication is available for two years, it will automatically become free to download. IOMP fully supported this cause and provided a humble financial contribution. We are happy to see today that the campaign was successful and the ICRP Annals are now free. The changes will take effect at the end of 2019, when all of issues of Annals of the ICRP up to the end of 2017 (up to ICRP Publication 137) will be freely available in the Publications section of the ICRP website.
IOMP is invited to take part at the International Symposium on Standards, Applications and Quality Assurance in Medical Radiation Dosimetry (**IDOS 2019**) taking place at the premises of the International Atomic Energy Agency (IAEA), 18–21 June 2019, Vienna, Austria. The symposium will cover recent developments in the field of radiation dosimetry standards, applications and quality assurance. For more information you can find at: www.iaea.org/events/idos2019
and program can be seen at:

https://www.iaea.org/sites/default/files/19/06/cn-273-programme.pdf.

The IOMP informative leaflet that will be distributed at IDOS 2019 is found below.



The IOMP Project “History of Medical Physics”

Slavik Tabakov
IUPESM Vice-President and IOMP Past-President

Medical Physics is now an inseparable part of contemporary medicine. One of the aims of the project “History of Medical Physics”, which was launched in 2016, is to show the contributions of our profession to medicine, as well as to trace the global development of medical physics. In the first Special Issue of our Journal Medical Physics International (MPI, April 2018) we included selected chapters of this large project – the development of X-ray tubes (by R Behling) and Radiographic detectors (by P Sprawls), plus the first steps of e-learning in the profession (by S Tabakov).

The Second Special Issue of MPI (June 2019) continues along this line, showing the development of fluoroscopy (by S Balter) and mammography (by P Sprawls) and their major role in medical diagnosis. Together with this are underlined the contributions of colleagues who have triggered some important moments of the development of these specific imaging methods and equipment.

The professional development of medical physics workforce is another cornerstone of the project. Back in December 2017 we published in MPI a large survey of Medical Physics in the Region of MEFOMP (led by A Niroomand-Rad, S Tabakov, I Duhaini et al), and in May 2019 we published the first survey related to Medical Physics in Central America (led by W Chanta, R Montezuma and P Caricato). The whole MPI issue of May 2019 had an accent on the countries from the Region of ALFIM, logically related to the coming ICMP 2019 in Chile.

Our next issue of the MPI Journal (Dec 2019) will focus on the professional development in the FAMPO Region. Alongside, we work on new chapters related to X-ray imaging, professional development and are planning the start of the Ultrasound Imaging part of the project. Also, an online display of original historical materials is under preparation - papers, surveys, images and others, which will further support this initiative.

It is very good to see a side effect of the History project – educational use of various images and diagrams from the first History chapters – thus making our legacy a part of the education and professional self-esteem of our colleagues around the world. This is exactly in line with the need of strong professional growth of medical physics by 2035 and beyond, as we had discussed in a number of papers.

At the announcement of the History project (MPI, May 2017) a number of fields/volumes in this large long-lasting project were highlighted. It is very good to see that the initiative is expanding and now the AAPM History Committee is starting a series of Symposia on this subject, the first one being at the AAPM Annual Meeting in San Antonio (July 2019). We would like to invite more colleagues to take part in this important initiative. All fields of medical imaging, radiotherapy, safety, professional, etc are to be covered, thus showing our rich multi-faceted profession and its important contribution to medicine.

Treasurer's Report for the Year Ended 31st December 2018

Ibrahim Duhaini
IOMP Treasurer

Total subscription income in 2018 was slightly up to $67,998 (2017: $67,391), including $2,291 from Corporate Member, Varian. Overall, the response from NMO's this past year has been similar to previous years, with a total of 55 having paid their dues on time compared to 57 in 2017. Two new NMOs, Oman and Paraguay, were approved in 2018 but with the member numbers being low, there will be little financial impact.

The amount held in the US Dollar interest-baring accounts continue to bring in a good return; the amount received has almost doubled to $4,418 compared to $2,250 in 2017. The total amount currently sitting in such accounts for IOMP is $177,188.

Total income for 2018 was up significantly on last year to $103,045 (2017: $79,049) largely due to the income relating to the World Congress held in Prague during the year. The WC income has been itemised as $27,182 which includes the IUPAP funding (€10,000), PTW sponsorship (€5,000) and assumes payment of the $10,000 owed by the host NMO, the Czech Association of Medical Physicists (CAMP), as opposed to the $20,000 which would have been due had the Congress made a profit. As of this date, CAMP is listed as a Debtor.

Total expenditure has increased to $97,564 (2017: $79,638) again largely due to the World Congress; the WC costs of $23,781 are attributed to the IOMP travel awards and general expenditure (catering, plaques etc) but does not include Officer travel expenses. Overall travel expenses are slightly increased due the Congress but other expenditure is not a concern. The support costs are down as the bulk of the legal fees for incorporation were paid in 2017.

Website maintenance fees of $1,000 were again waived at the instruction of Dr Magdalena Stoeva to offset costs against both MPW and the Women Sub-Committee.

The net result on income against expenditure for 2018 is a gain of $5,481 (2017: -$589). However, the accounts are showing a very small loss of -$37 due to the fluctuation in currency exchange rates between the US Dollar and the Euro and Sterling across the twelve-month period.

The Balance Sheet shows that the Organisation's reserves continue to be robust and are held in cash deposits, principally in US Dollars ($307,491), but also smaller holdings in Euros ($91,580) and Sterling ($28,751), all of which are currently deposited with Lloyds TSB PLC in the United Kingdom.

A reviewing accountant's report is shown on page 4.

Ibrahim Duhaini

IOMP Treasurer

Date: 14 March 2019

Wednesday May 1, 2019

IDMP 2019 Message

Dear Medical Physics Colleagues across the Globe,

It is my pleasure to announce to you the theme of this year to mark the celebrations of the International Day of Medical Physics (IDMP 2019):

It is a Medical Physics World

Aside from being to commemorate the establishment of the IOMP e-Newsletter (eMPW), this theme reflects the fact that many medical physicists (more than 25,000) around the globe are mostly united through their corresponding national societies (around 86) and regional organizations (6) under the umbrella of IOMP. This unification helps us as medical physicists to enhance our profession for the best interest of our communities and patients everywhere.

I wish all my colleagues around the World a **Happy Medical Physics Day**. Enjoy the celebrations of this day by preparing symposiums, parties, contests, gathering, rallies, or any other means to show our pride of being a **Medical Physicist**!

Ibrahim Duhaini

IOMP Treasurer
IDMP Coordinator

Report of Science Committee

Geoffrey S. Ibbott
Chair Science Committee

The IOMP Science Committee is responsible for disseminating current information to medical physicists; assisting in the planning and conduct of regional meetings on medical physics; contributing to and reviewing scientific documents prepared by organizations such as the ICRP, the WHO, and the IAEA; and participating in various forums for the generation of scientific information in medical physics.

For 2019-2021, the Committee membership is shown below:
Geoffrey Ibbott , Chair, USA
Abdalla Al-Haj, Saudi Arabia/MEFOMP Facundo Ballester, Spain/EFOMP
Sha Chang, USA
Lawrence Dauer, USA
XiaoWu Deng, China
Benedick Fraass, USA
George Kagadis, Greece/EFOMP
Reinhard Loose, Germany/EFOMP
Mahadevappa Mahesh, USA
Malcolm McEwen, Canada
Hossein Mozdarani, Iran/MEFOMP
Wilbroad E. Muhogora, Tanzania/FAMPO
Hugo Palmans, United Kingdom
Mark Rivard, USA
Maria Elisa Rostelato, Brazil/ALFIM
Ferid Shannoun, Austria
Vellaiyan Subramani, India
Yoshiharu Yonekura, Japan

The International Conference on Medical Physics (ICMP) will be held in Santiago, Chile, 8-11 September 2019. This project has consumed a lot of effort by members of the Science Committee. Several committee members have served on the ICMP Science Committee and helped to review nearly 400 abstracts that were submitted for oral and E-poster presentation. Several other SC members are serving on the ICMP Program Planning Committee and are helping with the design of the program and assignment of presentations to sessions. As co-chair (with Maria-Ester Brandan of Mexico City) of the two committees I appreciate the amount of work required to recruit speakers, review proffered abstracts, and assemble a cohesive program that will be valuable for the attendees and easy to navigate. I wish to take this opportunity to thank the members of the ICMP SC and PPC.

Several members of the Science Committee have contributed to preparation of a report by the Expert Group on Medical Exposures of which I am a member. This is a project of the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR). As I write this, the second draft of the report is being reviewed at a meeting of the UNSCEAR General Assembly.

In recent months, SC members contributed to review of a proposed conference in Brazil, and to review of two draft reports from the IAEA.

It is a great honor for me to have been elected to serve as chair of the Science Committee for this term.

Report of Awards & Honours Committee

Simone Kodlulovich Renha
Chair Awards & Honours Committee

For the Awards and Honour Committee (A&H) this year will be especially exciting considering the number of awards that will we given during the ICMP 2019 in Chile. The members of the committee, considering the specific requirements of each award, are developing a special score system in order to assure a standard method of evaluation, transparency and chiefly to grant the award to the medical physicists that this year is most deserving.

For this year we will have an honour to reward the outstanding medical physicists with the following Awards: IUPAP 2018, IUPAP 2019, IDMP 2019, John Mallard Award, Fellows of IOMP, IOMP Best Presentation Award for Young Medical Physicist and Honorary Members. IOMP will give these awards during the Congress, for the winners who could not attend the congress the certificate will be send by mail. In the case of IDMP 2019, the announcement will be in November 5 to celebrate in the IDMP.

This year work of the A&H committee was very hard and at the same time gratifying, considering the outstanding candidates nominated. We were impressed with the high level of scientific work that has been developed over the world and the importance of the application in the clinical practice.

IUPAP 2018

Kuo Men, China

The winner of IUPAP 2018 was already announced.

The winner is Kuo Men from China, 34 years old.

The award will include a cash prize of 1500 USD, IUPAP medal and an IOMP certificate. In addition, a short biography of the awardee will be published in Medical Physics World and an article in IUPAP newsletter.

John Mallard Award 2019

Thomas Rockwell Mackie - Nominated by AAPM

The IOMP John Mallard Award honours a medical physicist who has developed an innovation of high scientific quality and who has successfully applied this innovation in clinical practice.
Amongst several very high calibre nominations from all over the world the Awards and Honours Committee considered Dr.Thomas Rockwell Mackie as an outstanding medical physicist, with impressive capacity to innovate, develop and commercialise technological advance in the field of radiation therapy and its application in clinical practice. He has made invaluable contributions in academia, education and mentoring and coaching of many medical physicists.

Some main achievements:

• During his PhD thesis work, he co-developed the convolution/superposition method for radiotherapy dose calculation.

• In collaboration with some colleagues, he developed a method for the calculation of dose kernels. This collaboration led to fine tuning radiation treatment planning algorithms for photon external beam dose calculations in most commercial treatment planning systems.

• With Herb Attix they solved the problem of Cerenkov radiation contamination of measurements with scintillation dosimeters in megavoltage beams, paving the way for a new class of optical radiation dosimeters.

• In 1988, Dr.Thomas Rockwell Mackie was tasked with developing a stereotactic radiosurgery (SRS) program and along with computer programmer Mark Gehring, developed their own SRS treatment planning system.

• Dr.Thomas Rockwell Mackie is highly recognised for developing helical tomotherapy. In 2011, over 350 clinical tomotherapy units were in use around the world based upon his innovation.

• In addition to a researcher with more than $35 million in research grants, 180 publications, and 40 PhD theses supervised, he was a co-founder of Geometrics Corporation which developed the Pinnacle treatment planning system now sold by Philips Healthcare utilized in millions of radiation therapy treatments worldwide. He was also the co-founder of TomoTherapy which developed the helical tomotherapy system that was the first dedicated IMRT and CT guided treatment system and is in use in more than 35 countries.

In recognition of the extraordinary positive impact that Dr. Thomas Rockwell Mackie over the entire field of medical physics, the Committee has no hesitation in recommending him for the John Mallard Award.

MEFOMP Report

Report on the Regional Train the Trainers Course for Radiation Protection Officers (RPOs) of Medical and Industrial Facilities

25 - 29 March 2019

Beirut, Lebanon

According to the IAEA, the availability of people with competence in radiation safety is essential to guarantee radiation safety in Member States. The IAEA has established a Strategic Approach to help Member States to build competence in a sustainable way through education and training in radiation, transport and waste safety. RPOs are Key staff for radiation safety and they are many (in all nuclear and radioactive facilities) To guarantee sustainability, the train the trainers approach has been selected for RPOs Syllabus and training material to build competence in relevant aspects of radiation protection for a given practice are provided during these courses.

The IAEA in collaboration with the Lebanese Atomic Energy Commission (LAEC) conducted The Regional Train the Trainers Course for Radiation Protection Officers (RPOs) of Medical and Industrial Facilities from 25 - 29 March 2019 in Beirut, Lebanon. Five experts from IAEA and around 40 participants coming from more than 22 countries namely Bangladesh, Bahrain, Bahamas, Cameroon, Cuba, Fiji, UK, Indonesia, Iraq, Iran, Jordan, Cambodia, Lebanon, Malaysia, Oman, Papua, Pakistan KSA, Singapore, Syria, Vietnam, and Yemen.

The course provided participants with theoretical knowledge of roles, duties and competence of a radiation protection officer of medical and industrial facilities; and practical skills to design and deliver a training sequence on technical topics; to act as trainer of radiation protection officers in their countries.

All participants had secondary or tertiary education with a relevant technical or scientific background in the field of radiation safety. They all are familiar with the role and duties of the radiation protection officer, as provided in the International Basic Safety Standards ("a person technically competent in radiation protection matters relevant for a given type of practice who is designated by the registrant, licensee or employer to oversee the application of relevant requirements"). Participants are expected to become trainers of radiation protection officers of medical and industrial facilities in their countries.

The program aims are to:

1. build a core of national trainers in radiation protection.
2. to support the establishment of sustainable national infrastructures.
3. to train radiation protection officers of medical and industrial facilities.
4. to contribute to the overall improvement of radiation safety conditions in Member States.

The course was designed to be very interactive with an emphasis on presentations from the participants. They were expected to participate in discussions and deliver presentations on technical topics. The course was conducted in two groups one in English and one in Arabic.

At the end of this course participants were able to perform all these objectives:

1. Explain the role and duties of the RPO working at industrial and medical facilities,
2. Summarize the competencies needed for an RPO based on the IAEA syllabus for RPO ,
3. Perform a training needs analysis to prioritize activities and tailor a training session to your target audience,
4. Select and utilize interactive training methods for adult learners.
5. Enhance their presentation and communication skills through group exercises ,
6. Demonstrate their learning by designing and delivering a training sequence utilizing effective presentation and communication skills


تدريب المدربين لمسؤولي الوقاية الإشعاعية
منهاج الوكالة الدولية للطاقة الذرية لتدريب RPO
(ممارسة محددة)
رياض شويكاني
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المركز التدريبي للعلوم والتقنيات النووية
دمشق – ص. ب 6091
EA


التعرض المهني للمرأة

Medical Physicists and Biomedical Engineers – a personal perspective from a radiological physicist

Cari Borrás, D.Sc., FACR, FAAPM, FIOMP

In the last International Standard Classification of Occupations (ISCO-08), published by the International Labor Organization (ILO) (https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_172572.pdf), physicists and engineers are included in Sub-major Group 21 "Science and Engineering Professionals". In 2012, ISCO-08 introduced the category of medical physicist under unit group 2111, "Physicists and Astronomers". Biomedical engineers are listed as an example of "Engineering Professionals Not Elsewhere Classified" in unit group 2149. Both 2111 and 2149 group units contain a statement that ".....medical physicists (2111)/biomedical engineers (2149) are considered to be an integral part of the health work force alongside those occupations classified in Sub-major Group 22, Health Professionals....."

Furthermore, there is a note under Group 22, Health Professionals, that states: "Note. In using ISCO in applications that seek to identify, describe or measure the health work force, it should be noted that a number of professions considered to be a part of the health work force are classified in groups other than sub-major group 22, Health professionals. Such occupations include but are not restricted to: addictions counsellors, biomedical engineers, clinical psychologists and medical physicists".

While negotiations between the World Health Organization (WHO) and ILO on the recognition of biomedical and clinical engineering professionals is on-going, health care facilities have always employed such engineers. The problem is that especially in developing countries, many "engineers" are qualified as trained technicians. To confuse more the issue, roles are not well defined: hospital-based engineers perform very diverse functions: they serve in roles from waste collectors - called sanitary engineers in some countries - to procurement decision makers for complex equipment such as an MRI machine or entire surgery suites.

And when the profession of medical physicists was not recognized, many hospital engineers, usually service engineers, were responsible for what today is considered a medical physics task: radiological equipment quality control. This is true not only in developing countries; in the 1980's I established a QC program for x-ray units to be performed by local service engineers in Northern California Kaiser Permanent Hospitals, a multistate health maintenance organization. And during my job as Radiological Health Adviser of the Pan American/World Health Organization, while advising Ministries of Health on the importance of hiring medical physicists, I consistently sought the help of hospital engineers to perform some technical tasks - beyond their usual functions - that would improve health care delivery in radiology-related services.

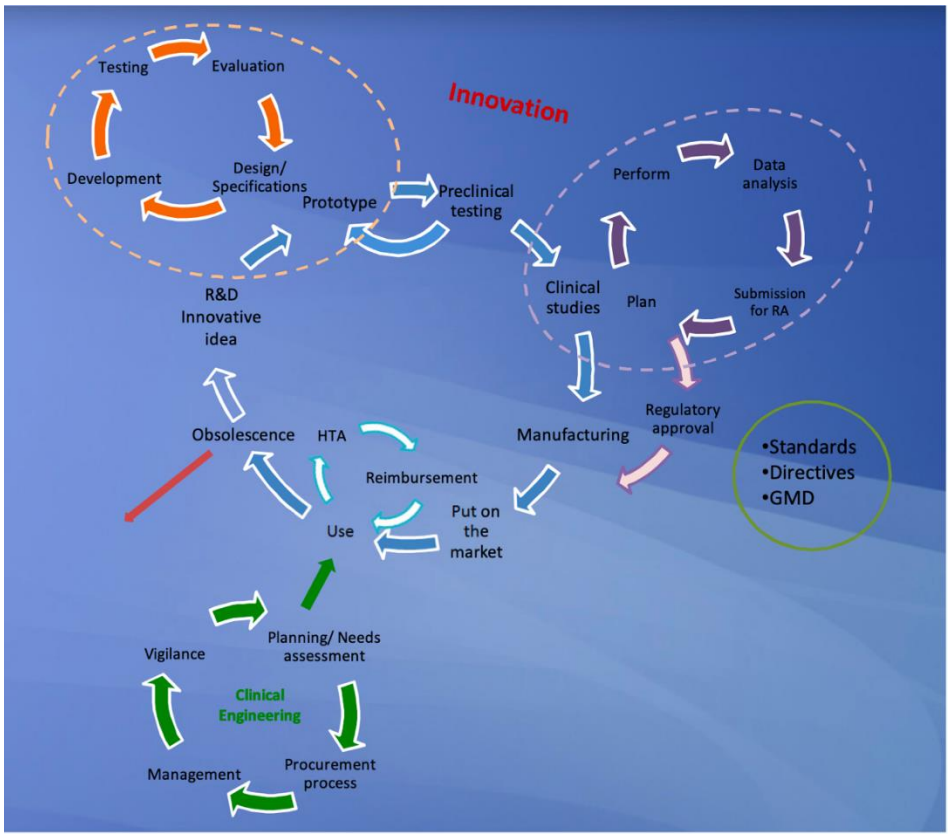


Figure 1.
Roles of Biomedical and Clinical Engineers, Pallikarakis 2013

To clarify functions, the Health Technology Task Group (HTTG) of the IUPESM (https://2018.iupesm.org/httg/) organized in 2013 a session at the 2nd World Health Organization Global Forum in Geneva, Switzerland, on "The Role of Key Professionals in Improving Patient Outcome through Technology Life Cycle Management – Medical Physicists, Biomedical Engineers, and Clinical Engineers". In this session, Nicolas Pallikarakis spoke about biomedical engineers; Yadin David about clinical engineers, and I spoke about medical physicists.
(https://www.who.int/medical_devices/global_forum/2nd-gf_parallel_sessions/en/index4.html)

Biomedical Engineers are engineers who apply engineering principles and combine design and problem-solving skills with medical and biological sciences, to advance healthcare treatment. For example, they design prosthetic limbs and artificial organs or regenerate tissue (https://www.who.int/medical_devices/Sun_pm_HR_1_PALLIKARAKIS.pdf?ua=1). They also create drug formulations, develop pharmaceuticals or collect and analyze biological data. It's a very highly-paid occupation, highly flexible, with positions in universities, hospitals, laboratories, industry, and regulatory agencies. The international organization that groups national and transnational societies involved in medical and biological engineering is named The International Federation for Medical and Biological Engineering (IFMBE). Their membership illustrates the different names that countries give to the engineers' organizations involved in health care. (http://2016.ifmbe.org/members/members_directory/page/2/?wpbdp_view=all_listings). (Interestingly, the membership of the International Organization for Medical Physics (IOMP) does not have such diverse groups).

A special group within the biomedical engineers are the clinical engineers. Their focus is on the interface between the patient/user and the technology. While biomedical engineers develop new systems through bioengineering research, clinical engineers' role is centered on technology management. Figure 1, taken from the 2013 Pallikarakis presentation, shows the steps involved in medical equipment deployment, clarifying the roles of the biomedical and clinical engineers.

According to the American College of Clinical Engineers (ACCE), a clinical engineer is a professional who supports and advances patient care by applying engineering and managerial skills to healthcare

technology. (https://accenet.org/about/Pages/ClinicalEngineer.aspx). Responsibilities may include financial or budgetary management, service contract management, maintenance activity planning, asset management, IT coordination, pre-purchase evaluation, project management, adverse event investigation, accreditation and regulatory compliance. The hospital-based clinical engineer may also have responsibility for supervision of the in-house maintenance staff to assure that the medical equipment is safe and effective.

Many of these functions are equivalent to those of medical physicists, except that in spite of their name, medical physicists work almost exclusively in diagnostic and therapeutic radiology issues, including nuclear medicine. And although many medical physicists work in academia, the clinical medical physicists deliver services at the patient level, in a similar way than the clinical engineer does. The basic difference is that medical physicists are more involved in clinical processes, especially in radiation therapy, where they are responsible not just for equipment accepting testing, commissioning, treatment planning, dosimetry and quality assurance; they are also involved with the clinicians in protocol evaluation and patient follow-up guidance. The same is true for medical imaging physicists, especially when they are in-house physicists.

To enhance their status, clinical medical physicists and clinical engineers seek certification. In some countries, such as in the United States (US), certification and/or registration of these professionals may be required to practice. In the US, medical physicists are certified by the American Board of Radiology (https://www.theabr.org/medical-physics) or by the American Board of Medical Physicists (https://abmpexam.com/), having had a postgraduate degree and clinical residency training, and passing exams with two or three parts, respectively. Clinical engineers are certified by the Healthcare Technology Certification Commission and the United States and Canadian Board of Examiners for Certification in Clinical Engineering (https://accenet.org/CECertification/Pages/Default.aspx). This certification is independent from the "Professional Engineer (P.E.)" registration, which is a license to practice engineering offered by each State to qualified engineers who must show appropriate education, experience and knowledge (https://www.nspe.org/resources/licensure/what-pe), and which also requires passing exams. Licensing is also obligatory for medical physicists in certain US States, but many others require registration only to practice (https://www.aapm.org/government_affairs/licensure/default.asp). I don't know the particulars, but there are similar schemes in other countries.

And while in the United States the roles of the clinical medical physicist and the biomedical or clinical engineer are well defined, in other countries, divisions are often blurred. And so are functions. For example, in Spain, medical physicists work on physiological signal detection and measurement; in the US, they do not. When I was chairing the HTTG and wanted to have the same number of physicists and engineers, I invited well-known biomedical engineers, only to find out that some of them had a doctorate in Medical Physics! Even the AAPM membership requirement is all-inclusive. It extends to "individuals who possesses an earned graduate degree in the Physical or Biological Sciences, Computer Sciences, Mathematical Sciences, or Engineering … This may include qualified individuals from such nontraditional medical physics associated fields as computer science and engineering and clinical or bioengineering". In fact, I know US University Professors of Biomedical Engineering, who are members of the AAPM, because they feel their scientific and educational interests are best aligned with the AAPM's. Other medical physics organizations share the same openness.

At the university level, faculty positions can be combined. For example, Cynthia McCullough, the current President of the American Association of Physicists in Medicine (AAPM), has two full Professorships: Medical Physics and Biomedical Engineering. Others, like Nicolas Pallikarakis, a prominent IFMBE member, is Professor of Medical Physics and Head of the Biomedical Technology Unit at the University of Patras, Greece. In Bangladesh, Siddique-e Rabbani was Professor of Medical Physics at the University of Dhaka, but worked, as a biomedical engineer would, in the development of home-grown medical devices.

Medical physicists have to work in a multidisciplinary team with clinicians, technologists, dosimetrists, radiotherapists, nurses, health physicists, IT staff,

maintenance staff… Do we work with the biomedical or clinical engineers? Do we take advantage of their role managing other medical equipment than the ones we are responsible for? Do we invite them to participate in research projects? Are they part of the in-house training courses? The IUPESM formed the HTTG to promote this collaboration. For several years the HTTG organized scientific/educational workshop on subjects of common interest, such as new image detector technologies, telemedicine, radiological equipment maintenance issues, and disaster preparedness. The slides of the workshop presentations are on the HTTG website. Some of them were held at special sessions of the World Congresses of Medical Physics and Biomedical Engineering. In spite of the integrated efforts of the HTTG, however, my perception of those joint world congresses is that physicists and engineers have separate tracks and except for some plenary sessions, they really do not interact. So, I go to the engineers' sessions to learn new technological advances.

As technology continues to play greater role, it is critical for improvement of patient outcomes that medical physicists and clinical engineers will strengthen their professional collaboration and enrich each other's vision. Perhaps the most interesting session I ever attended – I think in Seoul in 2006 - was on home care medical devices. I will always remember the presentation regarding a home mirror, that was electronically connected with the medical facility that followed the patient's status. Each time the patient went by, the medications he/she ought to take would appear on the mirror, and they would not disappear until each one of them was touched upon, something the patient was instructed to do after having taken them. The researcher developed this tool because he reckoned that no matter how old a person gets, he/she will always look him/herself in the mirror! I often wonder what happened to this clever idea. Was it ever commercialized? Of course, patients could touch the mirror to indicate compliance regardless of whether they had taken the medications, but I thought the idea was brilliant. I would like to have such a mirror in my house when I am old!

Doubtlessly, the greatest achievement of the HTTG was, at the end of 2016, the publication by Springer of "Defining the Medical Imaging Requirements of a Rural Health Center", written -under the aegis of the HTTG- by medical physicists and biomedical engineers from both industrialized and developing countries, most of them members of the HTTG. https://www.springer.com/us/book/9789811016110)

On a personal level, I wish to thank the ACCE for bestowing upon me in 2015 an international award "For her leadership in promoting and advancing global collaboration of medical physics and clinical engineering to enhance health care". I cherish this award immensely and I hope not only can I continue cooperating with biomedical and clinical engineers, with whom, we, medical physicists, have so many interests in common, but that I can promote that collaboration globally. I support Yadin David's remark at the end of his presentation at the 2nd WHO Global Forum: "Recommend WHO and Transnational Organizations to Promote Equal Recognition for Clinical Engineers, Medical Physicists and Biomedical Engineers Roles Within the Healthcare Team".

Acknowledgments

I wish to thank my friends Murray Loew, Ph.D., P.E., FIEEE, FSPIE, FAIMBE, Professor of Biomedical Engineering, School of Engineering and Applied Science, the George Washington University, in Washington DC, and Yadin David, Ed.D., M.Sc., P.E., C.C.E. FACCE, FAIMBE, FNAFE, Principal of Biomedical Engineering Consultants LLC, in Houston TX, for their valuable assistance in the preparation and review of this manuscript.

BETTER
Healthcare Technology
FOUNDATION

The Australasian College of Physical Scientists and Engineers in Medicine (ACPSEM) has recently established a new entity: The Better Healthcare Technology Foundation. Better Healthcare Technology aims to:

support initiatives in physics, engineering and associated sciences in medicine that engender new technology for higher quality techniques and better outcomes of patient care;

seek a collaborative arrangement between researchers and providers to work on innovative projects that fast-track tomorrow's healthcare techniques today;

support physics, engineering or other associated science initiatives in medicine that lead to innovative new techniques or technology and directly benefits patients in Australian, New Zealand and Asia Pacific (APAC) hospitals.

Through the auspices of the International Atomic Energy Agency (IAEA), Australian and New Zealand medical physicists have, for many years, provided expert lectures and professional assistance in Asian hospitals for nuclear medicine, radiology, radiotherapy and radiation protection services. The ANZ medical physicists have continued to be strong supporters and have continued to build up a multidisciplinary group with the support of radiation oncology and nuclear medicine medical specialists, radiation therapists, and nuclear medicine technologists.

There are ways that Australian and New Zealand medical physicists can be involved, such as hosting overseas visitors and volunteering in a developing country. Volunteering can be directly supported by Better Healthcare Technology and also by the Australian Government through the Department of Foreign Affairs, placing skilled volunteers in developing countries in the Asia-Pacific region.

Better Healthcare Technology has worked closely with the ACPSEM's Asia Pacific Special Interest Group (APSIG) since September 2009. The energy and enthusiasm of APSIG participants has been a highly successful initiative and has arranged significant worthy projects to bring direct voluntary help. These initiatives were primarily to provide much needed assistance in countries where their radiotherapy services required extra specialised training and guidance to establish a good standard of competency of their local radiotherapy staff who would be maintaining the cancer services for newly-financed, modern equipment. Between 2009 to 2018, APSIG managed to send 11 expert medical physicists (as unpaid volunteers) to Papua New Guinea, Vietnam, the Philippines, Myanmar and Cambodia.

APSIG supporters have organised charitable 'fun runs' and other fund raising events, totalling over $60,000, to fund a good number of these initiatives. APSIG has received financial assistance from the Australian Government and the RANZCR. Responsibility for raising sufficient funds for Asia-Pacific hospital initiatives has now been transferred to Better Healthcare Technology.

Better Healthcare Technology recently launched a new website: www.betterhealthcaretechnology.org .

The Better Healthcare Technology website aims to:

Build stronger collaboration between allied health professionals in Australian, New Zealand and Asian countries.

Engage the general public with health professionals;

Provide an efficient information pipeline to members of the public, our patients, donors and volunteers.

Provide blogs and information sections in the website with ample opportunity for questions, answers, education and information on the progress of Better Healthcare Technology projects and special initiatives; and

Report on the latest and greatest new healthcare techniques and technology.

The Foundation's website is a public site open for everyone to use. There are no barriers to registering in Better Healthcare Technology and it's free.

So, visit the website and subscribe. Make Better Healthcare Technology great for you!

Radiation Protection for Bumps, Babies and Beyond

Naomi Mc Elroy
Senior Medical Physicist, Tallaght University Hospital

This is the second time Module 11: *Dose management of pregnant patients, pregnant staff and pediatric patients in radiology* has been delivered as part of the EUTEMPE training scheme. This course started on the 01st of April this year and finished on the 25th of May. There was a wide mix of nationalities represented in the participants including: Ireland, UK, Sweden, Belgium, The Netherlands, Serbia, Italy, Surinam, and America. I applied quite last minute for this one, but was glad I did and that they could accommodate me!

The course is headed by Professor John Damilakis, who many people will be familiar with through his extensive research publications on radiation protection and dosimetry, and recent presidency of EFOMP among a multitude of other medical physics commitments and interests. He is joined in the delivery of the course by a number his local colleagues from the Medical Physics department in Heraklion, as well as guest lecturer Virginia Tsapaki – another well-known international Medical Physicist.

Module 11 Participants - Heraklion, Greece May 2018

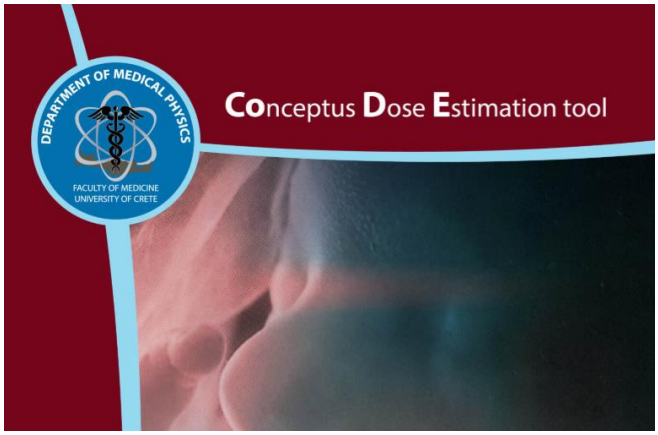
Similar to the previous module I completed, this one is also based on the Moodle platform with a total of 21 "Chapters" for participants to cover over the month of April. Following the completion of the online content, a very concise literature review was submitted on one of the chose topics by the 20th of May – this accounted for 20% of the course marks. The the face-to face section, lasting a week, was in Heraklion in Greece from the 21st to 25th of May. At the face-to-face section there was both an exercise and an exam which accounted for the remainder of the course marks.

Having done course previously, I knew I had to put my head down and get reading to get through the online content. Whenever I put a query on the forum at the end of a chapter, the teaching staff were always prompt and helpful in their response. Chapter length varied depending on topic being covered, and in each area being addressed had a separate chapter for conceptus/pregnant patient and paediatrics. The course did start at the very beginning for areas such as Biological effects, which I felt that most Medical Physicist should already know if they are aiming towards MPE status. But if you have not worked much in the paediatrics radiology field, starting at the very beginning was necessary to deliver all the relevant background information. The amount of detail for each side was wide ranging, but in general there was plenty of information on the topic being covered. In instances where participants were to do their own reading on a topic, guidance for relevant articles for Medical Physicists would have been appreciated. Some chapters, such as those covering Mathematical phantoms and Monte Carlo codes, made more sense when covered in the face-to-face

section as we got a chance to trial the software or watch demonstrations of it in action. Perhaps one of the most useful aspects of the course was the chapters covering absorbed dose via critical review of the literature. This provided plenty of research articles from which dose calculations for various situations could be based. Another useful tool introduced in this section was the CODE software – an EU project on conceptus dose and risks from imaging with ionising radiation. But more on that later.

My taxi/bus buddies from the Atrion Hotel - Heraklion, Greece May 2018

Content sufficiently covered, I chose my literature review topic, and found that there was plenty of time to complete the assignment in advance of the face-to-face section. The only difficulty I found was the succinct nature of the assignment – but it managed to focus my attention to provide the most relevant information in a summarising fashion! Then it was time to pack the suitcase for some guaranteed sunshine in Heraklion. I had met one of the other participants at a meeting in the UK so we had both arranged to stay in the same hotel, in order to share the adventure of travelling to the course each day. As it turns out, there were two other participants also in this hotel, so for the rest of the week all four of us travelled to the course together and shared our experiences as medical physicists in our respective countries.



Group practical session discussing software.

Day 3 Practical session on CT optimisation using a Paediatric phantom.

The face-to-face section was a more practical application of the knowledge we had gained through the online course, including a recap of some of the more important aspects. The day usually involved some presentations on theory followed a practical session. This allowed participants to debate ideas and share experiences from local / national approaches in the area of pregnant patients and paediatrics. It was a good mix, which meant participants weren't overwhelmed by a day taking in theory, and conversations surrounding method of radiation protection continued over breaks and lunch. In particular, I felt the session where we were

performing dose calculations and comparing results from different methods in literature highly useful, as it is a cost effective way to provide a dose estimate if you have no access to software. The other session that was especially useful was the demonstration of the CODE software for calculation of conceptus dose following a variety of different examinations. This software also allows calculations of occupational dose for fluoroscopically guided interventional procedures. For more information see http://embryodose.med.uoc.gr/code/about.php

The evenings were nice and balmy encouraging exploration of the city, and a well-deserved ice-ream (there was a multitude of good ice-cream shops!). The tutors had provided us with a suggested list of places to see and eat – I always like to get a local recommendation to try out when I visit somewhere new.

The Hosts and Attendees at Erganos Restaurant, Heraklion

We had a group dinner on the Thursday evening in the lovely traditional restaurant, Erganos, in Heraklion, which again provided a time to learn more about others experiences of Medical Physics in other countries over a banquet of food – tasty morsels never stopped coming from the kitchen!

Copy of the Wall frieze located in the ruins at Knossos and Gastronomic delights at Peskesi

There was a short exam on the Friday afternoon, after which almost half of us decided to do some sightseeing as a reward for completion of the course. So it was off to the local Minoan Palace ruins at Knossos, followed by another tasty dinner, this time in "Peskesi"….I would highly recommend this gastronomical delight!

Overall, I found this course very beneficial and would recommend it to others. Again, undertaking an external course such as this accounts for plenty of CPD credits towards the Category 1 points and also provides you with a recognised European MPE qualification – useful in the context of the BSS and new Irish Legislation due soon! For more information please see http://eutempe-net.eu

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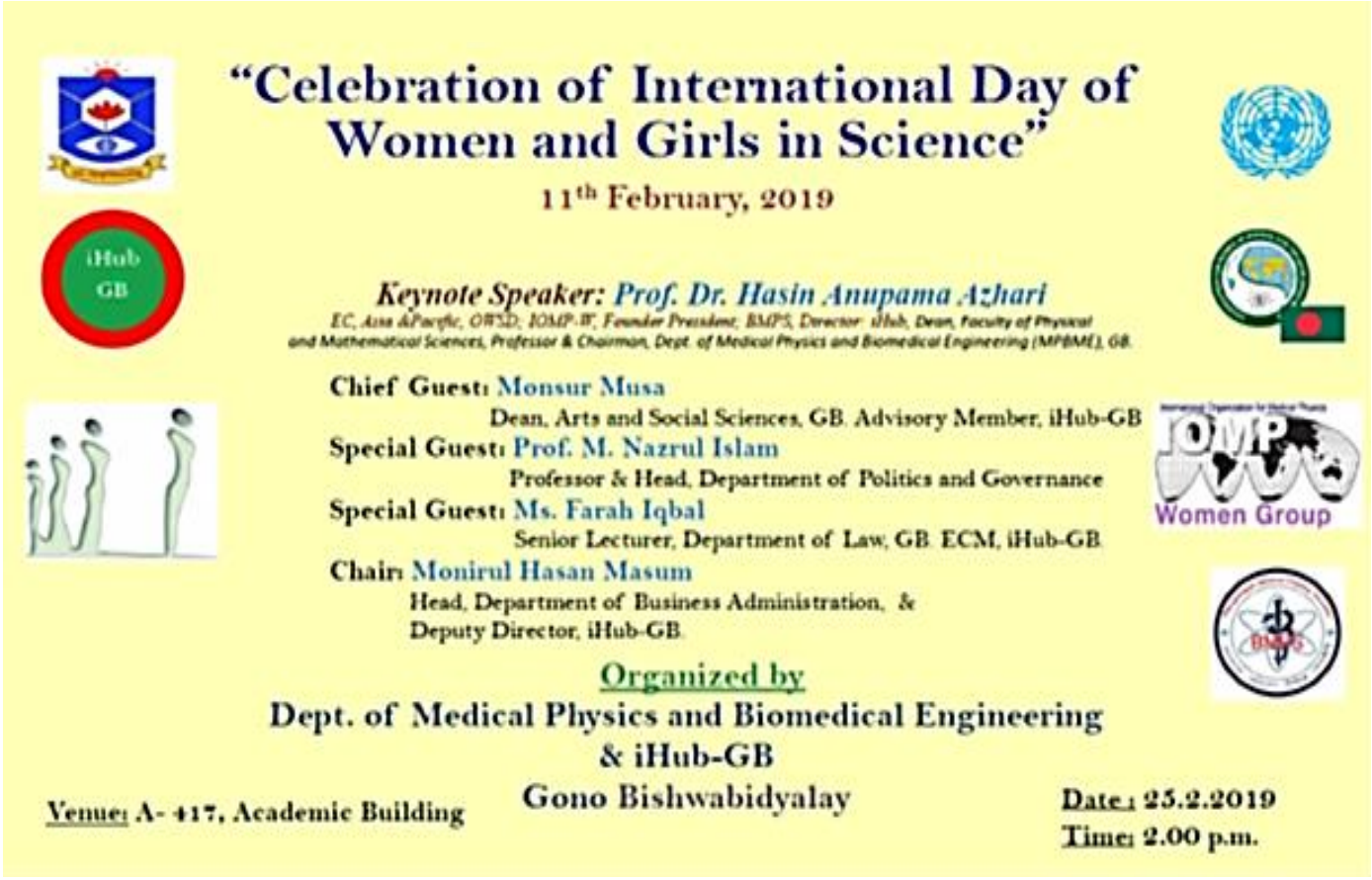
A report on “Celebration of International Day of Women and Girls in Science”, 11th February, 2019

N Karmaker, T Mumtaz, M H Masum, H A Azhari



History of Celebrating 11 February: International Day of Women and Girls in Science

Since 1968, Royal Academy of Science International Trust (RASIT) has been working on Empowering Women in Science through Education, Employment and Recognition. RASIT’s work focused on sustainable development programs in education,science, economy, environment and gender equality as well as the support of the marginalized and most vulnerable. Through its scholarship program, RASIT served and well prepared more than 10,500 female students from developing countries, and established the First International League for Women in Science in 1998.Further, in 2015, RASIT brought an international recognition for women and girls in science, and turned a dream into reality. In fact, in 2015, RASIT started writing the future’s history for Women and Girls in Science.

The idea for an International Day of Women and Girls in Science was generated during the first High-Level World Women's Health and Development Forum organized by RASIT and the United Nations Department of Economic and Social Affairs (DESA), and it was held on 10-11 February 2015 at the United Nations Headquarters, with the participation of government, Ministers and representatives, UNESCO, UN-Women, WHO, UNRWA, UNICEF, UNFPA, Every Woman Every Child Initiative, etc.

In order to achieve full and equal access to and participation in science for women and girls, and further achieve gender equality and the empowerment of women and girls, the United

Nations General Assembly adopted resolution/RES/70/212 declaring 11 February as the International Day of Women and Girls in Science.

Aims of this celebration

- To spread the background of 'International Day of Women and Girls in Science'
- To join the international community worldwide in celebrating the biggest day for women and girls in science.
- To make public awareness (Schools & Youth; Companies & Organizations; Universities & Institutions; Communities & Cities) about Women in Science
- To learn about the role of Women in Science in Sustainable Development
- To mobilize your networks! Message your friends about the International Day of Women and Girls in Science
- To promote female participation in Science & Technology professions.
- To increase the number of membership of women in science related organization e.g., OWSD

Organizers

- Organization for Women in Science for the Developing World (OWSD), Bangladesh Chapter.
- Dept. of Medical Physics and Biomedical Engineering, Gono Bishwabidyalay.
- iHub EC, Gono Bishwabidyalay
- Bangladesh Medical Physics Society (BMPS)
- International Organization for Medical Physics (IOMP) "IOMP Women Subcommittee" (IOMP-W)

Program details

The Program was conducted by Ms. Tania Ahmed (Lecturer, Dept. of Pharmacy, GB). At first the introductory speech on the background of 11 February celebration was delivered by program coordinator Ms. Nupur Karmaker, (Lecturer, Dept. of Medical Physics and Biomedical Engineering (MPBME), GB; ECM: iHub; Joint Secretary: OWSDBD; Treasurer: BMPS). After that the following invited speakers presented their views on Int'l Day of Women and Girls in Science with reference to the role model of their respective field of expertise.

Ms. Tania Akter (Senior Lecturer, Department of Computer Science & Engineering (CSE), GB; ECM: iHub, GB) discussed about the historical development and contribution of women in Computer Science &Engineering in Bangladesh.

Dilruba Akter Pansi (Lecturer, Department of Applied Mathematics, GB) presented a comparative views on the Past, Present and Future Status of Applied Mathematics in respect to the participation of women and also showed some women role models in Bangladesh from her related field.

Kazi Mahfuza Haque (Senior Lecturer, Ethics and Equity) focused on the increased participation of women in different sectors of Bangladesh and also welcomed male counterparts to take part in this progress.

Najmun Nahar (Lecturer, Department of Microbiology, GB) presented her views on microbiological research and acknowledge the efforts and contributions of female faculty members in the department of Microbiology, DU during her study.

Masuka Nasrin (Student, EEE, GB) and Kakoli Azad (Student, MPBME, GB) shared their feeling sabouttheimportance of female students to join this type of programs.

Ms. Farah Iqbal (Senior Lecturer, Department of Law, GB. ECM, iHub-GB) as a Special Guest mentionedabout the movement of women in science to form BAWS, the first association for women scientists and encourage young researchers and graduates to be motivated.

Keynote Speaker: Prof. Dr. Hasin Anupama Azhari (EC, Asia & Pacific, OWSD; Member: IOMP-W, Founder President: BMPS; Director: iHub; Dean, Faculty of Physical and Mathematical Sciences; Chairman, Dept. of Medical Physics and Biomedical Engineering (MPBME)), GB inspired all students, faculty members and other participants by her excellent presentation. She has successfully addressed that the statistics of women in STEM in Bangladesh is unsatisfactory. The main reason is that after secondary education female students are reluctant to grab the opportunities for continuing the STEM education in tertiary level. She also emphasized that many organizations are providing opportunities to the female scientists for early carriers like OWSD, iHub GB. These ideas would be helpful for bringing the female students in the pathway of women empowerment. In specific subject area women are also trying to organize through different women organizations in their related fields for equal access in gender balance like IOMP-W.

Md. Karam Newaz (Chairman, CSE, GB) appreciated keynote speaker for giving a clear picture of the

status of our women and showing the direction needed to move for the betterment of the current situation.

Prof. Dr. M. Nazrul Islam, Special Guest (Head, Department of Politics and Governance, GB)showed his own point of view that every human being should be considered as a component of politics. So equal participation of female and male citizens in casting vote for example can make a big impact on the nation. Bangladesh is heading towards developed countries and in order to achieve that gender equity and women empowerments are key factors for the success.

Participation of Dr. Tabassum Mumtaz, Principal Scientific Officer, IFRB, BAEC and 2019 OWSD-ELSEVIER Award winner from Bangladesh increased the core motivation of the program. She shared her experience about her research career and explained how she had been able to get the position with the support from OWSD.

Prof. Monsur Musa, Chief Guest (Dean, Arts and Social Sciences, GB. Advisory Member, iHub-GB) delivered valuable speeches on this program. He also instructed to document all the discussions and views being presented in this program.

Chair: Assistant Prof. Monirul Hasan Masum (Head, Department of Business Administration, &Deputy Director, iHub-GB) shared his experiences about the arrangement of this program. He also requested all the participants to give their valuable opinions regarding this program. At last, He thanked all the guests for their valuable time and making the program a successful one.

Through this program the participants agreed that women participation in STEM research is necessary for increasing the women contribution in science which will ultimately lead to ensure the women empowerment and gender balance in STEM fields.

Program highlights; Inaugural lecture by Nupur Karmaker; keynote lecture by Prof Anupama, part of audience and photos of closing ceremony

Prof. Marta Wasilewska Radwańska (1938-2019)

On 25 April 2019 the medical physics community lost one very special member - Prof. Marta Wasilewska Radwańska from Krakow, Poland. Marta is known to many of us as leader of one of the first University courses in Medical Physics in Poland, as Chair of the Education and Training Committees of EFOMP, as founding member of the IOMP Professional Relations Committee and as IOMP Council member. Marta also took part in some of the early e-learning projects in medical physics and was the Coordinator of the Polish translation in the Medical Physics Dictionary. Marta's excellent character and constant smile were a great part of any activity with her involvement.

Prof. Marta Wasilewska Radwańska graduated the famous Jagiellonian University in Krakow. From 1979 to1989 she was Deputy-Director of the AGH Institute of Physics and Nuclear Techniques in Krakow and from 1995 to 2005 she headed the Department of Medical Physics at the same Institute. After her retirement in 2005 she continued to teach and organise medical physics related Postgraduate Studies in Poland.

Prof. Marta Wasilewska Radwańska's initial research has been in the field of X-ray fluorescence and activation analysis of some materials, later she worked in the field of environmental protection and medical physics education. She developed one of the first undergraduate medical physics courses in Poland. She collaborated in various fields of radiation applied to medicine.

In her international work, Marta was supporting the IOMP Bulletin for Developing Countries (Edited by Prof. Oscar Chomicki) and was member of the reformed IOMP Professional Relations Committee from 1997 to 2006. Later as Chair of the EFOMP Education and Training Committee she took part in the European Medical Physics Programme development. From 2006 to 2012 Marta was involved in the EMITEL project, taking part in the Radiation Safety area and leading the Polish translation of medical physics terms.

Prof. Marta Wasilewska Radwańska was very active in the medical physics development in Poland, aligning its education with the European guidelines. She took part in the work of the Centre of Medical Post-Graduate Training and related State exams. Marta has contributed to the education of many cohorts of medical physicists and medical engineers in Poland. Her outstanding professional activities have been recognised with many Awards, among these the Knight's Cross of the Polonia Restituta Order (2002), the National Education Commission Medal (1996) and the Golden Cross of Merit (1983).

Marta was an exceptional person – intelligent, inventive, dedicated, sensitive, hard-working, with great specialist knowledge, and also with good humour, always supportive, always friendly and always ready to help. She will be missed not only by the colleagues in Poland and Europe, but by the whole medical physics community.

Prof. S. Tabakov, IOMP Past-President.

Calendar of Events

19th International Conference on the use of Computers in Radiation Therapy (ICCR) in partnership with the 2nd International Conference on Monte Carlo Techniques for Medical Application (MCMA)
Jun 17 – 21, 2019
Montreal, QC, Canada
www.iccr2019.org

MR in RT 2019 Symposium
Jun 23 – 25, 2019
Toronto, ON, Canada
www.mrinrt2019.com

AAPM 61st Annual Meeting & Exhibition
Jul 14 – 18, 2019
San Antonio, TX
www.aapm.org

Singapore Congress of Radiology and Workshops in Interventional Radiology Education Singapore 2019 (SGCR & WIRES 2019)
Aug 15 – 17, 2019
Raffles City Convention Center, Singapore
www.sgcr.sg

International Conference of Medical Physics (ICMP) 2019
Sep 8 – 11, 2019
Santiago, Santiago Metropolitan Region, Chile
www.icmp2019.org

65th Annual Scientific Meeting of COMP
Sep 24 – 27, 2019
Kelowna, BC, Canada
www.comp-ocpm.ca/2019-asm-english

Joint AAPM-EANM Educational Course
Oct 12 – 16, 2019
Barcelona, Spain (map)
www.eanm.org

PTCOG North America Sixth Annual Conference: New Frontiers in Particle Therapy
Oct 14 – 16, 2019
Miami, FL, USA
www.MiamiCancerInstitute.com/PTCOGNA2019

23rd Annual Mammography Update for Physicists
Oct 26 – 27, 2019
Atlanta, GA , USA
www.mtmi.net/course/23rd-annual-mammography-update-physicists

Joint ICTP-IAEA Workshop on Establishment and Utilization of Diagnostic Reference Levels in Medical Imaging
Nov 18 – 22, 2019
Trieste, Italy
www.indico.ictp.it/event/8729

Stereotactic Radiosurgery and Stereotactic Body Radiotherapy Physics
Dec 2 – 5, 2019
www.elekta.com/services/education-and-training.html