European Medical Physics News

Winter 2014/15

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Editorial

Dear Readers

Welcome to the Winter addition of the EFOMP newsletter. This issue is packed full with a wide range of news items, starting with messages from our new president John Damilakis and a farewell from Peter Sharp. It is good to know that Peter will still be providing valuable contributions with his new role as past-president.

Last year saw the successful 8th European Conference on Medical Physics which was held in Athens with 560 participants from all over the world including 60 invited speakers and 75 session chairs. This was a Herculean achievement for the team organising the conference, lead by Kiki Theodorou and Virginia Tsapaki. Having organised smaller conferences in the past I can fully understand the amount of work that is required and the Athens conference is worthy of high praise. It certainly set the benchmark for these types of conferences in the future. Along with this we have a report on the 6th Joint Meeting on Medical Physics of the Swiss Society of Radiation Biology and Medical Physics (SSRMP), organised by the German (DGMP) and the Austrian (ÖGMP) Societies for Medical Physics.

We have started to look outside of Europe for news items; it is always good to understand other organisations. So have you ever wondered what it would be like to work outside of Europe? The article on “Seeing the World with Different Eyes” brings a new perspective to the world of medical physics from Friedlieb Lorenz. Following on and continuing with our theme of interviewing well known medical physicists, we talked to Joanna Cygler about her career.

A number of other noteworthy articles are Teaching and Learning in Medical Physics, the new Compendium to Radiation Physics for Medical Physicists by E. B. Podgoršak and a review of Monte Carlo Techniques in Radiation Therapy by Joao Seco & Frank Verhaegen.

Finally I would like to take the opportunity to introduce a new member of the editorial committee who will be the new EFOMP Communication and Publications Committee Vice Chair. I hope you have enjoyed your Christmas and other holidays and, if you find the time to put pen to paper this year, we are always on the lookout for news items or other contributions and would encourage authors to contact myself, or one of the editorial team.

Prof Richard Bayford
Chair of EFOMP Communication and Publications Commitee

Your editorial team:




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John Damilakis: New EFOMP president

It is my great honour and pleasure to serve the community of Medical Physicists as EFOMP president. In this article, I'll try to sketch what I'm planning to do during my presidential term but before that, I would like to publicly thank our outgoing president Prof. Peter Sharp for his outstanding leadership. Luckily, Peter will continue to serve as an officer for another 2 years, in the role of past-president.

Medical Physics faces several challenges in Europe: the new EU BSS has been published with several clauses relevant to the profession of Medical Physics; important European Guidelines have been published recently that will affect our professional career; advanced educational and training platforms offer a more interactive learning experience that constantly evolves and so on. It is thus important that EFOMP addresses these challenges.

I have several pressing goals for the next years. It is important to start dialogue with our national member organizations to understand their needs and pay attention to their requirements. Based on the results of this dialogue and previous experience, I will work with EFOMP officers to develop our new strategic plan to enhance member benefits.

European Medical Physics Congress

Although there is a European Conference on Medical Physics, this is organised by the national Medical Physics society with input from EFOMP. There is a need of a European Medical Physics Congress i.e. a meeting on a European scale, convened at set intervals, covering all fields of Medical Physics. This meeting should become the premier venue for European and international medical physicists to come together, present the results of their research work, attend courses and view the most advanced medical technology.

Continuous Professional Development and learning platforms

EFOMP has a duty to ensure that medical physicists have access to the educational opportunities needed to acquire, maintain and refine the requisite knowledge and skills to fulfil their role in the clinical and academic environment. We provide advanced education through the 'EFOMP School for Medical Physics Experts'. Moreover, EFOMP co-organizes the 'European School of Medical Physics'. There is high demand for developing continuous professional development courses in medical physics due to the rapid development of medical techniques based on ionizing and non-ionizing radiation.

Technological changes in the field of medical physics are happening so fast that even updated information may become obsolete after only a few years. We should consider developing an e-learning platform to provide on-line material that meets different levels of knowledge and interests and flexibility to join discussions. This platform will reduce travel time and travel costs and will provide opportunities of sharing resources and experience with other colleagues all over the world.

European Diploma in Medical Physics

EFOMP should consider setting up an examination board to certify that a candidate has passed a high quality examination in Medical Physics performed in English language. This examination will provide an objective test of knowledge for medical physicists. The European Diploma in Medical Physics will facilitate harmonization of

medical physics standards throughout Europe and mobility of medical physicists within Europe. This diploma will not replace any national certificate but should complement other assessments of competence by national societies.

Accreditation board
External evaluation of Medical Physics educational programs to determine if standards are met is an important process to ensure the quality of services. EFOMP should consider establishing a board to evaluate and accredit education and training courses in Medical Physics. Accreditation should be based upon established standards and guidelines. An accreditation decision should be made following evaluation by a team of experts in the field of medical physics.

Projects
The projects committee is responsible for participating in the implementation of projects and supporting the participation of Medical Physics institutions for improving research in Medical Physics and the professional status of Medical Physicists in Europe and internationally. Recent projects include 'EUTEMPE-RX', 'PiDRL', 'MEDRAPET'and 'ENETRAP III'. The new EU Horizon 2020 programme is now open and there are opportunities to apply for funding for research and education projects focused on imaging, radiation therapy, radiation protection and other topics relevant to Medical Physics.

Policy Statements and Guidelines
I'm happy that we have produced a number of policy statements, guidelines and recommendations. We should increase our presence and influence on policymaking by continuing to formulate policy through policy statements and recommendations. All EFOMP committees can play an important in policymaking, especially the Professional Matters Committee and the European Matters Committee.

Relationship with other organizations
It is true that the healthcare sector is 'an interdependent world'. To meet challenges and address major issues, it is important to develop a strong and positive relationship with other international organizations and interested parties. We have signed memoranda of understanding and agreements with European societies and networks. It is important to expand, strengthen and consolidate linkages between EFOMP and other organizations in Europe and internationally.

Website
EFOMP's website is not only its internet identity but also an excellent communication tool with colleagues and the public. We should make any effort to enrich the content and expand our website. It is important, for example, to create a section for medical physics students and trainees and a public-only section with leaflets and videos to raise awareness of our profession.

Publications
We must strongly support our publications. The new Impact Factor of '*European Journal of Medical Physics'* (1.849) underlines the scientific importance of the journal. On behalf of EFOMP, I thank Prof. Paolo Russo for all of his hard work and dedication to advance the journal. We also have the 'European Medical Physics News' (EMPN) and the 'EFOMP Newletter' that provide news and publish articles of interest to the European Medical Physicists. Colleagues can subscribe to the EMPN and to the newsletter (*www.efomp.org/index.php/ct-menu-item-7/83-staticcontent/244-newsletter-subscription*) and receive these publications by email.

I'm convinced that the success of our work depends on the commitment and expertise of volunteers. The current membership of EFOMP covers national organizations which together represent more than 5000 medical physicist and engineers working in the field of medical physics. If every colleague devotes 1 minute per day to EFOMP activities, we will have about 80 hours per day of volunteer effort, in other words the equivalent of 10 full-time employees. I would like to encourage colleagues to join EFOMP's committees and working groups. We ask national member organizations to appoint a representative on each committee who will actively participate in the work of the committee. We look forward to an enthusiastic response to the above endeavor.

In conclusion, I would like to thank you for the privilege you have bestowed upon me in selecting me as President of EFOMP. I look forward to working with committee chairs, committee members and all of you in moving the profession forward over the next years. Comments and suggestions on issues that are relevant to our profession are welcome; my email is:

john.damilakis@med.uoc.gr.

President's farewell: So what did I do?

Peter Sharp, EFOMP Past-President.

As you know, the terms of EFOMP officers run for calendar years so on the 1st of January each year we welcome some new officers and say farewell to others. Well, as on 1st January 2015 I will be standing down as President, to be replaced by John Damilakis, the Editor suggested that I might like to write my "obituary".

So what are my memories of the years that I spent as President of EFOMP? First I will be quite clear that I, personally, did nothing. What we have achieved during that period was due to the joint efforts of the Board, the Council and members of the NMOs. The role of President is rather like that of the conductor of an orchestra; you try to make sure that everyone is playing the same tune and at the same time. Just as a conductor is dependent on the music someone else has written, so the President depends on the efforts of his predecessors, he is interpreting what they have done.

Well I had a good score for my "orchestra" as Stelios had made a number of changes during his presidency, in particular in the restructuring of committees, and I was able to take advantage them. It is invidious to pick out individuals but here are some of the highlights.

The raison d'être of EFOMP is to support the development of medical physics in Europe by bringing together all the European societies. EFOMP is fortunate in that the definition of Europe is well accepted and many of our NMOs are part of the European Union. So we are able to use the legislative framework and financial backing of the EU to achieve our aims.

Not surprisingly a lot of our time has been put into developing the educational framework for the training of medical physicists. Some countries already have a well-established, comprehensive training scheme, but many do not. A major event that took place during my presidency was the publication of the revised BSS and RP174 and 175, setting out the role of the MPE and the associated training programme. These owe much to the efforts of EFOMP officers working on your behalf, in particular Stelios Christofides and Carmel Caruana. Of course such programmes need to be supported by teaching and we were fortunate to get the EU-TEMPE-RX funding, thanks largely to the efforts of Hilde Bosmans, to allow us to create and implement the training programme required to bring the medical physicist in Diagnostic and Interventional Radiology to the level of MPE. We have also set up our own schools for the MPE.

Medical physicists are, first and foremost, scientists. It is our skills in physics that we bring to the management of patients. Part of our scientific activity is reflected in presentation of our work, both in scientific journals and at conferences. I am pleased that our journal, the European Journal of Medical Physics, continues to grow and now has an impact factor of 1.849. Our relationship with the publisher, Elsevier, has been excellent and the new editor, Paolo Russo, has continued to build on the good work of his predecessors. It is your journal and I am pleased that most NMOs agreed to become supporting members of the journal and have their names listed on the journal pages.

In 2013 we were a partner in the International Conference of Medical Physics in Brighton which I felt was a great success. This was followed, in 2014, by our own 8th ECMP in Athens another

memorable conference about which I will write elsewhere in this issue.

But we appreciate that not every country can afford to host such large conferences and so Board has been working to develop our European Conference of Medical Physics, and this will be taken further under John's stewardship.
EFOMP is also conscious of the fact that medical physics is not simply represented by medical physics societies but now there are many subject specific societies, such as ESTRO, ENMS and ESR, which rightly wish to have a say in areas in which medical physicists work. We have been working over the past few years to set up Memoranda of Agreement with other societies so that we can more readily work together rather than in competition.

Publicising what we do is important; no-one else will do that for us. We have revamped the website and I hope that this is proving useful to members. It is important that we continue to set out our views on the roles and activities of medical physicists. So we have continued to produce new policy statements and update existing ones; these are published in EJMP and can be accessed via our website. We regularly publish our Newsletter and European Medical Physics News. But I have been very conscious that EFOMP must continue to make every effort to involve its NMOs and their members in its activities. There is a great danger that EFOMP is simply seen to be the officers and, apart from the annual Council meeting, other medical physicists feel distant from EFOMP activities. I have tried to restructure Council so that all NMOs now have the opportunity to contribute to it. We have tried to increase the membership of EFOMP committees and working groups, we regularly send out electronic ballots on various issues for Council's approval. Some NMOs are very good at responding, others perhaps less so. It is important that, when asked, NMOs involve their own members in EFOMP.

For me it has been a privilege to act as President of EFOMP over the past 3 years. When I started being involved in EFOMP many years ago, I would not claim to be a good European. I come from a country that has always seen itself as separate from mainland Europe. Even now we are facing the possibility of a referendum on leaving the EU. One of the underlying principles of the Union, the mobility of labour, is seen as a threat. I am proud of what EFOMP has achieved and, while there is still a long way to go, we have made important steps towards ensuring that medical physicists, wherever they are in Europe, have the same opportunities for career development. I particularly value the many friends that I have made during this time and acknowledge the warm hospitality that I have always received. I thank all those who have supported me throughout my Presidency and in particular Marco, our General Secretary, whose efficiency has caused me to rethink my prejudiced views of Italians. I wish John every success for his presidency and, of course, for the next 2 years I will be keeping a close eye on him in my role as past-President.

Peter Sharp

EFOMP in Athens

One of the rewards of being an officer is that you get to see interesting cities in Europe. EFOMP is grateful to NMOs for hosting its meetings. In particular it gives the Board a chance to meet with the NMO and, in turn, the opportunity for the NMO to see how EFOMP works.

In 2014 the Board and Council meeting was hosted by HAMP, the Greek association, in Athens. As well as Board and Council we also ran the 8th European Conference of Medical Physics (ECMP). The venue was the Royal Olympic Hotel, right in the centre of the city. One could see the Parthenon without leaving the hotel, which was fortunate as many of us didn't manage to leave the hotel for about 72 hours.

HAMP had put together an excellent scientific programme and our thanks must go to Kiki Theodorou and Virginia Tsapaki, and their committees. The comprehensive programme, which was run in two parallel sessions, covered Radiation Therapy, Medical Imaging, Medical Informatics, Radiation Protection, Legislation and Standards, and Education and Training – so there was something for everyone. In addition there was a workshop on Biomedical Instrumentation and Related Engineering and Physical Sciences, a hands-on training course on QA and safety in MRI, and a satellite symposium on safety standards for non-ionizing radiation. Selected papers will be published in a special issue of EJMP.

One of the disadvantages of being an officer is that you don't get the opportunity to attend all the talks as our Board meetings overlap with the conference. Apart from the many routine issues that the Board needs to address, two strategic issues are worth highlighting. The first is the future of the ECMP. Dr Manuel Bardies, as Chair of the Scientific Committee had been asked to prepare a paper on the options for the development of ECMP. It was felt that holding a conference was important for the development of medical physics in Europe but the current model of linking it to the annual meeting of the host NMO was probably not robust. The view of the Board was that we should run a congress, rather than a conference, and this should be organised by a group within EFOMP, but there was no agreement on whether it should have a fixed location or move around Europe and whether it should be an annual event. The issue was taken to Council who strongly supported the idea of a congress. It was agreed that Prof. Damilakis would chair the group to take it forward with the intention of having the first congress in 2016, 2015 being the year of the World Congress.

The other issue that the Board addressed was the role of EFOMP in accreditation, certification and education provision. The Board was quite clear that EFOMP should take ownership of accreditation of the training and the certification of medical physicists at the end of training at MP and MPE level. It was not healthy for the future of medical physics in Europe for this to be taken on by another body. This did not, however, preclude

NMOs from undertaking this activity in their own country. The question was whether the existing activity of EFOMP in delivering education and training, for example, by the MPE schools or ESMP, meant that it had a conflict of interest. Could EFOMP accredit and certify when it was also teaching? Having looked at what other organisations did, it was agreed that provided the accreditation and certification panels had sufficient independent and external members, and were not formed solely by EFOMP appointees, then this should avoid a conflict of interest and not exclude EFOMP from organising training as well. Council later supported this view.

EUTEMPE-RX has asked EFOMP to work with them on accreditation, and certification and the Board now felt able to agree to this.

Council was held all day on the Saturday. As an innovation this year, the Board decided to introduce two short talks into the meeting so as to brief Council on important issues. Dr Christofides gave a presentation entitled “The Medical Physics Expert. What does it mean to you?” A discussion followed on the impact of the recent EU guidelines on individual member states. The second presentation was by Prof Damilakis “The International Day of Medical Physics. What should you be doing?” He gave a short history of medical physics and posed the question as to why most members of the public are unaware of what we do. IOMP had designated 7th November as the International Day of Medical Physics to try to raise the profile. John presented examples of what groups had done in 2013 and explained where people could find publications to use in the 2014 event. Copies of these presentations can be found on the EFOMP website; go to Events and click on Presentations.

An important part of Council is that EFOMP committees account for their work during the past year. Dr Christofides explained that, following a decision taken at last year’s Council, a group had been set up to develop a CEN Standard of Competence on Medical Physics Services. He had later become aware that IPEM was engaged in a similar exercise and it had been agreed that we would work together.

Dr Bardies updated Council on the work of the Mammography, CBCT and DICOM working groups. Agreement had also been reached to set up a group to look at the implementation of ICRP 103.

Prof Hartmann, chair of the Education and Training Group, discussed the developments going on restructuring the European School of Medical Physics following the retirement of its director.

Steve Evans summarised the work of the Projects Committee. Two new projects were being explored; one to develop DRLs in paediatric imaging and the other ENETRAP III, the European Network on Radiological Protection. Prof Caruana gave an update on the EUTEMPE-RX project.

NMOs then gave series of reports on issues in their own countries.

Finally Council confirmed the election of Dr Yves Lemoigne, recently retired director of ESMP, as an Honorary Member.

Prof. Peter Sharp

8th European Conference on Medical Physics

The Hellenic Association of Medical Physicists (HAMP) organized the 8th European Conference on Medical Physics in Athens during the period 11-13 September 2014.

The conference's main topics included:

- All recent research and technological advances in Radiation Oncology, including proton therapy.
- The new diagnostic methods and techniques in the fields of Radiology and Nuclear Medicine.
- The new protocols on patient dosimetry for diagnosis and treatment.
- The recent guidelines on radiation protection for patients and hospital staff.

A total of 560 participants from all over the world followed the works of ECMP 2014, including 60 invited speakers and 75 session chairs. The geographic distribution of participants is shown in diagram 1a on p.11. As the diagram shows the largest number of scientists attending the conference were from Greece (53 %) and rest of Europe in general (37 %). However, a substantial number of people travelled from USA, South America, Asia, Australia and Middle East for the conference. Diagram 1b shows the respective number of invited speakers and session chairs. Ninety two percent (92 %) came from Europe (largest percentage came from Greece: 46 %), with a small number coming from USA, Middle East and Australia.

The scientific program covered all the major aspects of Medical Physics today, i.e. Radiotherapy, Radiology, Nuclear Medicine, Radiation Protection, Educational, Regulatory and Professional subjects. The program included 38 Scientific Sessions, Symposia and Poster Sessions in 2.5 days. A total number of 320 abstracts were accepted, which, along with most of the invited lectures, have been published to a special issue of European Journal of Medical Physics (Volume 30, Issue S1, September 2014, ISSN 1120-1797). The majority of the invited lectures have been uploaded on the conference web site (*www.efomp-2014.gr/index.php/invited-lectures-are-uploaded-on-ecmp-website*) and can be freely downloaded.

The opening ceremony (Fig. 1) included 2 extremely interesting lectures. One of the lectures was given by John Hugh Seiradakis, Director of the laboratory of Astronomy of the Aristotle University on the famous Antikythera Mechanism (Fig. 2) with the title: "The Antikythera mechanism: Decoding an astonishing ancient Greek astronomical computer". The other one was given by Thomas Beyer, Professor of Physics of Medical Imaging, Medical University Vienna, with the title, "Image fusion in 2020" (Fig. 3).

The EFOMP medal 2014 was also given during the conference. The medal was given to Dr

Fig. 1: Opening ceremony of the conference.

Fig. 2: Professor Seiradakis presented the Antikythera Mechanism after the end of the conference opening ceremony.

Fig. 3: Prof Beyer gives his lecture in the opening ceremony.

Paul Shrimpton from IPEM, UK (Fig. 4) who also provided a very interesting lecture with the title: "Dosimetry in support of patient protection in diagnostic radiology; A valedictory view from the UK"

All major Scientific and Regulatory Organizations have been contributed to the Conference including the European Federation of Organizations of Medical Physicists (EFOMP), the Middle East Federation of Organizations of Medical Physics, which is the regional organization member of the International Organization for Medical Physics (IOMP) for Middle East, the International Atomic Energy Agency (IAEA), the International Committee of Radiation Protection (ICRP), the American Association of Medical Physicists (AAPM) and last but not least the European Commission (EC). The Conference's works have been supported by the Greek National Tourism Organization, IAEA, the Technological Educational Institution (T.E.I.) of Athens and finally the European Society of Magnetic Resonance in Medicine and Biology (ESMRMB).

Fig. 4: Dr Paul Shrimpton was given the EFOMP medal by EFOMP President Professor Peter Sharp.

Furthermore, a total of 18 major vendors in the Medical field and Medical Physics area participated in the technical exhibition. Apart from the exhibition booths, a number the vendors organized satellite symposia during which participants had the opportunity to follow the current technological and commercial trends.

There was an electronic poster exhibition. Certain number of abstracts were chosen by the scientific committee to be presented as a presentation using only one slide taking 2 min, the 3rd day of the conference.

The session "Meet the Editor" which was organized for the first time last year during 7th ECMP continued this year as well. During this session journal editors, including EJMP's editor, Paolo Russo, spoke to people on how to get their papers accepted for publication.

Apart from the scientific program, conference participants took active part in the social program, as well:
www.flickr.com/photos/128389939@N03/sets/.

The participants are given the opportunity to publish their work in European Journal of Medical Physics. The deadline for paper submission was 31 December 2014. Submissions which pass an initial desk evaluation will be peer reviewed before the assigned Guest Editors reach their final decision. For more information please visit the journal website:
www.physicamedica.com/

HAMP would like express its gratitude in particular to the Scientific Committee of the Conference who have devoted time, energy and expertise in order to offer an exciting scientific program, to the Organizing Committee who devoted a considerable amount of time to preparation and do their best to regulate a smooth and problem-free program, and last but not least to the Invited Speakers who have traveled from all over the world in order to share with us their valuable know-how and expertise.

Finally, HAMP would like to thank all colleagues and friends who came and contributed to the success of the conference. It was really

Fig. 5: The welcome cocktail was held at the roof garden of the conference hotel.

great to meet with such a big number of scientists, share nice and fruitful time in Athens and enjoy few days together.

Kiki Theodorou
Assoc. Prof. University of Thessaly Konstantopoulio General Hospital

Virginia Tsapaki
Chair of Scientific Committee, Chair of Organizing Committee, HAMP President and Chair of Education Committee

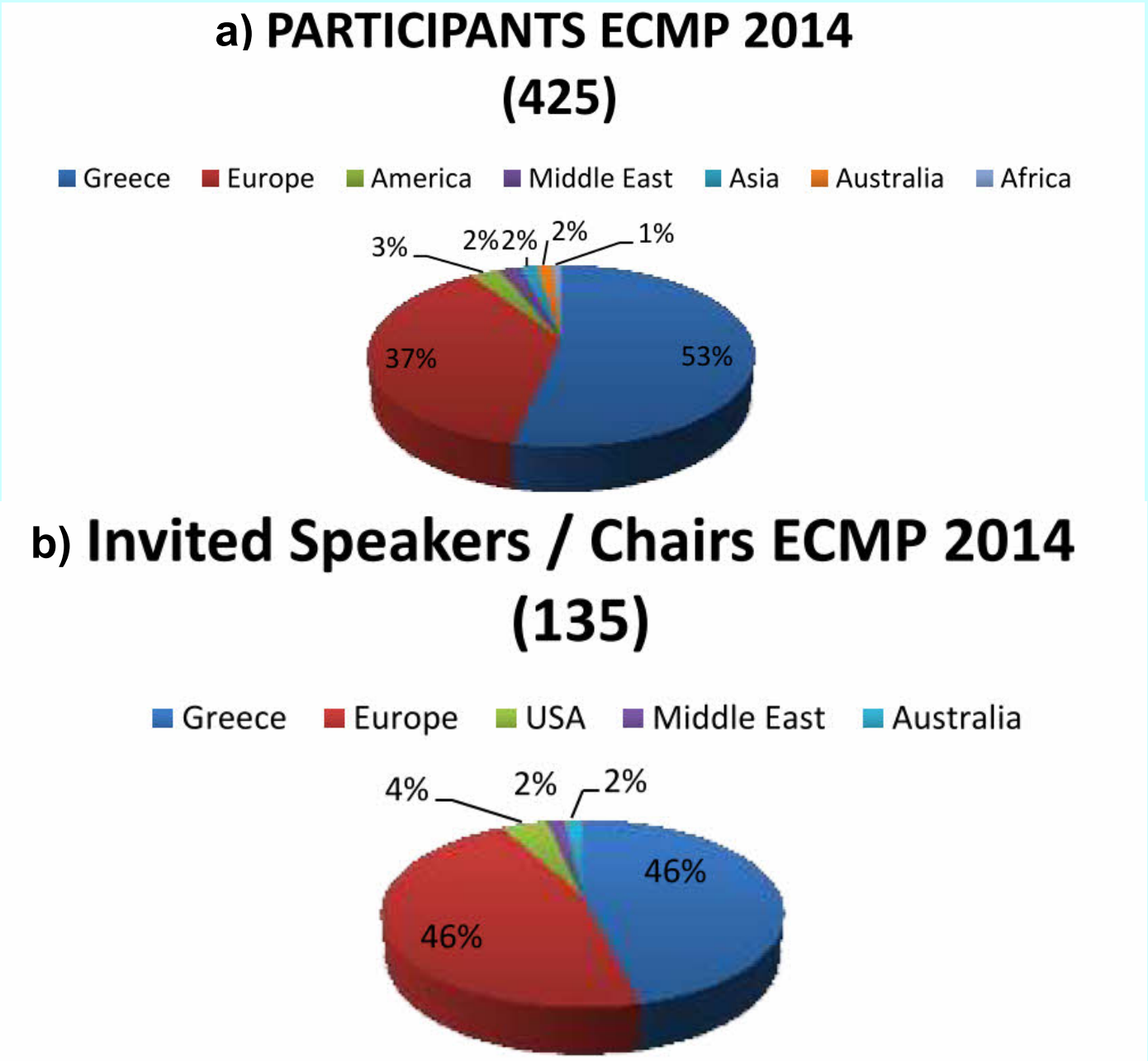

Diagram 1 a) Statistics on participants (top) and b) on invited speakers/chairs at ECMP 2014 (bottom).

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1319-23, 02/15

Summary of the 6th Joint Meeting on Medical Physics organised by the Swiss Society of Radiation Biology and Medical Physics (SSRMP), the German (DGMP) and the Austrian (ÖGMP) Society for Medical Physics

The Swiss Society of Radiation Biology and Medical Physics (SSRMP), the German (DGMP) and the Austrian (ÖGMP) Societies for Medical Physics jointly organized a conference in Medical Physics at the Irchel Campus of the University Zurich from September 07.-09, 2014. Chairman of the meeting was Stephan Klöck from the University Hospital of Zurich. After Gmunden (2002), Nuremberg (2005), Berne (2007), Munich (2009) and Vienna (2011) this was the sixth joint meeting and the second one taking place in Switzerland. 771 scientists, students and representatives of companies and institutions attended the meeting: 455 from Germany (59%), 221 from Switzerland (29%), 39 from Austria (5%), 48 from other European countries (6%) and 8 from non-European countries (1%). These numbers mark the biggest pure medical physics meeting ever performed on Swiss ground.

In January 2014 the steering committee with its 13 members defined the 24 topics of the conference. Scientists from various countries, including Germany, Switzerland and Austria, submitted a total of 240 abstracts. 70 members of the scientific committee did the reviewing and subsequently the program coordination for each session. The quality of the submissions was considerably high. The number of submissions for some of the topics reached high levels. For instance; “Dosimetry in radiation therapy”, “Magnetic resonance imaging” and “Particle radiation therapy” had to be split into 3 sessions. “Motion management in imaging and radiation therapy”, “Treatment planning and dose calculation in radiation therapy”, “Dosimetry in radiodiagnostics and nuclear medicine” and “Quality assurance for medical radiation applications” was split into two sessions. On the other hand, due to a lack of submissions, six important topics did not get a dedicated session: “Image reconstruction/visualization and ICT in medical physics”, “Radio diagnostics and computed tomography”, “Audiology”, “Medical optics”, “Biomedical engineering” and “Medical robotics and rapid prototyping”.

Fig. 1: Felicitas Pauss talking about the Higgs discovery at CERN during the opening ceremony (Photo: Conventus GmbH)

The program was subdivided in up to six parallel tracks containing 26 scientific sessions with 152 short presentations and invited lectures. The number of participants in each session ranged from 20 to 190. The “big” topics with more than one hundred attendees included “High precision and stereotactic radiotherapy” (n=190), “Treatment planning and dose calculation” (160), “Particle radiation therapy” (140), “Adaptive radiation therapy” (120), “Quality assurance for medical radiation applications” (110) and “Motion management in imaging and radiation therapy” (110). 102 posters were presented and discussed in 8 sessions followed by more than 150 visitors in total. 21 invited introductory lectures served to provide basic and advanced knowledge for the majority of the topics to enable newcomers in a certain field to follow the state of

Fig. 2: Willi Kalender, Glocker Medallist of the year 2014 speaking about dose in CT on its way further down to sub-mSv (Photo: Conventus GmbH)

the art short presentations. These lectures were part of the continuous education program of the conference. Another important part of the conference was the industrial exhibition: 42 companies at 38 booths demonstrated industrial solutions to the community and presented/ discussed their approaches in seven lunch symposia.

17 different prizes were awarded during the meeting: life time achievements, special investigations or projects, best presentations and best posters … and one for the dedicated joint meeting quiz. A detailed description of the awards is published in this issue.

There were also several special elements in the program. One of the scientific highlights was Felicitas Pauss' (CERN & ETH Zurich) fascinating story about the "Higgs discovery at CERN – the impact of science without borders" (Fig. 1) during the opening ceremony. Large scale research, like at CERN, is highly interdisciplinary and its success is based upon international networks and collaborations as well as important prerequisites for smaller scale research. Willi Kalender (Uni Erlangen-Nuremberg) is the Glocker medalist of the year 2014. He gave an excellent talk on "Patient dose in CT – the downward trend continues". In the Glocker lecture he described various approaches to decrease dose to reach sub-mSv CT examinations and also discussed the benefits for individual patients and the public (Fig. 2).

Fig. 3: Olli Hauenstein Swiss comedian and entertainer - special guest at the social evening (Photo: Conventus GmbH)

The "Meet the presidents" event on Monday and especially the social evening on Tuesday were ideal opportunities for catching up with friends and colleagues: more than 160 colleagues met for the dinner in the Albisguetli. Highlight of the evening was Olli Hauenstein, a famous Swiss comedian, serving subtle humor, artistic and musical entertainment (Fig. 3). He created a new term of strange truth: "Medical Sisyphist" derived from "Medical Physicist".

With this meeting a platform for exchange between the three societies and their members was created in order to promote the formation or renewal of interdisciplinary and international connections. Therefore, symposia were held for young medical physicists, medical physics in developing countries and on other professional issues in international comparison. Like at the previous two annual meetings of the DGMP, we organized a short introduction to Medical Physics and a guided tour through the industrial exhibition for 96 pupils from Zurich. 15 colleagues from universities, hospitals and industry served as guides.

Classical radiation physics with all its aspects was still the dominating subject of the congress.

Fig. 4: Zurich by night - returning from the social evening (Photo: Conventus GmbH)

Fig. 5: “It’s done” – presidents‘ photo with Uwe Wolff, Stephan Klöck, Jürgen Reichenbach, Wolfgang Enghardt and Peter Manser (Raphaël Moeckli had to leave early) (Photo: Conventus GmbH)

But over the last years medical imaging, especially without ionizing radiation, gained a lot of importance within medical physics. Due to a growing number of hybrid approaches in clinical practice and tendencies in international legislation we can expect that this trend will continue. Personally, I would appreciate more impact from medical engineering and technology disciplines in our community. We should strengthen our efforts in designing joint research projects to find answers and create solutions which are state of the art in all possible aspects. Additionally, medical radiation physicists have a lot of experience in professional issues in a clinical environment which they can share.

It was really exciting and a great honor and pleasure to organize this joint meeting of Medical Physics. I could experimentally change some of the organizational aspects and observe how they turned out. One of them: more than 70 speakers agreed on sharing their presentations with their audience. Together with the boards of the involved societies we will find a way to distribute them. The final thing for me to do as congress president is to thank all of you. To thank everyone for travelling to Zurich and joining the meeting, the scientists for submitting and presenting their results and discussing their issues, the sponsors and the industry exhibitors for enabling the meeting on this very professional level, all the supporting and helping institutions encompassing more than 100 persons, and especially the three involved boards (Fig. 5), the scientific committee and the congress team of Conventus. Special thanks to my family for their support and patience. They all contributed to the spirit of this joint conference that became an extraordinary meeting in Zurich 2014.

For more information (programme, abstract book and photos) please visit:

www.medphys-kongress.de or one of the homepages of the involved societies.

Sending greetings - bis bald, à bientôt, a presto, see you,

Stephan Klöck.

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New EFOMP Communication and Publications Committee Vice Chair

Dear colleagues,

Having elected as the new vice - chair of the Communications and Publications Committee I would like to introduce myself through this article.

I am a professional Medical Physicist and I currently work for the Medical Physics Department of Nicosia General Hospital.

My academic background includes a 4-year Physics Degree from the University of Athens-Greece, obtained in 1993, a Master in Medical Physics from the University of Aberdeen – UK obtained in 1994 and a Master in Public Sector Management obtained in 2012.

In 1996 I obtained my professional license as a Medical Physicist from the Greek government after one year of hospital training. In 1997 I have been appointed as a Medical Physicist by the Government of Cyprus. My initial interest in Medical Physics was in the field of Radiotherapy where I spent the first five years of my career between 1997 and 2002.

Between 2003 and 2008 I worked for the Cypriot Ministry of Health as a Medical Devices Officer. In this period I had the chance to represent my country at the European level and help in the preparation and implementation of the Cypriot national legislation on Medical Devices. During the same period, I joined the team that represented Cyprus in the European Health Technology Assessment (EUnetHTA) project.

Since 2008, I work in the field of diagnostic radiology. I have a special interest in computer programming and database design. I have developed management software for two nuclear medicine departments and one personnel dosimetry laboratory. My work in Nuclear Medicine has received a best poster award during the 9th World Congress of the World Federation of Nuclear Medicine and Biology which took place in Seoul-Korea.

I currently provide Medical Physics services for Arch. Makarios III, which is a maternity and paediatric hospital, the radiology department of the Cyprus military hospital and one mammography screening center all operating in the city of Nicosia. I also provide support to the departments that use software that I have developed.

Other fields that attract my interest include health and hospital management and scientific laboratory certification and accreditation. I am currently included in the ISO17025 list of trained technical assessors maintained by the Cyprus Ministry of Commerce Industry and Tourism.

In this 17-year period of professional experience I have been actively involved in several scientific organizations or societies. I have served in all positions of the board of Cyprus Association of Medical Physics and Bio-Medical Engineering as well as the Biomedical Research Foundation. For the last six years I serve as an elected board member of the Cyprus Society for Osteoporosis. I also currently serve as a member of the disciplinary committee of the Cyprus Association of Medical Physicists and as a member of the Cyprus National Radiation Protection Committee where I represent the Ministry of Health.

Charalambos Yiannakkaras

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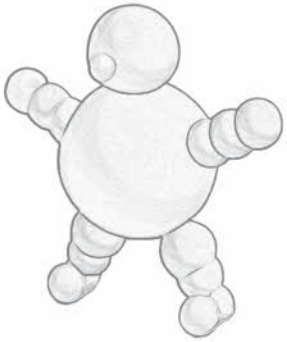

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Seeing the World with Different Eyes

As physicists we are all well aware of the fact that things heavily depend on the observer's eye – at least since Schrödinger's cat became so famous and Einstein published about Relativity. This article is not aiming for quite so profound truths as these two pioneers were writing about some decades ago. It merely wants to open up a different perspective to all those in the northern hemisphere who have not yet given much thought about the other side of the world.

Writing this article from Dunedin, New Zealand (45°52′S 170°30′E) I can affirm that down here some things are indeed quite different from "up there". Just to pre-empt anyone's assertion without substance: we are not continually standing on our heads. And we are not even feeling as if we were occupying the bottom half of the planet. In fact, it is just a matter of drawing maps in a meaningful manner. Figure 1 should remove any doubts as to which part of the world really matters.

After having clarified this issue we should come back to some differences. Having had a really good Physics teacher at school I had learned that the Coriolis force points in the opposite direction in the southern hemisphere. But I must say that it still puzzles me every time I let the water run out of the vanity basin: the water turns the wrong way! My brain still struggles to adjust to that sense of rotation. No problem to drive on the other side of the road (having come from Europe's mainland), to turn the key in the door the other way round, to adjust to summer time in January, to learn that south facing properties are not catching much sun (if any), etc. But that Coriolis force is still bewildering me!

Anyway, my article should more focus on Medical Physics rather than general experiences. Having come from Germany I think there is actually not much of a difference between working as a Medical Physicist in Germany and in New Zealand. The available equipment is pretty much the same; the procedures which are adhered to are quite comparable. There are possibly some minor differences which I am going to highlight in the following.

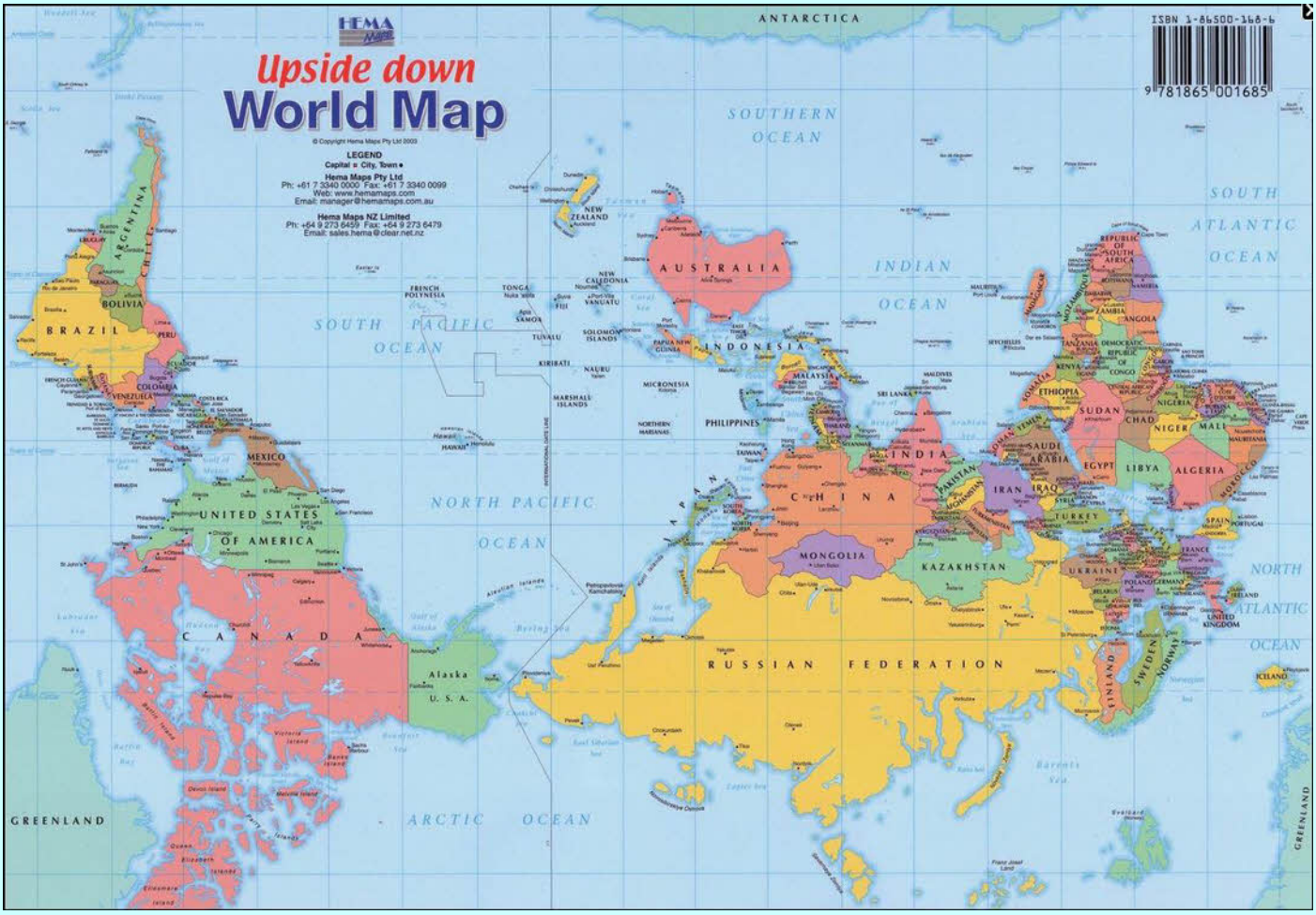

Fig. 1: A proper world map (from http://www.deceptology.com)

The population density of New Zealand is rather small, especially in the South Island. A couple of years ago there were about 4 million people living in this country and they cared for about 40 million sheep. This ratio has now slightly changed, as flocks are being replaced more and more with cattle herds. In any case, it is a rural country. Many patients wanting to receive radiation therapy have to travel long distances and need to take accommodation for the duration of their treatment. Any delay in treatment, e.g. because of a machine breakdown, can have quite profound effects on patients.

As expected for a small population, the Medical Physics workforce is also quite small in this country. There are nine radiation oncology centres in seven cities – three of those centres are private. In total there are about 30 linear accelerators in the whole country with around 60 medical physicists in radiation oncology – plus a few colleagues working in radiology and biomedical engineering.

These small numbers make it quite hard to provide a sustainable training programme. One University offers an MSc in Medical Physics. After graduating students will then work as registrars in one of the radiation oncology departments. Their practical training is done according to ACPSEM guidelines. In fact, New Zealand simply counts as a branch of the ACPSEM (Australasian College of Physical Scientists and Engineers in Medicine) despite the fact that “Kiwis” and “Ozzies” are generally rather proud of the “ditch” between them. ACPSEM has developed a comprehensive clinical training guide (CTG) which is perceived to be very rigid and too detailed by many. However, it provides trainer and trainee with a good understanding as to what expectations are to be met. Following this training guide will help pass the required written, practical and oral exams. Practical exams for Medical Physicists might be rather unusual in many countries but not so in Australasia. The practical exam is carried out on any of the machines available in the department, which could be a linear accelerator, an orthovoltage X-ray unit, a CT.

This gives already a reasonable overview over the available equipment in this country. There are various Elekta, Siemens and Varian linacs (including Artiste, TrueBeam and VersaHD), quite a few orthovoltage X-ray units, afterloaders and one IntraBeam used for treatment delivery. The relatively large market for orthovoltage X-ray units in this part of the world might well be related to the high skin cancer rate throughout Australasia. With the various treatment machines there is also a wide range of measurement equipment available. Specialized dosimetric equipment is chosen according to each department’s needs.

There are regular dosimetry audits carried out by the Institute of Environmental Science and Research (ESR). They independently determine the output of the machine; they provide dosimetric calibration service; and they also provide personal dosimetry service. Each department needs to be licensed by ESR, which is currently done through licensing certain individuals in each department, like Radiation Oncologists and Medical Physicists.

The departments are managed slightly differently compared to German departments. The various professional groups (Radiotherapists, Radiation Oncologists, and Medical Physicists) are rather independent from each other. There is one service manager above each group’s director; this person is essentially responsible for running the department from an administrative point of view. In Germany this role seems to coincide more with Clinical Director. The professional directors are responsible to run their own professional group and make sure they comply with national and international guidelines.

It is up to the Professional Director of Medical Physics to decide whether a medical physics accreditation obtained overseas is accepted locally. If the director is not satisfied with the existing accreditation, employment can be made conditional upon ACPSEM accreditation within a certain time frame. Medical Physics accreditations from the following countries have been accepted in New Zealand so far: UK, USA, Canada, France, Germany, Netherlands. It is worth noting that in Germany employers are generally only interested in their employees’ state licence (“Fachkunde”) and not in their accreditation by the German Society of Medical Physics (“DGMP Fachanerkennung”). In New Zealand, however, it is the other way round – which should not be to the surprise of the attentive reader. A state licence obtained in Germany is rather irrelevant, as the licence will have to be obtained by ESR regardless. On the other hand, the accreditation obtained by the German Society of Medical Physics (DGMP) is often considered to be equivalent to ACPSEM accreditation. Having said this,

some DGMP accredited physicists still make the effort to go through ACPSEM accreditation. ACPSEM accreditation and registration comes with the obligation for continual professional development (CPD), which is achieved by attending scientific meetings or informal meetings, publishing, education, professional service, and structured self-study. Employers are obliged to support their employees' CPD activities in providing sufficient time and funds.

After being inspired with many new ideas at conferences and user meetings the physicists can than put into practice what they have learned abroad. The procedure to realize new ideas in a department is generally to set up a multidisciplinary team consisting of at least one representative of each professional group. This group will then progress their project to the point of clinical implementation and the individual team members will report back to their respective professional group and provide the necessary training. Such teams are often formed in order to introduce new treatment techniques or new technology to the department, e.g. VMAT, SBRT, new linear accelerator, new treatment planning system, or going paperless. These kinds of projects require some extra efforts of staff members and there are various approaches to tackle this challenge. Some departments ask their staff to work overtime, some grant them time in lieu, some work on two shifts, some are considering weekend work, and others simply put in enough resources (e.g. one machine per day is made available for physics on a rotating basis).

Besides the local management of the radiation oncology departments there is also the Ministry of Health, which directly controls certain objectives on a national level, such as maximum waiting times. As the Ministry recently produced a Cancer Plan in order to plan national service for the next ten years they recognized a current and future lack of Medical Physicists. Hopefully that recognition will give our profession a boost over the next couple of years. The plan looks at how many linear accelerators will be needed in which part of the country over the next decade and at the corresponding staffing levels.

Along these lines there have been quite a few job openings in New Zealand of late. Some of them were also posted on the German medical physics mailing list and aroused quite a bit of interest. We had posted a job on that list some years ago and did not receive much response from it. The scenario was slightly different for the more recent advert as there seem to be more people keen to emigrate. To the best of my knowledge there are 4 Medical Physicists in this country who came from Germany. The Medical Physics group reflects the diversity of the society, as there are people here who had worked before in the UK, USA, France, Belgium, Netherlands,

Fig. 2: Tautuku Bay

Germany, Russia, Hungary, Qatar, India, Portugal, Ireland, Bulgaria, Sweden, China, Japan and, last but not least, in Australia.

There are different aspects of New Zealand which attracts people. Many are attracted by the stunning and diverse landscape (Figure 2). Hiking is very popular here, and so are any water sports or extreme sports like bungee jumping and Heli Skiing. Fascinating as these things are they are not the only reason why people immigrate to New Zealand, though. New Zealand is also a peaceful and safe place and has the reputation of being a good place to raise a family.

The latter is in fact the reason why my family wanted to emigrate, too. We considered home-schooling to be the very best option for our children. As the German government likes to inflict all sorts of disciplinary means on parents with that attitude – up to coercive detention and child removal – we preferred to move to a better place with freedom of choice.

This is what we found in New Zealand, besides a thriving Medical Physics community, most fascinating countryside, and many other aspects which make it worthwhile living here – in God's own country, as New Zealanders like to describe their homeland.

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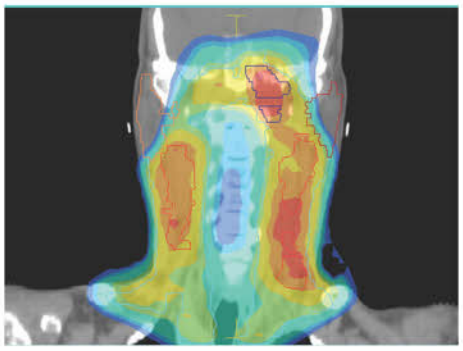

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Interview with Joanna Cygler

Joanna Cygler, medical Physicist born in Poland and working in Ottawa, Canada. She is known for her contributions to electron dose calculation using MC and also for the use of MOSFET detectors for in vivo dosimetry. Smart, sharp, funny and a good friend of her friends.

Núria Jornet: When and why did you decide to go for a physics degree?

Joanna Cygler: I was born and educated in Poland. I decided to study physics in my first year of high school, when I was about 12-13 years old. I was inspired by a popular science book about nuclear energy and its peaceful applications. It was a new and hot topic in those times. The destruction of Hiroshima and Nagasaki spun lots of discussions about how the powerful force of nuclear energy could be channelled for the benefit of humanity rather than its destruction. I dreamed about a career somehow devoted to peaceful applications of nuclear energy. I finished high school, passed entry exams and got accepted at the Department of Physics, University of Lodz, where I specialized in nuclear physics at low energies. Subsequently, I completed Ph.D. degree at the Technical University of Lodz.

Fig. 1: Joanna Cygler

How did you enter the medical physics world?

It was many years later, after I moved to Canada. I made a career switch from basic research to medical radiotherapy physics. I got a position as a research associate at the Cross Cancer Institute in Edmonton and worked on an electron beam dose calculation project with Jerry Battista and John Scrimger. Incidentally, the desk I took over was the one that Rock Mackie had used when doing his PhD. Two years later I accepted a medical physics staff position in the Ottawa Cancer Clinic, where I have been employed ever since.

Why did you take the decision to move to Canada from Poland?

The decision to stay in Canada was complex and not easy for me. Originally, I came in 1980 for 1 year of post-doctoral fellowship. However, the political situation in Poland got worse. In December 1981 martial law was imposed. The political unrest continued. In the meantime I had my first son and was afraid to return to the country where there was political unrest and a danger of Russian intervention.

Is there any person(s) that have had a special impact in your professional life?

I cannot really name one person. Over the years, there were various people whom I looked up to as role models and learned my work ethics from. However, in my youth, Maria Sklodowska-Curie was definitely a big inspiration. First, she was a woman, like me. Second, she was also Polish and loved her homeland. And most of all, she was very passionate about her research. I found it all very romantic and inspiring.

Fig. 2: Joanna Cygler with Núria Jornet, Vienna 2006.

Is there any fact in your life that has had a special impact in your career?

I think the decision to stay in Canada had a definite impact on my career and personal life.

What has been from your point of view your best contribution to the medical physics world?

Developing a complex phantom for testing electron beam algorithms, which led to testing and then clinically implementing the world's first commercial electron MC dose calculating engine. Also my work on development of MOSFET based dosimetry systems, especially RADPOS - the

Fig. 3: Joanna Cygler in 1981.

system for simultaneous measurement of dose and position in real time.

If you could change something in your career, what it would be?

I entered a field that was fairly new at the time and rapidly evolving. I was able to carve my path in the way that allowed me to follow my scientific interests and tap into my various skills and abilities. Working in a large department enabled me to combine clinical service, research and education. I cannot really think about anything I would like to change. This is pretty satisfying and I realize I have been very lucky.

Is there any day that you remember in particular from your career?

The day the airline lost my luggage just before I was going to be made a fellow of the AAPM! It was a very hot day and I had no clothes except a pair of jeans and a t-shirt I was traveling in. I had to buy in a hurry some outfit more suitable for the occasion. My luggage arrived 2 days later…

What do you enjoy most from your job?

I enjoy variety of aspects of my job. I like to be able to combine clinical service and academic activities such as research and teaching. I love experimental work, especially working with new devices or techniques. I also love teaching. However, knowing that I make a difference to our patients gives me the highest satisfaction. Once we were treating a young pregnant woman for Hodgkin's disease. I built a special shielding construction that limited the dose to her abdomen. The patient gave a birth to a healthy baby girl and each time she came for a follow-up visit, she made a point of seeking me out to show off her daughter and thank me.

I also really enjoy collaborating with colleagues from other countries.

What is your vision, in ten years time, of the medical physics education in Europe? Do you think we'll be able to have a homogeneous education that will facilitate the free-movement of MP around Europe?

Europe has a better than ever chance to have a common core education for medical physicists. The Bologna agreements have paved a path to unified higher education.

Increased compatibility between education systems in different countries should make it easier for students and professionals to move within Europe.

Fig. 4: Cautiously at work...

ESTRO plays an important role in continuing education, and in providing common professional standards. And of course, one should mention EFOMP efforts to establish Medical Physics Expert recognized by National Member Organizations and accepted as a medical profession by European Commission. EFOMP efforts started in 2006 with Malaga declaration. Since then there is an ongoing effort to develop educational guidelines that can be adopted by all European countries. This is a difficult project, taking into account that different countries have very different training requirements for medical physicists. So I imagine a few more years will pass before a free movement is a reality for all medical physicists. Perhaps there should be a European Certifying Board established for medical physicists to assure uniform minimum standards of knowledge and clinical practice. However, learning the local language of a country one would like to work in may still be a barrier for truly free movement of medical physicists throughout Europe.

How do you see the future of medical physicists?

Medical physics has been a fast evolving field. In recent years it is becoming more and more interdisciplinary. If we want to stay relevant, it is important to maintain a broad set of skills, so one can react to new demands of our job. For example, in radiotherapy, imaging is playing increasingly important role. Also, knowledge of radiobiology is becoming a real necessity, as it allows us to link in a meaningful way the delivered doses to treatment outcomes. I expect that in the not so distant future, it will be possible to customise treatments for each patient, based on his/her radiation sensitivity. Since our true strength as physicists is critical scientific thinking, medical physicists should lead interdisciplinary teams that contribute new ideas leading to improvement of technology and patient treatment.

Three advices to a physicist who is starting in the field?

My advice comes from the previous statement and the fact that medical physics is becoming increasingly interdisciplinary field. To be successful:

1. Maintain a broad set of skills. For example, in radiotherapy physics expand your expertise to imaging and radiobiology.
2. Continue to learn new things and develop a life-long learning strategy. Form national and international collaborations with other medical physicists.
3. And above all, remember that you are a physicist, trained to do research and developmental work, and not just to commission and operate the equipment. So get involved in cross-disciplinary research, conferences and workshops. Collaborate and participate in education of not only physicists but also other medical staff.

What do you like to do in your free time?

I love to travel and learn about other countries, interact with people of different countries, and learn about their lives and history. I like nature walks and camping in national parks. In the winter, I like skiing. When at home, I like to listen to music, read a good book, and get together with friends.

Do you think that it is possible to balance professional, family and personal life?

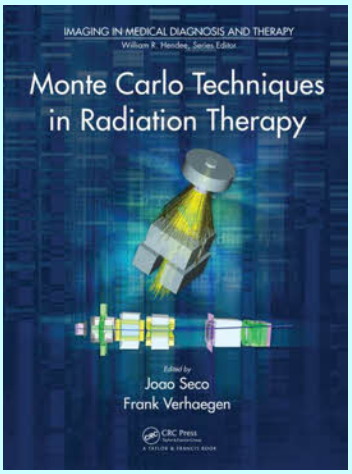
This is a tough question. Work, family, personal life balance can mean different things to different people. For me, a wholesome life has to consist of all three elements. However, at different stages of life, these elements may take different priorities. Sometimes one of them has to take a back seat for a while. As life itself is a process, achieving a balance in life is a process to. It may sometimes seem as a struggle.

In principle, I believe it is possible, but not easy to achieve a balance. An understanding and supportive partner is a big help and I have been lucky to have one.

Fig. 5: Hiking in the Alps 2003.

Monte Carlo Techniques in Radiation Therapy

By Joao Seco & Frank Verhaegen



Radiation Therapy (RT), and especially 'external-beam' RT, was very different before Monte Carlo (MC) came on the scene – we can date this approximately to the late 1960s when Martin Berger and Steve Seltzer published seminal papers on depth-doses, electron fluence spectra and stopping-power ratios for high-energy electron beams, derived from their ETRAN code. Today it is difficult to over-estimate the contribution that MC has made in virtually every aspect of RT. Despite this, since the 'Erice' book (the 'orange bible') was published in 1988 I do not believe that any book on MC applied specifically to radiotherapy has appeared.

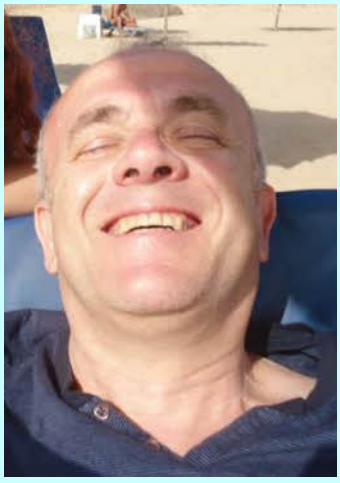
This very professionally produced volume includes almost everything one might expect: 3 chapters in 'Part I MC Fundamentals' – on *History*, *Basics of MC Simulations*, *Variance Reduction Techniques* - and 18 subsequent chapters covering Radiation Dosimetry, External Photon and Electron Beam Modelling, Patient Dose Calculations, Brachytherapy Dosimetry, Treatment Planning (called 'Clinical Considerations'), Proton and Ion Beam Dosimetry (and 'clinical considerations'), Radionuclide Therapy, Kilovoltage and Megavoltage Imaging, and Shielding of RT facilities. Looking to the future, there are chapters on '4D MC', 'Proton Radiography and CT', 'PET-based treatment verification of ion-beam therapy', and 'GPU-based fast MC for RT dose calculation'.

Amongst the chapter authors there are many well-known names, including the editors themselves: Alex Bielajew, Matthias Fippel, Jan Seuntjens, Jeff Williamson, Charlie Ma, George Ding, Michael Fix, Hugo Palmans, Harald Paganetti, Michael Ljunberg, Bruce Faddegon, Steve Jiang. Yet rather surprisingly neither Pedro Andreo (of stopping-power ratio and IAEA Codes of Practice fame) nor Dave Rogers (of EGS and BEAM fame) are here.

Such a book should inform the reader about the key milestones in the development of the field, thus conveying *the excitement of the journey* – such as ion chamber simulation passing (or *failing*) the Fano Test, the simulation of the complex geometry of a linac treatment head, and calculating a CT-anatomy-based treatment plan. It should indicate new areas where the technique has yet to make a real impact, such as radiobiology. And limitations of the technique should be discussed, e.g. situations where the technique *cannot* be applied (e.g. to the *electrical* behaviour of an ionization chamber, or the radiation chemistry of an irradiated cell) and where the results cannot be trusted, e.g. at low energies where cross-sections are highly uncertain.

Does Seco & Verhaegen (2013) pass the test? By and large yes. One of the very best chapters is by Alex Bielajew on 'History' - supremely readable and admirably concise. My own bias is towards MC applications in radiation dosimetry; the material in this chapter was not what I expected – too abstract and with a near total absence of concrete examples. The proton (& ion beam) dosimetry chapter by Hugo Palmans is much better in this respect. There is nothing on how MC can be used to explore the *radiobiological* effects of ionizing radiation, such as track structure from 'interaction by interaction' codes. This is a surprising omission in a book on *radiation therapy* which itself is based on *radiobiology*.

Congratulations to Joao Seco and Frank Verhaegen for planning this project, assembling an expert group of authors, and for all the demanding and often tedious editing work. *MC Techniques in RT* merits a place in every radiation therapy physics department. On Amazon (as of January 2015) this handsome book can be yours for approximately 110 Euro, and slightly less for the Kindle version. In my book (pun unintended) this is a bargain!



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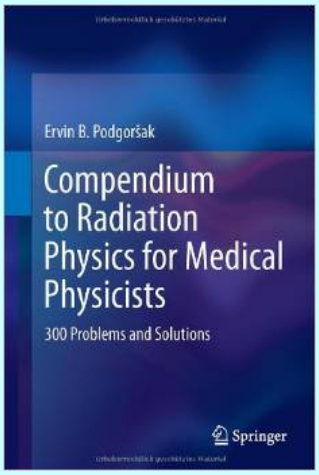
Teaching and Learning in Medical Physics: The new "Compendium to Radiation Physics for Medical Physicists" by E. B. Podgoršak



Teaching as well as learning always requires good textbooks. Good textbooks on medical physics have been written or edited by a series of authors and are now well available. With reference to medical physics in radiation oncology one could especially mention the two more recently published and well known textbooks: "Radiation Oncology Physics: A Handbook for Teachers and Students" edited by E. B. Podgoršak and issued by the International Atomic Energy Agency, Vienna in 2005, and the "Handbook for Radiotherapy Physics - Theory and Practice" edited by P. Mayles, A. Nahum, and J. C. Rosenwald and published by Taylor & Francis in 2007. In both books the text material has been developed with the assistance of a large number of contributing specialist authors from multiple continents under the expert guidance of the editors.

In addition and equally important, successful learning also requires continuous exercising. In this context the new recommendations of the European Parliament and Council regarding qualification appear quite important. These recommendations have introduced a new terminology and a new qualifications framework for Europe called the "European Qualifications Framework" (EQF). A key characteristic of that EQF is that qualification levels are defined in terms of learning outcomes, and that these learning outcomes are expressed as inventories of knowledge, skills and competences (KSC). The term "skills" refer to that type of qualification which must be acquired by exercises and training.

Consequently, books containing exercises and training material are needed as urgent as textbooks comprising the knowledge in the field. Now we have indeed such a new book in Medical Physics: The "Compendium to Radiation Physics for Medical Physicists" written by E. B. Podgoršak and published by Springer in 2014. The following text is taken from its preface:

This book is intended as a supplementary textbook for a radiation physics course in academic medical physics and biomedical engineering graduate programs as well as a reference book for candidates preparing for certification examinations in medical physics subspecialties. The book may also be of interest to graduate students in physics, chemistry, and various branches of engineering wishing to improve their knowledge and understanding of modern physics and its intimate relationship with radiation physics applied to medicine.

The book contains 129 specific sections grouped into 14 chapters. Each section contains one or more long questions that consist of several shorter questions related to the subject material of the specific section. The chapters and sections of this textbook follow the layout of the textbook: "Radiation Physics for Medical Physicists" published by Springer in 2010 and the 300 solved problems presented in this book are intended to provide supplementary information to the radiation physics textbook through examples relevant to the topics discussed in individual sections of the textbook.

A last remark: Having made the differentiation between gaining knowledge and gaining skills it is interesting to realize that this book "*can also stand on its own as a radiation physics textbook serving as a tool for learning radiation physics through perusing a series of solved radiation physics problems".*

I am sure that it may happen that even more experienced medical physicists not immediately know the answer and, accordingly, can improve their knowledge using this book.

In summary, I consider this new "Compendium to Radiation Physics for Medical Physicists" as a really significant enrichment for all involved in teaching Medical Physics.

Günther Hartmann
Chair of EFOMP Education & Training Committee

EUTEMPE-RX

The EC supported EUTEMPE-RX project develops an educational and teaching platform for Medical Physicists in Diagnostic and Interventional Radiology to reach the expert level (EQF 8).

Targeted participants are Medical Physicists working in radiology departments, industry and regulatory authorities or working at a PhD project in the same domain.

A European network of excellence with partners in different fields of interest for the profession will set up a harmonized course including 12 modules with radiation safety, clinical involvement and efficacy being prevalent subjects.

EUTEMPE-RX

Course enrollment is FREE, but we may charge for catering and social events.

The modules will combine online with face-to-face teaching (approximately 40 hours each). The participants may attend all modules or select specific modules only.

The project will strive for a diverse group of European participants, based upon the participants' CV and letter of recommendation.

Maximum number of participants per module is 20.

The minimum entrance requirements are: EQF level 7 = master + 2 years of experience in medical physics for radiological applications.

Please visit our website:
www.eutempe-rx.eu

Scientific Meetings

4-9 March 2015
European Congress of Radiology
Vienna, Austria
Info: www.myesr.org

4-5 March 2015
Transit Dosimetry
Birmingham, West Midlands, UK
Info: 10times.com/portal-dosimetry

18-21 March 2015
European Society for Molecular Imaging
Tübingen, Germany
Info: www.e-smi.eu

23-26 March 2015
Radiobiology & Radiobiological Modelling in Radiotherapy
Port Sunlight, UK
Info: www.estro.org

26-28 March 2015
Internationa Workshop on Magnetic Particle Imaging (IWMPI)
Istanbul, Turkey
Info: www.iwmpi.org

26 March 2015
Cardiovascular MRI
Bristol, UK
Info: www.ipem.ac.uk

31 March-4 April 2015
Image-Guided Radiation Therapy Hands-On Course
Haarlem, The Netherlands
Info: www.inholland.nl

13-24 April 2015
Dosimetry and Treatment Planning for Basic and Advanced Applications
Trieste, Italy
Info: indico.ictp.it

20-22 April 2015
Positron Emission Tomography (PET): Technology and Application
London, UK
Info: www.kcl.ac.uk

22-25 April 2015
ECIO 2015 - 6th European Conference on Interventional Oncology
Nice, France
Info: www.ecio.org

24-28 April 2015
3rd ESTRO Forum
Barcelona, Spain
Info: www.estro.org

26-29 April 2015
British Nuclear Medicine Society Annual Spring Meeting
Brighton, UK
Info: www.bnms.org.uk

4-8 May 2015
Conference of the World Association of Radiopharmaceutical & Molecular Therapy
Innsbruck, Austria
Info: www.eanm.org

14-16 May 2015
3rd Warsaw Medical Physics Meeting
Warsaw, Poland
Info:www.facebook.com/warsawmedicalphysicsmeeting?fref=nf

28-30 May 2015
Optimisation in X-ray and Molecular Imaging
Gothenburg, Sweden
Info: rpop.iaea.org

30 May–5 June 2015
The International Society for Magnetic Resonance in Medicine Annual Meeting
Toronto, Canada
Info: www.ismrm.org

7-12 June 2015
Jagiellonian Symposium on Fundamental and Applied Subatomic Physics
Krakow, Poland
Info: indico.cern.ch

24–27 June 2015
CARS 2015 - Computer Assisted Radiology and Surgery
Barcelona, Spain
Info: www.cars-int.org