Winter 2015

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Exclusive interview with the person above
- Can you find him among the EMITEL collaborators?
Editorial

Dear Readers

Welcome to the winter edition of the EFOMP newsletter. I have enjoyed putting together these newsletters over the past two years, however it is now time to hand over this task to Gaspar and I am sure you will join me in supporting him as he takes on the role of Chair of publication and communication.

This issue includes a wide range of news items, and gives you a chance to catch up with some reports from the year’s activities in the EFOMP community. IAEA organized a high level meeting entitled ‘Regional Meeting on Medical Physics in Europe: Current Status and Future Perspectives’ within RER6031 project. The meeting took place on 7-8 May 2015 in Vienna. The meeting objective was to raise awareness among national authorities of the roles, status, education, training, recognition, and accreditation of medical physicists, the impact of staff shortages in European Member States as well as providing them with a better understanding of medical physics. In particular, the meeting discussed the need for staffing provision in the field of medical physics in order to ascertain the level of need for physics services in radiation oncology, nuclear medicine and diagnostic radiology.

There is a short article on ENETRAP, which gives an insight to the history of the project, which is useful for those who are not familiar with this project. Reports of the meetings of the EFOMP Board in March, Toulouse and Marburg in September 2015 are also included in this issue.

It was agreed at the Board meeting that brief notes on items of importance discussed at all EFOMP Board meetings should be published in EFOMP Newsletters so that members could be made aware of the work the Board has been undertaking. We hope to put these in short news bulletins in the future.

We also have a brief article on the history of Medical Physics in Greece, by John Damilakis and Virginia Tsapaki and we continue with our interview series Professor Slavik Tabakov, give us an interesting insight into his world and how his a natural curiosity for all the sciences as well as gadgets and technology lead him in to the field of medical physics.

Finally. I hope you have enjoyed your Christmas 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 one of the editorial team.

Prof Richard Bayford
Chair of publication and communication

Your editorial team:
Dear friends,

As the new vice-chair of the Communications and Publications Committee I would like to introduce myself.

I am a clinical Medical Physicist and I currently work for the Medical Physics Department of Araba University Hospital in the beautiful city of Vitoria, in the Basque Country, in the north of Spain. I have a Physics Degree from the University of Granada, and I obtained my professional license as a Medical Physicist after a three year residence at the Marqués de Valdecilla University Hospital in Santander.

Since 2010 I have worked in the field of radiation therapy and I have carried out some research in nuclear medicine, that has recently culminated in a patent for a device to conduct biopsies, guided only by positron emission tomography image.

At the end of 2013 a lucky break combined my professional and personal interests when my colleague and good friend Naia Pereda, a medical physicist at the Basurto University Hospital in Bilbao, sent me a message (via Twitter) with a proposal I could not refuse.

She asked me to be one of the editors and founding members, with herself and Manuel Vilches, another medical physicist at the Institute of Molecular and Oncological Medicine of Asturias (IMOMA), of a blog dedicated to medical physics. The blog, named Desayuno con fotones (Breakfast with photons), became a reality at the beginning of 2014 and now relies on a large number of collaborators and followers. In less than a year we have received recognition from the National Center of Particle Physics, Astroparticles and Nuclear Science (CPAN) winning the prize for the best Best Science Blog and we consider (and we have data to support this - we are scientists after all) that we have built an effective platform for the communication of our profession to society. I can never express enough gratitude to Naia for embarking me on this adventure.

Now the time has come to face an amazing new challenge as vice-chair of the Communications and Publications Committee. For an organization like EFOMP, with European-wide scope, that provides the link between medical physics organizations and their members from different cultures, communication is a pivotal activity. Fortunately, a revolution is taking place in the field of communication thanks to the rise of social media and mobile devices. And it is not exaggerated to say that the growth of these technologies has changed the landscape of communication and collaboration in society, as well as in all fields of knowledge. So, since we have the tools, let's use them!

I face this challenge with enthusiasm and the conviction that, with your help, the Communications and Publications Committee will be able to reinforce the links between organizations and members and promote fruitful and productive activities that will be beneficial to all.

Gaspar Sánchez
Meeting of the EFOMP Board
March 2015 in Toulouse

It was agreed at the Board meeting that brief notes on items of importance discussed at the all EFOMP Board meetings should be published in EFOMP Newsletter so that members could be made aware of the work the Board was doing.

President - The meeting opened with an address from the President Prof. John Damilakis. In it he highlighted the importance of the involvement of NMOs and their representatives in EFOMP committees. The future success of EFOMP depended on full participation in committees. He invited committee chairs to outline their vision for 2015/2016.

Science Committee – There are 5 working groups; on CBCT, Mammography, DICOM WG 28, Digital Angiography and Implementation of ICRP 103 in Nuclear Medicine. There is a need to improve relationships with other physics committees of other societies, such as the physics committee of ESTRO.

Projects Committee – Mr Evans highlighted the current involvement in projects. PiDRL is progressing well with guidelines drafted; ENETRAP III is advancing well; unfortunately the BSS project was awarded to another group; the MELODI programme is ongoing. A list of future potential projects is being compiled so that we can move forward quickly. It was suggested that a list be compiled identifying the organisations in each NMO whose research interests tie in with those of EFOMP and so could become involved in future projects. Horizon 2020 projects have a low acceptance rate and the possibility of using consultants for future proposals was discussed as well as utilising EIBIR.

EU Matters Committee – Anna Makridou highlighted two main ongoing issues for her committee: BSS Implementation – work has started; a European Professional Card. A third issue relates to improving our image with the EU Parliament, and the possibility of a meeting with members of the European Parliament, though this has been attempted previously with limited success.

Professional Matters Committee – Dr Christofides indicated that there many EFOMP documents that need to be brought up to date. The priority is to update policy statements.

Education and Training Committee – One strategic initiative for EFOMP in the field of E&T is the School for MPE in Prague, which is now running for the fourth time. It has achieved considerable success with more than 120 students attending the school. It is also important to improve the European School of Medical Physics (ESMP) – again addressed later in the agenda. There was also a short discussion on CPD.

Communications Committee – involvement of the whole committee was important for Prof. Bayford, including involving the vice chair on the process of the latest newsletter; training on the software for the EMP News and involvement in a short newsletter in the summer. The involvement of new advertisers was also important and there was the possibility to target ‘large’ companies.

European Congress of Medical Physics (ECMP) - Prof Damilakis explained that a working group had been set up to look into the organisation of the European Congress of Medical Physics and now brought their proposals to the Board. He explained the make-up of the Congress Program Committee which would work in conjunction with a Local Organising Committee. He explained that the Congress would be a biennial event and, if feasible, would rotate location as determined by NMO representatives. The first event would be held in Athens in Sept 2016.

ESMP – Archamps. A presentation was given by Bob Holland who is the Director of Development at the European Scientific Institute (ESI), our partners in the School. He had been working with Dr Christofides to renew ESMP and inject new life in the partnership between EFOMP and ESI. Mr Holland detailed the role of ESI and their involvement in other scientific schools and provided an overview of ESMP over the recent years. He provided a brief overview of the organisation of the school, course content for the upcoming course and the busi-
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ness plan for the 2015 school. The business plan highlighted the recruitment of students, the lecturers, accommodation and facilities, the budget, fees and the question of bursaries for assisted places for student from developing nations for their fees and accommodation. The aim was to have a budget estimate as balanced as possible. The criteria for the bursaries have yet to be decided but it was hoped that a fund of €20000 would be available. Communication in form of an accessible website and emailing alongside active promotion by NMOs and EFOMP would be vital to the success of the school.

Following the presentation there was a discussion among the officers as to the level of bursary provided to ESMP.

It was agreed that EFOMP needed to develop a policy in relation to sponsorship/ bursaries/ endorsements. This should be led by Dr Bardies with input from representatives of the science, professional matters and education committees. It was hoped that this policy could be developed/confirmed from existing information for approval at the Council meeting in September 2015.

Proposal for an Accreditation Board - Prof Sharp outlined the background and proposal which focused on the independent accreditation board – the European Board for Accreditation in Medical Physics (EBAMP).

There was a discussion on the general principles proposed. Following a question from Prof. Bayford, Prof. Sharp confirmed that there should be no conflict with existing national boards. EFOMP should be there to help out smaller countries to meet national and perhaps EU standards in the future – in line with the EUTEMPE-RX project.

The current proposal was for EFOMP to meet initial set up costs. A number of existing national schemes already charged for accreditation and there was worry that a structure would not be viable without payment due to the levels of administration. Perhaps it should be considered that certain organisations should be charged but with waivers in place for certain criteria/countries. There was also a discussion on the different elements of accreditation versus certification and how this ties in with CPD, as well as how the independence of this accreditation body is maintained and perhaps audited in the future. It was agreed that the documentation should move forward with an expanded working group to work on further guidelines, to develop a business plan and promotion strategy and also to await feedback from EUTEMPE-RX project. The documentation could also be sent to NMOs for feedback. This document has now been circulated to NMOs for comments.

EFOMP Examination Board and European Diploma of Medical Physics - A working group was established to work on this.

Medical Physicists' roles and tasks under the European BSS - There was a discussion on the BSS requirements for Medical Physicists and it was determined that it was important to consider in depth with the setup of a working group to review existing documentation in the area and then report back.

European Professional Card - Anna Makridou provided a short presentation on this subject. She explained that this was a key element in the recognition of professional qualifications and EU countries are expected to implement it by January 2016. She confirmed the approach already taken by the EU Committee on this matter to involve EFOMP and prepare the ground for future inclusion. She would continue with the official approach from EFOMP along with input from Mr Evans.

EFOMP leaflet - The EU Matters Committee had prepared a leaflet that could be used for general distribution as an introduction to EFOMP and to highlight what was involved in medical physics and the work of medical physicists. Some more work on it was still needed.
IAEA Regional Meeting on Medical Physics in Europe

From 7th – 8th May 2015 the International Atomic Energy Agency (IAEA) organized Regional Meeting on Medical Physics at the IAEA headquarters in Vienna. The meeting was organized within the IAEA project RER/6/031 “Strengthening Medical Physics in Radiation Medicine” and the main objective of the meeting was to raise the awareness of national authorities from European Member States about the importance of medical physics profession. Representatives of Ministries of Health and other relevant national authorities as well as medical physics professionals from the European Member States were invited.

Over 60 representatives from more than 30 European countries participated at the meeting which was skillfully guided by Joanna Izewska and Ivan Videnovic from the IAEA. Presence of professional international societies (EFOMP, IOMP, ESTRO) and WHO enriched the meeting and additionally raised the importance of the issues discussed.

After official statements on behalf of IAEA (M. Abdel-Wahab) and World Health Organization (WHO - M. Perez), several topics were presented and discussed during two days meeting and few of them are briefly presented below:

- The importance of clear definition of roles and responsibilities of Clinically Qualified Medical Physicists (CQMPs) within the health care community as well as education and training framework was discussed within several presentations (A. Megzifene, S. Christofides, J. Izewska, A. Torresin, S. Tabakov, N. Jornet).

- The need for full recognition of CQMPs (e.g. Medical Physics Experts as defined by the European Council Directive 2013/59/Euratom, Qualified Experts in Medical Physics as defined in the “Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards”, General Safety Requirements Part 3 (IAEA, 2014) or commonly Medical Physics Specialists) as health professionals with the important role in radiation protection and safety of patients, staff and general public in radiation medicine seems to be one of the priorities within European community. Two examples of successful recognition and training systems were presented in detail (N. Jornet from Spain and M. Taras from Finland).

- The essential role of Medical Physicists in introducing new technology in clinical practice was underlined by E. Gershkevitsh and the importance of team work approach in all subfields of medical radiation physics was presented by medical doctors from all fields of radiation medicine (E. Rosenblatt, A. Bischof Delaloye, D. Remedios) and radiation therapy technologist (A. Osztavics).

- Few examples of incidents and accidents in radiation medicine were presented by O. Holmberg. A number of incidents/accidents that have been reported have common root causes attributed to lack of CQMPs or inadequate and insufficient training of medical physicists. The results from the recent surveys (IAEA “Questionnaire on Medical Physics Status in Europe” and survey within EC MPE project), clearly indicated the problem of staff shortages in Medical Physics across Europe (J. Damilakis, M. do Carmo Lopes). Two models for Medical Physics staffing levels in Radiation medicine were presented: EC/EFOMP model by S. Christofides and IAEA model by B. Healy.

- Existing directives, guidelines, standards and recommendations were presented and discussed in detail (Y. Vasilieva, G. O’Reilly, M. Perez, S. Christofides), among them: European Council Directive 2013/59/Euratom (2013), International Basic Safety Standards (IAEA 2014), IAEA HHS 25 “Roles and responsibilities, and education and training requirements for Clinically Qualified Medical Physicists” (IAEA 2013), “Bonn Call - for - action” (IAEA and WHO, 2012) and European...

The most important outcome of the meeting were recommendations endorsed by the participants and representatives of international organizations. The meeting statement and recommendations will be forwarded through IAEA and WHO channels to Ministries of Health of the European Member States and to other relevant national authorities. Recommendations from the meeting are written below.

**Recommendations for the Europe Region**

Recalling the provisions of “Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards” (General Safety Requirements Part 3, IAEA 2014) regarding the role of medical physicists in ensuring safety in diagnostic and therapeutic procedures involving application of ionizing radiation, the Meeting recommended that Member States of the Europe Region should fully recognize Clinically Qualified Medical Physicist (CQMP) as a health professional with specialist education and training in the concepts and techniques of applying physics in medicine and competent to practice independently in one or more of the subfields (specialties) of medical physics.

The Meeting also recommended that Member States of the Europe Region should, in particular:

1. **Recognize** medical physics as an independent profession in health care with radiation protection responsibilities, as given in the Joint position statement by the IAEA and WHO – Bonn call for action;

2. **Ensure** that medical physics aspects of therapeutic and diagnostic procedures, including patient and equipment related tasks and activities are performed by CQMPs or under their supervision;

3. **Establish** the appropriate qualification framework for CQMPs including education, specialized clinical training, certification, registration and continuing professional development in the specialization of medical physics, i.e. diagnostic and interventional radiology, radiation oncology, and nuclear medicine;

4. **Follow and fulfill** international recommendations regarding the staffing levels in the field of medical physics;

5. **Establish** mechanisms for the integration of medical physics services in all centers practising radiation medicine, and establish, where appropriate, independent Medical Physics Departments in which accredited clinical training can take place;

6. **Promote** involvement of CQMPs in hospital governance boards and relevant national health committees;

7. **Establish and enforce** the legislative and regulatory requirements related to radiation safety in medical imaging and therapy where medical physics is concerned, in accordance with the international and, where applicable, European basic safety standards.

While it is evident that clinically qualified medical physicists should have an essential and indispensable role in all fields of medical radiation physics (Radiation therapy, Nuclear medicine, Diagnostic and interventional radiology), it seems, that the importance of this role is still not adequately recognized by national authorities and hospital’s leaderships in many European countries. However, the recommendations from this meeting, in line with already published requirements from European directive 2013/59/Euratom and International basic safety standards - IAEA, give us hope and confidence, that medical physicists will be fully recognized as independent and regulated health profession throughout the Europe. Corresponding organizational (e.g. medical physics departments), educational and clinical training models should be established in all European countries - for the benefit of medical physics profession and for the benefit of patients.

Download IAEA recommendations from this meeting.

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Bozidar Casar
SBSMPS President
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A meeting in Prague – first module of the EUTEMPE-RX programme

Introduction
In early February we had the pleasure of meeting likeminded physicists from all over Europe and beyond as we participated in the face-to-face part of module one of the EUTEMPE-RX project titled ‘Development of the profession and the challenges for the MPE (Diagnostic and Interventional Radiology) in Europe’. We had a week of intensive study and interesting discussions. The first module could be seen as a physics orientated condensed MBA of sorts as it aimed to give us the tools and knowledge needed to reflect and discuss on the role of the MPE in both a national context as well as a European context. It consisted of three main areas focusing on the role of the MPE and the profession today and tomorrow, an introduction to management and management issues in Diagnostic & Interventional Radiology and the development of the professional profile of the MPE. The course was taught in two parts: one online part from mid-December and one face-to-face part in Prague, followed by an examination.

The Online phase
Online phase consisted of 17 chapters covering issues such as: Legislation – new Basic Safety Standards - 2013/59/EURATOM directive, European Guidelines on Medical Physics Expert – Radiation Protection no 174, health care ethics, leadership, strategic planning skills, project managements for MPEs, principles of curriculum development pedagogical and communication skills for MPEs, medical sociology for MPEs, occupational and organizational psychology for MPEs, management of a medical physics service in Diagnostic & Interventional Radiology, equipment managements, staffing levels, qualitative research methodologies, and more. Through directed learning using case studies and reading of reference material we were presented with the current problems facing the profession on both the organisational scale and on more hands on issues such as how to handle communication of adverse radiation incidents. We were in this phase already being prepared for the coming exam through our answers to assigned case studies. At the same time the supplied documents during the online phase were excellent. These documents also helped us during our daily job as medical physicists. The case studies were very beneficial as they served as a way of connecting the theory of both reading material and later lectures to more practical problems we might face. All throughout the online phase we were reminded to base our answers to the case studies on the real situation we face in our own country as well as the legal framework we work in. In that way dealing with case studies was not meant only to prepare us for the exam, but also for dealing with true tasks in our countries.

A meeting of minds in Prague
After the intensive online phase we finally headed for the meeting of minds in Prague 9-13 February. Most of us arrived on Sunday the 8th after some delays and diversions due to the sudden blizzard over Prague.

We had an early start on Monday morning, session “Role of the MPE: where is D&IR heading and what should be our role?”, with a full class in attendance. After an introduction by Hilde Bosmans and Carmel Caruana we headed straight into lectures, with the topic of the first day being the role of the MPE yesterday, today and tomorrow. We were given presentations on the role of the MPE in the new directive as compared to the previous one by Eliseo Vano, as well as lectures on the role of the MPE in the European Guidelines on Medical Physics Expert and in teaching by Carmel Caruana. We were also given a lecture concerning non-ionizing radiation and EFOMP policy statement 14 about managing safety in the MRI environment.

The topic for the second day was “Management issues for MPEs” focusing on the organization (E.Vano), staffing levels (S.Evans) and strategic planning of a Medical Physics Service, and also role of MPE within Hospital Governance Board (P. Sharp). We were also given good insights into how to use standards to create a safety culture (S. Christofides) and the role of ethics in all our work (J. Malone), as well managing relationship with other professions (J. Damilakis). The topics provided for some very interesting discussions that revealed the similar problems we face but also the very different conditions we work in.
The last day of taught lectures was spent on the very important topic of developing, publicising and internationalising the role of the MPE. There are many ways for Medical Physicists to get involved in both EFOMP at the European level and IEC at the international level. One challenge for MPEs is combining clinical work, research and innovation which was presented by EU-TEMPE-RX project leader Hilde Bosmans. We also had a lecture on the need for us to spend time on engaging with the people we work for, the public and the patient. It is worth noting that lecturers who presented the documents, guidelines and standards were personally involved in their development, so we were provided with first hand information.

After 3 days of intensive study with lectures and discussions on case studies we had a day free of lectures to prepare for the exam. Nevertheless for a few hours Carmel Caruana, and Stephen Evans were available to answer last questions and during this meeting we had fruitful discussion concerning staffing levels in D&IR needed to provide our service under EURATOM requirements. We came back to the lecture hall on Friday morning for the 4 hours open book examination in which we had to choose three out of four cases to answer. Given the thorough grounding in the online phase as well as the lectures and discussions in Prague we were well prepared for the exam.

Impact of EUTEMPE-RX module MPE01 on our practice we have found this course very practical and in our opinion this course will significantly contribute to our daily practice. European directive 2013/59/EURATOM emphasizes that our profession’s duty is to act or give advice on matters relating to radiation physics applied to medical exposure, for instance: with respect to fast technology changing – especially in D&IR – there is huge needs for HTA (Health Technology Assessment), knowledge based risk communication to patients and personnel, participating in clinical procedures optimisation especially procedures of those needing special attention like paediatric or pregnant patients and application and use of diagnostic reference levels. Previously in European legislation involvement of MPE in D&IR wasn’t so clearly stressed, and that could be the reason why in some countries MPE involvement in D&IR had been lower than it is supposed to be with respect to new Basic Safety Standards. Perhaps that was also the reason why our profession and its role in D&IR departments wasn’t known by some of the other medical staff. MPE’s participating actively in hospital matters could benefit to better patient care, better and targeted distribution of finance into relevant technology, and most important – to assure that all safety legal requirements are met. In order to be part of hospital governance there is a need to be not only MPE but also a Leader and Manager. This first module gave us a strong base education in this field as leadership and management skills were targeted MPE needs to work as a team member with Radiologists and Radiographers (also in collaboration with manufacturers) in each department to contribute to the optimisation of the procedures and to give advice in justification if asked about risk by other professional staff. Last but not least, MPE might be involved and contribute e.g., by giving advice to stakeholders and governance institutions responsible to 2013/59/EURATOM BSS implementation process in each country.

In between studies.
What is work without play? And Prague before tourism season is such a nice place to play in. A few of us actually started out the week in Prague with a city tour and some food on Sunday. We had a very good tour guide in Carmel, who taught us to “look up while in Prague”. The evening activities gave us a needed daily break from lectures and time to get to know each other better. We went to a black light theatre which was a dizzying experience but I suppose we had more fun at the Novomestsky Pivovar which served us traditional Czech food accompanied by a maestro playing accordion, singing and dancing. Thursday was not only exam preparation we also managed to spend time wandering around the Castle Complex, seeing the change of guards and also discussing between us how best to tackle questions in the exam over a nice meal.

Conclusion
The course was not only a great opportunity to learn from the European leaders of medical physics, but perhaps even more importantly from fellow physicists working in a variety of different settings from Turkey, Morocco to most states of the EU. As a profession we are facing fast change and many challenges of various kinds depending on our country of work, through this course we now have developed a wide network of peers which is sure to be of help when we engage in building the future of our profession. We have set up a Google group to keep in touch
and hope that participants from the other modules will also join us. If you want to join the group write to Eric Pace at ericpace@gmail.com

Marius Laurikaitis, Kaunas, Lithuania; Witold Skrzynski, Pruszkow, Poland; Itembu Lannes, Stockholm, Sweden; Solen Cubukcu, Ankara, Turkey; I Agnieszka Kuchcinska, Wroclaw, Poland

Medical Physics in Greece

History: In 1955 the first medical physicist began work on diagnostic radionuclides in Alexandria University Hospital in Athens. In 1962 a school of Hospital Physicists was organized by the Greek Atomic Energy Commission. The rapid growth of Medical Physics and the need for scientific communication brought about the establishment of the Hellenic Association of Medical Physicists (HAMP) in March 15, 1969.

The Hellenic Association of Medical Physicists: HAMP provides a medium for the interchange of scientific and professional information and ideas. Since January 1999 the HAMP has its own web site www.efie.gr. The board of directors of the HAMP consists of 7 medical physicists. Many activities take place in working committees and working groups. The society is very active in organizing seminars and continuous professional development courses.

Current professional status: Medical physicists in Greece mainly work for healthcare institutions, medical schools, research centers and for the Greek Atomic Energy Commission. Figure shows the increase in the number of medical physicists from 1960 until 2013. In the 70’s there was only a handful of medical physicists in Greece. However, today there are about 400 medical physicists covering all areas of Medical Physics. In 2013, HAMP had 228 male and 156 female members. Medical Physics departments have been established in many large hospitals and in all university hospitals.

Education: From 1960 to about 1990, postgraduate education in Medical Physics was provided occasionally according to the needs of the country in Medical Physicists. There are currently 2 postgraduate courses in Medical Physics. The inter-university postgraduate course in “Medical Radiation Physics” is organized by the universities of Crete, Athens, Thessaloniki, Ioannina and Thrace in collaboration with the Greek Atomic Energy Commission and the National Center of Scientific Research ‘Demokritos’. The University
of Patras organizes another inter-departmental course on Medical Physics. To become certified medical physicists, graduates from both courses must follow Medical Physics residency for at least 1 year. After residency, they are able to sit for written examinations in physics of diagnostic and interventional radiology, physics of nuclear medicine, physics of radiation oncology and radiation protection to acquire the professional license of medical radiation physicist.

Fig. 1: Development of the number of medical physicists in Greece.

John Damilakis and Virginia Tsapaki

Fig. 2: Number of men and women working as medical physicists in Greece.
EUROPEAN TRAINING COURSE

PILOT MEDICAL MODULE FOR Radiation Protection

A course designed for Radiation Protection Experts (RPEs) working in the medical field, in compliance with Council Directive 2013/59/Euratom (BSS), is being run as part of the European Network on Education and Training in Radiation Protection (Part III) (ENETRAP III) EC funded project (Fission-2012-5.1.1).

Successful course participants will be able to evidence that they have the necessary knowledge, skills and attitudes (KSAs) to provide expert radiation protection advice to employers, staff and members of the public in the medical fields of radiotherapy, diagnostic & interventional radiology and nuclear medicine. The Medical Module will consist of an on-line phase and will be followed by a one week face-to-face session. This session will consist of a number of lectures and workshops designed to ensure the KSA requirements are satisfied. Before the face-to-face session, registered course participants will need to provide portfolios covering: the regulatory framework; measurement of radiation dose, dose rates and contamination measurements; calculation of potential exposures; hazard and risk assessments; control procedures (including the zoning of radiation areas); and, personal and environmental dosimetry. Participants will be provided with detailed KSAs to fulfil their portfolio during the on-line phase. These portfolios will be discussed in the face-to-face session to provide opportunities for improvements and reflective thinking. The successful candidates will have fulfilled the required contents for the portfolios and passed both an oral assessment on their portfolio and a multiple choice examination at the end of the face-to-face session.

Facility Organisers and Lecturers:

- Stephen Evans, EFOMP Chair Projects Committee
- Stelios Christofides, EFOMP Chair Professional Matters Committee
- Virginia Tsapaki, EFOMP Vice Chair Projects Committee
- Hilde Bosmanns, EFOMP Past Chair Projects Committee

On-line phase:

- Available from September 2015
- Portfolio to be completed before the face-to-face session

Face-to-face session: 4th-8th July, 2016

Nuclear Techniques Department, Budapest University of Technology, Budapest, Hungary

Pre-requisites:

The course is suitable for Medical Physicists, medical device companies and radiation protection authorities. Education to Level 7 e.g. Masters degree in Medical Physics, or equivalent through Life Long Learning is a pre-requisite.

Course fees and expenses

A reduced registration fee of 250 EUR has been set for this pilot session. The normal fee is 500 EUR for later registrations.

Please note: the registration fee is currently being reviewed.

Free registration may be offered to some applicants depending upon their circumstances.
The ENETRAP Project (2005) was funded under the Sixth Framework Programme to improve the radiation protection education and training (E&T) in Europe. This was followed by ENETRAP II (2009) under the 7th Framework programme to provide high-quality "reference standards" and good practices for E&T in radiation protection (RP), specifically with respect to the radiation protection expert (RPE) and the radiation protection officer (RPO). This provided basic E&T entry modules on radiation protection.

ENETRAP III (2014) (also under the Seventh Framework Programme) further develops the European reference-training scheme for RPEs with additional specialized modules for the medical sector, geological disposal and nuclear power plants (WP3). It will also introduce a train-the-trainer strategy (WP4).

Guidance will be proposed for implementing E&T for RPEs and RPOs, providing important assistance to all Member States who are expected to transpose the Euratom Basic Safety Standards (BSS) requirements into their national legislations (WP5, WP7).

It will also demonstrate the practical feasibility for mutual recognition in Europe for effective borderless mobility (WP6).

For all these activities ENETRAP III will strongly connect with all stakeholders, i.e. end-users, E&T providers, legal authorities, and other relevant international organisations, groups and networks dealing with E&T in radiation protection (WP2).

ENETRAP III Workpackages

- WP1: Project coordination
- WP2: Organisation of “think-tank” activities and establishment of partnerships ensuring feedback from stakeholders
- WP3: Establishment of three specialized training modules for RPE and implementation of pilot sessions
- WP4: Development of a train-the-trainer (TTT) strategy and organisation of a TTT training event
- WP5: Dissemination of project results and contribution to a website for capacity building and transfer of know-how in radiation protection
- WP6: Testing of methodologies for RPE recognition and mutual recognition in practice
- WP7: Writing of guidance to support the implementation of E&T requirements for RPE and RPO as defined in the Euratom BSS

Steve Evans,
EFOMP Projects Committee

The deadline for applications is 1st February 2016.

Accreditation has been requested for EFOMP CPD

Information and Registration:
Dr. Csilla Pesznyák
BME, Institute of Nuclear Techniques
Email: pesznyak@reak.bme.hu
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President. The meeting opened with an address from the President. Prof Damilakis informed the Board that the drafting of the MELODI (Multidisciplinary European Low Dose Initiative) Medical Strategic Research Agenda (SRA) had commenced. MELODI is a European Platform dedicated to low dose radiation risk research. EFOMP together with other medical associations had recently signed a Memorandum of Understanding with MELODI. Prof. Damilakis is in contact with ESR and EFRS and recently received the draft statement of SRA priorities. 5 topics on radiation protection had been selected and these would probably form the future EC projects.

Projects Committee. Mr Evans highlighted the current involvement in projects. PiDRL is progressing very well. Draft guidelines on how to establish and how to use paediatric DRLs have been developed. ENETRAP III is also advancing well. There was a discussion on the progress of the EUTEMPE-RX project and future EFOMP involvement. In respect of a proposal for EUTEMPE-RO (Radiation Oncology) there will be a call for an Erasmus+ in Oct 2015 and Feb 2016. This is in the sector skills programme and this includes healthcare. Future calls are expected also from EURATOM.

EU Matters Committee. In relation to the directive on BSS, the committee has set up a working group to identify potential issues around the implementation of this directive in different countries and provide a mechanism to agree on the way forward with EFOMP NMOs. NMOs had been asked to nominate representatives and almost all NMOs are represented in this group. EU Matters committee chair Ms Anna Makridou also gave a brief presentation on the European Professional Card (EPC). It was determined that the EPC represents a document holding system rather than an actual approval system. While it had been determined that Medical Physicists would not be included in the current list of professions eligible under the EPC, she would continue to follow and track this opportunity for EFOMP. On another matter, to raise awareness of the Medical Physics profession, the EU Matters Committee had prepared a leaflet that could be used for general distribution as an introduction to EFOMP and to highlight what was involved in medical physics and the work of medical physicists.

Education and Training Committee. Prof Damilakis provided an update on preparation for the ECMP 2016 in Athens, Greece. The date had recently been agreed for 1 – 4 September 2016. ECMP 2016 has been promoted during the World Congress in Toronto and the AAPM meeting in California. The ‘Call for Bidding’ for ECMP 2018 was sent out on 20thJuly to all NMOs and submissions should be received by 30 Nov 2015.

Regarding the Accreditation Board, Prof Sharp explained that the EBAMP proposal had been sent to the NMOs for consideration and comment. These have been incorporated in a revised document that makes it clear that EBAMP is looking at award of CPD points for training events and not accrediting degree courses and training centres at the moment. This latter issue would be for the Board of EBAMP to decide in the future. Dr Brambilla outlined the proposal to set up a Program Planning Committee (PPC) for the EFOMP’s Medical Physics Expert (MPE) School. This PPC should:

1. Write a draft of the school statute identifying the main bodies of the school and submit it for discussion and approval to the EFOMP Board and then to the next Council in Athens 2016.
2. Plan the future activities of the school for 2016-2017

Regarding subjects for 2016 courses, it was decided to proceed with Computed Tomography as the topic for winter school. The subject for the summer school 2016 will be ‘Dosimetry in Nuclear Medicine Therapy’.

Professional Matters Committee. Dr Christofides identified the countries that could be considered as part of Europe and therefore potentially be members of EFOMP. There was a general discussion on the matter and it was felt that there were certain countries to approach, however a final decision would be made at a later
time following the discussions on country membership.

**Science Committee.** There is a need to improve relationships with physics committees of medical societies.

Discussion with Dr Catherine Clark, ESTRO - Dr Torresin provided some background information on the relationship and contact with ESTRO i.e. contact with and attendance at the Physics committee meetings; participation in their annual conference, and the section dedicated to physics; the EFOMP/ESTRO workshop; training sessions. ESTRO Physics committee was represented at EFOMP’s board meeting by Dr Catherine Clark. Prof Damilakis asked a number of questions to clarify the understanding of ESTRO including: the composition of the ESTRO physics committee; interaction with and composition of the main ESTRO Board; physics committee involvement in the ESTRO conference; the new ESTRO office location in Brussels.

A key issue for ESTRO Physics Committee is collaboration with EFOMP for MPE training for Radiation Oncology (EUTEMPE-RO project). It was agreed that this is of value to European medical physicists.

Catherine Clark confirmed that ESTRO would be promoting the International Day of Medical Physics and have articles planned for the ESTRO newsletter – physics sections. Prof Sharp asked if ESTRO were moving towards more direct communication with NMOs. Catherine Clark confirmed that there is a national society’s special session, usually the day before the ESTRO meeting, but that it is specific to radiotherapy.

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**Highlights of the 46th Annual Meeting of the German Society of Medical Physics (DGMP) at Marburg**

The 46th Annual Meeting of the German Society of Medical Physics (DGMP) took place in Marburg from 9th to 12th September 2015 with great success. More than 800 participants, including 165 students and 136 industry representatives, met to discuss current issues in Medical Physics as well as the interdisciplinary research and clinical collaboration. For four days, the DGMP Congress Presidents Prof. Dr. Martin Fiebich and Prof. Dr. Klemens Zink invited the experts of Medical Physics to the University of Marburg to exchange new insights.

During the opening ceremony, the keynote lecture was held by Prof. Dr. Rudolf Stark from the Psychological Institute of the University of Gießen: "Angst im Kopf – Einblicke mittels funktioneller MRT" presented the fascinating results of magnetic resonance imaging.

The plenary lecture "Ethical Issues and Medical Physics – new and unexpected challenges" by Prof. Jim Malone from Dublin, Ireland, was one of the highlights of the conference (Fig. 1). In 163 oral presentations and 89 scientific poster contributions the diverse sections of Medical Physics and their current status were presented and discussed. The themes of the sessions included radiation therapy, dosimetry, particle therapy, treatment planning, brachytherapy and MR, computer tomography, nuclear medicine, molecular imaging and hybrid systems. Discussed were the IMRT, IGRT / ART, diagnostic radiology and radiation protection related, the quality and defect management, as well as image processing and visualization of medical data and audiology. Radiation protection, a workshop for CT-optimization and a session for risk management completed the program.
One of the highlights was the key note lecture on “New ICRU Key data für radiation dosimetry and its impact on the calibration of clinical beams” by Prof. Pedro Andreo from Stockholm (Fig. 2). The workshop on optimization in computer tomography organized by Bernhard Renger (Munich) who explained the theoretical possibilities of optimizing the image quality and radiation exposure. In the practical part the participants could test their knowledge. As a further highlight the DGMP was host of this year’s annual meeting of the European Society of Medical Physics (EFOMP). In a special session "European Aspects of Medical Physics" the EFOMP and in particular the proposals for medical physicists’ staff were presented and discussed by Prof. John Damiliakis, President of EFOMP and Chairman Dr. Stephen Evans.

Next year’s Congress President Prof. Laura M. Schreiber, MBA, Comprehensive Heart Failure Center (CHFC), invites to the 47th Annual Meeting of the German Society of Medical Physics (DGMP) and the 19th Annual Meeting of the German section of the International Society for Magnetic Resonance in Medicine (ISMRM) e. V. taking place at Congress Centrum Würzburg from 7th to 10th September 2016.
Interview with Slavik Tabakov

Slavik Tabakov was born in Bulgaria where he did his university degree and PhD. He has been a key person in developing the education and training of Medical Physics. In 1995, he established two new Medical Physics MSc courses in Bulgaria. In 1991 he took a position in King’s College Hospital where he is still working, first as principal medical physicist, later as consultant (in 1998 I received my FIPEM). From 2001 he is Director of the MSc Medical Engineering and Physics at King’s College London. Since 2011 he also directs MSc Clinical Sciences (Medical Physics) and MSc Clinical Sciences (Clinical Engineering) at King’s. He has been a pioneer in the use of IT for online education for medical physicists. One of his better known projects is EMERALD, online education for Medical Physicists in Radiology. He is now IOMP president.

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

Slavik Tabakov: I grew up in a family of medical doctors, but also had a natural curiosity for all the sciences as well as gadgets and technology. Medical physics somehow bridged these two worlds. Looking in hindsight, my grandfather was a key figure in inspiring my career-path. He was a medical doctor, one of the first radiologists in Bulgaria and for this he specialised in Paris, attending the classes of Marie Curie. Our family home was also where he held his practice and where in the 1920s the first Fluoroscopic equipment in Bulgaria had been installed. His office was filled with X-ray equipment parts, and I remember vividly when he showed me an old X-ray tube. I was fascinated with it and this became one of the favourite objects of my childhood. I was sure I was going to work with such equipment later in my life. During my secondary school I gained awards at the national ‘Olympiads on physics and maths’ what further stabilised my future aspirations. After graduating from the Technical University Sofia, I specialised in Medical and Nuclear Engineering (MSc in Medical Physics did not yet exist in Bulgaria). I continued with a PhD in medical physics (CT densitometry).

How did you enter the medical physics world?

I started my working life in the profession at the Medical University Plovdiv, as research associate (lecturer) specialising in Diagnostic Radiology (X-ray). The University had just purchased the second CT scanner in the country and I was part of the team which installed it. For the next ten years I continued working at this Medical University, where I also completed my habilitation in medical physics.

My work with the new CT scanner included training at the Technicare company (in Cleveland, Ohio), where I entered into the hi-end world of medical imaging. I was lucky to be there at the time when the first Digital X-ray equipment was produced. As soon as I returned to Bulgaria, I started lobbying for purchasing such equipment in the country. With the help of my medical colleagues we succeeded and in 1984 I installed, together with colleagues from France, the first such equipment in the country. Further specialisations followed in Germany and France.

In 1988 I established a Digital Medical Imaging Research Lab in Medical University Plovdiv, where, together with its staff of three physicists and engineers, we did research with our clinical colleagues related to application of various quantitative imaging methods. In my work one of the most useful documents were these from IPEM, what somehow shaped my professional aspirations towards the practices in the UK. When I came in London in 1991 I became a member of the Radiation Physics team of the Medical Physics Department of King’s College Hospital. During my work in the UK I developed many projects related to medical physics education. In fact the most important projects of my professional career were made when I was in the UK and, as a
sign of appreciation to my colleagues here, I recently gifted to IPEM my Harold Johns medal.

Is there any person(s) that have had a special impact in your professional life?
A number of colleagues had an impact on my professional life. My early steps were supported by Prof. Ivan Delov, who was heading the Chair of Roentgenology in Plovdiv. It was thanks to his support that I was able to travel to trainings in the USA and in Western Europe (this was still the time behind the Iron Curtain).

Another person who supported me a lot was Prof. Colin Roberts from King’s College London. We meet at a conference at Budapest, we discussed how to expand the East-West European professional links and also how to develop of our professional education, based on use of IT. After our discussion he arranged for me to join his Department in London, where I continue to work about 25 years now. We both developed and collaborated in our initial e-learning projects. After Colin’s retirement we continue to collaborate in a similar way with another colleague and friend from the Department - Dr Neil Lewis (King’s College Hospital), especially related to my two MSc courses at the moment.

Prof. Perry Sprawls (Emory University, USA), was another special colleague in my professional life. We met in ICTP Trieste in 1999 and discovered that we share the same passion for the profession, its education and also classical music. We still work together at the Medical Physics College in ICTP Trieste (where we are Coordinating Directors).

However, it is without doubt my wife Dr Vassilka (Assia) Tabakova who has had one of the most important impacts on my professional life, as she has been part of the team and helped me in all the projects. We graduated at the same time from the University, and share ideas and dreams since then.

Is there any fact in your life that has had a special impact in your career?
Extremely important for my life were the democratic changes in Eastern Europe in 1989. Both my wife and I were born in the beautiful historic city of Plovdiv, Bulgaria. Together we were very active during the democratic changes, volunteering to be part of the ‘Fairer Voting’ teams who travelled across the country ensuring this first democratic wave had support in every corner. The enthusiasm and emotion of the time is unforgettable. In 1990 I faced a crossroad - to go into politics, or to continue with the profession. Some of our friends continued in the political world, and became the first democratic leaders of the country. I respect them for this, but am happy with ultimately choosing my profession.

A significant moment in my professional career was when my first e-learning project (EMERALD) was approved by the EU. At that time this was a very innovative project, terms such as e-learning and e-books did not even exist yet. I still remember clearly when I got the call from Brussels for its funding - it was 6 December 1995. Following this we did a sequence of very successful e-learning projects. We continued in further educational projects with the core team of EMERALD - colleagues from King’s College London, ICTP Trieste, Lund University, Florence University, High School on Medical Technology Lisbon, Medical University Plovdiv, Trinity College Dublin (all plus their University Hospitals).

What has been from your point of view your best contribution to the medical physics world?
This is without doubt the medical physics e-learning projects, which I developed and coordinated from our Department in King’s. The projects EMERALD, EMERALD II and EMIT developed the first e-learning in the profession – these were 5 volumes of training tasks and related Image databases (Diagnostic Radiology, Nuclear Medicine, Radiotherapy, Magnetic Resonance and Ultrasound Imaging). These are now used by colleagues from over 70 countries and were pivotal for the development of medical physics in many low-and-middle income countries. In the past 15 years the steady number of users of this e-learning is about 2,500 per month. These materials are free for use at their large web site.
www.emerald2.eu, which is the first educational web site in the profession.

The original e-learning materials of these projects attracted the first award for education of the EU- The Leonardo da Vinci Award. Together with Alain Noel and Inger-Lena Lamm we included EFOMP as a full partner in the EMIT project. This was the first EU project for EFOMP and it delivered to the Federation not only financial income, but also this award, which was important for the EU portfolio of the Federation. Now EFOMP is a company and leads many successful EU projects. This makes me very happy, as I know that we gave a good V₀ for this.

The further project EMITEL was the largest of all e-learning projects. Together with Peter Smith, we included IOMP as a partner and the project grew to more than 300 contributors from 36 countries. This was the largest international project in the profession and its coordination was far from easy. I did this alongside my daily workload for the MSc Medical Engineering and Physics in King’s and my wife Assia’s help was indispensable throughout these long days. EMITEL developed the first e-Encyclopaedia of Medical Physics and Multilingual Dictionary of Medical Physics Terms (now translated into 29 languages). From 2010 both have some 5,000 users per month through their unique web site www.emitel2.eu (designed by my former students and current colleagues M Stoeva and A Cvetkov).

Additionally to this, I established an Medical Physics MSc course in Plovdiv (project ERM) and helped the establishment of 15 similar MSc courses in other countries. It is a pleasure to have so many students – counting the MSc courses in King’s College London, the MSc in Bulgaria, the ICTP College and the Seminars in various countries (from 1999 to present) - these come to about 250 in the UK, 50 in Bulgaria and about 1,000 in some 80 other countries. Later some of those colleagues developed further educational courses and activities in their own countries, what multiplied the effect on the number of medical physicists worldwide.

In other words, my best contribution is the continuing development and support of many education and training activities in medical physics, which are now used worldwide. The latest project was the IOMP Journal Medical Physics International, devoted to educational and professional issues, which Perry Sprawls and I developed and Co-Edit. This free access Journal (www.mpijournal.org) has some 4,000 readers per month.

If you could change something in your career, what it would be?
Thankfully, I feel I probably wouldn’t have done anything differently. In my study at King’s College, I have a board with the photographs of all the students currently on the course. Throughout the Department we also have class photos from previous years, team photos of everyone who has contributed to the many international projects I’ve mentioned. Our Encyclopaedia and teaching materials are a reminder of the thousands of students across the world who we have managed to reach. I cannot ask for more than
this. Back in 1989-90 I decided that I shall focus on education and training and I have never looked back. I can only be grateful, that my hard work was successful.

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

Of course, several – some critical, some uplifting - but will just mention a few.

A moment I shall never forget was when we first arrived in London with our car (crossing all Europe). I had to go to the Medical Physics Department in King’s College Hospital, but coming directly from the ferry, I did not have a map yet. I was driving through the streets of this huge city almost swept by its size. I decided to stop somewhere, turned in one street, after this in another one, where I could park and start looking by foot for a place to buy a map. When I got out of my car and turned to the street I saw the sign of the Hospital in front of me… and I continued to work there since.

A most uplifting moment I shall always remember was when our projects EMERALD and EMIT received the EU Leonardo da Vinci Award. Neil Lewis and I were representing the project Consortium. The Award ceremony dinner was at the grand St Pieters hall in Maastricht. When the EU Commissioner announced our project first we with Neil almost flew at the stage. This success paved the way to a number of future projects. We made small replicas of the award statuette for each project partner (Neil presented this statuette to EFOMP at the Nuremberg ICMP Conference, 2005). I felt in a similar way when I received the IOMP Harold Johns medal at the World Congress in Seoul, as this medal was a recognition of 10 years work for the development of e-learning in our profession. Another such moment was just this month when the Medical University Plovdiv bestowed upon me their Doctor Honoris Causa degree.

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 Medical Physics around Europe?

Medical physics is growing extremely rapidly and even now it is impossible to include all knowledge for the profession in one Master course. Early narrow specialisation can work, but it decreases significantly the breadth of the acquired knowledge. At the same time medical equipment (imaging, therapeutic and other) is becoming an essential part of clinical medicine and more and more specialists are needed to collaborate with medics in the field of clinical research, effective application and safe use of this equipment. Contemporary medicine is impossible without medical equipment – a very important focus of our profession. In my view a way forward is developing new Bachelor courses on Medical Physics. These University courses will include combination of physics modules, those essential for our profession) plus introduction to all branches of medical physics. To make it simple it would be something like BSc Physics with substantial Medical Physics element. The following Master course will concentrate in depth into some of the professional branches. In other words this will be education similar to medical education – general medicine and specialisation. This might seem too
radical to some, but there is no way to include the increasing volume of knowledge and skills needed for our profession into the horarium of one Master course.

This new type of medical physics education will have to include good knowledge about the use of the vast amount of imaging information – both as quantitative imaging and as imaging-based modelling. The future personalised medicine will rely on these subjects and we have to be ready for this challenge. There are fast growing new strands in the interface between medicine and exact sciences - the very interface where medical physicists and engineers are the pioneers. We have to be ready to collaborate and to lead new research in this direction. This means that we have to increase the scope of our profession. This can only happen if we raise the education level of Medical Physicists – i.e. BSc + MSc in Medical Physics.

I believe in the strength of the people in the European Union and am sure that harmonisation of our education is already on its way. The Bologna Declaration set its directives and these are now implemented in many countries. EFOMP has made excellent progress in harmonisation of medical physics education across Europe. In some countries we already have possibilities for free movement of European specialists at junior professional level. However this will be quite difficult to be achieved at senior level – e.g. Qualified Expert. As IOMP President I shall fully support this and help to extend its momentum in other continents. As medicine, our profession is international, with one goal – the benefit of the patient. It is only natural to see harmonisation in the scientific contribution of medical physics to medicine.

How do you see the future of medical physicists? Medical physicists are now an important part of healthcare and we have to keep it this way through better collaboration with our clinical colleagues. At the same time we need better visibility of the profession. This was one of the reasons for IOMP to put all its strength behind the official recognition of the profession by the International Labour Organisation (published in 2011), and to initiate during 2013 the International Day of Medical Physics (7th November). But we have to do more in this direction and to continue to increase the number of medical physicists globally. This is a logical step resulting from the need of more and better medical services and related medical equipment. If this trend does not exist this may lead to slow down of the whole healthcare system. Recently IOMP initiated, together with IAEA and WHO activities aiming to help the increase of medical physicists in Africa and Latin America, where various medical equipment exist, but there are not enough specialists to work with it and maintain it.

At the same time we have to resist some initiatives in this period of austerity measures – e.g. to include more technicians to do some of the routine medical physics activities like quality control or dosimetry. It might be possible internally in one department senior medical physicists to assign such tasks to junior medical physicists, but this should be internal professional decision, not forced by the external management. Cutting cor-
ners on this level can disrupt the whole progress of the profession and healthcare. Routine activities exist in every profession, in the case of quality control, for example, this is exactly the time when one can see future possibilities for optimisation. But a person with insufficient qualification will do the control and will not see these possibilities. Often we support unintentionally such initiatives by specifying parts of our duties as “routine” and “creative”. Creativity can be born out of every simple activity and we have to promote this view.

Lastly, as I mentioned replying the previous question for education, we have to expand the scope of medical physics and enter into additional collaborative fields.

Three advices to a physicist who is starting in the field
First of all - believe in your profession and love it. If one is not motivated to be a member of the team caring for the patient (often an “invisible” team member), it is hard to be a medical physicist. Our research is in the interface between sciences and is based on collaboration – this is a huge field, where many new discoveries are awaiting – we have to actively look for them. Second – be ready for continuous update of your knowledge. Our profession changes so rapidly, that often even knowledge from the past 10 years can be outdated. One needs to have a broad palette of knowledge and skills.

Finally - enjoy your profession. There will be many dedicated colleagues with other professions in the team – it is imperative to find a common language with them. Often in the profession it is necessary to work many extra hours – these are indeed steps towards the final goal, not a burden. Others in the team will be like-minded people and the final joint celebration is very important.

What do you like to do in your free time?
In reality I do not have much free time. I have always worked on our projects alongside my clinical and educational duties at King’s, hence all project work was over the weekends and holidays. Now, since 2013, my MSc course at King’s has about 120 students and I have important activities in IOMP, which again take up evenings and weekends. However when I have some free time I listen to classical music. My wife also loves music and we are very happy now that our daughter Dobrinka is a successful classical composer (last year her first profile CD String Paths was nominated for a Grammy). I also enjoy history, art and photography. We all love nature (especially mountains) and wherever we go I take many photos.

Do you think that it is possible to balance professional, family and personal life?
Yes, it is possible, but it’s not easy. For me personally, it would have been very difficult to do all the projects without the support of my wife. We recently wrote an e-book charting the progress of these projects over the past 20 years. The book ‘The Pioneering of e-Learning in Medical Physics’ (available at www.emerald2.eu/e-learning) is dedicated to all colleagues who took part in the projects – a gratitude for all their free time shared for the projects.

As for future generations, I think that the current trend to do more work for less time and with fewer people is dangerous not only for the profession (and for our personal lives), but also for the human progress as a whole. This is a very short-sighted way to make financial economies. Humanity could end in a regress if a professional does not have time to think, to educate the new generation (both children and students), and to do something outside the daily duties. Discoveries are made when you have had time to absorb the world around you, and we shouldn’t suffocate the possibility for thought and contemplation.
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13 - 16 January 2016
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Info: www.ibis-sevilla.es

14 - 18 March 2016
MPE08 : Role of the medical physicist in CT imaging and patient dose optimization: CT imaging and patient dose optimized with objective means
Lausanne, Switzerland
Info: www.eutempe-rx.org

13 - 16 January 2016
MPE09 : Achieving quality in diagnostic and screening mammography
Nijmegen, The Netherlands
Info: www.eutempe-rx.org

18 - 22 January 2016
MPE09 : Achieving quality in diagnostic and screening mammography
Nijmegen, The Netherlands
Info: www.eutempe-rx.org

17 - 22 April 2016
MPE12 : Personnel dosimetry, including techniques to communicate practical results to the users (RPE)
Braunschweig, Germany
Info: www.eutempe-rx.org

28 - 30 January 2016
Computed Tomography Imaging: Dosimetry, Optimization and Advanced Clinical applications
Prague, Czech Republic
Info: www.efomp.org

29 April-03 May, 2016
35º ESTRO Forum
Turin, Italy
Info: www.estro.org

22 February 2016
5th Annual SPECT/CT symposium: Current status and future directions of SPECT/CT imaging
London, UK
Info: www.bir.org.uk

16 - 20 May 2016
MPE11 : Radiation dose management of pregnant patients, pregnant staff and paediatric patients in diagnostic and interventional radiology
Iraklion (Crete), Greece
Info: www.eutempe-rx.org

27 February-03 March 2016
Basic Clinical Radiobiology
Budapest, Hungary
Info: www.estro.org

27 February-03 March 2016
SPIE Medical Imaging Conference
San Diego, CA , United States
Info: www.spie.org

6 - 10 March 2016
Dose modelling verification for external beam radiotherapy
Utrecht, The Netherlands
Info: www.estro.org

29 April-03 May, 2016
35º ESTRO Forum
Turin, Italy
Info: www.estro.org

27 – 30 June 2016
18th International Conference on the use of Computers in Radiation Therapy
London, UK
Info: www.iccr2016.org/

1 - 4 September 2016
1st European Congress of Medical Physics
Athens - Greece
Info: www.efomp.org

25 - 28, 2016 September 2016
ASTRO 2016 Annual Meeting
Boston, Massachusetts, United States
Info: www.astro.org

10 - 14 October 2016
International Conference on Integrated Medical Imaging in Cardiovascular Diseases (IMIC 2016)
Vienna, Austria
Info: www.iaea.org