International Organization for Medical Physics

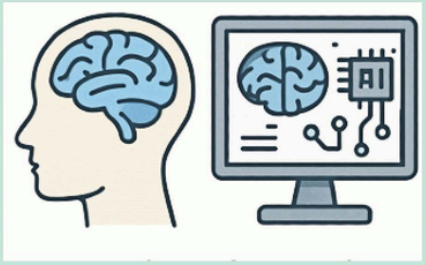
IOMP

eMPW

Volume 41 Number 2 December 2025

Medical Physics and Emerging Technologies: Shaping the Next Decade

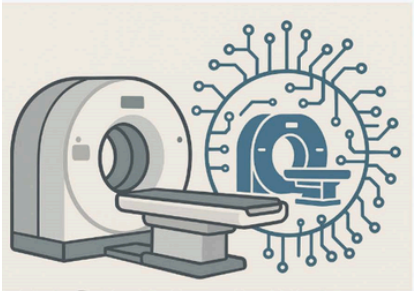
AI Assisted Imaging

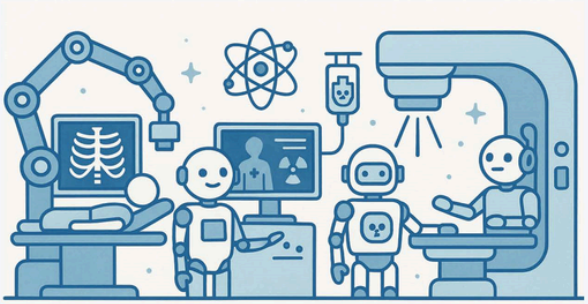


Proton Therapy

Theranostics

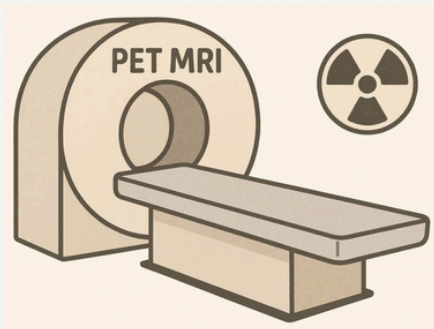
Digital Twin Model of SPECT-CT



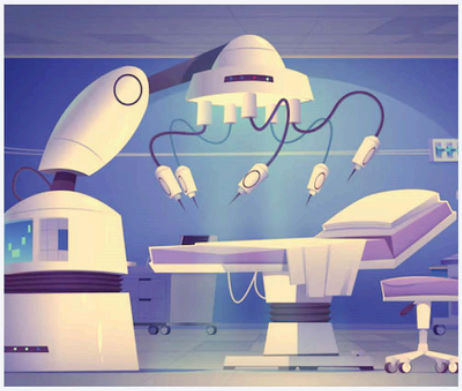


ROBOTICS IN RADIOLOGY, NUCLEAR MEDICINE AND RADIOTHERAPY

PET - MRI



3D Printing Phantoms



Cyberknife

Telemedicine

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Chai Hong Yeong, PhD

Editor-in-Chief of IOMP e-Medical Physics World (eMPW)

CHAI HONG YEONG

Editor of IOMP eMPW

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"I hope that this issue will not only inform you about IOMP's activities but also inspire you to engage actively with our global community. Emerging technologies will continue to transform medical physics over the next decade. "

Dear Colleagues,

It is my pleasure to welcome you to the **December 2025** issue of e-Medical Physics World (eMPW), the first issue produced fully under the **newly elected IOMP Executive Committee for the 2025–2028 term.** This has been a landmark year for our profession: a year of renewal in IOMP leadership, of strengthened partnerships with global health organisations, and of rapid progress in emerging technologies that are reshaping the way we image, treat and care for patients.

The **cover** this issue is extracted from the **IDMP 2025 poster**. It reflects both the excitement and responsibility that come with the current wave of innovation: artificial intelligence, digital twins, 3D printing, advanced imaging and treatment modalities, etc. Medical physicists play a central role to evaluating these technologies, integrating them safely into clinical workflows, and ensuring that no patient is left behind as healthcare becomes more complex and technology-intensive.

In the **IOMP ExCom Reports**, you will find detailed updates from our President, Vice-President, Treasurer, Immediate Past President and several Committee Chairs. In particular, these reports introduce the new ExCom and committee members for the 2025–2028 term, outline their terms of reference, and set out priorities for activities in the coming triennium.

This issue also includes the reports from the **IOMP Regional Organizations,** namely AFOMP, EFOMP, FAMPO, ALFIM, MEFOMP and SEAFOMP.

We are pleased to highlight the achievements of two prominent medical physicists in this issue: **Professor Golam Abu Zakaria,** recipient of the prestigious **Harold Johns Medal** from IOMP, and **Professor Geoffrey Ibbott,** awarded the **AAPM William D. Coolidge Gold Medal.** We extend our warmest congratulations to both colleagues.

Editorial

Chai Hong Yeong, PhD

Editor-in-Chief of IOMP e-Medical Physics World (eMPW)

The **IDMP 2025 Reports** section presents celebrations from around the globe under the theme *"Medical Physics and Emerging Technologies: Shaping the Next Decade."* These reports illustrate how societies in different regions are using IDMP to showcase medical physicist roles in emerging healthcare technologies that are going to shape the next decade.

The **Post-Event Reports** section takes us to a variety of medical physics activities organised by our regional or national member organizations in the last six months. These include the hybrid summer workshop on functional imaging for diagnostics and therapy (by German Cancer Research Centre), online teaching course on particle therapy (by DKFZ), 5th online course on data analysis with Python for medical physics (by Malta Association of Medical Physics), 20th International Forum of Health Sciences at Kyushu University, Japan, and the ASEAN College of Medical Physics (ACOMP) online workshop on quantum computing.

I would also like to thank **Prof. Kwan Hoong Ng** and **Prof. Chai Hong Yeong** for contributing two engaging articles: a Book Talk on *"Pink Agent: Stories from Breast Cancer Survivors"* and *an interview with Professor Franco Milano on "Building Medical Physics Capacity through Education, Quality and International Collaboration."* I am personally grateful to **Prof. Franco Milano** for graciously accepting my invitation to share his insights and experience during the interview.

As Editor-in-Chief, I am deeply grateful to all contributors, committee members, reviewers and the MPWB team whose dedication has made this issue possible. Your efforts – whether in drafting reports, preparing event summaries, sharing photographs or promoting eMPW within your networks – enable this bulletin to reflect the diversity and dynamism of our field.

Looking ahead, I hope that this issue will not only inform you about IOMP's activities but also inspire you to engage actively with our global community. Emerging technologies will continue to transform medical physics over the next decade.

Thank you for your continued support! I wish you a healthy, fulfilling and collaborative year ahead, and I look forward to receiving your news, ideas and contributions for future issues.

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Prof. Mika Kortesniemi
Education & Training

University of Helsinki and Helsinki University Hospital
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Malaysia

President's Message

Eva Bezak, PhD

President of IOMP

EVA BEZAK

President, IOMP

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"I am committed to serving and supporting our global medical physics community and look forward to working closely with the IOMP ExCom, as well as with our many dedicated colleagues and friends across all regions of the world, further strengthening IOMP's role as a truly global professional organisation, advancing medical physics."

Dear Colleagues and Friends in Medical Physics,

Welcome to the December 2025 issue of e-Medical Physics World (eMPW). I am very privileged to address you all in my role as IOMP president (2025-2028). As you are aware, IOMP represents over **30,000 medical physicists worldwide** and **90 adhering national member organisations** and some **affiliate organisations**. And it is timely to remind ourselves that IOMP's mission is to advance medical physics practice worldwide by disseminating scientific and technical information, fostering the educational and professional development of medical physicists, and promoting the highest quality medical services for patients. I am very honoured that you all are part of our medical physics family, supporting the IOMP's mission.

In my role, I am committed to serving and supporting our global medical physics community and look forward to working closely with the IOMP Executive Committee (ExCom), as well as with our many dedicated colleagues and friends across all regions of the world, further strengthening IOMP's role as a truly global professional organisation, advancing medical physics.

Our ExCom will also continue to expand and consolidate collaborations with our major international partners, including the **IAEA, WHO, and ICRP, as well as with our regional organizations and national member organizations.** Just to mention a single example, we collaborated with WHO on the Resolution on Strengthening Medical Imaging Capacity that seeks to address this gap by strengthening medical imaging capacity in all countries (The resolution was unanimously adopted during the **78th World Health Assembly in May 2025**. The theme of this year's Health Assembly was One World for Health.)

Our partnerships are essential to addressing shared challenges in new developing and implementing medical technology, education, professional development, safety, and access to quality medical physics services worldwide.

President's Message

Eva Bezak, PhD

President of IOMP

Once again, I would like to express my heartfelt appreciation to the outgoing ExCom members who completed their service in 2025: **Prof. Madan Rehani, Prof. John Damilakis (who continues on the ExCom as Immediate Past President), Prof. Arun Chougule, and Dr. Ibrahim Duhaini.** Your leadership and efforts have played a vital role in IOMP's growth and its strong engagement with the international medical physics community. Over the past three years, you guided the organization through a period of rapid technological evolution, while reinforcing the importance of global collaboration, education, and capacity building. On behalf of IOMP, I sincerely thank you for your outstanding service.

I would also like to personally thank **Madan and John**, my immediate predecessors in the role of President, for their mentorship, guidance, and support over the past two terms. Their experience and wisdom have been invaluable, and I am deeply grateful for their continued engagement with IOMP.

By the same token, I extend a very warm welcome to all colleagues joining the **IOMP Executive Committee** for this new term:

IOMP Vice-President: Prof M. Mahesh
IOMP Past-President: Prof John Damilakis
IOMP Secretary General: Prof Magdalena Stoeva
IOMP Treasurer: Prof Mohammed Hassan Kharita

Committee Chairs:
Science Committee: Prof Robert Jeraj
Education & Training Committee: Prof Mika Kortesniemi
Professional Relations Committee: Prof Simone Kodlulovich
Publications Committee: Prof Francis Hasford
Awards & Honors Committee: Prof Kwan Hoong Ng
Medical Physics World Board: Prof Chai Hong Yeong

In forming the new ExCom and establishing new committees, we have placed emphasis on both regional representation and gender balance, reflecting the diversity and strength of our global community. Details of the newly established committees are presented in the **ExCom reports** in this newsletter. In the next stage the committee chair will be developing their **strategic vision** for this term (2025-2028).

President's Message

Eva Bezak, PhD

President of IOMP

I would also like to acknowledge the successful celebrations of the **International Day of Medical Physics (IDMP)** on **Nov 7, 2025**, as well as bring your attention to the upcoming IOMP webinars held in December 2025 and January 2026. The December webinar is traditionally dedicated to our emerging medical physics colleagues and this year it will consist of two distinct parts, each with own/separate learning objectives. The first part is a scientific talk on use of nanoparticles and hyperthermia for treatment of cancer with a scientific learning objective on developing understanding about this new cancer therapy. The second part is related to development of soft professional skills of medical physicists on how to optimally use social media and apply their use for scientific communication and networking. Please register here: https://www.iomp.org/iomp-school-webinars-2025/

I would like to also announce the **International Medical Physics Week** will be held from **20th April 2026** with the following theme: **Sustainability in Healthcare: The Medical Physics Contribution.**

As the year 2025 ends, I wish each of you a very **Happy New Year** and all the very best for 2026. May it be a year of good health, professional growth, and continued collaboration as we work together to advance medical physics worldwide. You have worked hard, adapted, persisted. Our profession is defined by responsibility, compassion and scientific integrity. As you move forward, carry with you curiosity, humility and courage. Continue learning, continue questioning, and always remember that your work directly improves patient lives. The world needs your skills; use them wisely and proudly. Be the best you can be and make a change for the patients in your home countries.

Vice President's Message

M Mahesh, PhD

Vice President of IOMP

M. MAHESH

Vice President, IOMP

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"I consider this a great opportunity to advocate for advancing medical physics and medical physicists as an essential part of patient care."

Dear Colleagues and Friends,

It gives me great pleasure to provide this brief report as Vice-President of IOMP. At the end of the World Congress on Medical Physics, new officers of IOMP were sworn in, during which I took the oath as the **Vice President** of IOMP hoping to serve the medical physics communities around the world. I consider this a great opportunity to advocate for advancing medical physics and medical physicists as an essential part of patient care. I am looking forward to working with President Eva Bezak and all members of the IOMP-EXCOM in the years to come.

As the year 2025 is coming to an end, I like to reflect on various activities I was involved in serving the medical physics community globally. Year 2025 has been special to me, I served as **President of the American Association of Physicists in Medicine** and as you all know, I also served as **Science Committee Chair** from 2022 to 2025 before been elected to serve as your Vice President for the IOMP (see separate report titled 'Science Committee Report' for 2022-2025).

One of the highlights for me was the active involvement in developing the scientific program for the **World Congress**. As the science committee chair of IOMP, I served as the **International Scientific Chair**, for the World Congress on Medical Physics & Biomedical Engineering in Adelaide, Australia from Sept 29 – Oct 4, 2025 (https://wc2025.org). In addition, I worked with Prof Eva Bezak on organizing the IOMP school during the World Congress. Eight sessions on different fundamental topics, with each topic taught by two well-known lecturers were well attended. In fact, two topics of the IOMP school is planned as topics for IOMP webinars in 2026 (Theranostics in February 2026 is already in works).

Starting my role as **Vice-president,** I will be working with Eva Bezak and Magdalena Stoeva on several issues related to 'term of service' for members serving on several key committees, further strengthening the IOMP rules and future election process, etc.

IOMP Immediate Past President and IUPESM Vice President's Message

John Damilakis, PhD

Immediate Past President of IOMP

JOHN DAMILAKIS

Immediate Past President, IOMP
Vice President, IUPESM

john.damilakis@med.uoc.gr

" Our collaboration within IUPESM ensures that medical devices and technologies are both technologically advanced and clinically effective and safe."

For medical physicists, our professional identity, standards, and global impact are strengthened through a well-defined international framework. This report briefly explains that framework, focusing on our **primary organization, the IOMP, and its 'parent body', the International Union of Physical and Engineering Sciences in Medicine (IUPESM)**. This is important for every medical physicist to understand, as it clarifies where we fit into the global system of healthcare science and engineering, how our voice is amplified, and how we collaborate with our closest scientific cousins, biomedical engineers.

IUPESM is not a direct membership organization for individuals. It is a union of two constituent international organizations: the **IOMP and the International Federation for Medical and Biological Engineering (IFMBE)**, which represents the global biomedical engineering community.

The IOMP President, upon concluding his/her term in office, continues to serve on the IOMP Executive Committee for the subsequent three-year period as the immediate past-President. According to IUPESM By-Laws, the positions of IUPESM President and Vice-President automatically alternate between the retiring Presidents of the two constituent organizations. This term, I have the honor to be the IUPESM's Vice President.

A key role of IUPESM is to provide a unified platform for these two intertwined disciplines. It is a formal member of the International Council for Science, giving our combined fields a seat at the table of world science. This affiliation is vital for recognition, for initiating global projects, and for liaising with other major scientific unions and bodies.

Under the IUPESM umbrella, the two organizations work in synergy while representing their distinct professions. Our sister organization, the IFMBE, has a primary focus on Biomedical Engineering, defined as the application of engineering principles and design concepts to medicine and

IOMP Immediate Past President and IUPESM Vice President's Message

John Damilakis, PhD

Immediate Past President of IOMP

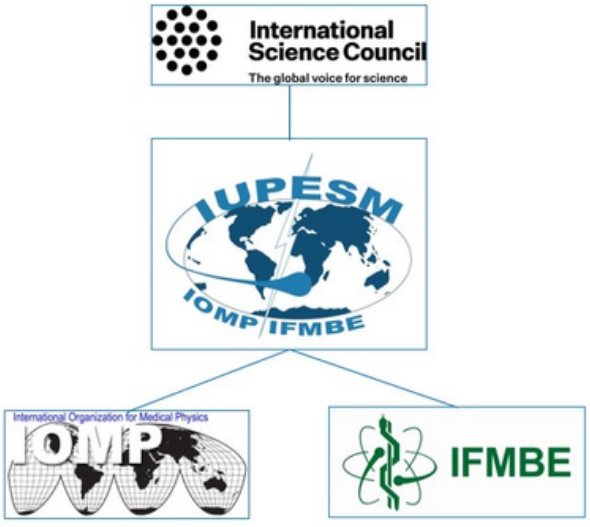
biology for healthcare purposes. Its core domains encompass medical devices, implants, biomaterials, clinical engineering, informatics, and rehabilitation engineering. Its primary mission is to encourage, support, and advance biomedical engineering globally, fostering innovation and the safe application of technology.

The synergy between our fields is fundamental. While a medical physicist might focus on the safe and optimal performance of a linear accelerator or an MRI scanner, a biomedical engineer might have designed its components, software, or safety systems. Our collaboration within IUPESM ensures that medical devices and technologies are both technologically advanced and clinically effective and safe.

The most visible symbol of our collaboration is the **World Congress on Medical Physics and Biomedical Engineering**. This premier international conference in our field is held every three years. It is organized by IUPESM, and its scientific program is a joint effort of IOMP and IFMBE.

Understanding this structure helps us appreciate several important points. First, it underscores the weight of our voice. Our national society's membership in IOMP feeds into the authoritative voice of IUPESM at the highest international levels. Second, it directly supports our career development by providing access to IOMP and IUPESM resources like journals, schools, certifications, and congresses. Third, it reveals the bigger picture, highlighting that solving modern healthcare challenges requires the combined expertise of medical physics and biomedical engineering. Finally, it confirms that we are part of a structured, respected, and active global community working to improve healthcare through science.

The international landscape for our profession is elegantly structured. The IOMP is our dedicated global home for medical physics, and together with the IFMBE, we form the IUPESM. This structure drives innovation and upholds the highest standards for the benefit of patients everywhere. As IOMP members, we are an integral part of this essential global network.



Treasurer's Report

Mohammad Hassan Kharita, PhD

Treasurer of IOMP

MOHAMMAD HASSAN KHARITA

Treasurer, IOMP

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""We appreciate the ongoing support and engagement of the IOMP community. The Finance Subcommittee is committed to responsible stewardship of the organization's resources, ensuring a bright and sustainable future."

1. Introduction

This report presents the latest updates, team introductions, acknowledgments, and future outlook for the IOMP Finance Subcommittee. As the IOMP continues its mission of growth and innovation, the Finance Subcommittee remains dedicated to the sound stewardship of the organization's resources.

2. Acknowledgment of Outgoing Chair

The Finance Subcommittee would like to express its deep appreciation to Dr. Ibrahim Duhaini, our outgoing chair. During his tenure, Dr. Duhaini played a pivotal role in streamlining financial processes and enhancing transparency in reporting. His commitment and expertise have laid a strong foundation for ongoing and future work. On behalf of the entire Finance team, we extend our sincere gratitude for his outstanding service.

3. Finance Subcommittee Team (2025-2028)

The current Finance Subcommittee is composed of a diverse and dynamic team, representing expertise from various regions. The team members for the 2025-2028 term are as follows:

Chair: Mohammad Hassan Kharita

Members:

- Zhong Su (AAPM)
- Samya Al Mane (MEFOMP)
- Adamou Soli Idrissa (FAMPO)

Ex-officio Members:

- Eva Bezak (IOMP President)
- M Mahesh (IOMP Vice President)
- Magdalena Stoeva (IOMP Secretary General)

The subcommittee looks forward to working closely with the Executive Committee to ensure the long-term financial sustainability of IOMP.

Treasurer's Report

Mohammad Hassan Kharita, PhD

Treasurer of IOMP

4. Terms of Reference

Guided by the IOMP Bylaws (approved May 2022), the terms of reference for Finance Subcommittee are:

- To advise ExCom on all the monetary affairs of the Organization.
- To prepare the annual budget for approval by ExCom.
- To prepare financial procedures as set out in the Bylaws for approval by ExCom.
- To prepare any other guidelines concerning the Organization's income and expenditure.
- To formulate and keep under review a dues structure for the national organizations in accord with the structure specified in the Bylaws. Recommend to ExCom the actual dues to be paid by the various categories of member.
- To prepare and recommend the overall financial plans for the Organization.

5. Outlook for the Year Ahead

The Finance Subcommittee remains dedicated to effective financial management and transparency, upholding IOMP's standards of excellence. All members are encouraged to provide feedback and pose questions regarding our initiatives, as your input is essential to advancing our shared mission.

6. Conclusion

We appreciate the ongoing support and engagement of the IOMP community. The Finance Subcommittee is committed to responsible stewardship of the organization's resources, ensuring a bright and sustainable future.

Scientific Committee's Report

Robert Jeraj, PhD

Chair of IOMP Scientific Committee

ROBERT JERAJ

IOMP Science Committee Chair

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"The SC actively supported numerous international and regional meetings, including the highly successful World Congress in Adelaide in 2025"

As the new Chair of the IOMP Science Committee (SC), I am pleased to present this brief end-of-year report.

First, I would like to express my sincere gratitude to **Dr. M. Mahesh**, the previous Chair of the SC, and **all former committee members** for their outstanding dedication and contributions during the last term.

The SC actively supported numerous international and regional meetings, including the **highly successful World Congress** in Adelaide in 2025. Members also contributed to and **reviewed several scientific documents** prepared by other organizations and participated in various forums for generating and disseminating scientific knowledge in medical physics. Notably, the committee engaged in multiple IOMP initiatives, such as **IOMP webinars**, continuing to promote scientific excellence in medical physics worldwide.

Second, I am delighted to introduce the new IOMP SC, which includes representatives from all regional and many national organizations all around the world:

- Robert Jeraj, Slovenia, USA (Chair)
- Carlo Cavedon, Italy
- Daniela Thorwarth, Germany
- Hadi Fayad, Qatar
- Ioannis Sechopoulus, The Netherlands
- Jan Seuntjens, Canada
- Jeffrey Lui, Hong Kong
- Khamwan Kitiwat, Thailand
- Maria Cristina Plazas, Colombia
- Martin Ebert, Australia
- Mary Joan, India
- Stephen Inkoom, Ghana
- Tan Hong Qi, Singapore
- Xinye Ni, China

Scientific Committee's Report

Robert Jeraj, PhD

Chair of IOMP Scientific Committee

Looking ahead, the new IOMP SC will continue to advance medical physics globally by disseminating knowledge, promoting research, and exploring emerging areas in physics and biology. In this term, we will place particular emphasis on building global scientific consortia to bring medical physics scientists together, strengthen international collaboration, and enhance participation in scientific programs— particularly supporting the needs of academic medical physics worldwide.

Our success depends on active involvement of the entire medical physics community. I invite you to participate, propose new global initiatives, and engage in upcoming projects. Only together, we can ensure that medical physics remains a leading source of innovation and scientific excellence in medicine.

Generated by AI (nano banana Pro) - medical physics world in the next decade

Education and Training Committee's Report

Mika Kortesniemi, PhD

Chair of IOMP Education and Training Committee

MIKA KORTESNIEMI

IOMP Education & Training Committee Chair

Mika.Kortesniemi@hus.fi

"Our education should be accessible worldwide and thus provided via multiple channels and formats, both on-line, on-site and combined."

1. Introduction

This report presents the acknowledgments, member introductions, terms of reference and goals for the IOMP Education and Training Committee (ETC). ETC provides prerequisites for our medical physics knowledge and profession, and thus our strategy has fundamental connection to the core mission and vision of IOMP.

2. Acknowledgment of the previous chair and committee members

I warmly acknowledge Prof. Arun Chougule, our outgoing chair, for his efforts to support the knowledge base of our global medical physicist community. I also thank the previous members of the committee for their significant contributions and commitment to build our educational capabilities. During the past term, ETC has provided wide range of activities in the form of training events, webinars, endorsed courses and accredited education and training.

3. Introduction of ETC members for the upcoming term (2025-2028)

The goal of securing and widening the medical physics education calls for a wide range of knowledge from the committee. Accordingly, the updated committee features expertise from all medical physics subspecialities and representation of all geographical regions, including members from the regional medical physics organisations. The committee members for the 2025-2028 term are:

Chair: Mika Kortesniemi, Europe

Members:

- Dr Erato S. Markidou, Europe
- Dr. Jaydev Dave, North-America
- Dr. Jiayun Chen, Asia
- Dr Kirill Skovorodko, Europe
- Dr. Parminder S. Basran, North-America
- Dr Reetta Siekkinen, Europe

Education and Training Committee's Report

Mika Kortesniemi, PhD

Chair of IOMP Education and Training Committee

- Dr Stephen Tronchin, Australia
- Dr. Supriyanto Ardjo Pawiro, Asia
- Dr. Vellaiyan Subramani, Asia
- Prof. Akihiro Haga, Asia
- Prof. Ana Maria Marques da Silva, South-America
- Prof. Christoph Trauernicht, Africa
- Prof. Renata Longo, Europe
- Prof. Stephen Inkoom, Africa

In alignment with the IOMP's Statutes and Bylaws (updated Nov 2025), the outgoing chair shall retain ex-officio, non-voting membership for a transitional period of six months to facilitate a smooth leadership transition.

4. Terms of Reference (ToR)

Guided by the IOMP's Statutes and Bylaws (approved May 2022), the terms of reference for ETC are steering us to:

- Improve medical physics worldwide by disseminating systemized knowledge through education and training of medical physicists especially in developing countries.
- Advance the practice of physics in medicine by fostering the education, training and professional development, and by promoting highest quality medical services for patients worldwide.
- Promote internationally sponsored education and training programs.
- Identify the need for international education and training activities, recommend the method of support, assist with the organization of the event and suggest changes in the curriculum and faculty of the educational activity if needed.
- Consider applications from national and regional organisations for sponsoring or endorsing educational and training meetings.
- Consider requests for review, comment or endorse relevant documents.
- Evaluate and promote medical physics education and training programs and support international cooperation addressing the education/training needs of medical physicists.
- Stimulate the foundation of regional centres for education and training in collaboration with IAEA, WHO and other relevant organisations.
- Compile and update listings of medical physics educational opportunities worldwide for posting on the IOMP web page.
- Support and collaborate with the education and training committees of regional organizations on development of training materials and methodology.

Education and Training Committee's Report

Mika Kortesniemi, PhD

Chair of IOMP Education and Training Committee

5. Goals for the future

The goals of ETC follow from the strategic plan of IOMP and its first point in the agenda: to enable access to high-quality education and training resources in medical physics. Our education should be accessible worldwide and thus provided via multiple channels and formats, both on-line, on-site and combined. Regional and national prerequisites in medical physics are different across the globe. Thus, we need graded approaches to make our education activities effective for our international medical physics community. We will also support the recognition of high quality medical physicist academic programs and training events in connection with the IOMP Accreditation Board. All colleagues are welcome to share ideas and feedback for our shared vision of up-to-date knowledge in medical physics.

6. Finally

Education and training are the foundation for future knowledge and scientific discoveries. This foundation must continuously evolve to keep track on our fast developing professional and technological field. With this spirit, I would like to welcome all new and continuing members of the committee to the new term, to build knowledge for all of us.

Awards & Honours Committee's Report

Kwan Hoong Ng, PhD

Chair of IOMP Awards & Honours Committee

KWAN HOONG NG

IOMP Awards & Honours Committee Chair

kwanhoong.ng@gmail.com

"The IOMP Awards and Honours Committee is entrusted with the important task of recognizing excellence and outstanding contributions in the field of medical physics"

AHC members (2025-2028):

- Kwan Hoong Ng (Chair)
- Kelly Kisling (AAPM)
- Wayne Beckman (COMP)
- Rabih Hammoud (MEFOMP)
- Loredana Marcu (EFOMP)
- Ung Ngie Min (SEAFOMP)
- Taofeeq Abdalla Ige (FAMPO)
- Golam Abu Zakaria (EFOMP)
- Peter Metcalfe (AFOMP)
- Vera Uushona (FAMPO)
- Olga Avila (ALFIM)

The IOMP Awards and Honours Committee is entrusted with the important task of recognizing excellence and outstanding contributions in the field of medical physics. The main awards are listed as follows:

a. **Marie Sklodowska-Curie Award**
b. **The Harold Johns Medal**
c. **The John Mallard Award**
d. **IOMP Fellows**
e. **IDMP Award of the International Day of Medical Physics**
f. **IUPAP Early Career Scientist Prize in Medical Physics**
g. **IUPESM Awards of Merit IOMP**
h. **Honorary Members IOMP**

During this term, the following activities were carried out as listed below. The committee had made a number of improvement in the AHC workflow to ensure timely management of the awards:-

1. Held regular online meetings to discuss and finalise AHC matters (Figure 1).
2. Managed the award calls, nomination and evaluation of IOMP awards
3. Revised and updated the AHC Manual (revision 2023).
4. To streamline the award nomination process using an online Google form.

Awards & Honours Committee's Report

Kwan Hoong Ng, PhD

Chair of IOMP Awards & Honours Committee

5. To ensure a sustainable work practice, a Gmail account was created to be used as the AHC committee email – ahc.iomp@gmail.com. The purpose of this email account is to generate Google Forms for the award nomination, receive and store nomination and supporting documents. This email account can be passed on to subsequent AHC. All important documentations related to the AHC work will also be stored in this Gmail drive (including the AHC manual, action date Excel sheet and score sheets.

6. Devised an Excel sheet to chart the action dates of each award.

7. The AHC had also proposed to create two new awards, namely

- Andrée Dutreix Lifetime Achievement Award for Contribution to Clinical Trials
- Rosalyn Yalow Female Medical Physics Lifetime Achievement Award

8. The AHC also hosted an IOMP Webinar on Why Radiation Oncology Clinical Trials Need Medical Physicists on 28 October 2024 at 12 pm GMT to promote awareness of the medical physicists worldwide. The moderators were Dr Wayne Beckham, from British Columbia Cancer, Victoria, Canada and Emeritus Prof Dr Kwan Hoong Ng, from Universiti Malaya, Kuala Lumpur, Malaysia. The speakers were Professor Dr Søren M. Bentzen, from the University of Maryland, Baltimore, USA and Professor Dr Tomas Kron, from the Peter MacCallum Cancer Centre, Melbourne, Australia.

9. The AHC members published an article in Medical Physics International: Beckham WA and Ng KH, Medical Physics and Clinical Trials, Medical Physics International, 12 (2), 2024.

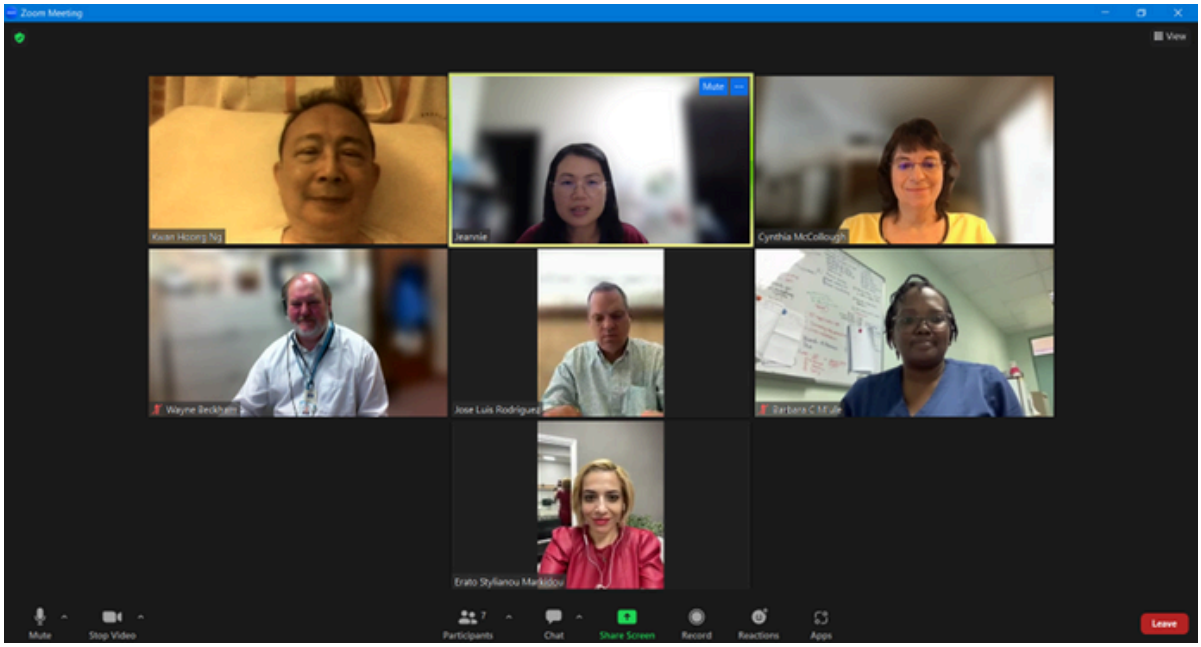


Figure 1: AHC committee (2025-2028) first online meeting.

Professional Relation Committee's Report

Simone K Renha, PhD

Chair of IOMP Professional Relation Committee

SIMONE K RENHA

IOMP Professional Relation Committee Chair

simonekodlulovich@gmail.com

"The PRC aims to enhance the network of medical physicists, particularly in countries where medical physics societies are not yet established."

As we begin this new cycle, I want to express my gratitude for the trust that medical physics organizations have placed in me to continue leading the activities of this important committee. As chair, my commitment to strengthening medical physics globally continues to grow, along with my enthusiasm for this work. However, this is a collective effort that requires the collaboration of every medical physicist, and I am confident that I can count on everyone's support. I would also like to take this opportunity to thank the previous members of this committee for their excellent contributions to the PRC.

From 2025 to 2027, the PRC committee will include several esteemed new members, many of whom have been highly recommended by medical physics organizations. This committee is composed of medical physicists specializing in diagnostic radiology, nuclear medicine, and radiotherapy, ensuring balanced representation in terms of both gender and geography. I am very pleased to introduce the new members of the committee:

Chair: Simone K Renha, ALFIM

Members:

- Qianxi Ni (CSMP/AFOMP)
- Hasin Anupama (BMPS/AFOMP)
- Bronwin Van Wyk (SAAPMB/FAMPO)
- Volodymyr Vashchyshyn (UAMP/EFOMP)
- Sheaka Alobaidi (KAMP/MEFOMP)
- Vanesa Sanz (SAFIM/ALFIM)
- Whitney Coulor (ALFIM)
- Leonel Torres (ALFIM)
- Stephanie Parker (AAPM)
- Manju Sharma (AAPM)
- Jake Van Dyke (COMP/AAPM)

To begin our efforts, the committee will develop a strategic plan for 2026. The extensive experience of the members will enable us to create a structured, viable, and efficient plan. The following ideas will be submitted for the committee's consideration:

Professional Relation Committee's Report

Simone K Renha, PhD

Chair of IOMP Professional Relation Committee

1. Action plan for the medical physics network

The PRC aims to enhance the network of medical physicists, particularly in countries where medical physics societies are not yet established. The proposal involves reaching out to representatives from each country to begin the process of forming an association tailored to the unique circumstances of each nation. Two members of the PRC committee will act as tutors, assisting with the implementation of actions and activities necessary to establish a steering committee.

2. Establishment of Supporting Nucleus

As many countries lack the necessary financial and human resources to establish a new medical physics society, the PRC aims to connect countries facing similar challenges and take the initial steps together. This includes promoting discussion forums at congresses and conferences to connect with medical physicists from clinics, hospitals, universities, regulatory authorities, service providers, researchers, and other related fields to build a community that supports the creation of the association.

3. IOMP webpage: Career center resources

The PRC proposes creating a dedicated section on the IOMP website focused on professional development. This section could feature international cooperation projects, partnerships, access to free educational materials, information about certification processes, and details on clinical training programs. Enhanced communication will enable the PRC to assist in preparing IOMP sponsorship proposals for “professional relations” meetings.

Additionally, this new space can assist professionals who are seeking a job or need advice on how to apply. This includes guidance on preparing a suitable curriculum, getting ready for an interview, and acquiring the technical skills needed for each position. In addition, PRC will provide on this page specific webinars led by experts on career development and leadership.

4. Improve the partnership with other organizations with similar goals

There are important associations aimed at improving medical physics on a global scale. Collaborating on common activities or projects can enhance the reach and impact of these efforts. To initiate this cooperation, the PRC proposes to partner with "Medical Physics for World Benefit" and the Global Representatives Subcommittee (GRSC) of the AAPM.

Professional Relation Committee's Report

Simone K Renha, PhD

Chair of IOMP Professional Relation Committee

5. Working groups

Working groups will be formed to develop policy statements, professional recommendations, and codes of practice, as well as to establish expert groups addressing specific national, regional, or global professional issues.

6. Webinars

To promote periodic webinars related to themes of interest related to professional development. These are initial ideas, but more will follow shortly. All medical physicists are now invited to contribute to this strategic plan. I would greatly appreciate your feedback.

As the end of the year approaches, I wish everyone happy holidays and a 2026 filled with professional achievements.

Medical Physics World Board (MPWB) Committee's Report

Chai Hong Yeong, PhD

Chair of IOMP Medical Physics World Board (MPWB)

CHAI HONG YEONG

IOMP MPWB Committee Chair

yeongchaihong@gmail.com

"I would like to invite all medical physics colleagues worldwide to share your suggestions and feedback on how MPWB can serve you better."

I am deeply honoured to have been re-elected as Chair of the IOMP Medical Physics World Board (MPWB) for the new term 2025–2028. I would like to express my sincere gratitude to all MPWB members who served during 2022–2025, and to medical physics colleagues around the world, for their strong support and collaboration over the past three years.

During the previous term, MPWB achieved several important milestones. A key highlight was the revamp of the IOMP website (www.iomp.org) into a more user-friendly, content-rich platform that better reflects the breadth of IOMP activities. We also maintained a consistent publication schedule, issuing the IOMP Newsletter bimonthly and eMedical Physics World (eMPW) twice a year without interruption.

The Board worked actively to strengthen connections with individual medical physicists and professional communities worldwide through email updates, newsletters, the Bulletin and social media. As a result, the number of subscribers to IOMP news has grown substantially from approximately 28,000 to about 60,000, and our various social media channels now reach more than 6,000 followers. These figures reflect a vibrant and increasingly engaged global community.

It is my pleasure to introduce the **MPWB members for the 2025–2028 term:**

- Chai Hong Yeong, Malaysia – Chair
- Habib Ashoor, Bahrain
- Jae Lirio Inamarga, Philippines
- Joerg Lehmann, Australia
- Li Kuo Tan, Malaysia
- Nashaat Ahmed Deiab, Egypt
- Nilendu Gupta, USA
- Rajni Verma, India
- Renato Dimenstein, Brazil
- Rosana Pirchio, Argentina

Medical Physics World Board (MPWB) Committee's Report

Chai Hong Yeong, PhD

Chair of IOMP Medical Physics World Board (MPWB)

The MPWB Chair also oversees the work of the **Web Sub-committee**, whose members are:

1. Chai Hong Yeong, Malaysia – Chair
2. Ezequiel Larger, Argentina
3. George Kagadis, USA
4. Mark Pokoo-Aikins, Ghana
5. MD Akhtaruzzaman, Bangladesh
6. Niki Fitousi, Belgium
7. Nora AlRashidi, Kuwait
8. Ruijie Yang, China
9. Shalaine Tatu, Philippines

www.iomp.org

The Committee is charged to:

1. Contribute to the advancement of medical physics worldwide by providing a bulletin to all members covering IOMP activities and matters of interest to medical physicists;
2. Disseminate information, promote communication and provide news useful to all countries, with particular attention to the needs of developing countries;
3. Seek information of relevance to IOMP members from the Officers, Committee Chairs, World Congress Presidents, regional meeting organisers and other representatives of IOMP activities, and communicate this information to the worldwide membership;
4. Assist IOMP Officers to improve communications by suggesting publication formats and preparing proposals for enhanced methods of achieving MPWB goals;
5. Seek advertising and sponsorship support for eMPW in order to achieve sustainable, self-funded publication of the bulletin.

Both the MPWB and the Web Sub-committee include members from all IOMP regions, representing a wide range of sub-disciplines in medical physics and reflecting a balanced mix of gender, socioeconomic background and age groups. I have full confidence that this diverse and committed team will work together effectively to fulfil the mandate outlined above and to further strengthen IOMP's global communication and outreach.

Finally, I would like to invite all medical physics colleagues worldwide to share your suggestions and feedback on how MPWB can serve you better. Your insights are essential for ensuring that our commitments remain relevant, inclusive and responsive to the needs of the global medical physics community.

Thank you once again for your trust and support. I look forward to working with you throughout the 2025–2028 term.

Publication Committee's Report

Francis Hasford, PhD

Chair of IOMP Publication Committee

FRANCIS HASFORD

IOMP Publication Committee Chair

haspee@yahoo.co.uk

"This balanced regional composition strengthens the Committee's ability to address global publishing challenges, promote equitable access to knowledge, and ensure that IOMP publications reflect the diversity and dynamism of the worldwide medical physics community"

1. Introduction

The Publications Committee of the International Organization for Medical Physics (IOMP) plays a central role in advancing the Organization's mission by supporting high-quality scientific communication, professional knowledge dissemination, and global visibility of medical physics. Through its oversight of IOMP publications and strategic publishing initiatives, the Committee contributes to education, research capacity building, and professional development across regions.

This report provides an overview of the transition within the Publications Committee, acknowledges the contributions of the outgone members, introduces the newly constituted Committee with their regional representation, and outlines the Committee's Terms of Reference (TORs) and planned activities for the current term.

2. Appreciation of the Outgone Publications Committee

The IOMP expresses sincere appreciation to the outgoing members of the Publications Committee for their dedication, professionalism, and invaluable service to the Organization. Over the past term, the Committee has worked diligently to strengthen IOMP's publication portfolio, enhance the quality and reach of its scholarly outputs, and support strategic partnerships with publishers and allied organizations.

The outgoing Committee provided critical guidance on editorial policies, publication ethics, and content development, while also supporting flagship publications such as Medical Physics International (MPI) and other IOMP communication platforms. Their efforts have helped maintain high scientific standards, improve global accessibility to medical physics knowledge, and reinforce IOMP's standing as a leading international professional body.

On behalf of the IOMP leadership and membership, the Organization extends heartfelt thanks to all past Committee members for their commitment, time, and expertise, and acknowledges their lasting contributions to the growth and sustainability of IOMP publications.

Publication Committee's Report

Francis Hasford, PhD

Chair of IOMP Publication Committee

3. Introduction of the New Publications Committee

Following the completion of the previous term, a new Publications Committee has been constituted to continue and expand upon the work of its predecessors. The Committee has been deliberately composed to reflect broad regional representation, ensuring inclusivity, diversity of perspectives, and responsiveness to the needs of medical physicists across all regions.

The new Publications Committee comprises members drawn from the following IOMP regions – Africa, Asia-Oceania, Europe, Latin America, Middle East, North America. Membership of the new committee is below:

Chair: Prof Francis Hasford, FAMPO

Members:

- Mohammed Metwaly (UK)
- Marina Sala (AAPM)
- Jennifer Pursley (AAPM)
- Jiayun Chen (AFOMP)
- Carlos Daniel Venencia (ALFIM)
- Fabrizio Levrero (EFOMP)
- Julio Francisco Almansa Lapez (EFOMP)
- Nashirudeen Abdul Mumuni (FAMPO)
- Ismail Zergoug (FAMPO)
- Mustafa Salih Al Musawi (MEFOMP)
- Anchali Krisanachinda (SEAFOMP)

Ex-Officio:

- Eva Bezak (IOMP President)
- M Mahesh (IOMP Vice President)
- Magdalena Stoeva (IOMP Secretary General)
- Chai Hong Yeong (Editor, e-Medical Physics World)
- Sameer Tipnis (Editor, Medical Physics International)
- Slavik Tabakov (Editor, MPI History Edition)
- Perry Sprawls (Editor, MPI History Edition)
- Editors of IOMP Journals

This balanced regional composition strengthens the Committee's ability to address global publishing challenges, promote equitable access to knowledge, and ensure that IOMP publications reflect the diversity and dynamism of the worldwide medical physics community. The new Committee is committed to collaborative engagement with IOMP leadership, editors, publishers, and regional organizations in delivering its mandate effectively.

Publication Committee's Report

Francis Hasford, PhD

Chair of IOMP Publication Committee

4. Terms of Reference (TORs) of the Publications Committee

The Publications Committee operates under defined Terms of Reference (TORs) in the IOMP Statutes and Bylaws:

- To improve medical physics worldwide by providing or supporting appropriate publications or knowledge generated as a result of research, education and professional programs of the organization. The focus of the Committee includes both printed and electronic documents.
- To manage the operation of Medical Physics World.
- To oversee the publication agreements with publishers of the official IOMP journals.
- To make nominations of editorial board members and other such appointments as necessary to the IOMP Executive Committee.
- To identify the need for international scientific, research and professional publications through consultation and cooperation with other committees and task groups of the Organization.
- To assist regional and national organizations of Medical Physics to prepare proposals for publication of new materials in traditional or new formats as necessary to extend the international medical physics knowledge base.

5. Plan and Priorities for the Committee

In line with its TORs, the Publications Committee has outlined a forward-looking plan for the current term, focusing on the following priorities:

- Strengthening IOMP flagship publications and other official IOMP publications, with emphasis on quality, relevance, and regional balance.
- Enhancing global representation in publications by encouraging submissions, editorial participation, and thematic content from under-represented regions to ensure global coverage.
- Digital and open access strategies by exploring innovative digital dissemination approaches and open-access models to improve reach, readership, and long-term sustainability.
- Capacity building in scientific publishing by supporting initiatives such as author workshops, reviewer training, and editorial mentorship, particularly for early-career medical physicists.
- Monitoring and evaluation by establishing mechanisms to periodically review publication performance, readership metrics, and alignment with IOMP strategic goals.

6. Conclusion:

The newly constituted IOMP Publications Committee builds on a strong foundation laid by its predecessors and is well positioned to advance IOMP's publication mission in a rapidly evolving scientific and publishing landscape. Through inclusive representation, clear terms of reference, and a focused plan of action, the Committee aims to enhance the quality, reach, and impact of IOMP publications for the benefit of the global medical physics community.

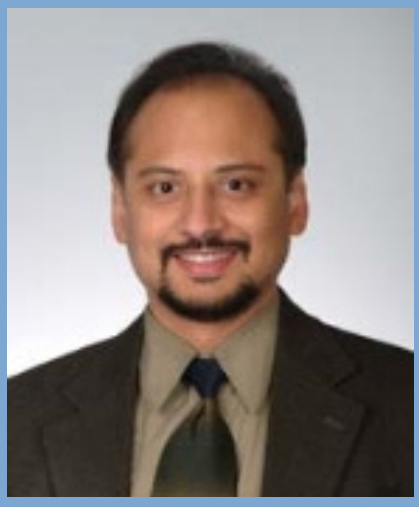
Medical Physics International (MPI) Journal Report

Francis Hasford and Sameer Tipnis

co-Editors-in-Chief

FRANCIS HASFORD

haspee@yahoo.co.uk



SAMEER TIPNIS

tipnis@musc.edu

The Medical Physics International (MPI) Journal has remained IOMP's flagship publication since formation in **2013**. The editorial transition from Slavik Tabakov and Perry Sprawls to Francis Hasford and Sameer Tipnis has been seamless, producing the **July 2023 issue (Vol. 11, No. 1)**, which compiled over 280 pages including abstracts from the **Regional Conference of the Federation of African Medical Physics Organizations (FAMPO) in Morocco in 2022**, and the **Regional Conference of the Middle East Federation of Medical Physics (MEFOMP) in Oman in 2023.**

The **December 2023 issue (Vol. 11, No. 2)** expanded further, featuring abstracts from **International Conference on Medical Physics (ICMP) 2023 in Mumbai** and **theses from the ICTP Master of Medical Physics Programme**, reaching a record 618 pages.

By 2024, readership had grown significantly, with the MPI website attracting **over 1,000 daily visits** at peak. To manage the expanding content, the Publications Committee initiated the establishment of **MPI-Proceedings**, a special series dedicated to books of abstracts from ICMPs and World Congresses. This innovation is to ensure consistency in archiving and build MPI into a family of journals that includes **MPI**, **MPI-History Edition**, **MPI-Proceedings**, etc.

The maiden issue of the MPI-Proceedings, released in **October 2025**, published abstracts from the **Middle East Medical Physics Conference (MEFOMP 2025) held in Kuwait** and the **dissertation abstracts from the 10th Cycle ICTP Master of Medical Physics Programme**, Trieste, Italy.

The **December 2025 issue** of the regular MPI is currently under preparation and planned for release mid-January 2026. Enjoy reading the exciting articles from the MPI family of journals and share with us your nice feedback. Best wishes for the festive season and the New Year! Looking forward to greater collaboration in the coming year, 2026.

IOMP Women Sub-Committee's Report

Loredana Marcu, PhD

Chair of IOMP Women Sub-Committee

LOREDANA MARCU

IOMP Women
Sub-Committee Chair

loredana@marcunet.com

"The IOMP Women Subcommittee is focused on a number of activities aimed to attract more women to medical physics and to assist women MPs with their continuous professional development."

The IOMP Women Subcommittee is focused on a number of activities aimed to attract more women to medical physics and to assist women MPs with their continuous professional development. The main objectives of this subcommittee are aligned with the key IOMP mission - to advance medical physics practice worldwide by disseminating scientific and technical information, fostering the educational and professional development of medical physicists, and promoting the highest quality medical services for patients.

To fulfil these aims, the IOMP Women subcommittee follows a number of action plans that are in place for the past few terms:

- To develop, implement and coordinate activities and projects related to the role of females in the scientific and professional advancement of medical physics.
- To promote the role of the women in medical physics and encourage female medical physicist to advance in the profession.
- To support the contribution of female medical physicists at major scientific conferences and congresses.
- To disseminate the work undertaken by the subcommittee through scientific publications and conference presentations.
- To provide regular status/progress updates to the IOMP on all tasks and projects related to the IOMP Women subcommittee.

IOMP Women subcommittee main activities/events during 2025:

During 2025 the IOMP Women Subcommittee was involved in a number of tasks/ activities:

1. This year's **International Women's Day (8th March 2025)**, was marked by a joint IOMP-W & AHC webinar to promote Women in Medical Physics. The three speakers represented three different continents: Europe, North America and Asia, respectively. The topics covered various aspects pertaining to women in medical physics, and were presented by the following invited speakers:

IOMP Women Sub-Committee's Report

Loredana Marcu, PhD

Chair of IOMP Women Sub-Committee

- **Jennifer Pursley** (Mayo Clinic Department of Radiation Oncology) talking on the "Status of women medical physicists in the US and the AAPM"
- **Chai Hong Yeong** (School of Medicine, Faculty of Health and Medical Sciences, Taylor's University, Malaysia) talking on the topic of "Empowering Women's Leadership in Medical Physics: Challenges and Opportunities in Asia"
- **Oleksandra Ivashchenko** (University Medical Center Groningen, The Netherlands) delivering a talk on "Leading with Purpose: Navigating Challenges and Embracing Opportunities as a Young-Career Medical Physicist in Europe".

2. Collaboration with **IUPESM WiMPBME group**: a new paper was written reporting the quantitative data resulting from the international survey developed by the group with the title: A gender breakdown of unexpected benefits generated by work from home in STEM fields - a qualitative analysis of the WiMPBME Task Group survey. The paper has been published in the journal Physica Medica 130:104897 and can be found at: https://www.sciencedirect.com/science/article/pii/S1120179725000079.

3. IOMP-W has been active in organizing special scientific sessions within the World Congress in Medical Physics and Biomedical Engineering (Adelaide, 29 Sept - 4 Oct, 2025). The sessions and special symposia organized within the scientific track **"Women, Diversity and Inclusivity in Medical Physics and Biomedical Engineering"** were a great success.

4. According to tradition, IOMP-W is organizing the next year's women day celebration through another webinar **(March 2026)** to promote **Women in Medical Physics**. Possible speakers will be discussed in the next subcommittee meeting.

5. The **IOMP-W membership for the next term (2025-2028)** is finalized and listed below:

- Loredana Marcu (Romania) - Chair
- Laurentcia Arlany (Singapore)
- Kathleen Hintenlang (USA)
- Rafidah Zainon (Malaysia)
- Iyobosa Uwadiae (Nigeria)
- Afua Yorke (USA)
- Jesuana Aizcorbe (Argentina)
- Sadia Afrin Sarah (Bangladesh)
- Jennifer Pursley (USA)
- Buthaina Sulaiman Al Ameri (UAE)
- Noramaliza Binti Mohd Noor (Malaysia)
- Stephanie Parker (USA)
- Talent Magnus (UK)
- Yuhe Yao (China)
- Lenka Lhotska (Czech Republic)
- Leticia Irazola (Spain) - to be confirmed

International Organization for Medical Physics

IOMP

IOMP Regional Organization Reports

AFOMP

EFOMP

AMPFO

Asociación Latinoamericana de Física Médica

ALFIM

SEAFOMP

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AFOMP's Report

Mary Joan, Aik Hao Ng, Anupama Azhari

Asia Oceania Federation of Organizations for Medical Physics (AFOMP)

ASIA OCEANIA FEDERATION OF ORGANIZATIONS FOR MEDICAL PHYSICS (AFOMP)

https://afomp.org/

This year marked a significant milestone for the Asia-Oceania Federation of Organizations for Medical Physics (AFOMP) as it celebrated the Silver Jubilee of the AFOMP formation. This 25-year journey reflects not only scientific and technological progress, but also the strength of regional collaboration, leadership, and shared purpose among medical physicists across Asia and Oceania region. To honour this landmark anniversary, a special Silver Jubilee celebration programme was held in conjunction with the IUPESM World Congress of Medical Physics and Biomedical Engineering 2025 in Adelaide, Australia, bringing together leaders, members, and friends of the AFOMP community.

Since its formation, AFOMP has played a pivotal role in advancing medical physics in a region characterised by diversity in healthcare systems, resources, and stages of development. The establishment of AFOMP provided a vital platform for knowledge exchange, professional networking, and capacity building. Over the past 25 years, it has grown in scale, quality, and influence, mirroring the rapid evolution of medical physics itself. From conventional x-ray imaging techniques to state-of-art data-driven, technology-enabled practices. The Silver Jubilee celebration was therefore both a moment of reflection and a forward-looking reaffirmation of AFOMP's mission.

A key highlight of the celebrations was the release of a Special Silver Jubilee Issue of the AFOMP Pulse Newsletter. This commemorative edition documented the history and evolution of AFOMP, showcasing milestones, memorable congresses, and the expanding role of AFOMP in education, training, and professional standards. Contributions from AFOMP member organisations illustrated how regional cooperation has strengthened national societies and elevated the practice of medical physics across borders. Reflections from past and present leaders added a personal and inspirational dimension, capturing the vision, dedication, and collective effort that have shaped AFOMP over the past quarter century.

AFOMP's Report

Mary Joan, Aik Hao Ng, Anupama Azhari

Asia Oceania Federation of Organizations for Medical Physics (AFOMP)

Group photo during the AFOMP Silver Jubilee Celebrations in conjunction with WC2025 at Adelaide.

Another key event during the celebration programme was a AFOMP Leaders' Forum, featuring distinguished AFOMP leaders namely Emeritus Professor Ng Kwan Hoong, Associate Professor Anchali Krisanachinda, Professor Arun Chougule and Professor Eva Bezak, moderated by Professor Hasin Anupama Azhari and Dr. Ng Aik Hao. The forum provided a golden opportunity for intergenerational dialogue, blending historical perspectives with insights into emerging challenges and opportunities. The discussion began with reflections on the formation of AFOMP, recalling the early motivations, collaborative spirit, and determination required to build a regional federation; challenges faced by the profession; future outlook of artificial intelligence (AI) and sustainability in medical physics and efforts in diversity, equity, and inclusion (DEI).

The leaders also emphasised the need for mentorship, leadership development programmes, and platforms that amplify the voices of early-career medical physicists in order to make AFOMP remain important and relevant for future generations.

Front page of the Special Silver Jubilee Issue of the AFOMP Pulse Newsletter during the launching ceremony. The panellists and moderators of the AFOMP Leaders' Forum.
(Access via https://afomp.org/afomp-pulse-the-newsletter/?volume=vol_1702)

AFOMP's Report

Mary Joan, Aik Hao Ng, Anupama Azhari

Asia Oceania Federation of Organizations for Medical Physics (AFOMP)

In addition to this Meetings (ExCom, Council meeting), award sessions, and the AOCMP 2025 ECMP (early career MP session) have all taken place. AFOMP declares the incoming officers' new terms for 2025–2028 in the council meeting 2025.

Council meeting: Incoming and outgoing officers, delegates, NMO representatives

AFOMP Award Ceremony

Medical Physics song at Gala Dinner

EFOMP's Report

Efi Koutsouveli

President of EFOMP

EUROPEAN FEDERATION OF ORGANIZATIONS FOR MEDICAL PHYSICS (EFOMP)

https://www.efomp.org

EFOMP's sustainability roadmap has an holistic approach and includes actions to ensure professional, social, economical and environmental sustainability. EFOMP acts in the long run in the best interest of the National Member Organisations, Individual and Industrial Members and prioritizes practices with an aim to achieve living and working conditions that support people in engaging and remaining in medical physics throughout an extended working life in Europe and beyond.

1. Structure

The European Federation of Organisations for Medical Physics (EFOMP) founded in 1980 is the umbrella organisation for 37 National Member Organisations (NMOs) which together represent more than 10,000 medical physicists and clinical engineers working in the field of medical physics in Europe. The office is located in Utrecht, Netherlands. NMOs are the voting members of the Federation whereas Individual Associate and Company Members are non-voting members. www.efomp.org

This year, the EFOMP Annual General Council Meeting (AGCM) was held in Zagreb, Croatia and online in September. The meeting took place at the School of Public Health "Andrija Stampar",University of Zagreb School of Medicine (UZSM),in parallel with the EFOMP School on "Interventional Radiology Practices" and was hosted by the Croatian Medical Physics Association (CROMPA) - Figure 1.

Figure 1. EFOMP Annual General Council Meeting in Zagreb, Croatia

EFOMP's Report

Efi Koutsouveli

President of EFOMP

Advisory Committees (Six committees)

Communications & Publications, European & International Matters, Education & Training, Professional Matters, Projects, Science

European School for Medical Physics Experts

The EFOMP School offers courses that address both established and emerging areas of scientific, research, educational and training relevance within Medical Physics clinical practice. The School's mission is to promote harmonisation of knowledge, skills and competences across Europe. This year, we organised three 2.5-day courses in Radiology, Nuclear Medicine and Radiotherapy, as well as a one-day programme held in conjunction with the 12th Alpe Adria Medical Physics Meeting (AAPM) at the Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste, Italy.

A recent initiative offers reduced fees to participants from low- and middle-income countries worldwide and early career European colleagues.

Special Interest Groups (SIG)

The SIGs are networks of medical physics communities working in specific areas. The SIGs aim to fulfil the need for networking, education, research and professional exchanges in those fields. EFOMP has six active SIGs dedicated to a number of topics including: Radionuclide Internal Dosimetry, Early Career Physicists, Dental Imaging, Particle therapy, Artificial Intelligence and Magnetic Resonance Imaging. Our SIGs are involved in organizing schools, symposia, webinars and our congress ECMP. They have dedicated focus groups within them on a number of topics.

Regional Organisations of IOMP may nominate liaison persons to strengthen collaboration between the regions and support joint initiatives.

A few days ago, the 2nd Symposium on 'Molecular Radiotherapy Dosimetry: The Future of Theragnostics' took place in Athens, Greece. With 225 registrations from 32 countries in Asia, Europe, the Middle East, and North and South America, and with 125 abstracts submitted, the Symposium clearly demonstrated that it meets an important and growing need within the global community (Figure 2).

Figure 2. EFOMP and Sister Societies (AAPM, EURADOS, EANM, and SNMMI) representatives in Athens, Greece

EFOMP's Report

Efi Koutsouveli

President of EFOMP

European Journal of Medical Physics (EJMP)

The journal is jointly owned by EFOMP and the Italian Association of Medical Physics, with Associate Societies; France, Ireland, and Spain. It currently holds an Impact Factor of 2.7, ranking 71st out of 212 journals (Q2) in the Radiology, Nuclear Medicine & Medical Imagingcategory. Additionally, the journal features a dedicated EFOMP Corner, where EFOMP-related activities are published open access, ensuring broad visibility for our community's work.

European Congress of Medical Physics (ECMP)

In 2024, ECMP was hosted by the Medical Physics Societies of Austria (OGMP), Germany (DGMP) and Switzerland (SGSMP) and welcomed France (SFPM) to further foster ties within the regional medical physics communities. In 2026, the Congress will take place in Valencia, Spain hosted by the Medical Physics Society of Spain (SEFM) and welcomes Poland (PTFM). The congress theme is "Advancing Healthcare through Physics: Bridging Science and Patient Care for a Sustainable Future". This theme reflects the vital intersection between scientific innovation and the care of patients, staff, and the public. A sustainable development approach and actions are adopted for the congress and in particular to actively engaging the early career professionals. https://ecmp2026.efomp.org/

2. Activities

Educational Platform (e-LEMENT)

The new versatile, attactive and modern e-Learning for Education in MEdical physics and New Technologies platform (e-LEMENT) opened in February this year. It has been an ambitious project which was successfully delivered byEFOMP's Education & Training committee in collaboration with its provider Cevents (Spain). e-LEMENT is divided into several sections, each with a specific content, some accessible to everyone, others only to those who have signed up for Individual Associate Membership (IAM). It hosts the repository of all courses and educational material that have been and will be delivered by the EFOMP School and EFOMP Special Interest Groups as it was on the previous EFOMP e-Learning platform. It will also host fee-based courses, with low-cost registration fees, synchronous and asynchronous as well as hybrid or blended, with and without CPD points. A section is dedicated to National Member Organisations which can be used to promote and/or add their own courses in their own languages to reach much easier professionals from their own country or countries/regions who speak the same language. Another section is a link to the most complete e-Encyclopaedia and multilingual dictionary of medical physics actually on the web, created by EMITEL. And a last small section is dedicated to fun in medical physics, open to everyone.

The platform is accessible to all EFOMP Individual Associate Members for a low fee of €15. Membership is open to healthcare professionals from all disciplines across the globe.

EFOMP's Report

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President of EFOMP

Working Groups

Listed below are the Working Groups that have successfully completed their work, with nine more currently in progress.

- Physiological Measurements, Medical Physicists and Medical Physics Experts - Policy Statement 20 (available at EJMP)
- Dosimetry in Nuclear Medicine Therapy – Molecular radiotherapy which produced Policy Statement 19 (available at EJMP)
- Medical Physics Education for the non-physics healthcare professions which produced Policy Statement 18 (available at EJMP)
- Role of Medical Physics Expert in clinical trials which produced guidelines (available at EJMP)
- Joint Task Group AAPM 282-EFOMP Working Group 'Breast dosimetry for standard and contrast-enhanced mammography and breast tomosynthesis".

The WGs on the revision of the Core Curriculum for Medical Physics Experts working in Nuclear Medicine and Radiology are a key priority for 2025. The EFOMP-EANM will be published shortly and the EFOMP-ESR will finalise their work by the beginning of 2026.

A Policy Statement 'on the role of Medical Physicists and Medical Physics Experts in the management of medical laser sources' is under development.

Projects

The Projects strategy is built on three key pillars: integrating project participation as a core EFOMP activity, engaging in EU-funded initiatives to help shape the future of the medical physics profession, and promoting EFOMP as a trusted and capable project partner. EFOMP aims to be present as a partner in projects that are shaping future EU policies and strategies for the benefit of Europe's patients and citizens, support the development of sustainable vocational education and training, exchanges in scientific and clinical research to improve human health and combat the impact of environmental crisis to our health systems. Currently, EFOMP is involved in seven European projects covering a broad range of topics, including: education and training, implementation of the Basic Safety Standards directive on Medical Physics Expert, Radiation Protection Expert and Radiation Protection Officer and radiological equipment, analysis of workforce availability, safety by incident learning, quality and safety in nuclear medicine.

International Matters – Connecting worldwide

We update existing and establish new Memoranda of Understanding and Practical Arrangements with regional organisations and stakeholders (such as ACPSEM, ALFIM, EANM, ESR, ESTRO, MEFOMP, FAMPO, ICTP, IAEA) with the aim to strengthen joint initiatives, and promote high-quality medical physics practices internationally. These partnerships support activities conducted

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Efi Koutsouveli

President of EFOMP

through the EFOMP Congress, the EFOMP School, the EFOMP Journal, and the new educational platform e-LEMENT. Notably, the new agreement with the IAEA highlights EFOMP's support for the Rays of Hope initiative and the development of regional Anchor Centres.

Communication

- Series of webinars A comprehensive series of webinars is organised by our Special Interest Groups, often in collaboration with sister societies, offering regular opportunities for knowledge exchange, scientific updates, and community engagement.
- Social media EFOMP actively communicates through multiple social media channels — Facebook, Instagram, X, LinkedIn, and our YouTube channel.
- European Medical Physics News We publish four newsletters per year. Over the past 18 months, we have modernised our submission process and enhanced the layout and design of EMP News. Each issue now has approximately 90–110 pages and features a rich variety of scientific, educational, and professional content.

Publications

The Malaga declaration - An updated vision on Medical Physics in Europe was revised in 2023 and provides direction to the future development of the profession in Europe.

We have published all our policy statements and the outcome of our working groups in EJMP. A link to some further publications in the last 3 years is available here https://www.efomp.org/index.php?r=fc&id=other-publications

Awards

EFOMP honorary membership was attributed in 2023 to Marco Brambilla (Italy) and was given during ECMP2024 in Munich. The EFOMP Medal was awarded to Prof. Slavik Tabakov (Bulgaria) and was given to him at the 12th Alpe Adria Congress in Trieste in May 2025.

3. Key priorities for 2025-2026

Automatic Recognition of the Medical Physics Expert (MPE) by the European Commission as a regulated profession

A successful submission sets a general system for the recognition of evidence of training, automatic recognition of professional experience and allows free mobility of MPEs within the Member States while ensuring a more efficient and transparent recognition of professional qualifications. This will also act as a foundation for such recognition outside the EU 27 countries:

- Establish a working group to pool all information and put together the submission to EU
- Approved European National Registration Schemes by EFOMP (currently 12 out of 27 countries)

EFOMP's Report

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President of EFOMP

Common Training Framework

A Comprehensive European Curriculum will be developed to consolidate the role of the Medical Physics Expert (MPE) as a unified profession with structured specialty competences. This curriculum will harmonise education and training across Europe, establish a common baseline with defined specialty cores, and reserve highly specialised competences for existing sub-specialty Core Curricula and CPD. Through this initiative, EFOMP—together with ESTRO, EANM, ESR, and other European societies—aims to strengthen the professional identity of the MPE, ensuring quality, safety, and innovation in the medical use of both ionising and non-ionising radiation for the benefit of patients, staff, and the public.

4. Future Plans

The Strategic Agenda of EFOMP is founded upon a strong commitment to social, economical, environmental and ethical sustainability. EFOMP's Sustainability Roadmap embraces healthcare practices which contribute to a sustainable future and unites with IOMP and other National, European and International stakeholders to support global coordinated efforts.

References

1. *E. Koutsouveli, "Incoming President of the European Federation of Organisations for Medical Physics editorial", Physica Medica, Volume 117 (Copyright Elsevier), https://doi.org/10.1016/j.ejmp.2023.103197.*
2. *EMP News series, EFOMP website*

Efi Koutsouveli *is a Medical Physicist, Radiation Protection Expert, and Laser Safety Officer at Hygeia Hospital in Athens, Greece (since 1993). Her professional work focuses on radiation oncology, hospital quality management, and oncology information systems. She serves as EFOMP President (2024-2026) and is the recipient of the 2019 IOMP–IDMP Award for her outstanding contributions to promoting medical physics to a broader audience.*

FAMPO's Report

Francis Hasford, Stephen Inkoom

Federation of African Medical Physics Organizations (FAMPO)

FEDERATION OF AFRICAN MEDICAL PHYSICS ORGANIZATIONS (FAMPO)

https://fampo-africa.org

Introduction:

The Federation of African Medical Physics Organizations (FAMPO) is the regional federation of the International Organization for Medical Physicists (IOMP) in Africa. The Federation was established in December 2009 to promote the application of physics in medicine in the Africa region.

Activities of FAMPO are extended throughout Africa and the local Islands in the region. Currently, the Federation has membership from 30 countries within the region. National Member Organizations (NMO's) are Algeria, Egypt, Ghana, Kenya, Libya, Morocco, Niger, Nigeria, South-Africa, Sudan, United Republic of Tanzania, Tunisia, Uganda and Zimbabwe. The remaining countries at present do not have the critical mass to establish NMOs. These include Angola, Burkina Faso, Cameroon, Cote D'Ivoire, Ethiopia, Gabon, Madagascar, Malawi, Mali, Mauritania, Mauritius, Namibia, Rwanda, Senegal, Sierra Leone and Zambia.

At present, six countries in Africa (i.e., Algeria, Ghana, Namibia, South Africa, United Republic of Tanzania, and Zimbabwe) have legislative recognition of Medical Physics as a health profession.

Activities of the Federation:

In the past years, below listed major activities are being/have been undertaken:

1. Establishment of the FAMPO Secretariat: FAMPO secretariat, located in Accra, Ghana, has now been furnished and fully functional.

2. FAMPO Council Meeting: FAMPO Council meetings have been held in June 2022, September 2023 and October 2024.

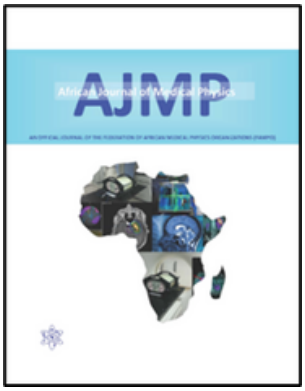
3. FAMPO Journal: African Journal of Medical Physics (AJMP), the Federation's official journal, has released two issues in the last one year. We encourage submission of good articles by MPs from Africa and beyond (https://globalmedicalphysics.org/)

FAMPO's Report

Francis Hasford, Stephen Inkoom

Federation of African Medical Physics Organizations (FAMPO)

4. Publication of Triannual Newsletter: The Federation has continued its triannual release of the FAMPO newsletter. The newsletters highlight most of the important developments and programmes on medical physics in Africa.



5. Medical Physics Training Centres: Currently, nine countries have academic and clinical training programmes for medical physics training. These are Algeria, Egypt, Ghana, Kenya, Morocco, Nigeria, South Africa, Tunisia and Zimbabwe. Tanzania and Burundi are working to establish academic programmes.

6. Certification/Registration of FAMPO Physicists: The Professional Development Committee is finalizing implementation of the FAMPO certification/registration processes. First set of certified/registered MPs are set to receive their certificates by end of May 2022.

7. First FAMPO Regional Conference of Medical Physics: The First Regional conference on Medical Physics was staged in Marrakech, Morocco in November 2022. The event brought together medical physicists from all over Africa and beyond for knowledge sharing, networking, and set the scene for discussions on regional-based solutions to peculiar challenges faced by medical physicists in Africa. A Book of abstracts was published in Medical Physics International Journal http://mpijournal.org/pdf/2023-01/MPI-2023-01-p100.pdf

8. IDMP Celebrations: National Societies in MS continue to observe and celebrate IOMP's International Day of Medical Physics (IDMP) celebration every 7th November.

9. FAMPO membership database update: FAMPO has initiated processes to update its membership database.

10. Collaborations: FAMPO has initiated collaborations with the American Association of Physicists in Medicine (AAPM)

- 2025 Global Medical Physics Continuing Education Course
- AAPM Committee Three (International Council)

FAMPO's Report

Francis Hasford, Stephen Inkoom

Federation of African Medical Physics Organizations (FAMPO)

11. Continuous Professional Development (CPD) activities of MPs: Members of FAMPO continue to benefit from CPD activities such as training courses, webinars, etc. Webinars are mostly from FAMPO, IOMP, IMPW, IAEA, AAPM, WHO, IRPA.

Date	FAMPO Webinar Topic	Speaker
Feb 2024	Radiation Protection in Interventional Radiology	Dr. Vera Uushona (Matcon Radiation Consultancy, Namibia)
Apr 2025	AI-driven dosimetry: Enhancing safety in X-ray imaging	Prof. John Damilakis (IOMP President)
Nov 2025	Artificial Intelligence - Powered Multimodality Medical Imaging	Prof. Habib Zaidi (Geneva University Hospital, Switzerland)

FAMPO's Report

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Federation of African Medical Physics Organizations (FAMPO)

12. **New FAMPO Executive Committee Members**

In January 2025, new FAMPO Executive Committee members took office to serve from 2025 to 2027 as follows:

Officers:
President – Prof. Francis Hasford (Ghana)
Immediate Past President – Prof. Christoph Trauernicht
Vice President – Prof. Nashaat Ahmed Deiab
Secretary General – Prof. Stephen Inkoom
Treasurer – Dr. Adamou Soli Idrissa

Committee Chairs:
Education and Training Committee (ETC Chair) – Dr. Bronwin Van Wyk
Professional Development Committee (PDC Chair) – Dr. Iyobosa Uwadiae
Scientific Committee (SC Chair) – Ms. Barbara M'ule

Future Plans:

The Federation intends to undertake the following activities in the coming year:

- Pursue fund raising initiative to support the execution of the organization's activities.
- Liaise with IAEA to identify more Universities/Centres for academic and clinical training of medical physicists in Africa.
- Continue with CPD activities of MPs such as training courses, webinars, conferences, etc.
- Update FAMPO member database and FAMPO registration processes.

ALFIM's Report

Erick Hernández
President of ALFIM

LATIN AMERICAN ASSOCIATION OF MEDICAL PHYSICS (ALFIM)

https://www.alfim.info/

Actividades realizadas por ALFIM en el periodo 2022-2025

Executive Council
Patricia Mora, Costa Rica, president
Erick Hernández, Guatemala, vicepresident
Adlín López, Cuba, Secretary

Expansion and Strengthening of ALFIM Member Countries

One of the major milestones achieved was the expansion of ALFIM's membership, which now comprises a total of 17 member countries. With the recent incorporation of Jamaica, the Association marks the inclusion of the first country whose official language is English. The pivotal role of the representatives of the Board of Directors from each member country has been highlighted as essential to the continued strengthening of the Association.

Strengthening of Communication and Strategic Projection of ALFIM as an Organization

During this period, ALFIM advanced significantly in consolidating its institutional structure and visibility. The Committees on Communication, Education, Publications, and History were strengthened, reinforcing the Association's role as a reference point in the region. Communication platforms were optimized, including the official website, newsletter, YouTube channel, and social media, thereby enhancing outreach and engagement with members and the broader medical physics community.

A total of five newsletters were issued in 2023 and four in 2024, providing regular and timely dissemination of relevant information. The first newsletter of 2025 is expected to present a comprehensive summary of the highlights of the current congress. Importantly, the newsletter now includes an English version, made possible through the valuable collaboration of Jamaica, further expanding ALFIM's capacity for international communication. In addition, opportunities for improvement were identified in the design and layout of the newsletter, reflecting ALFIM's commitment to continuous development and professional excellence.

ALFIM's Report

Erick Hernández

President of ALFIM

Development of Strategic Alliances

Strategic alliances were established with journals serving as official communication channels for ALFIM, and annual sponsorships were secured with manufacturers in the field of medical physics to support the Association's activities. These alliances and sponsorships were particularly strengthened in connection with the Congress and the celebration of ALFIM's 40th anniversary. As part of this commemoration, an interview was conducted with Dr. Cari Borrás, one of the key promoters of the Association's founding.

Promotion of Continuing Education

An online course on reference levels in Nuclear Medicine was organized, with the participation of 315 attendees. Throughout 2024, a series of virtual seminars was conducted on relevant topics in medical physics, featuring experts from across the region. These lectures were recorded and published on ALFIM's YouTube channel, where they have accumulated a significant number of views over time, demonstrating both the interest generated and the relevance of the topics addressed.

Fomento de la Investigación y la Innovación

The initiative of the "Así lo hacemos" competition was highlighted, with two successful editions recognizing excellence in research and innovation. In addition, it generated valuable educational material, which is now available on ALFIM's YouTube channel.

Strengthening of International Cooperation

Emphasis was placed on the importance of reinforcing international cooperation as a means to advance the development of medical physics across the region.

ALFIM–SEFM Agreement

This agreement aims to strengthen collaboration and foster exchange between both societies (Latin American association of Medical Physics and Spanish Society of medical physics).

X Latin American Congress of Medical Physics, Antigua Guatemala, March 9–12, 2025

From March 9 to 12, 2025, Antigua Guatemala served as the meeting point for medical physics professionals from Latin America and the Caribbean. The X Latin American Congress of Medical Physics was held at the Hotel Casa Santo Domingo, alongside the II Iberolatino-American and Caribbean Congress of Medical Physics and the IV International Symposium on Radiation Protection in Medicine, the latter taking place at the Hospital of the Obras Sociales del Hermano Pedro.

ALFIM's Report

Erick Hernández

President of ALFIM

The academic program of the congress included three pre-congress courses and four thematic areas conducted simultaneously: radiotherapy, radiology and interventional procedures, nuclear and theranostic medicine, and radiation protection and innovations. More than 50 speakers participated, offering 7 plenary lectures, 18 keynote lectures, 11 refresher courses, and 4 roundtable discussions, in addition to oral sessions and poster presentations.

Over 300 attendees from various countries shared knowledge, clinical experiences, scientific developments, and collaboration opportunities. The inauguration ceremony, presided over by Patricia Mora and Erick Hernández, included the opening lecture delivered by Ramona Gaza: From LEO to Moon to Mars: Radiation Protection for Astronauts. The welcome reception was held at the National Museum of Antigua Guatemala.

MEFOMP's Report

Mohammad Hassan Kharita

President of MEFOMP

MIDDLE EAST FEDERATION OF ORGANIZATIONS OF MEDICAL PHYSICS (MEFOMP)

https://www.mefomp.com/

Introduction

The Middle East Federation of Organizations of Medical Physics (MEFOMP) serves as the regional branch of the International Organization for Medical Physics (IOMP), connecting 12 member countries in a shared pursuit of excellence in medical physics. In recent years, MEFOMP has distinguished itself as a catalyst for progress, uniting professionals, fostering international partnerships, and driving advancements in research, education, and clinical practice. This report details MEFOMP's recent milestones, highlights its expanding influence, and outlines its vision for the future of medical physics in the Middle East.

Leadership and Governance

The conclusion of 2024 marked a pivotal moment for MEFOMP with the election of its Executive Committee for the 2025–2028 term. This milestone not only reaffirmed the organization's dedication to continuity and strategic growth, but also underscored its commitment to driving innovation. The newly elected team officially began their tenure during the MEFOMP Medical Physics Conference held in Kuwait in February 2025, launching an ambitious agenda that will shape the federation's future direction over the next several years.

- President: Dr. Mohammad Hassan Kharita (Qatar)
- Vice President: Dr. Rabih Hammoud (Lebanon)
- Past President: Dr. Meshari AlNuaimi (Kuwait)
- Secretary-General: Mr. Refaat Almazrou (KSA)
- Treasurer: Dr. Zakiya Al Rahbi (Oman)

Supporting the Executive Committee are dedicated chairs:

- Education & Training Committee: Dr. Riad Shweikani (Syria)
- Awards & Honors Committee: Mr. Mohamed Tahlak (UAE)
- Science Committee: Dr. Mustafa Al-Musawi (Iraq)
- Professional Relations Committee: Dr. Sheaka Alobaidli (Kuwait)
- Media Committee: Mr. Faisal Shenawy (Kuwait)

MEFOMP's Report

Mohammad Hassan Kharita
President of MEFOMP

This robust organizational structure enables MEFOMP to respond effectively to the evolving needs of its member societies and the wider medical physics community.

Scientific Collaboration and Conferences: Expanding Horizons

MEFOMP's flagship event, the 2025 Medical Physics Conference in Kuwait, was a landmark gathering, organized in collaboration with the International Atomic Energy Agency (IAEA) and endorsed by leading global and regional organizations such as IOMP, AFOMP, EFOMP, FAMPO, and AAPM. The conference attracted over 250 in-person delegates, including 50 distinguished international experts, and featured five targeted workshops. The scientific program was robust, with more than 100 abstract submissions and 80 accepted for publication, covering critical advancements in radiotherapy, nuclear medicine, and diagnostic radiology.

Further demonstrating MEFOMP's dedication to fostering scientific exchange, the federation co-organized the 3rd Academic International Medical Physics Conference in Karbala, Iraq (April 2025), and supported the International Conference on Advances in Radiation Cardiology (ICARO-4) in June 2025. These initiatives cement MEFOMP's role as a key driver of knowledge sharing both regionally and internationally.

Partnerships and Professional Development: Building a Collaborative Ecosystem

Collaboration remains at the heart of MEFOMP's mission. The signing of a Memorandum of Understanding with MESTRO and ongoing negotiations with ICTP and ESTRO reflect MEFOMP's dedication to expanding its network and influence. The federation played a pivotal role in the ICTP 2025 School on Radiation Oncology Medical Physics, with leadership from Vice President Dr. Rabih Hammoud (co-chair) and educational contributions from Dr. Aram Rostami (lecturer). MEFOMP's sponsorship of participants from Iraq, Syria, and Yemen is a testament to its commitment to capacity building and equitable access to training opportunities.

A significant achievement was MEFOMP's successful joint bid with the United Arab Emirates Medical Physics Society to host the 28th International Conference on Medical Physics (ICMP) in Abu Dhabi in March 2027. This event will further enhance the region's visibility and engagement with the global medical physics community.

Recognizing Excellence and Fostering Community

MEFOMP actively celebrates the achievements of its members through a comprehensive awards program. Recent honorees include:

- **Ms. Khalsa Al Shukaili:** "Dr Huda Al Naemi" Award 2025
- **Ms. Naema Al Maymani** and **Mr. Aram Rostami:** Young Scientist Award 2024
- **Dr. Sheaka Alobaidli:** Outreach & Engagement Award 2024

MEFOMP's Report

Mohammad Hassan Kharita

President of MEFOMP

Ongoing professional development is supported by monthly webinars and the "Photon" podcast, which delivers content in Arabic to engage a broader audience. These platforms help nurture a dynamic, informed, and interconnected regional medical physics community.

Education, Certification, and Workforce Development

MEFOMP's member countries boast an average of eight medical physicists per million inhabitants—outpacing the global average and reflecting a robust human resource base. Educational pathways continue to broaden, with postgraduate programs available in five countries. Despite this progress, challenges persist, including uneven workforce distribution and the necessity for more structured clinical residency programs.

To address these issues, MEFOMP advocates for the establishment of a regional certification board, aiming to standardize professional qualifications and ensure alignment with international best practices. Such measures are vital for maintaining high standards of patient care and safety across the region.

Research, Innovation, and the Road Ahead

Research and innovation are at the core of MEFOMP's strategy for advancing medical physics. Collaborative projects with organizations like IAEA, EFOMP, and AAPM enable joint research with hospitals and universities, notably in CT radiation dose optimization and quality control, in partnership with Hamad Medical Corporation (Qatar) and Massachusetts General Hospital (USA).

MEFOMP is also leading the integration of artificial intelligence (AI) into medical physics practice. Focus areas include AI-powered diagnostics, personalized treatment planning, and operational efficiency. The 2025 Medical Physics Conference featured specialized workshops on CT dosimetry and machine learning, developed in collaboration with IOMP, highlighting the region's commitment to embracing cutting-edge technologies.

Conclusion: A Future Defined by Collaboration and Excellence

Through its comprehensive initiatives, MEFOMP exemplifies a culture of collaboration, innovation, and continuous professional development. By driving research, promoting education, and engaging actively with the global medical physics community, MEFOMP is enhancing patient safety and advancing the field across the Middle East. As the federation looks to the future, its commitment to excellence, inclusivity, and scientific leadership will continue to shape the trajectory of medical physics in the region.

SEAFOMP's Report

Chai Hong Yeong
President of SEAFOMP

SOUTHEAST ASIA FEDERATION OF ORGANIZATIONS OF MEDICAL PHYSICS (SEAFOMP)

https://seafomp.org/

1. Introduction

The Southeast Asia Federation of Organizations for Medical Physics (SEAFOMP) is the regional federation representing medical physics communities across Southeast Asia. SEAFOMP's mandate is to advance safe, effective, and equitable application of medical physics in healthcare through:

- Scientific exchange and congresses
- Professional development and education
- Regional collaboration and harmonisation initiatives
- Partnerships with international organisations and peer federations.

During 2022–2025, SEAFOMP prioritised capability building, regional networking, and stronger alignment with international quality and safety initiatives—while expanding programmes that directly support workforce development and leadership among early- and mid-career medical physicists.

2. Strategic Priorities (2022–2025)

Across the term, SEAFOMP's activities were organised around the following priorities:

- Regional scientific exchange and visibility through SEACOMP and joint congress models.
- Capacity building and continuous professional development via the ASEAN College of Medical Physics (ACOMP) workshops and schools.
- Structured collaboration via Special Interest Groups (SIGs) to sustain multi-country technical workstreams.
- Partnerships and contributions to global guidance with organisations such as the IAEA and AAPM.
- Improved communications and member engagement, supported by web presence and federation-wide townhalls.

SEAFOMP's Report

Chai Hong Yeong

President of SEAFOMP

3. Major Congresses and Scientific Meetings

3.1 SEACOMP 2022 (in conjunction with WC2022, Singapore)

SEAFOMP supported SEACOMP 2022 held in conjunction with the IUPESM World Congress of Medical Physics and Biomedical Engineering (WC2022) in Singapore, including seven SEAFOMP Travel Awards (USD150 each) for applicants from SEAFOMP member countries.

3.2 SEACOMP 2023 (Lombok, Indonesia)

The 21st SEACOMP was held on 10–13 August 2023 in Lombok, Indonesia, with ~300 participants. The John Cameron Memorial Lecture was delivered by Prof. James Lee (Singapore). Four Travel Awards and two Special Travel Awards (for Laos and Cambodia) were awarded to support participation and inclusivity.

3.3 ISEACOMP 2023 (Mumbai, India; in conjunction with ICMP & AOCMP)

SEAFOMP participated in the first International SEACOMP (ISEACOMP) held in conjunction with ICMP and AOCMP on 6–9 December 2023 in Mumbai, India, with ~1300 participants from 33 countries (as reported by the host). This collaboration strengthened SEAFOMP's profile and regional integration with broader Asia-Oceania activities.

3.4 AOCMP–SEACOMP 2024 (Penang, Malaysia)

A major milestone for the term was hosting the 24th AOCMP in conjunction with the 22nd SEACOMP in Penang, Malaysia (10–13 October 2024). The congress welcomed 523 participants from 33 countries, 62 invited speakers from 20 countries, and 63 industrial partners, with the 19th John Cameron Memorial Lecture delivered by Prof. Larry DeWerd (USA, online). The meeting also enabled strategic engagement across the international community, including an in-person IOMP ExCom meeting held during the congress period. To support participation and equity, multiple travel award schemes were coordinated, including IUPAP, AFOMP, SEAFOMP, IFM, and MyCEB travel awards.

3.5 SEACOMP 2025 (Chiang Rai, Thailand) and SEAFOMP 25th Anniversary

The 23rd SEACOMP, held in conjunction with the 16th Thai Medical Physicist Society Annual Meeting, took place in Chiang Rai, Thailand (23–26 January 2025), attracting 475 participants, 50 invited speakers, and exhibitors from 22 countries. The 20th John Cameron Memorial Lecture was delivered by Prof. Martin Grossmann (Switzerland). This congress also marked the 25th Anniversary of SEAFOMP, and introduced the inaugural SEAFOMP Lifetime Achievement Awards recognising SEAFOMP founders for sustained contributions to the federation.

SEAFOMP's Report

Chai Hong Yeong
President of SEAFOMP

4. Education, training and capacity building (ACOMP)

ACOMP remained a central platform for structured professional development across imaging, radiotherapy, proton therapy, and nuclear medicine. In conjunction with WC2022, ACOMP delivered dedicated schools including Proton Therapy (12 June 2022), Diagnostic Radiology (13 June 2022), and Quality & Safety in SBRT (14 June 2022).

In 2024–2025, ACOMP expanded an online workshop series covering CT simulation QA, proton therapy planning and QA, AI fundamentals, radiotherapy QA, small field dosimetry, and a nuclear medicine Gamma Knife series, alongside a SEAFOMP Townhall to enhance member engagement.

5. SEAFOMP Special Interest Groups and regional initiatives

To sustain long-term technical collaboration, SEAFOMP supported SIG-led programmes including:

- ASEAN Diagnostic Reference Levels (DRL) (lead: Prof. Anchali Krisanachinda)
- AI in Medical Physics (lead: Prof. Kwan Hoong Ng)
- IndoQCT (lead: Dr. Choirul Anam)
- ASEAN Theranostic Nuclear Medicine Physics Consortium (lead: Prof. Chai Hong Yeong; discussion stage)

These SIGs provided a structured mechanism to translate congress momentum into continuing workstreams, enabling cross-country knowledge transfer and future multi-centre initiatives.

6. Partnerships and international contributions

SEAFOMP strengthened collaboration with international partners and contributed to quality-and-safety efforts beyond the region. Key examples include:

- Support to the IAEA as a collaborator for the International Symposium on Standards, Applications and Quality Assurance in Medical Radiation Dosimetry (IDOS) 2026.
- Review and endorsement of IAEA guidance documents on Dose Management Systems and QA/Optimization for Fluoroscopically-Guided Interventional Procedures.
- Collaboration with the AAPM Global Early Career Research Subcommittee (GECRSC), including liaison appointments and short-term collaboration pathways such as access to the AAPM Global Rising Stars programme and visibility for SEAFOMP young leaders.

SEAFOMP's Report

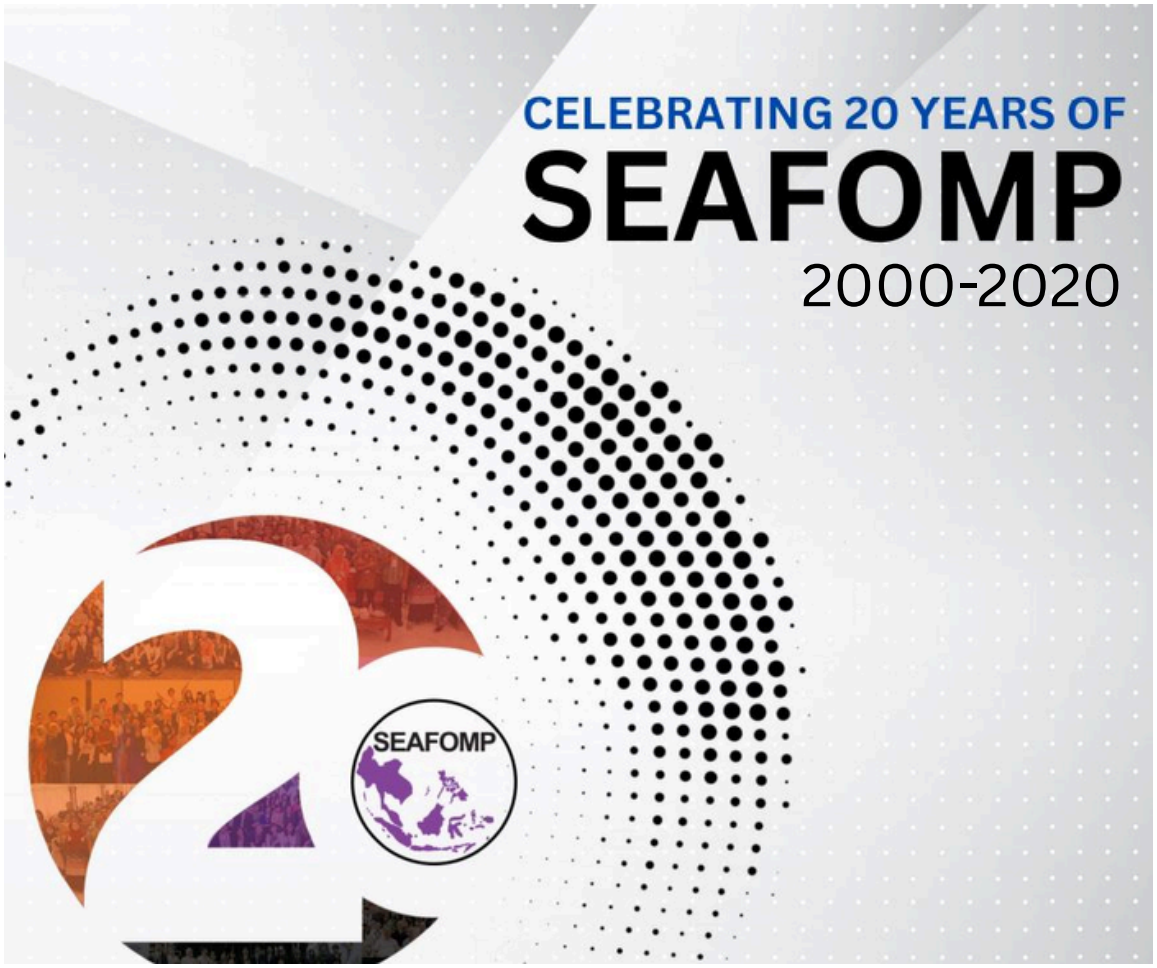
Chai Hong Yeong
President of SEAFOMP

7. Communications and federation strengthening

SEAFOMP maintained and strengthened its communications infrastructure, including the federation website (seafomp.org) as a stable regional reference point for activities and announcements. Member engagement was further enhanced through federation-level townhalls integrated into the ACOMP programme calendar.

8. Looking ahead

SEAFOMP will continue to focus on strengthening training pipelines, accelerating SIG outputs (especially DRL and AI-related work), and expanding practical, multi-country collaborations. The federation also noted future congress planning, including SEACOMP 2026 in Manila, Philippines, and support for Thailand's bid to host AOCMP–SEACOMP 2027.



Awards and Honours

Professor Golam Abu Zakaria Receives Prestigious Harold Johns Award

Asif Hasan Nabi
Advisor Alo Bhubon Trust, Dhaka, Bangladesh

The International Organization for Medical Physics (IOMP) has honoured Bangladeshi-born German scientist Professor Dr. Golam Abu Zakaria with the **Harold Johns Medal** for 2025, one of the highest international honours in the field of medical physics.

Professor Zakaria is a globally respected medical physicist who has made pioneering contributions in Radiation Oncology, Nuclear Medicine, and Diagnostic Radiology. In 2023, the German government recognized his outstanding service by awarding him the **Federal Cross of Merit**, its highest civilian honour.

A colleague first informed Professor Zakaria after seeing the announcement on the IOMP website. Shortly afterward, the IOMP President, Prof. Dr. John Damilakis officially contacted him to confirm the award. The medal was presented during the **World Congress on Medical Physics and Biomedical Engineering (IUPESM 2025), held September 29 to October 4, 2025, in Adelaide, Australia.** This congress occurs every three years. Professor Zakaria is the first German citizen of Bangladeshi origin to receive this honour.

This recognition highlights his decades of dedicated service to excellent teaching and contributions to international education and human development. Until his retirement six years ago, he headed the Department of Medical Physics at Gummersbach Academic Teaching Hospital, affiliated with the University of Cologne in Germany.

The German Society for Medical Physics (DGMP) congratulated him on its website, noting that this distinguished award recognizes his exceptional contributions in research, clinical innovation, and education. They emphasized his global impact, particularly through the creation of international training programs, academic development in Bangladesh, and long-term support for young professionals around the world.

Professor Golam Abu Zakaria Receives Prestigious Harold Johns Award

Asif Hasan Nabi
Advisor Alo Bhubon Trust, Dhaka, Bangladesh

Now 72, Professor Zakaria first travelled to Germany at age 18. Throughout his career, he has remained committed to supporting young medical physicists, especially those from developing countries in South Asia. He has facilitated numerous scholarships for students mad medical physicists to pursue education and advanced training in Germany and established the DGMP Committee for Medical Physics in Developing Countries over three decades ago.

Though the **Harold Johns Medal** is a major honour, it adds to a long list of distinctions. He has previously been named **"Outstanding Personality of the Decade 2000–2010"** by two international oncology organizations. In 2019, Harvard Medical School awarded him the **Global Radiation Oncology Distinguished Leader Award**. The German government also recognized his work through the **Federal Cross of Merit**, acknowledging both his scientific achievements and his development work in Bangladesh.

Today, Professor Zakaria continues to supervise PhD students worldwide and is actively involved in developing the South Asia Centre for Medical Physics and Cancer Research (SCMPCR). Speaking to the media, he joked, *"I had declined an earlier invitation to lecture in Adelaide because I did not feel like travelling so far. But now I really must go, because they are granting me a valuable award!"* This prestigious international award marks a significant milestone in his life's work.

Professor Golam Abu Zakaria Receives Prestigious Harold Johns Award

Asif Hasan Nabi
Advisor Alo Bhubon Trust, Dhaka, Bangladesh

Life and Work of Dr. Golam Abu Zakaria

Dr. Zakaria was born in Naogaon, Bangladesh, on December 31, 1953. He interrupted his studies at the Bangladesh University of Engineering and Technology (BUET) to travel to Germany in 1972 with a government scholarship. Here he completed his degree in Physics at the Martin Luther University of Halle-Wittenberg in 1978, pursued postgraduate studies at the University of Göttingen, and earned his PhD with distinction from Heidelberg University, followed by residency training in Medical Physics.

His doctoral research introduced the Pencil Beam treatment technique for head, neck, and lung cancers. This innovation was used for more than ten years at Heidelberg University Hospital before commercial treatment planning systems became available.

For over three decades, he served as Head of Medical Radiation Physics and Chief Medical Physicist at the Gummersbach Academic Teaching Hospital, improving radiotherapy planning, dosimetry, and quality assurance. Since 2003, he has also been a Professor of Clinical Engineering at the Anhalt University of Applied Sciences.

He has played a key role in advancing Medical Physics education in Bangladesh. In 2000, he helped launch the country's first Master's program at Gono University. Later, he founded the South Asian Centre for Medical Physics and Cancer Research (SCMPCR), which trains cancer care professionals from across South Asia and beyond. He is also the founder of the Alo Bhubon Trust (Alo-BT), dedicated to improving education, healthcare, and training opportunities in Bangladesh.

Professor Zakaria has held numerous international leadership positions, including:

- **Chair, DGMP Working Group for Developing Countries**
- **Vice-Chair, IOMP Accreditation Committee**
- **Chair, IMPCB Accreditation Committee 2 (Radiation Physics)**
- **Trainer for the ICTP Medical Physics Training Program**

He has authored more than 120 scientific publications, including research on Artificial Intelligence in radiotherapy.

AFOMP has also established a **Leadership Award** in his name to inspire the next generation of medical physicists.

Professor Geoffrey Ibbott Awarded AAPM William D. Coolidge Gold Medal

Slavik Tabakov
Chair of IOMP History Sub-Committee, IOMP Past President

The IOMP is pleased to announce that **Prof. Geoffrey Ibbott, former Chair of the IOMP Science Committee (2015–2018 and 2018–2022)** and current **Co-Editor-in-Chief of Medical Physics International (MPI) – History Edition**, has been awarded the **William D. Coolidge Gold Medal by the American Association of Physicists in Medicine (AAPM)**. The Coolidge Medal is AAPM's highest honour, recognising individuals whose distinguished careers have made a sustained and significant impact on the field of medical physics.

Prof. Ibbott is Professor and Chair Emeritus in the Department of Radiation Physics at The University of Texas MD Anderson Cancer Center, USA. Over several decades, he has contributed substantially to radiation dosimetry, quality assurance, and optimisation of radiotherapy practices, supporting safer and more effective cancer treatment in many parts of the world. His long-standing service to the American Board of Radiology (ABR), including roles as Trustee and Governor (2007–2017) and Secretary-Treasurer, and his current position as Associate Executive Director for Medical Physics, reflect his commitment to maintaining high professional and certification standards in medical physics.

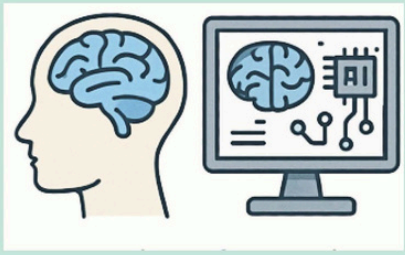
The award commemorates **William D. Coolidge,** who in 1913 developed the first practical x-ray tube employing a "hot" cathode, a landmark invention that underpins modern diagnostic x-ray systems. By receiving the Coolidge Gold Medal, Prof. Ibbott joins a select group of medical physicists whose work has had a transformative influence on clinical practice and on the advancement of our profession globally. IOMP warmly congratulates Prof. Ibbott on this well-deserved recognition.

IOMP 07 November 2025

International Day of Medical Physics

Medical Physics and Emerging Technologies: Shaping the Next Decade

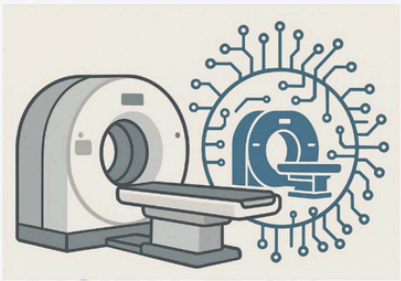
AI Assisted Imaging

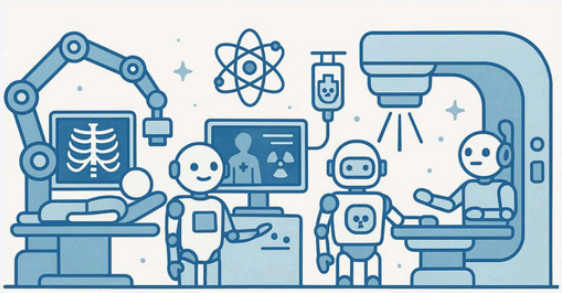


Proton Therapy

Theranostics

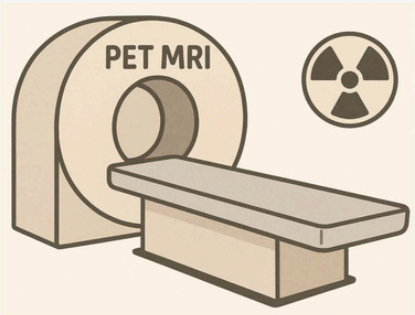
Digital Twin Model of SPECT-CT



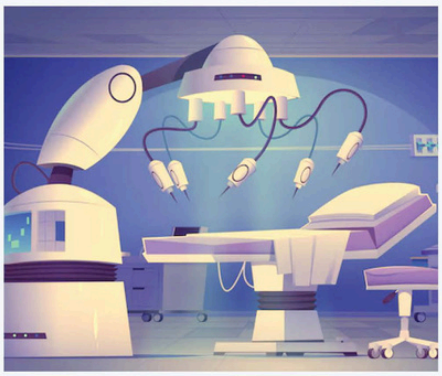


ROBOTICS IN RADIOLOGY, NUCLEAR MEDICINE AND RADIOTHERAPY

PET - MRI



3D Printing Phantoms



Cyberknife

Telemedicine

Celebrating innovation and impact — Advancing healthcare through Medical Physics and Emerging Technologies.

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Chai Hong Yeong, PhD

IOMP MPWB Chair

Introduction

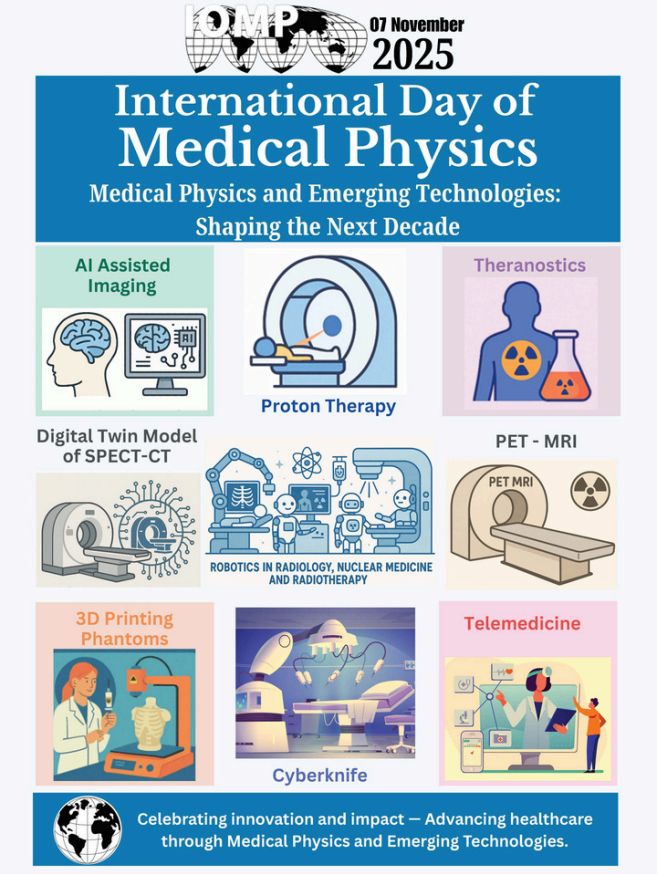
The International Day of Medical Physics (IDMP) 2025 was celebrated worldwide on 7 November 2025 under the theme “Medical Physics and Emerging Technologies: Shaping the Next Decade.” Coordinated by the International Organization for Medical Physics (IOMP), this year’s IDMP highlighted the rapidly evolving technological landscape in healthcare and the pivotal role of medical physicists in advancing, integrating, and safeguarding emerging technologies for the benefit of patients.

The official IDMP 2025 message, delivered by Dr Ibrahim Duhaini (IOMP Treasurer and IDMP Coordinator), underscored the responsibilities of medical physicists at the forefront of innovations such as artificial intelligence (AI), machine learning, image-guided and adaptive radiotherapy, quantitative imaging, theranostics and personalised medicine. The call was clear: to use IDMP 2025 as a platform to reaffirm our commitment to scientific excellence, patient safety and ethical innovation.

1. IDMP 2025 Poster

IOMP is delighted to recognise Ms. Yashna M. Seebarruth, Medical Physicist at Jawaharlal Nehru Hospital, Rose Belle, Mauritius, as the winner of the IDMP 2025 poster design contest. Her artwork, showcasing the theme “Medical Physics and Emerging Technologies: Shaping the Next Decade”, was selected as the official global poster for this year’s celebration.

The design creatively reflects the contribution of medical physicists to innovation and patient care, while highlighting the truly global nature of the profession. It is especially inspiring that the winning design comes from Mauritius, demonstrating the depth of talent across all regions. IOMP encourages all medical physics departments, academic institutions and professional societies to display the poster prominently and use it in their local IDMP outreach activities throughout the year.



IDMP 2025 Report from IOMP

Theme: "Inspiring the Next Generation of Medical Physicists"

Chai Hong Yeong, PhD

IOMP MPWB Chair

2. Presidential Message

In line with IDMP tradition, the IOMP President, Prof. John Damilakis, addressed the global community to mark the 2025 celebration. In his message, he emphasised that the theme ***"Medical Physics and Emerging Technologies: Shaping the Next Decade"*** speaks directly to the opportunities and responsibilities facing medical physicists as healthcare systems worldwide adopt AI-enabled tools, advanced imaging techniques and increasingly complex radiotherapy technologies.

Prof. Damilakis highlighted three key priorities:

1. Leadership in technology assessment and QA – ensuring that new technologies are rigorously validated, safely implemented and continuously optimised.
2. Equitable access – advocating for innovations that narrow, rather than widen, the gap between high- and low-resource settings.
3. Capacity building for the next decade – strengthening education, training and professional development so that medical physicists are prepared to steward emerging technologies responsibly.

His message reinforced IDMP as a unifying platform, bringing together regional organisations and national member organisations to share experience, inspire younger professionals and coordinate global action around a common theme.

IDMP 2025 Report from IOMP

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3. IDMP 2025 Global Webinar

A central highlight of the 2025 celebration was the IDMP 2025 Webinar titled ***"Medical Physics and Emerging Technologies: Shaping the Next Decade,"*** held on 7 November 2025 at 12:00 GMT. The 1-hour global event was organised by Prof. Eva Bezak, Prof. John Damilakis and Prof. Magdalena Stoeva, and moderated by Prof. Eva Bezak.

The programme included:

a) Opening statement and introduction of the IOMP ExCom 2025–2028 by Prof Eva Bezak

b) Invited lecture by Dr Jitendra Sharma, Managing Director and Founder CEO of the Andhra Pradesh MedTech Zone (AMTZ), India - who shared insights on how innovation ecosystems, med-tech industrial infrastructure and regulatory initiatives can accelerate translation of emerging technologies into clinical impact, particularly in low- and middle-income settings.

c) AI video: a dedicated video illustrated how AI and data-driven methods are reshaping medical imaging, radiotherapy planning and dosimetry, while also emphasising the central role of medical physicists in validation, safety and governance of AI-enabled systems.

d) Announcement of the IDMP 2025 Awardees

The recording of the IDMP 2025 webinar is available via the IOMP website and YouTube channel: https://www.youtube.com/watch?v=u5rFsa6f0IU

IDMP 2025 Report from IOMP

Theme: "Inspiring the Next Generation of Medical Physicists"

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4. IDMP 2025 Awards

On 8 November 2025, IOMP announced the recipients of the IDMP 2025 Award, which recognises excellence in medical physics with a particular emphasis on promoting the profession to a wider audience and highlighting the contributions of medical physicists to patient care.

The 2025 IDMP Awardees are:

1. **Prof. Dr Mary K. Martel (AAPM)**
2. **Prof. Dr K. Thayalan (AFOMP)**
3. **Prof. Dr Patricia Mora (ALFIM)**
4. **Prof. Dr Paolo Russo (EFOMP)**
5. **Prof. Dr Stephen Inkoom (FAMPO)**
6. **Assoc. Prof. Dr Hadi Fayad (MEFOMP)**
7. **Assoc. Prof. Sivalee Suriyapee (SEAFOMP)**

Each award consists of an IOMP certificate, and a short biography of each awardee will be published in the IOMP Bulletin/e-Medical Physics World (eMPW) to further showcase their achievements and inspire colleagues worldwide. IOMP warmly congratulates all seven laureates on this prestigious recognition.

IDMP 2025 Report from IOMP

Theme: "Inspiring the Next Generation of Medical Physicists"

Chai Hong Yeong, PhD

IOMP MPWB Chair

5. Worldwide Activities and Regional Engagement

In alignment with the IDMP 2025 Coordinator's message, medical physics societies, academic institutions, research centres and clinical departments around the globe organised a wide range of activities, including:

- Public outreach and media campaigns to raise awareness of the role of medical physicists in modern healthcare and to explain, in accessible terms, how technologies such as AI, image-guided therapies and advanced dosimetry contribute to safer and more effective diagnosis and treatment.
- Scientific symposia and webinars focusing on innovation in imaging, radiation therapy, nuclear medicine and radiation protection, often co-branded with IDMP 2025 and featuring local and international experts.
- Educational programmes aimed at students and early-career professionals, including career talks, open days in hospitals and universities, and mentorship activities designed to encourage the next generation to pursue medical physics.
- Interdisciplinary events bringing together medical physicists, clinicians, engineers, regulators and industry to discuss how emerging technologies can be safely and equitably implemented in diverse health-care systems.

Regional organisations, including EFOMP and MEFOMP, highlighted the IDMP 2025 theme in their newsletters and regional events, illustrating a shared commitment to leveraging emerging technologies to improve patient care while upholding the highest standards of quality and safety.

Conclusion

IDMP 2025 successfully reinforced the message that medical physicists are central to shaping the next decade of medical innovation. Through the official theme, global webinar, poster campaign, and regional and national activities, the celebration showcased how our community is engaging with emerging technologies—not as passive adopters, but as leaders in their safe, effective and ethical implementation.

IOMP extends its sincere appreciation to the IDMP Coordinator, the IOMP Executive Committee, regional and national member organisations, and all medical physicists and partners who contributed to this year's celebrations. Building on the momentum of IDMP 2025, the organisation looks forward to continued collaboration in advancing medical physics worldwide and ensuring that innovation translates into tangible benefits for patients everywhere.

IDMP 2025 Celebration from NHS Sheffield Teaching Hospitals

NHS
Sheffield Teaching Hospitals
NHS Foundation Trust

Medical physics – a rational choice for tomorrow, in a changing world

Medical physics and clinical engineering services in the UK are experiencing long-standing critical workforce shortages. This has wide reaching implications for the safety of patients, health care staff and the public. Investment in people and training will build a positive future in an exciting field.

"I chose medical physics because it perfectly combines **science and patient care**"

"Every calculation, every image, **every safety check** ultimately helps someone"

"I wanted to use my **scientific skills to improve lives** - medical physics is a challenging and interesting career"

"**Doing our best for patients** is the fundamental motivator for Clinical Scientists"

"The unique combination of biology, engineering and mathematics"

"Impactful work, innovation, intellectual challenge, collaborative environment"

"Working in an **expanding** interesting field"

"I wanted to find a job that was interesting, used my physics degree and that I could **see the benefit of**, rather than just crunching some numbers"

"Knowing that my science knowledge is used to **make the world a better place**"

"The ability to influence national practice in Radiation Protection and Diagnostic Imaging **to the benefit of patients** is a great motivator"

"Using my physics degree to help people"

Our professional body, Institute of Physics and Engineering in Medicine has online resources for developing the workforce of tomorrow **www.ipem.ac.uk**

PROUD TO MAKE A DIFFERENCE
SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST

IDMP 2025 Celebration from Christian Medical College & Hospital, Ludhiana 1–7 November 2025

Mary Joan

Christian Medical College and Hospital, Ludhiana, India

The **Department of Radiation Oncology at Christian Medical College and Hospital, Ludhiana,** has a longstanding tradition of celebrating the International Day of Medical Physics (IDMP) through a rich array of academic, scientific, and creative activities. Each year, the department organizes workshops, conferences, scientific sessions, oral and poster presentations, and model-making competitions that highlight the evolving and indispensable role of medical physicists and radiation science professionals in modern healthcare. These events foster a spirit of inquiry and innovation among students, technologists, physicists, and clinicians. In keeping with this legacy, the IDMP 2025 celebrations commenced with a multidisciplinary two-day scientific program, marking the beginning of a week dedicated to exploring the intersection of physics, emerging technologies, and clinical care; an embodiment of the department's commitment to education, innovation and excellence in medical physics.

A Grand Opening to a Week of Learning and Collaboration

The celebrations for IDMP 2025 were inaugurated on 1 November 2025, coinciding with the annual conference of the North Zone Association of Radiation Oncologists of India (NZAROI), hosted by the Department of Radiation Oncology, CMC Ludhiana. More than 300 delegates including radiation oncologists, medical physicists, radiologists, radiation therapy and radiology technologists, postgraduate residents, and faculty travelled from Punjab, Himachal Pradesh, Delhi, Haryana, Jammu & Kashmir, Uttarakhand, Ladakh, Chandigarh, Tamil Nadu, along with international participants from the United Kingdom and Canada, to attend this two-day academic event.

The inaugural ceremony was graced by Dr. Ramandeep Kaur, Civil Surgeon of Ludhiana, who served as Chief Guest. She inaugurated the conference in the presence of Dr. William Bhatti (Director, CMC), Dr. Jeyaraj Pandian (Principal, CMC and President of the World Stroke Organization), principals of all constituent colleges, the Medical Superintendent, Nursing Superintendent, and senior faculty from across the institution. Leaders of professional bodies including the President and Secretary of NZ AROI, the President of the Northern Chapter of AMPI, and past office bearers of AMPI and NC-AMPI honoured the occasion with their presence.
A significant highlight of the inauguration was the release of the Conference Souvenir and Abstract Book by Dr. Ramandeep Kaur, featuring scientific abstracts and all poetry submissions received for the IDMP competitions.

IDMP 2025 Celebration from Christian Medical College & Hospital, Ludhiana 1–7 November 2025

Mary Joan

Christian Medical College and Hospital, Ludhiana, India

Multidisciplinary Forum:

The IDMP Inaugural Multidisciplinary Forum led by Prof. Arun Chougule, centred around the IDMP 2025 theme: “Medical Physics and Emerging Technologies: Shaping the Next Decade.”
Radiation oncologists, radiologists, medical physicists, and technologists came together to discuss advancements in precision oncology, AI-assisted imaging, advanced radiotherapy technologies, and the expanding contributions of medical physics to patient care. Esteemed contributors: Dr. Kamlesh Passi, Dr. Balasubramanian N, Dr. V.K. Dangwal, Mr. A.R. Arputharaj, Dr. Ravi Kant, Dr. Subhash Singla, Dr. Jaineet P, Dr. Pamela Jeyaraj, Dr. Deepak Abrol, and Dr. Pradeep Garg offered insights into technological innovation and its potential to revolutionize cancer treatment in the coming years.

IDMP 2025 Celebration from Christian Medical College & Hospital, Ludhiana 1–7 November 2025

Mary Joan

Christian Medical College and Hospital, Ludhiana, India

Scientific Competitions: Celebrating Excellence

A central feature of IDMP celebrations at CMC is the vibrant academic competition platform that encourages postgraduate trainees and early-career professionals to showcase their research. This year, the conference saw an impressive range of oral presentations, poster displays, and case reports across radiation oncology, radiology, paediatrics, general surgery, and community medicine.

Prize Winners:

Oral Presentations

- 1st Prize: Dr. Shilpa Kaushal, PGIMER Chandigarh
- 2nd Prize: Mr. Arputha Anumanth Raj, Max Hospital, Noida
- 3rd Prize: Dr. Swapnil Bisht, PGIMER Chandigarh

Case Report Presentations

- 1st Prize: Dr. Sobia Sandhu, Guru Gobind Singh Medical College, Faridkot
- 2nd Prize: Dr. Rushabh Hingrajiya, MMIMSR, Mullana–Ambala
- 3rd Prize: Dr. Tapasya Rawat, Aadhar Health Institute, Hisar

Poster Presentations

- 1st Prize: Dr. Shivali Ranote, SLBS Govt. Medical College, Mandi (HP)
- 2nd Prize: Dr. Anisha Manohar, Capitol Hospital, Jalandhar
- 3rd Prize: Dr. Saumya Negi, Himalayan Institute of Medical Sciences, Dehradun

Quiz Competition

- 1st Prize: Dr. Sneha Bose & Dr. Sivaranjani P, AIIMS Bathinda
- 2nd Prize: Dr. Dimbeswar Roy, Dr. Anisha Manohar, Dr. Sonak Capito Hospital Jalandhar

These competitions reflected the academic vibrancy and collaborative spirit that have become a trademark of IDMP at CMC Ludhiana.

IDMP 2025 Celebration from Christian Medical College & Hospital, Ludhiana 1–7 November 2025

Mary Joan

Christian Medical College and Hospital, Ludhiana, India

Poetry Competition: Creativity in Healing

Creativity continued to flourish through the Poetry Writing Competition, open to students and faculty of the medical, nursing, allied health, dental, and physiotherapy colleges. Poems in English, Hindi, and Punjabi touched themes of healing, science, courage, and hope.

Prize Winners:

Punjabi

- 1st Prize: Ms. Armaandeep Kaur, B.Sc Radiotherapy
- 2nd Prize: Mr. Mohit Sharma, B.Sc Radiotherapy

Hindi

- 1st Prize: Mr. Rajdeep, B.Sc Radiotherapy
- 2nd Prize: Ms. Anshika, B.Sc Nursing

English

- 1st Prize: Ms. Melissa, MBBS 2025
- 2nd Prize: Mr. Chrism Karthik, MBBS 2025
- 3rd Prize: Ms. Shreya Mary John, B.Sc Nursing

All entries were published in the Souvenir, affirming commitment to celebrating both scientific excellence and creative expression.

Celebration of Innovation and Impact

Cancer Survivors' Forum- A Space for Empathy and Understanding

One of the most impactful events of the week was the Cancer Survivors' Forum. Survivors shared deeply personal accounts of their journeys through diagnosis, treatment, recovery, hope, and the challenges that persist beyond active therapy. Their stories created a powerful environment of empathy, reminding clinicians and trainees alike of the human experience behind every treatment plan and technological advancement.

IDMP 2025 Celebration from Christian Medical College & Hospital, Ludhiana 1–7 November 2025

Mary Joan

Christian Medical College and Hospital, Ludhiana, India

A heartfelt tribute was paid to **Dr. Parveen Sobti,** former Professor of Pediatrics, whose unwavering friendship, support, and collaboration as well as her lifelong embodiment of compassion and empathy continue to inspire the department and all who had the privilege of knowing her and working with her.

Dr. Pallavi Abhilasha, Associate Professor in the Department of Psychiatry, delivered a deeply impactful talk titled 'Silent Pain, Untold Stories: Mental Health of Survivors', shedding light on the emotional burdens carried by cancer patients and the often-overlooked mental health challenges faced by cancer care professionals.

This year also featured an exceptional initiative by Mr. Ayan, the 18-year-old son of Prof. Dr. Bhavana Rai (CMC Alumnae and Chair of Scientific Committee) who designed a dedicated website for cancer survivors. The platform aims to help survivors strengthen their skills, upgrade their careers, and find employment opportunities; a thoughtful, forward-looking contribution that was highly applauded.

Honouring Scientific Luminaries

The department concluded the celebrations with a heartfelt and reflective tribute to the scientific pioneers whose ground-breaking work laid the very foundation of modern radiology, radiation oncology, and medical physics. The week's final gathering honoured Madam Marie Curie, whose birthday on 7 November stands as a global symbol of courage, intellect, and innovation in radiological sciences. Her life story marked by unwavering determination, scientific brilliance, and an unshakable commitment to humanity served as an inspiration to all present. Participants fondly remembered her extraordinary legacy, including the remarkable humility with which she and Pierre Curie chose not to patent their discoveries, ensuring that their breakthroughs would remain freely available for the benefit of mankind. The narrative also celebrated the research and humanitarian contributions of her daughters, Irene Joliot-Curie and Eve Curie, who extended the Curie legacy both scientifically and compassionately.

The commemoration also honoured Bharat Ratna Sir C.V. Raman, Indian Nobel Laureate in Physics, who shares the same birth date. His pioneering discovery of the Raman Effect continues to shape modern spectroscopy and stands as a testament to India's scientific heritage. On 8 November, the department remembered Wilhelm Conrad Roentgen, whose discovery of X-rays revolutionized diagnostic medicine and ushered in the era of modern imaging an achievement that continues to save millions of lives each year.

IDMP 2025 Celebration from Christian Medical College & Hospital, Ludhiana 1–7 November 2025

Mary Joan

Christian Medical College and Hospital, Ludhiana, India

Adding depth and relevance to these tributes, Dr. Edmond Dubland, Palliative Care Physician from Canada, along with Mrs. Penny Dubland, shared thoughtful reflections on the essential balance between technological innovation and human compassion. They emphasized that while medical physics and radiation technologies continue to evolve at an unprecedented pace, true healing is possible only when empathy remains at the heart of clinical care. Dr. Dubland led a meaningful discussion on the origins of IDMP, the extraordinary contributions of Madam Marie Curie, and her steadfast perseverance in the face of scientific and personal challenges. His reflections underscored how her work and the values she embodied serve as moral anchors for.

A Celebration that Unites Technology, Humanity, and Learning

The IDMP 2025 celebrations at CMC Ludhiana successfully brought together science, innovation, education, creativity, and compassionate patient care. The week exemplified the profound impact of multidisciplinary collaboration uniting physicists, clinicians, technologists, students, survivors, and innovators to advance the future of radiation medicine. As the celebrations concluded on 7 November 2025, the department reaffirmed its dedication to pushing the boundaries of medical physics while upholding the values of healing, empathy, and excellence.

Gallery of Memories

IDMP 2025 Celebration from Christian Medical College & Hospital, Ludhiana 1–7 November 2025

Mary Joan

Christian Medical College and Hospital, Ludhiana, India

IDMP 2025 Celebration from Christian Medical College & Hospital, Ludhiana 1–7 November 2025

Mary Joan

Christian Medical College and Hospital, Ludhiana, India

IDMP 2025 Celebration from SMS Medical College & Hospitals, Jaipur, India

Rajni Verma

Department of Radiological Physics, SMS Medical College & Hospitals, Jaipur, India

The Department of Radiological Physics, SMS Medical College & Hospital, Jaipur, organized a One-Day Scientific Symposium on the occasion of the **International Day of Medical Physics (IDMP 2025)** on **7th November 2025** at the **SMS Medical College Library Hall.** The event was conducted under the banner of the Association of Medical Physicists of India (AMPI) and the AMPI–Northern Chapter, and was endorsed by the International Organization for Medical Physics (IOMP), the Asia-Oceania Federation of Organizations for Medical Physics (AFOMP), and the Indian Women Scientists' Association (IWSA).

The IOMP theme for IDMP 2025, **"Medical Physics and Emerging Technologies: Shaping the Next Decade,"** served as the guiding concept of the day. The symposium highlighted the vital contributions of medical physicists in advancing patient care through innovation, research, and adoption of emerging technologies in healthcare.

The celebration began at 9:30 AM with a warm welcome by Dr. Rajni Verma, Organizing Secretary, IDMP 2025 Jaipur, who greeted all dignitaries, academicians, professionals, and students. The Chief Guest of the event was Prof. (Dr.) Deepak Maheshwari, Principal & Controller, SMS Medical College & Hospital, Jaipur. The Special Guest of Honourwas Dr. Mrinal Joshi, Medical Superintendent, SMS Hospital, Jaipur, and the Guest of Honour was Dr. V. Subramani, Vice President of AMPI and Professor of Medical Physics, AIIMS New Delhi. The function was presided over by Prof. (Dr.) Arun Chougule, Organizing Chairman, IDMP 2025 Jaipur & Ex-Head, Department of Radiological Physics.

IDMP 2025 Celebration from SMS Medical College & Hospitals, Jaipur, India

Rajni Verma

Department of Radiological Physics, SMS Medical College & Hospitals, Jaipur, India

The event commenced with the Lighting of the Lamp and Saraswati Vandana, symbolizing the illumination of knowledge. The dignitaries were felicitated with floral greetings, and the audience was welcomed to the vibrant pink city of Jaipur. Prof. Arun Chougule delivered the Welcome Address, emphasizing the importance of interdisciplinary collaborationandthe role of IDMP in uniting professionals worldwide.

In their special addresses, Dr. V. Subramani shared the global initiatives of AMPI and IOMP, Dr. Mrinal Joshi highlighted the integral role of medical physicists in clinical practice, and Prof. (Dr.) Deepak Maheshwari praised the organizers for hosting such an event aligned with the global IDMP 2025 theme. The release of the IDMP 2025 Posterwas a key highlight, symbolizing the innovation and dedication of the medical physics fraternity. The dignitaries were then presented with mementos as a token of appreciation, and the session concluded with a group photograph and breakfast.

IDMP 2025 Celebration from SMS Medical College & Hospitals, Jaipur, India

Rajni Verma

Department of Radiological Physics, SMS Medical College & Hospitals, Jaipur, India

The scientific program began at 11:00 AM and featured a series of enriching lectures by distinguished speakers. **Prof. Arun Chougule** spoke on **"Inter-Professional Collaboration for Innovation and Research in Medical Physics,**"underscoring teamwork and innovation. **Prof. Devesh Gupta** delivered a session on **"Emerging Technologies in Medical Physics Radiotherapy,"** focusing on technological advancements in radiation oncology. **Dr. V. Subramani** presented a talk on **"Shaping the Future of Cancer Care: Role of Medical Physics and Technology,"** highlighting how innovation and technology are driving improvements in cancer management and care.

A Panel Discussion on **"The Role of Artificial Intelligence in Medical Physics"** brought together expert panelists — **Dr. Athiyman, Dr. Hemlatha, Dr. Gourav Jain, Dr. Ananth K., and Dr. Pawan K. Jangid** — and was skillfully moderated by **Dr. Rajni Verma**. The discussion explored the applications of AI in treatment planning, imaging, and patient safety, sparking lively engagement among the participants.

Following the lunch break, **Dr. Rajni Verma** delivered a special talk titled **"Why, Where, and When to Find a Medical Physicist — Celebrating the Invisible Hands of Modern Medicine."** The presentation paid tribute to the often-unseen but critical contributions of medical physicists in ensuring the precision, quality, and safety of medical technologies.

The event witnessed enthusiastic participation with around **145 attendees**, including 139 registered participantscomprising medical physicists, oncologists, academicians, and students from various institutions. The celebration was well covered by the local press, further enhancing public awareness about the contributions of medical physicists to healthcare and scientific advancement.

IDMP 2025 Celebration from SMS Medical College & Hospitals, Jaipur, India

Rajni Verma

Department of Radiological Physics, SMS Medical College & Hospitals, Jaipur, India

The event concluded with closing remarks from the organizing committee, expressing gratitude to all dignitaries, speakers, and delegates. The day ended with a high tea, celebrating the successful culmination of an intellectually rich and inspiring scientific gathering.

The Organizing Committee of IDMP 2025 Jaipur expresses its profound gratitude to the International Organization for Medical Physics (IOMP), Asia-Oceania Federation of Organizations for Medical Physics (AFOMP), Indian Women Scientists' Association (IWSA), Association of Medical Physicists of India (AMPI), and the AMPI–Northern Chapter for their kind endorsement, guidance, and support. Their collaboration and encouragement greatly contributed to the success and global visibility of this event.

The International Day of Medical Physics 2025 celebration at Jaipur successfully embodied the IOMP theme **"Medical Physics and Emerging Technologies: Shaping the Next Decade."** The symposium brought together experts, researchers, and young professionals to share insights, strengthen networks, and celebrate the impact of medical physics in shaping the future of healthcare. The event stood as a testament to scientific excellence, teamwork, and the continuous pursuit of innovation for patient-centered care.

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From WC2025: Medical AI in 20XX - Messages to Young Investigators

Kwan Hoong Ng[1], Shingo Baba[2], Hidetaka Arimura[2], Kodama Takumi[2], Jin Yu[2]

[1] Department of Biomedical Imaging, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia
[2] Division of Medical Quantum Science, Department of Health Sciences, Faculty of Medical Sciences, Kyushu University, Fukuoka, Japan

** This is a report of the special symposium “Medical AI in 20XX - Messages to Young Investigators“, held during the IUPESM World Congress on Medical Physics and Biomedical Engineering, Adelaide, Australia, Sept 29 - Oct 4 2025.

Introduction

In 20XX, the era of artificial superhuman intelligence (ASI) will come to the world. ASI allows multiple AI agents to learn, create, and discover independently and without limits. Additionally, multiple AI agents can interact with each other to enhance their capabilities, which can be implemented in quantum computers. In the medical field, highly versatile ASI models will be developed, where AI agents can communicate with each other and find the best ways to learn from all patient data, including electronic medical record data, image data, including pathological images, and multi-omics data. Fine-tuning AI agents for individual tasks enables the total diagnosis of CT, MR, and PET images, as well as the accurate detection and extraction of tumours and risk organs, treatment selection, and prognostic prediction. Two medical physicists and a radiologist will discuss the bright and exciting future of medical AI.

Co-Creation with AI as Medical Professionals and Researchers (Kwan Hoong Ng)

Prof. Ng explores how co-creation with AI, i.e. the collaborative process where humans and machines jointly generate new knowledge, value and solutions, can transform medical science and healthcare. He traces AI’s evolution through cycles of enthusiasm and scepticism, noting that recent advances in generative AI have opened unprecedented possibilities for scientific discovery. In academia, new standards are emerging: transparency in AI use, disclosure in publications, and ethical guidelines from international bodies such as COPE and UNESCO. Responsible AI use now includes fairness audits, ethics education for developers, and careful management of hallucinations where AI “imagines” or fabricates information.

Through practical case studies, Prof. Ng illustrates co-creation in patient engagement, particularly in radiation dose communication. Medical physicists, patients, linguists, and ethicists collaborated to develop an AI-powered chatbot that explains radiation risk in human-centred language. The system learned from feedback, reduced anxiety, and improved trust in demonstrating how AI can enhance empathy and clarity in clinical communication.

Looking forward, the talk envisions Artificial Superhuman Intelligence (ASI)—AI systems with open-ended self-learning and creative capabilities, potentially operating via quantum computing. This new frontier challenges humanity to integrate machine intelligence with human ethics, values and wisdom.

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Prof. Ng concludes with a call to action: co-create a future guided by the anchoring principles of dignity, justice, equity, transparency, and care for all life. The future of AI in medicine must be one of partnership, imagination, and shared purpose in which collaboration occurs where technology resonates with human compassion.

Key messages:

- Co-creation with AI is the future of medical innovation
- Interdisciplinary teams are essential for co-creation with AI
- Co-creation strengthens patient communication and empowerment
- AI will evolve towards Artificial Superhuman Intelligence (ASI)
- Build the future responsibly with human dignity and well-being at the core

Future Radiology AI (Shingo Baba)

Prof. Baba explores the evolving landscape of AI in diagnostic radiology and its implications for the next generation of radiologists.

Since Geoffrey Hinton's 2016 prediction that AI would replace radiologists within five years, AI has made remarkable progress, but has not rendered radiologists obsolete. Instead, radiology faces surging workloads, workforce shortages, and increasing demand for accuracy and efficiency, thus creating a clear need for AI collaboration.

Contemporary radiology AI builds on two breakthroughs—transformers (for language and structured data) and diffusion models (for image generation). These enable high-performance applications across modalities: X-ray, CT, MRI, ultrasound and mammography.

AI is now deployed in cancer detection, image interpretation, segmentation and automated reporting. Global adoption is accelerating, with about 40% of hospitals in North America and 38% in Europe use AI daily. AI systems match or exceed radiologist performance in several diagnostic tasks (e.g., breast cancer, pneumonia, melanoma). Yet challenges persist: technical reliability, interpretability ("black box" issue), legal accountability and ethical dilemmas in data use and equity.

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Some emerging directions include:

- Generative AI and multimodal AI integrate images, clinical notes, and genomics to enhance accuracy and provide personalised diagnostics.
- Multi-agent systems (like M³Builder) automate radiology workflows from data input to report generation.
- Despite fears of replacement, radiologists' roles are evolving toward AI management, oversight, and interdisciplinary consultation.

Skills for future radiologists, including AI literacy, data science competence, ethical awareness, and adaptability, will define the next generation.

Key Message:

AI will not replace radiologists; it will empower them. The future of radiology depends on professionals who can bridge medicine and AI, combining human judgment with intelligent technology to shape ethical, data-driven healthcare.
Together, the two visions portray a continuum: AI-driven precision imaging leading seamlessly into AI-optimised therapy. The future medical professional will need more than technical skill - critical thinking, ethical grounding, and cross-disciplinary literacy in physics, data science and medicine will be essential.

Their shared message to young investigators: AI is not the destination but the catalyst. The challenge is to go beyond what AI can do—to question, integrate, and create the next generation of human-centred intelligent medicine.

Future Radiotherapy AI (Hidetaka Arimura)

Prof. Arimura envisions a future era where Artificial Superhuman Intelligence (ASI)—AI with open-ended, unlimited self-learning and creativity that will transform radiotherapy. In this imagined 20XX scenario, every device in the treatment suite (CT, MR, couch, particle beam system) is managed by intelligent agents interacting under the coordination of a God-like Quantum AI (Lord GLA). ASI systems can plan, optimise, and verify treatments, guided by human oversight and the Three Laws of Robotics.

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Some key innovations include:

- **Quantum Computing:** Enables ultra-fast optimisation and simulation, reducing calculations that once took thousands of years to mere minutes. Quantum-enhanced Monte Carlo (QMC) methods support real-time dose computation and patient QA.
- **MR-based Treatment Planning:** AI derives electron density and stopping power from MR data, eliminating dependence on CT. Tumour-based setup, segmentation and contouring achieve an accuracy of over 90%.
- **Quantum AI-driven Adaptive Radiotherapy:** Real-time tumour tracking with 4D-MR and automatic optimisation allows fully adaptive, precise treatment.
- **Multi-ion and FLASH Therapy:** Compact accelerators deliver mixed-ion (He, C, O, Ne) beams for highly efficient, biologically potent therapy, reducing side effects and fractions. FLASH irradiation achieves ultra-fast, targeted exposure.

Prof. Arimura concludes that quantum AI can manage the full treatment cycle, from imaging and planning to QA and adaptation, in realising real-time, fully automated precision radiotherapy.

For young investigators, Arimura emphasises qualities that ASI cannot replicate, such as Critical thinking and questioning conventions, Cross-disciplinary integration across medicine, physics, and mathematics, and Adaptability and foresight in anticipating the future of healthcare.

His key message is ***"Do forward-looking research today to shape the bright medicine of tomorrow."***

Panel Discussion (including students' participation: Kodama Takumi, Jin Yu)

AI has become one of the most talked-about topics in recent years. With rapid technological advancement, AI is increasingly woven into our daily lives. Generative AI models such as ChatGPT and Copilot, for instance, serve as powerful tools that help beginners explore and understand new fields of knowledge. At present, these systems function like patient teachers or intelligent companions when learning the fundamentals. However, when it comes to advanced or domain-specific research discussions, current AI applications still face significant limitations.

In medicine, particularly in radiation oncology, AI has already demonstrated its practical value. It is now widely used for nodule detection and tumour contouring, substantially reducing the workload of oncologists and medical physicists. Nevertheless, this does not mean that professionals can or should fully depend on AI. While the technology can be remarkably efficient, it is not infallible. We must always apply our professional judgment and perform thorough quality assurance on AI-

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generated results. After all, in clinical practice, even a 1% error could translate into a 100% mistake for an individual patient.

Another key challenge lies in medical data itself. Many transformer-based AI models require massive datasets for training, yet medical data is often limited, fragmented or highly sensitive. This scarcity presents a real obstacle to model performance. Still, this limitation might also inspire innovation. By rethinking model architectures, we could design systems capable of learning effectively even from relatively small datasets. Given the exponential pace of AI development, overcoming this challenge may not be far away.

At the same time, the growing presence of AI is reshaping the professional landscape. In clinical practice, the role of medical physicists is expected to evolve from primarily hands-on technical tasks to the management, validation and quality control of AI systems. In education, there is concern that AI might replace some teaching roles. Yet, in the realm of research, there remains strong reason for optimism: human curiosity, creativity and ethical reasoning continue to give us an edge. Rather than viewing AI as a rival, we can see it as a collaborator, one that challenges us to redefine our expertise, enhance our critical judgment and ultimately, elevate the quality of care we provide.

Takeaway: A New Alliance Between Human Wisdom and Machine Intelligence

These three talks deliver a profound and unifying message: the future of medicine will be shaped not by machines alone, nor by humans alone, but by the creative alliance between human wisdom and machine intelligence. AI, in all its evolving forms: from generative models to quantum-enhanced systems that offer extraordinary capabilities to analyse, predict, and innovate. Yet its true power emerges only when guided by human values, ethical discernment and a sense of shared purpose.

For young investigators, this new era calls for more than technical mastery. It demands the courage to question algorithms, the humility to recognise AI's limitations, and the vision to design technologies that reflect human dignity and compassion. The next generation of medical scientists must not only develop AI systems, but also co-create with them in shaping research, diagnosis and therapy in ways that are transparent, just and sustainable.

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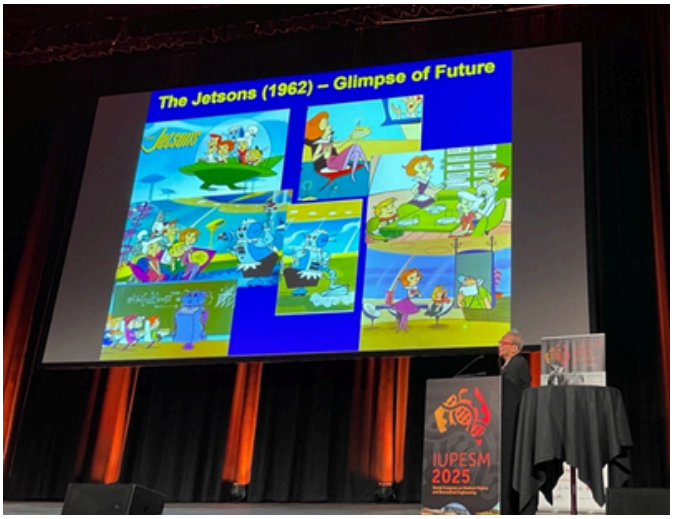
Message for young investigators:

- **Master and question AI** — understand algorithms deeply, but also challenge their assumptions and biases.
- **Co-create with AI** — design systems that reflect human dignity, transparency, and justice.
- Think beyond silos — integrate physics, medicine, data science and ethics to ensure responsible innovation.
- **Be future-ready** — adapt continuously, learn collaboratively and let curiosity guide discovery.

This alliance invites us to reimagine what it means to be a professional and a researcher. It challenges us to integrate disciplines such as physics, medicine, data science, ethics and the humanities to ensure that innovation is both intelligent and humane. In this partnership, AI becomes not a substitute for human insight but a mirror that deepens it, revealing new directions toward understanding life, health and healing.

Ultimately, the measure of our progress will not be how autonomous our machines become, but how deeply human our science remains. By embracing co-creation with AI, we affirm that technology's highest purpose is to amplify our moral imagination and scientific curiosity, helping us build a future of medicine that truly serves humanity and the world we share.



Prof Kwan Hoong Ng spoke about "co-creation with AI as Medical Professionals and Researchers

Panel discussion. From Left: Kodama Takumi, Jin Yu, Kwan Hoong Ng, Shingo Baba, Hidetaka Arimura (Moderator)

Post-Event Reports

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Post-Event Report: Hybrid Summer Workshop on Functional Imaging for Diagnostic & Therapy (18 Aug - 19 Sep 2025)

Oliver Jakel

Host of the Summer Workshop in Medical Physics 2025

The **Hybrid Summer Workshop 2025 on Functional Imaging for Diagnostics and Therapy** was held from **18 August to 19 September 2025,** organised by the **German Cancer Research Center (DKFZ)** in **Heidelberg, Germany**. The programme comprised an online phase from 18 August to 14 September, followed by a hybrid attendance phase in Heidelberg from 17 to 19 September.

In total, **65 participants** joined the live-online phase via **Zoom** and **40 participants** attended the **on-site sessions** in Heidelberg. An additional nine participants, who were unable to attend the Zoom sessions for technical or other reasons, nevertheless completed both course assessments successfully. The workshop was targeted at BSc, MSc and PhD/MD students, as well as young scientists and clinical trainees with backgrounds in Physics, Medical Physics, Radiation Therapy, Radiooncology, Radiology, Medical Engineering and related disciplines.

The event attracted a highly international cohort:

- 49 participants from Germany (31 on site, 18 online)
- 5 from India (online)
- 4 each from Austria (2 on site, 2 online), Italy (1 on site, 3 online), the Philippines (online) and the United Kingdom (2 on site, 2 online)
- 3 from Greece (online)
- 2 each from Canada (1 on site, 1 online), Sweden (1 on site, 1 online), Switzerland (1 on site, 1 online), China, Egypt, Latvia, Mexico, Republic of Korea, Thailand and Ukraine (online)
- 1 each from Australia, Bangladesh, Chile, Czech Republic, El Salvador, Kenya, Luxembourg, Peru, Saudi Arabia and Serbia (online), as well as Portugal and Spain (on site)

The workshop proceeded without major technical issues during the online phase or the live Zoom sessions. Most participants successfully completed the online component by passing the first online test, which qualified them to continue with the live-online or attendance phase in Heidelberg.

During the online phase, participants accessed a series of pre-recorded lectures introducing the **fundamentals of imaging modalities such as CT, MRI and ultrasound.** These lectures were delivered by internationally recognised experts from Germany and Chile. An interactive Zoom session on 9 September 2025 brought all participants together for the first time; they discussed their interests and backgrounds in breakout groups before joining a live lecture by **Dr Susu Yan (Boston, USA)** on **“Low-Field MRI”**.

The Live-Online/Attendance phase commenced on **17 September 2025**. Morning sessions were devoted to lectures on a range of topics (programme details available on the workshop website). From Wednesday to Friday, on-site participants were offered optional **online guided tours of the Ethos Linac and Vida MRI at DKFZ,** as well as the **Heidelberg Ion Beam Therapy Center (HIT).**

Post-Event Report: Hybrid Summer Workshop on Functional Imaging for Diagnostic & Therapy (18 Aug - 19 Sep 2025)

Oliver Jakel

Host of the Summer Workshop in Medical Physics 2025

Online participants joined **virtual visits to the HIT facility** on Wednesday, guided by **Prof. Karger,** and to the **DKFZ machines** on Thursday, guided by **Prof. Jäkel**. Both tours were designed and hosted by DKFZ.

Registration fees enabled the organisers to host a workshop dinner in Heidelberg on 18 September, providing an informal setting for participants to network with peers and interact with experts.

The programme concluded with a **"Meet the Expert"** session, in which on-site and online participants met the faculty in four small groups. This format allowed for in-depth discussion of remaining questions in a more private and focused setting. The experts included course leaders **Dr Vanessa Frank and Dr Martin Niklas**, together with Dr **Sebastian Mueller and Alina Paunoiu**. At the end of the course, only one participant did not pass the final (second) online test, which was required to obtain the final certificate of attendance and supplement.

Feedback from participants indicated high satisfaction with both the academic content and the hybrid format. The evaluation highlighted the importance of continuous support from the organising team and noted the successful integration of online and on-site components in Heidelberg. Selected comments from the post-course survey included:

"I especially liked the atmosphere and learning goals."
"What I liked is that the topics were really interesting and we were able to learn about new trends and development."
"I liked the topic of this year the most. A tour of the HIT facility was very well constructed and explained."
"I liked the degree of depth in subjects that speakers used in the hybrid attendance phase. I would split participants in smaller groups for round table discussions to avoid competitiveness arising among participants."

Additional impressions from the attendance phase are available on the DKFZ website:
https://www.dkfz.de/en/medical-physics-in-radiation-oncology/further-education-and-training/hybrid-summer-workshop-2025

The organisers report that the 2025 edition successfully demonstrated the value of a hybrid format for advanced training in medical physics and are planning a follow-up summer school in 2026.

Post-Event Report: Online Teaching Course on Particle Therapy 2025 (6 Oct - 21 Nov 2025)

Oliver Jakel

Course Leader, Online Teaching Course on Particle Therapy 2025

The **Online Teaching Course on Particle Therapy 2025** was conducted from **6 October to 21 November 2025**, with a total of 38 participants from around the world. The course, accredited for **CPD points in Category 1 of IOMP**, attracted participants from:

- Austria (1)
- Brazil (1)
- Chile (1)
- Germany (11)
- India (4)
- Japan (1)
- Malaysia (1)
- Morocco (1)
- Palestinian Territories (1)
- Peru (1)
- Poland (1)
- Portugal (1)
- Republic of Korea (2)
- Spain (4)
- Sweden (2)
- Thailand (2)
- United Arab Emirates (1)
- United Kingdom (1)
- United States of America (1)

The course ran without major technical issues during the online phase and the live sessions hosted via Zoom. All participants successfully completed the initial online phase by passing the first online test, which qualified them to join the live-online phase held on **17–18 November** and **20–21 November 2025**.

Live-Online Teaching and Case-Based Discussions

The first live-online day (17 November) focused on interactive and case-based learning. Participants presented clinical cases and discussed how they would approach treatment, under the guidance of Prof. Christian Karger and Dr. Semi Harrabi. This format enabled detailed review and comparison of different treatment strategies and was considered a particularly valuable part of the course.

On 18 November, the second live-online session centred on a structured discussion of the pros and cons of FLASH radiation therapy, led by Prof. Oliver Jäkel and Dr. Jeannette Jansen. Participants followed a lively debate on current evidence, technical feasibility and clinical perspectives.

Lectures on 20 November 2025 addressed the clinical indications for particle therapy, along with radiobiology and the stochastic radiation effects of neutrons in particle therapy. On 21 November, the programme continued with clinical indications and provided an overview of current technical standards in particle therapy practice.

Post-Event Report: Online Teaching Course on Particle Therapy 2025 (6 Oct - 21 Nov 2025)

Oliver Jakel

Course Leader, Online Teaching Course on Particle Therapy 2025

Practical Component and Use of matRad

As part of a hybrid internship on the morning of 21 November, all students were given the opportunity to download and work with matRad, an open-source treatment planning system for intensity-modulated photon, proton and carbon ion therapy developed at DKFZ (https://e0404.github.io/matRad/). This practical component allowed participants to apply theoretical concepts in a realistic dose-planning environment.

Although five participants were unable to attend all Zoom sessions during the hybrid attendance phase because of time constraints, poor internet connectivity or other reasons, all participants successfully passed the second online test. In total, 33 participants obtained **54 CPD points in Category 1 of IOMP**.

IT Incident and Course Management

Shortly before the hybrid attendance phase, Heidelberg University's IT infrastructure suffered a cyberattack on 19 November 2025, which rendered the university's Moodle learning platform temporarily unavailable. As a result, access to course materials and the second online test via the original platform was interrupted.

The organising team rapidly migrated all teaching materials (including presentation slides and the matRad software link) and the second mandatory online test to a new Moodle system hosted by DKFZ and supported distribution through the DKFZ cloud service Nextcloud. By 27 November 2025, all participants had access to the new platform and were able to complete the second online test by 15 December 2025. Due to the emergency migration, an anonymous online course survey could not be implemented on the new system.

Participant Feedback and Outcomes

Despite the IT challenges, the sixth edition of the Online Teaching Course on Particle Therapy was successfully completed and again attracted a diverse international audience. Participants reported that the hybrid format facilitated rich interaction with experts and peers and allowed for in-depth discussion of technical and clinical topics in particle therapy.

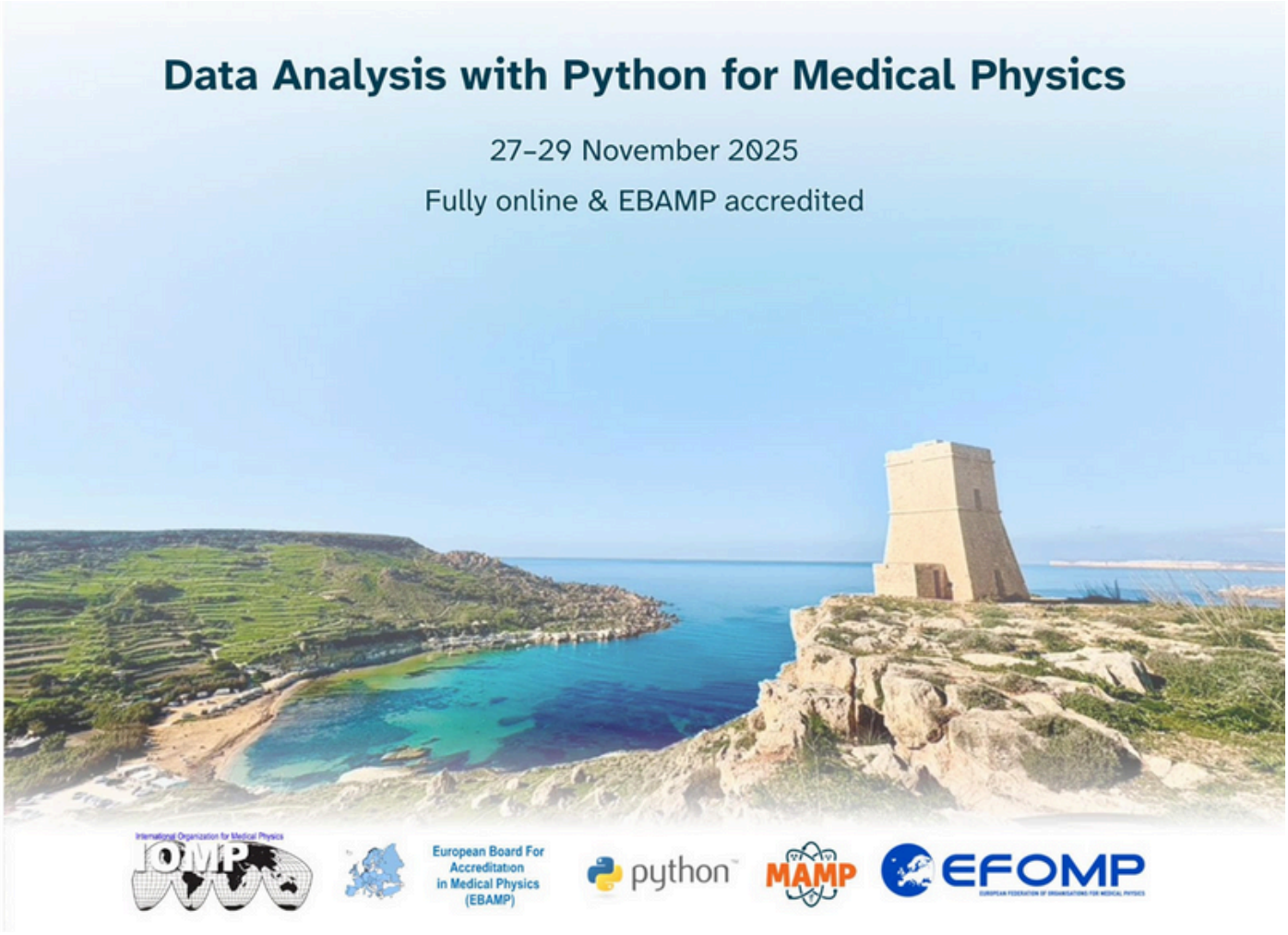
Feedback shared publicly by course participants has been very positive. In a LinkedIn post, Júlio Pereira, a physicist and PhD candidate in Nuclear Technology, described the course as: *"a period of intensive learning, with in-depth discussions and updates on essential topics in particle therapy,"* and expressed confidence that the knowledge gained would be invaluable for his PhD research and future career in proton therapy.

The organisers view the 2025 course as a successful continuation of their long-running virtual training initiative in particle therapy and intend to build on this experience for future editions.

Post-Event Report: 5th Online Course: Data analysis with Python for Medical Physics (27-29 Nov2025)

Eric Pace

President, Principal Course Tutor



The 5th edition of the online course "Data Analysis with Python for Medical Physics" was held online between **27–29 November 202**5, with **40 participants** attending. The next edition of the course is planned for 29-31 October 2026, again online. This will be held in real-time (i.e. no pre-recorded sessions) between 09:00–17:00CET. See https://thepythoncourse.eu for updates.

The course, is delivered under the auspices of the **Malta Association of Medical Physic**s, provided clinical Medical Physicists with a hands-on introduction to programming principles and the tools required to perform data collection and visualisation and to aggregate statistics using the Python language.

The course was **endorsed by EFOMP and IOMP**, and was also accredited by EBAMP at EQF level 6 with a total of **20CPD points,** with an additional 6CPD points for those sitting for and passing the examination.

Post-Event Report: 5th Online Course: Data analysis with Python for Medical Physics (27-29 Nov2025)

Eric Pace

President, Principal Course Tutor

Python was selected for a number of reasons: it is free, obviating lengthy procurement processes and licensing issues and hence provides access to a wider support network; it is capable of performing most of the core tasks that can be done with MATLAB, SPSS and R; it integrates well with any operating system and facilitates automation, and is easily extendible to communicate with databases and to deploy analytical solutions as functioning web sites. Finally, Python is also becoming the reference tool for AI/ML work.

The course spanned **three full days** and introduced the tools necessary for **automated data collection, cleaning**, and **application of aggregate statistics and plotting**. Around 5-6 hours were dedicated to hands-on practice, so that participants may actually write code and gain practical experience with the tools immediately. A number of assistants were available during the hands-on exercises to provide one-on-one help in dedicated breakout rooms.

The course covered an introduction to data types and data structures, navigating an Integrated Development Environment, reading and writing Excel and CSV files, managing tabular data with Pandas, extracting DICOM information using PyDicom, generating reproducible figures using Matplotlib and Seaborn, and an overview of the PyLinac library for automated Radiotherapy image quality QC testing. The assessment consisted of 41 mixed multi-choice and short-answer questions.

The course programme is tabulated below:

Time (CET)	Thursday
08:30–09:00	**Registration**
09:00–10:00	**Introduction to the Python language** Data types, data structures, string manipulation, string formatting
10:00–10:30	**Introduction to the Python language** Walkthrough examples and hands-on session
10:30–11:00	**Break**
11:00–11:45	**The Integrated Development Environment** Navigating the PyCharm IDE & exploring basic features
11:45–12:30	**Structured programming** Control flow, modules, functions, object-oriented programming
12:30–13:30	**Break**
13:30–14:15	**Structured programming** Hands-on problem-solving session
14:15–15:00	**Operating system interaction** Navigating directories and working with path objects
15:00–15:30	**Break**
15:30–16:15	**Files:** Working with CSV, Excel, JSON documents
16:15–17:00	**Files:** Hands-on problem-solving session
17:00	**Close**

Post-Event Report: 5th Online Course: Data analysis with Python for Medical Physics (27-29 Nov2025)

Eric Pace

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Time (CET)	Friday
09:00–09:45	**Panel data 1** Introduction to the Pandas library
09:45–10:30	**Panel data 1** Hands-on problem-solving session
10:30–11:00	**Break**
11:00–11:45	**Panel data 2** Reshaping & concatenating data, grouped statistical operations
11:45–12:30	**Panel data 2** Hands-on problem-solving session
12:30–13:30	**Break**
13:30–14:15	**Combined hands-on session** Time to review and complete previous exercises
14:15–15:30	**Visualisation** Fundamentals of plotting with matplotlib, Pandas and Seaborn
15:30–16:00	**Break**
16:00–17:00	**Visualisation** Hands-on problem-solving session
17:00	**Close**

Time (CET)	Saturday
09:00–09:45	**Regular Expressions** Introduction to the pattern matching language, RegEx
09:45–10:30	**Regular Expressions** Hands-on problem-solving session
10:30–11:00	**Break**
11:00–11:45	**DICOM files** Introduction to the PyDicom library
11:45–12:30	**DICOM files** Hands-on problem-solving session
12:30–13:30	**Break**
13:30–14:15	**Image Quality Control** Introduction to the PyLinac library
14:15–15:00	**Image Quality Control** Hands-on problem-solving session
15:00–15:30	**Break**
15:30–17:00	**Optional assessment** Multiple choice and short answer questions
17:00	**Close**

Post-Event Report: 5th Online Course: Data analysis with Python for Medical Physics (27-29 Nov2025)

Eric Pace
President, Principal Course Tutor

Course tutors and assistants: Samuel Grima, Eric Pace, David Scicluna, and Clarissa Attard

Special thanks go to **Eng. David Scicluna** who was involved in the delivery of three of the talks, and thanks to Ms Clarissa Attard and Mr Samuel Grima who assisted the participants during the hands-on session with any queries and technical difficulties.

Eric Pace was the main tutor for this course and regularly teaches python programming topics to the students of the University of Malta and abroad. Eric holds a B.Sc. (Hons) Physics and Computer Science & AI, and an M.Sc. Medical Physics and is an MPE and RPE in DIR. He is a full time academic with 10 years of clinical work experience. His interests include patient-specific clinical protocol optimisation and automation.

David Scicluna was the second main tutor for this course and has longstanding experience with Python for automation and AI. David holds a B.Eng. (Hons) Electrical and Electronics Engineering, and an M.Sc. ICT, and an M.Sc. Medical Physics and has just completed his traineeship in DIR. His research interests include emerging AI technologies, with particular focus on medical image segmentation, ethical concerns related to AI and generative AI.

Post-Event Report: 20th International Forum of Health Sciences, Kyushu University, Fukuoka, Japan (21 Nov 2025)

Masatoshi Kondo[1], Hidetaka Arimura[1], Kwan Hoong Ng[2]

[1] Department of Health Sciences at Kyushu University, Fukuoka, Japan
[2] Department of Biomedical Imaging, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia

The Department of Health Sciences at Kyushu University, Fukuoka, Japan, hosted the 20th International Forum of Health Sciences, an annual event established in 2006 to promote global collaboration in research and education. Each year, the forum gathers researchers, faculty members, and students from partner institutions to exchange insights and explore emerging developments in the health sciences.

For the 2025 edition, Professor Tokihiro Yamamoto and Emeritus Professor Kwan Hoong Ng were invited as guest speakers, contributing perspectives on career development and the evolving role of artificial intelligence (AI) in medicine.

Highlights from the Scientific Programme

"A Career Across Continents" delivered by **Professor Tokihiro Yamamoto**. Chaired by Professor Hidetaka Arimura

Professor Yamamoto of the University of California, Davis, delivered a reflective lecture titled "My Medical Physics Career Journey from Japan to the United States." He is a graduate of the Department of Radiation Science at Osaka University. He later worked in radiation therapy at Kyoto University Hospital. A pivotal moment in his career occurred during an informal encounter: offering a sightseeing tour in Kyoto to Professor Paul J. Keall. That simple act of hospitality led to a professional connection and eventually to an invitation for a postdoctoral fellowship in the United States. This became the cornerstone of his international career.

His talk illustrated how mentorship, openness to new experiences, and unexpected opportunities can profoundly shape the trajectory of a medical physicist.

Keynote Address: "Co-Creation with AI for Medical Professionals and Researchers" delivered by Emeritus Professor Kwan Hoong Ng Chaired by Professor Masatoshi Kondo

Emeritus Professor Kwan Hoong Ng began by describing the current phase of AI development: marked by unprecedented computational power, huge datasets, and advanced architectures and algorithms. Although AI has gone through cycles of enthusiasm and stagnation, today's progress is deep, sustained and widely revolutionary.

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Prof. Ng traced his early involvement in AI 30 years ago, beginning with the development of expert systems for foetal distress in obstetrics and computer-based cell analysis. Since then, AI has expanded across medicine, science and education, unlocking new forms of human–machine collaboration.

Human–AI Creativity

Traditionally, creativity arises from curiosity, experience, and knowledge. Now, AI can generate text, images and music at levels sometimes indistinguishable from human work. This signals a shift from human-only creativity to hybrid human–AI co-creation, where machines provide speed and pattern recognition, while humans provide interpretation, context and ethical perspective.

Intelligence vs. Wisdom

Prof. Ng emphasised the need to distinguish intelligence from wisdom. AI can analyse vast datasets and generate coherent outputs, but it lacks the lived experience, ethical judgment and moral reasoning that define wisdom. As AI assumes greater roles in decision-support systems, particularly in healthcare, safeguarding human judgment becomes essential.

Implications for Education and Research

Generative AI is now widely used by students, prompting educators to redesign assessments to cultivate critical thinking and ethical reasoning rather than rote output.

In research, AI is evolving from a tool to a collaborator. Platforms such as SciMON, SciMuse and ResearchAgent assist with identifying knowledge gaps, generating hypotheses and navigating scientific literature. Consequently, academic publishing now requires transparency about AI use and adherence to responsible research conduct practices.

A Co-Creation Example: Communicating Radiation Risk

Prof. Ng highlighted a project that improved patient communication about radiation risk through a co-creation model. Medical physicists provided technical accuracy, linguists refined clarity, patients contributed lived experiences, and AI systems adapted explanations based on feedback. The result was a more empathetic and patient-centred communication approach.

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Ethics, Trust and the Road Ahead

The growing concept of "co-intelligence", i.e. human and machine intelligence working in partnership, underscores the importance of ethical design, transparency and accountability. Prof. Ng went on to discuss future directions, including agentic AI and multi-agent ecosystems, and the potential emergence of Artificial General Intelligence (AGI) and ultimately Artificial Superhuman Intelligence (ASI). These systems, possibly accelerated by quantum computing, could revolutionise medical science but also present profound as well as unprecedented ethical challenges.

Prof. Ng concluded that as AI accelerates, human wisdom must deepen. Only with ethical awareness and human-centred values can AI development remain safe, responsible and beneficial.

Student Innovations and Global Experiences

The final segment of the forum featured a student idea competition on generative AI and a presentation on short-term study experiences at Universiti Malaya.

All three award recipients were master's students:

- **Best Practice Award — Ms. Kana Inuzuka**

Proposed using generative AI not merely to obtain answers, but to cultivate the skill of asking insightful and meaningful questions.

- **Good Practice Award — Ms. Alya Ismia Rusdiana**

Suggested a gradual, teacher-guided integration of AI into education across all levels, including foundational education on AI itself.

- **Good Idea Award — Mr. Koki Nanjyo**

Highlighted AI's usefulness in organising complex ideas and enhancing conceptual clarity.

Additionally, **Mr. Takuto Fukano** presented a vibrant photo-rich account of his two-month short-term study programme at Universiti Malaya, reflecting on academic and cultural experiences.

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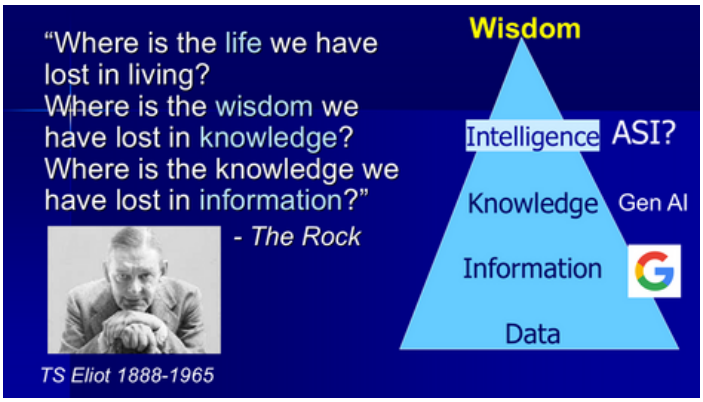
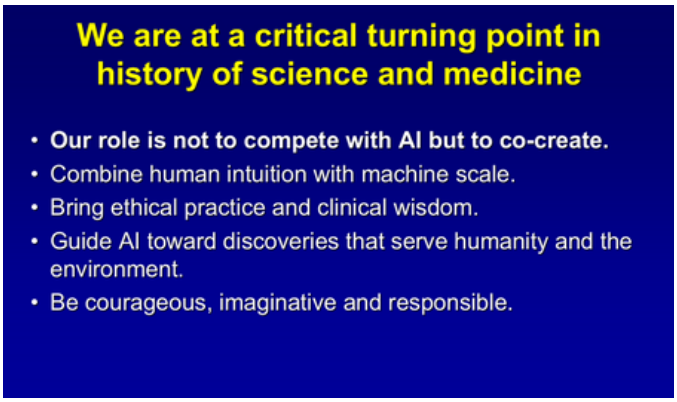
Group photo at the auditorium





Post-Event Report: ASEAN College of Medical Physics (ACOMP) Workshop: From Bits to Qubits – A Journey into Quantum Computing (19 Dec 2025)

Kwan Hoong Ng[1] and Chai Hong Yeong[2]

[1] Department of Biomedical Imaging, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia
[2] School of Medicine, Faculty of Health and Medical Sciences, Taylor's University, Subang Jaya, Malaysia

Introduction

On 19 December 2025, the ASEAN College of Medical Physics (ACOMP) hosted an online workshop titled "From Bits to Qubits – A Journey into Quantum Computing" - bringing quantum technology a step closer to the medical physics community. The session, chaired by Emeritus Professor Dr Kwan Hoong Ng, the director of ACOMP, and Professor Dr Chai Hong Yeong, formed part of ACOMP's ongoing effort to broaden the technical horizon of medical physicists and prepare them for emerging technologies that will shape future healthcare.

About the Speaker

The invited speaker, Dr Yung Szen Yap, is a senior lecturer at Universiti Teknologi Malaysia (UTM) and an associate professor at the University of Osaka, Japan. He has spent the last 16 years working at the cutting edge of quantum technology, with hands-on experience in building quantum computers.

Dr Yap is also the Chief Technology Officer of AQSolotl, a quantum technology spin-off from the Centre for Quantum Technologies (CQT) at the National University of Singapore and Nanyang Technological University, and an active member of MyQI, Malaysia's quantum research community. His unique combination of academic, industrial and regional roles provided participants with a grounded, practice-oriented view of where quantum technology is heading—and why it matters for ASEAN.

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ACOMP and its Mission

In their opening remarks, Professors Ng and Yeong briefly introduced ACOMP, its formation in 2014, and its mission to enhance medical physics education and training across ASEAN. Through structured programmes, online workshops and regional collaborations, ACOMP aims to build capacity, promote professional development, and foster a community of practice among medical physicists in low- and middle-income countries in Southeast Asia and beyond.

This quantum computing workshop is one of a growing series of webinars that expose medical physicists to frontier technologies adjacent to their traditional domains, including AI, data science and now quantum information science.

From Abstract Theory to Working Machines

Quantum computing, long regarded as the preserve of physicists and theorists, is rapidly shifting from laboratory curiosity to technological frontier and reality. Dr. Yap, who has been working in quantum computing since 2009, offered a lucid introduction to the science, the promise, and the challenges of this emerging field.

Dr. Yap began by recounting his own journey through quantum technology, from early work on electron spins to hands-on experience with superconducting quantum computers. His personal journey mirrors the evolution of the field itself: once dominated by abstract theory, quantum computing has now become an experimental and engineering endeavour, combining physics, materials science, electronics and computer science.

He recalled how quantum algorithms (most famously Shor's algorithm for integer factorisation) revealed that quantum machines could outperform classical computers at specific tasks. This insight reshaped modern cryptography and set off a global race to build a practical quantum computer. Recognition of this intellectual breakthrough culminated in the Nobel Prizes in 2022 and 2025 for quantum information science, a milestone that signalled the field's maturity and its significance for the wider scientific community.

Quantum research is no longer confined to traditional scientific superpowers. Dr. Yap highlighted the first ASEAN Quantum Summit, held in Johor, Malaysia, on 10-12 December 2025, as a symbolic and practical step toward building regional capacity in quantum technology. The summit underscored ASEAN's growing ambition to participate meaningfully in this strategic domain, fostering collaboration among researchers, policymakers and industry players.

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Beyond Ones and Zeros: The Quantum Advantage

A core part of the workshop was a clear, accessible explanation of what makes quantum computing fundamentally different:

- Qubits vs bits: While classical bits are either 0 or 1, qubits can exist in superpositions of both states simultaneously.
- Entanglement: When qubits are entangled, the state of one is correlated with the other in ways that have no classical analogue.
- Scaling: In principle, adding qubits increases the available computational space exponentially, enabling certain algorithms to explore complex spaces much more efficiently than classical machines.

Dr Yap stressed that quantum computing is only one branch of a broader quantum technology ecosystem, which also encompasses quantum sensing, quantum communication, quantum metrology and even nascent ideas in quantum biology.

Measuring the World with Quantum Precision

One of the most immediately relevant aspects for medical physicists is quantum sensing and metrology. Many high-precision technologies already rely on quantum effects:

- Atomic clocks, which underpin GPS and global time standards
- Magnetometry and gravity sensing using cold atoms
- Quantum-enhanced measurements for navigation and geophysics

In healthcare, quantum principles are already embedded in established technologies such as NMR and MRI, demonstrating that "quantum" is not just futuristic jargon but a practical foundation for imaging and diagnostics.

Dr Yap described how next-generation quantum sensors could deliver even higher sensitivities, opening new possibilities in imaging, physiology and environmental monitoring that may eventually intersect with medical physics practice.

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Security in a Quantum Era

One of the most immediate implications of quantum computing lies in cybersecurity. Dr. Yap explained how large-scale quantum computers could break widely used encryption schemes such as RSA by efficiently factoring large numbers (at least in principle). This prospect has triggered urgent efforts worldwide to develop quantum-resistant solutions.

Two complementary responses are emerging:

- Post-quantum cryptography: seeks to design classical encryption algorithms that remain secure even against quantum attacks.
- Quantum key distribution (QKD): uses the laws of physics themselves to guarantee secure communication. Any attempt to intercept a quantum key inevitably disturbs the system, revealing the presence of an intruder.

Dr. Yap then highlighted some ongoing quantum communication projects, including regional initiatives discussed at the ASEAN Quantum Summit, 10-12 December 2025 https://quantum2025.org/iyq-event/asean-quantum-summit/, as early steps toward a future quantum-secure information infrastructure.

Building a Quantum Machine

Turning to hardware, Dr. Yap outlined the diverse technological approaches currently being explored. These include NMR and electron spin resonance (ESR) systems, nitrogen-vacancy centres in diamond, optical platforms, and superconducting qubits. Each approach has its strengths and limitations, reflecting different trade-offs between scalability, coherence and control.

He offered a detailed glimpse into the operation of superconducting quantum computers (Figure 1), which rely on microwaves to manipulate qubits cooled to near absolute zero inside dilution refrigerators. These machines resemble towering scientific instruments as much as computers, criss-crossed with control lines and shielded from environmental noise (Figure 2).

Given today's technological constraints, Dr. Yap emphasised the importance of hybrid computing, where classical and quantum processors work together. In this near-term paradigm, quantum devices handle specific sub-tasks while classical computers manage control, optimisation and error correction.

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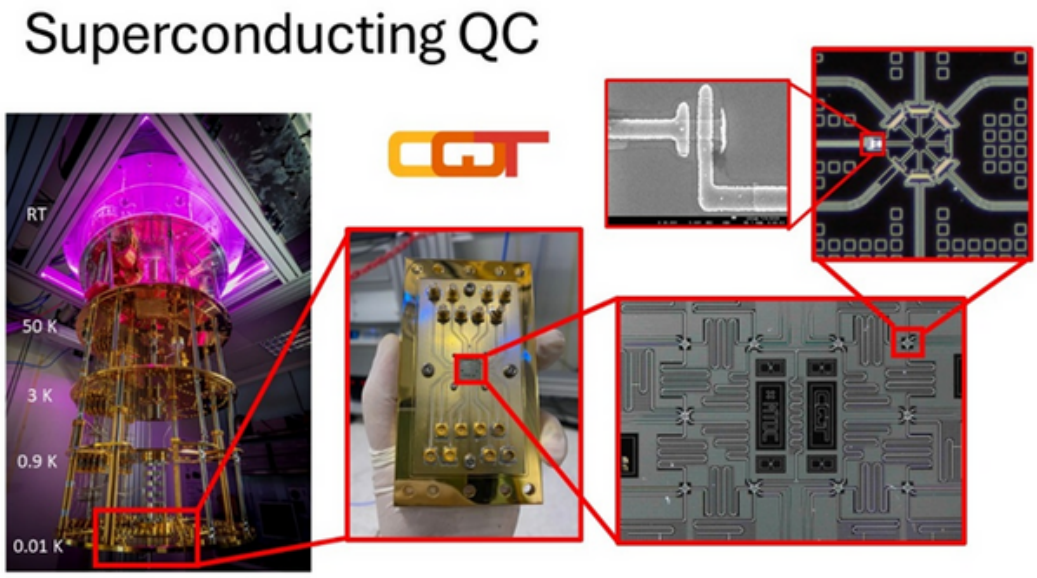

Figure 1. The superconducting quantum processing unit (QPU) or quantum processor. The image shows the dilution refrigerator, the QPU holder, the QPU, the qubits, and the Josephson junctions (Photo credit: Centre for Quantum Technologies, Singapore).

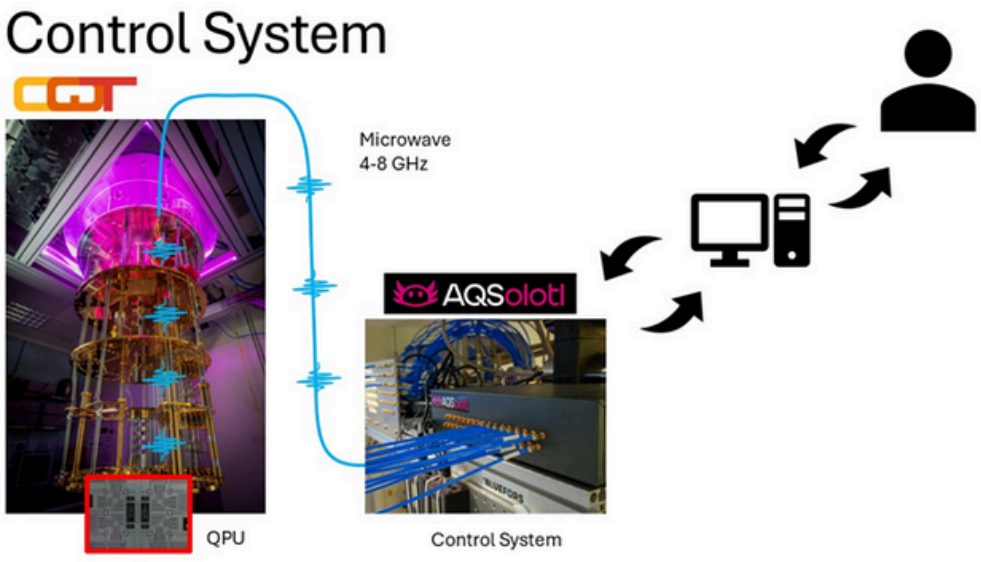

Figure 2. The full system for a superconducting quantum computer. Commands from the users in either high-level language (Python) or low-level language (quantum gates) are compiled into microwave pulses by the control system (Photo credit: Centre for Quantum Technologies and AQSolotl Pte Ltd, Singapore).

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Algorithms, Noise and the Path Ahead

Quantum algorithms remain the intellectual engine of this emerging field. Beyond Shor's algorithm, Dr. Yap discussed quantum simulators and classical algorithms inspired by quantum principles, which are already influencing materials science and chemistry.

Yet there are many formidable challenges. Quantum systems are inherently noisy, and error rates remain a key obstacle to large-scale deployment. Dr. Yap introduced the concept of error mitigation—techniques designed to reduce the impact of errors without requiring fully fault-tolerant machines. Achieving true fault tolerance remains a long-term goal, demanding advances in both hardware and architecture.

Why Should Medical Physicists Care?

For the medical physics community, Dr Yap's talk underscored several important messages:

- Quantum technologies are already embedded in imaging and metrology, and their role will expand.
- Quantum-enhanced sensing and simulation could directly influence future diagnostics, treatment planning, and radiation measurement.
- Understanding the basics of quantum information will help medical physicists engage with emerging tools, evaluate vendor claims, and contribute to cross-disciplinary collaborations.

As with artificial intelligence, early awareness and literacy will position medical physicists to shape how quantum technologies are adopted in healthcare, rather than simply reacting to them.

Looking forward

The workshop concluded with an active question-and-answer session, reflecting strong interest among participants in practical applications, career opportunities and regional collaborations in quantum science.

Dr Yap's central message was that quantum technology is a transformative trajectory, not a single breakthrough. Its impact will unfold over the years, reshaping computation, communication, sensing and measurement. For ASEAN medical physicists, the challenge is twofold: to build capacity and partnerships in this emerging field, and to ensure that quantum technologies, when they reach the hospitals, are implemented safely, ethically and for the benefit of patients.

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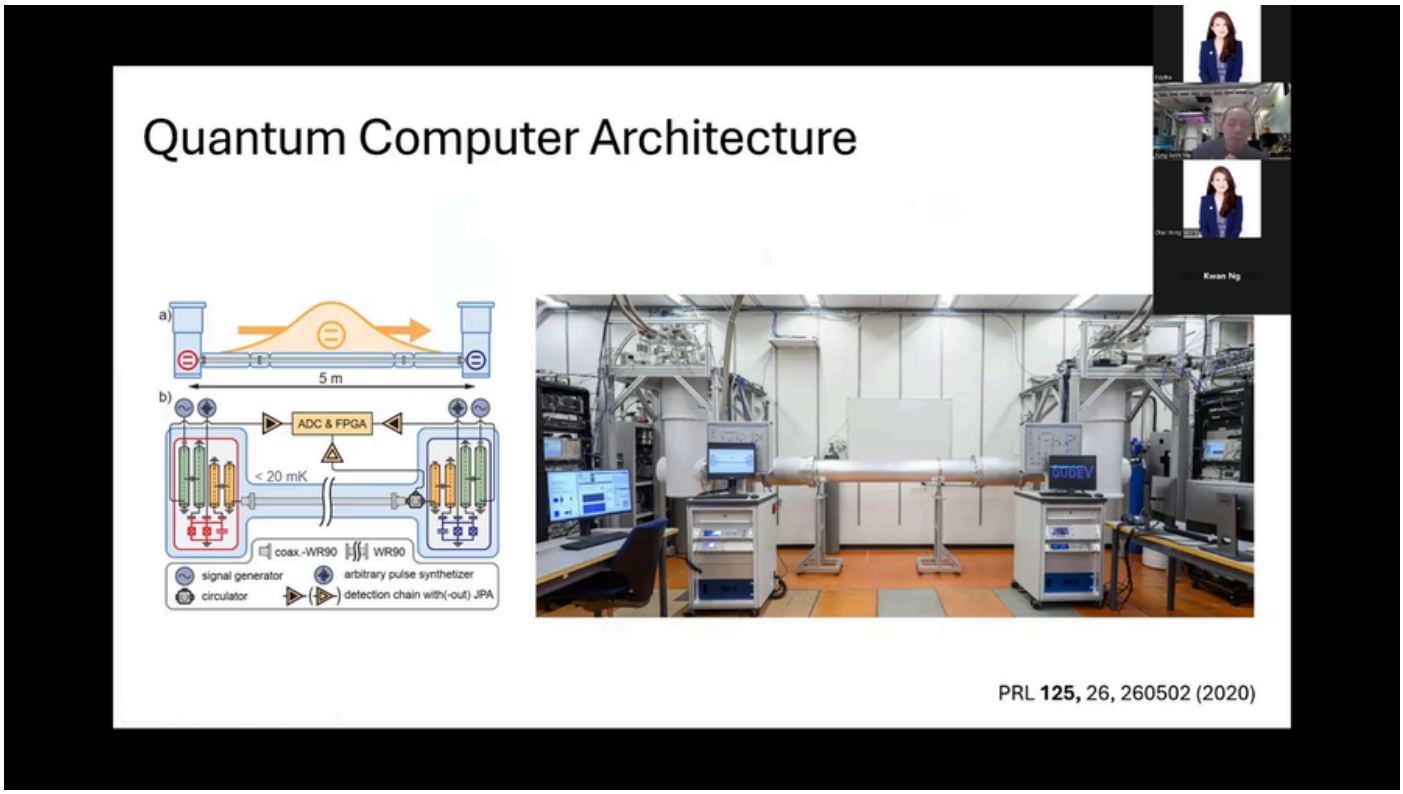
Recording of the Workshop

The full recording of "From Bits to Qubits – A Journey into Quantum Computing" is available at: https://youtu.be/VNVFcwejlZ4

Readers are encouraged to watch the session and follow future ACOMP workshops as the College continues to explore frontier technologies at the intersection of physics, engineering and medicine.

Acknowledgments

The authors would like to express their sincere gratitude to Dr Yung Szen Yap for his inspirational presentation and to all participants for their active engagement throughout the online workshop.



Invited Articles

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Pink Agent: Stories from Breast Cancer Survivors - *A Book Talk on Collaboration, Courage and the Power of Shared Stories*

Kwan Hoong Ng, PhD

Department of Biomedical Imaging, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia

A book talk on ***"Pink Agent: Stories from Breast Cancer Survivors"*** was held at the Law Library, Universiti Malaya, Kuala Lumpur, Malaysia, on December 16, 2025, bringing together academics, healthcare professionals, cancer survivors, caregivers, students, and members of the public for an afternoon of conversation and breast cancer awareness updates. Organised by the Universiti Malaya Library, the session created a space where lived experience, professional insight and community engagement met in meaningful dialogue.

Pink Agent is a collection of stories by eleven Malaysian women who have experienced breast cancer firsthand. Rather than presenting a single account, the book offers a tapestry of voices, each unique and candid, capturing the many realities of diagnosis, treatment, survivorship and life beyond cancer. As one survivor story conveys, "breast cancer does not arrive as a single moment, but unfolds across months and years, reshaping relationships, identity, and one's sense of self."

In his opening remarks, Emeritus Professor Ng welcomed participants and noted that Pink Agent is not only a book of personal stories but also a product of collaboration. Cancer survivors, healthcare professionals, educators, designers and translator worked together to ensure that these narratives were shared with care, respect and authenticity. The session aimed to move beyond awareness slogans and instead engage with the deeper human experiences behind them.

Throughout 2025, the Universiti Malaya Library's Book Talk Series has evolved into more than a literary programme. It has become a platform where books serve as entry points to deeper conversations, lived experiences and shared reflection. Each session brings together authors, scholars, professionals and the university community to engage with ideas that matter beyond the printed page. From personal memoirs and survivor stories to scholarly works grounded in research and heritage, the series celebrates the diversity of voices that shape knowledge and understanding.

These book talks are intentionally designed to be accessible and human-centred, encouraging dialogue across disciplines and fostering empathy, critical thinking and intellectual curiosity. The Pink Agent, the final book talk in 2025, serves as a fitting culmination of the series, reflecting the Library's commitment to fostering inclusive, meaningful and socially responsive engagement within the university community.

Pink Agent: Stories from Breast Cancer Survivors - *A Book Talk on Collaboration, Courage and the Power of Shared Stories*

Kwan Hoong Ng, PhD

Department of Biomedical Imaging, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia

Introducing the book, Emeritus Professor Ng highlighted that Pink Agent speaks to a broad audience. While deeply personal, the stories offer valuable insights for caregivers, educators, and healthcare professionals seeking to understand survivorship beyond clinical outcomes. The book reminds readers that healing is not only physical, but also emotional, social, and relational, often continuing long after treatment has ended.

The collaborative spirit of the book was further reflected in the diversity of its contributors. What better place to have such a talk than the 'Collaborative Learning Area', called 'CoLA', of the law library? Alongside survivor narratives, the book includes perspectives from a dietitian (Dr Tah) and a nursing lecturer (Dr Lai), who offer professional insights based on their expertise and experience in patient care. A survivor's story (Madam Wong) is complemented by the voice of her daughter (Ms Lee), providing a humanistic view of illness, caregiving and resilience. Together, these perspectives illustrate how breast cancer affects not only individuals, but families as well as communities.

Special acknowledgement was given to the designers (Kelly and Hema) of Pink Agent, whose sunflower-themed artwork runs throughout the book. These illustrations symbolise growth, fragility, and renewal, echoing the emotional journeys described in the text.

The role of the translator (Malay version), Madam Tam was also recognised, underscoring the importance of making survivor stories accessible to a wider Malaysian audience and ensuring that language does not become a barrier to empathy.

The main speaker, Professor See, shared the inspiration behind Pink Agent and reflected on the process of gathering and presenting survivor stories. She spoke about the trust involved in listening to deeply personal accounts and the responsibility of honouring each woman's voice. One recurring theme, she noted, was that survivorship is rarely celebratory, as it is often portrayed. As one story suggests, "strength does not always look like optimism; sometimes it looks like endurance, honesty and asking for help."

Following the presentation, a moderated discussion explored the realities of survivorship and the challenges of balancing medical perspectives with emotional truth. Panelists spoke about common misconceptions, including the belief that life simply "returns to normal" after treatment. Several stories in Pink Agent challenge this assumption, revealing instead an ongoing process of adjustment, uncertainty and returning to 'normal' life.

Pink Agent: Stories from Breast Cancer Survivors - *A Book Talk on Collaboration, Courage and the Power of Shared Stories*

Kwan Hoong Ng, PhD

Department of Biomedical Imaging, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia

From left to right: Dr Lee Lee Lai (nursing lecturer), Dr Pei Chien Tah (dietitian), Prof Mee Hong See (breast surgeon), Emeritus Prof Kwan Hoong Ng (medical physicist), Madam Pay Feng Wong (cancer survivor) and Hui Xian Lee (interviewer and writer).

The full team. From left to right: Dr Lee Lee Lai (nursing lecturer), Dr Pei Chien Tah (dietitian), Hui Xian Lee (interviewer and writer), Madam Pay Feng Wong (cancer survivor), Kelly (designer), Prof Mee Hong See (breast surgeon), Emeritus Prof Kwan Hoong Ng (Chair, medical physicist), Madam Lye Suan Tam (translator), Hema (designer).

Pink Agent: Stories from Breast Cancer Survivors - *A Book Talk on Collaboration, Courage and the Power of Shared Stories*

Kwan Hoong Ng, PhD

Department of Biomedical Imaging, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia

Questions also focused on support systems and collaboration. Contributors reflected on the vital roles played by family members, healthcare teams and community networks. Faith, personal belief systems and mindset emerged as sources of strength for some survivors, while others emphasised the importance of being allowed to feel fear, anger or fatigue without judgement.

The audience question-and-answer segment further enriched the session. It further elaborated caregiving, emotional labour and how storytelling can influence more compassionate approaches to care and education. The conversation reinforced the idea that true and sincere listening is itself a form of support and healing.

The principal author (Prof See) with the librarians.

From left to right: Zanaria Saupi Udin, Haniza Adnan, Prof See, Lisdar Abdul Wahid, Manimala Thavandran and Siti Norfateha Azwa Adnan.

In his closing remarks, the Chairperson thanked the speakers, contributors, and audience for their thoughtful engagement. He also thanked the librarians and staff members for their great support and for hosting this talk in a very conducive environment. He noted that Pink Agent reminds us that behind every diagnosis is a human story, shaped by courage, vulnerability, relationships and hope.

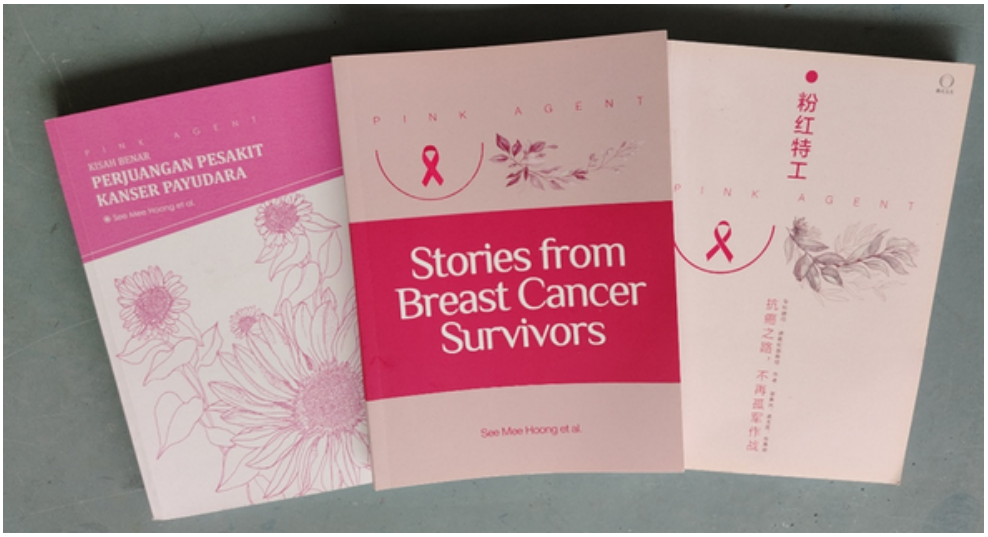
The recording can be viewed here: https://youtube.com/watch?v=crQ9Gi5WYSU&feature=shared

Pink Agent: Stories from Breast Cancer Survivors - *A Book Talk on Collaboration, Courage and the Power of Shared Stories*

Kwan Hoong Ng, PhD

Department of Biomedical Imaging, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia

The three language versions of 'Stories from Breast Cancer Survivors'



Pink Agent: Kisah Benar Perjuangan Pesakit Kanser Payudara (Malay)
See Mee Hoong, Lai Lee Lee, Tah Pei Chien, Lee Hui Xian, Wong Pay Feng
Universiti Malaya Press 2025
ISBN 978-967-488-415-4

Pink Agent: Stories from Breast Cancer Survivors
See Mee Hoong, Lai Lee Lee, Tah Pei Chien, Lee Hui Xian, Wong Pay Feng
Universiti Malaya Press 2023
ISBN: 978-967-488-292-1

粉红特工 (Mandarin)
作者：薛美虹,谢素凤，吴玉莲，陈惠婷
Mockup Media（002672033-U）2021
ISBN: 978-967-26543-0-8

An Interview with Professor Franco Milano: *"Building Medical Physics Capacity Through Education, Quality and International Collaboration"*

Chai Hong Yeong

School of Medicine, Faculty of Health and Medical Sciences, Taylor's University, Malaysia

Introduction

Professor Franco Milano is a retired Professor of Medical Physics at the University of Florence. Over several decades, he has contributed extensively to medical physics education and quality practice, including international initiatives and educational resources. He has been deeply involved in capacity building through international collaborations and committee work focused on education and training. In this interview, he reflects on his professional journey and shares perspectives on how medical physics education and practice can evolve—especially in settings where resources, training opportunities and technology adoption vary widely. The structure and classification of university degrees have changed since the time he completed his studies, so the titles used then do not fully correspond to today's degree system. We will try as much as possible to bring back to today's organization the academic qualifications he obtained many years ago.

Conferral of Laurea Honoris Causa Zhytomyr Polytechnic State University Ukraine 2013

After a four year BSc in Nuclear Physics at the University of Florence he got a two year Msc at University of Pisa in the use of ionizing radiation in medicine, energy production, industry and research. He developed twelve years of clinical and research experience as a hospital Medical Physicist within the university hospital Azienda Ospedaliera Careggi in Florence, contributing to diagnostic imaging, radiotherapy, and radiation protection programs. He then served for four years as Professor at the University of Catania, where he combined academic teaching, research, and clinical collaboration and then he hold the position of Medical Physics Professor at the University of Florence, continuing his work in medical physics, academic leadership, and scientific development till his retirement after which he dedicated himself to teaching at non-Italian universities to this day. During his professional life before retirement he had collaborations with IAEA, ESTRO, SEAFOMP and other international organizations as well as participation in European projects and a NATO project.

An Interview with Professor Franco Milano: *"Building Medical Physics Capacity Through Education, Quality and International Collaboration"*

Chai Hong Yeong

School of Medicine, Faculty of Health and Medical Sciences, Taylor's University, Malaysia

Q1. Professional journey and focus

Interviewer:
Could you briefly share your professional journey—what first drew you to medical physics, and how your work evolved across clinical practice, education, and international collaboration?

Prof Franco Milano:
My personal discovery of physics applied to medicine happened when I was choosing a topic for my thesis. My advisor proposed an experimental project that could also have applications in medical practice. The work lasted about three years and involved digitising a television signal. For my advisor, this meant automating the study of traces in a bubble chamber that revealed nuclear interactions. In medicine, however, it opened the possibility of real-time image acquisition from an image intensifier, using the television signal to determine the spatial position of radioactive sources. This, in turn, allowed calculation of dose distributions in gynaecological radiotherapy and accurate timing of treatments according to the medical prescription.

After graduating, I received a CNR fellowship in biotechnology and became involved in clinical trials between European universities, which naturally led to active international collaborations.

I was later invited to join the teaching staff of the first ESTRO courses, and I also began numerous collaborations with the IAEA—activities that continued up to the year of my retirement from the University of Florence. In parallel, for about 25 years I participated in European projects as project leader and/or collaborator, many of which focused on the education and training of medical physicists.

Workshop on Medical Physics ICTP 1983

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Chai Hong Yeong

School of Medicine, Faculty of Health and Medical Sciences, Taylor's University, Malaysia

Q2. The "why": education as a multiplier

Interviewer:
Many colleagues describe education as the highest-impact investment in medical physics. What motivates you personally to devote sustained effort to education and training activities?

Prof Franco Milano:
I fully agree that medical physics education is critically important. Personally, I consider it as important as medical physics research, because education impacts all medical physicists and therefore influences all their actions. I find great satisfaction in educating both students and medical physicists. Teaching often establishes a kind of "friendship" that is not easily forgotten—by either the instructor or the students—especially when classes are held in person and you truly feel part of a medical physics community.

There are, unfortunately, exceptions. Sometimes the instructor "uses" educational opportunities primarily for personal gain, and I prefer not to name names. There are medical physicists and even engineers who present what they do as education, but the real objective is self-promotion. For me, genuine education is about serving learners and the profession, not serving oneself.

Conferral of Laurea Honoris Causa Riga Technical University Latvia 2012

European Conference on Post-graduate Education in Medical Radiation Physics Budapest 1994

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Q3. Identifying what learners truly need

Interviewer:
When designing a course or programme, how do you identify the most important topics—and distinguish between what is interesting versus what is essential for safe, high-quality clinical practice?

Prof Franco Milano:
If I am teaching a regular course at an Italian university, I adhere very closely to the content specified for that course. However, if the course or seminar is international—such as a college, a master's course, a summer school or a programme aimed at PhD candidates—I try to demonstrate how teaching should be done, in my opinion. It becomes a kind of train-the-trainer approach.

I also look for topics that are still in the pre-clinical application phase. For example, some time ago I enjoyed discussing phase-contrast imaging when it had not yet entered routine diagnostic practice. Another important aspect is adapting to the local context: I try to consider the local situation, the origin of the audience, and even cultural and religious factors. If I am lecturing to medical physicists from India or Africa, my style will be different, while always aiming for what is best for that audience. This is more difficult when the audience is very diverse, as in a college or summer school, so the approach must be more general but still learner-centred. When lessons are in person, there is often strong empathy and a real sense of symbiosis between the teacher and the colleagues who are listening.

Q4. Bridging theory and practice

Interviewer:
Medical physics requires both deep theoretical foundations and highly practical competencies. From your perspective, what is the best balance between classroom learning, structured clinical training, and supervised professional development?

Prof Franco Milano:
I would answer this very briefly. With the advent of data science, it is essential that both theoretical foundations and practical skills are explored as deeply as possible and in every useful form. It is a matter of ethics. We cannot afford superficiality in either domain if we want to serve patients properly.

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Q5. Quality assurance and patient safety

Interviewer:
In your experience, which quality and safety practices make the most tangible difference in patient outcomes—especially in environments with limited equipment, limited staffing, or limited QA infrastructure?

Prof Franco Milano:
Again, a very concise answer. The behaviour and decisions of the medical physicist must always be aimed at optimising patient outcomes. Everything else—equipment, protocols, infrastructure—serves that goal. For this reason, I would propose that IOMP develop specific guidelines for what I would call "rural medical physics", to support colleagues working in under-resourced environments and help them prioritise the most impactful QA and safety practices.

Q6. The human side of training and international programmes

Interviewer:
In international education programmes, participants often arrive carrying significant responsibilities—clinical duties at home, financial pressures, family commitments. Is there a story or experience you remember that captures the resilience and motivation of medical physics trainees?

Prof Franco Milano:
It may sound strange, but I have vivid memories of almost every international experience I have had. I may have forgotten some of the names, but I retain strong visual memories of many people and situations. Each experience has enriched me as a human being, so it is hard to select one example that uniquely captures the resilience and motivation of medical physics trainees.

In general, however, I would say this: if the intangible motivations disappear—whether it is your first experience or your ten-thousandth—then it is time to step away. Personally, I only stopped travelling because of COVID, and as soon as it was possible I resumed my activities, initially online and now gradually in person again, despite the rising cost of air travel. I continue with the same motivation and desire to contribute.

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Q7. AI and modern tools: competence, governance, and QA

Interviewer:
AI and automation are now entering routine workflows across imaging and radiotherapy. What competencies do you think medical physicists must develop to use these tools responsibly—and what should QA look like for AI-enabled systems?

Prof Franco Milano:
Medical physicists must develop data science skills while maintaining, and indeed strengthening, their traditional competencies. Those traditional skills must be brought to the highest possible level of quality. In many cases, quality controls on equipment are already implemented by manufacturers, and in the future the role of the medical physicist in QA may shift more towards certifying the doses actually absorbed by patients and verifying the overall safety and integrity of AI-enabled workflows.

So, beyond understanding the algorithms, medical physicists will need to be able to ask the right questions about data quality, bias, validation and clinical relevance. Data science is an addition, not a replacement, for our core professional identity.

Q8. Global harmonisation: standards, accreditation, certification

Interviewer:
We often discuss harmonising education standards and professional recognition internationally. From your committee and professional experience, what are the most realistic steps to strengthen education, accreditation and certification across regions—without imposing a one-size-fits-all model?

Prof Franco Milano:
IIt is very difficult, perhaps impossible, to fully harmonise educational standards and professional recognition on a global scale. I would be satisfied if we could reduce the differences between national organisations within regions. Regionally, I would try to establish mentoring systems connecting more advanced organisations with less advanced ones. This could involve online consultations, joint staff training seminars and occasional in-person visits.

From a structural perspective, I sometimes think that IOMP could be organised more like the AAPM, with chapters, clearer processes for elections, term limits and continuous turnover in leadership. My "dream" is an IOMP that combines strong global coordination with genuine grassroots participation and renewal.

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Q9. Educational resources and sustainability

Interviewer:
Developing and sustaining educational resources—courses, reference materials, e-learning tools—requires long-term commitment. What do you see as the most effective model to keep resources current, accessible, and relevant for both high-resource and low-resource settings?

Prof Franco Milano:
For the development and sustainability of educational resources, I would again look to the AAPM as a useful model. It has created a substantial body of material that is accessible online, and this has clear value for the community.

One weakness, however, is that most of the AAPM material focuses on professional aspects rather than basic theoretical training. To my knowledge, there is only one IAEA publication that addresses that foundational theory in a systematic way. Perhaps the IAEA could be asked to provide financial support for purchasing core textbooks for university programmes that train medical physicists. In my view, wherever possible, universities should lead in training medical physicists, with hospitals providing support for the clinical and professional components of that training.

Q10. Looking forward: what would you build next?

Interviewer:
If you could design the "next generation" medical physics education platform or programme, what would it include—and what would you change compared with traditional models?

Prof Franco Milano:
For the new generation of medical physicists, I would emphasise a few key words: ethics, sustainable innovation and risk management. I would base any future educational project on these concepts.

In addition, I would strengthen the teaching of all forms of communication—communication with patients, with colleagues, with other healthcare professionals, and with the public. Communication is not a "soft" add-on; it is a core competency that influences how our scientific and technical work actually translates into patient care and public trust.

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Closing message

Interviewer:
What message would you like to leave with the global medical physics community—particularly early-career physicists and trainees who want to contribute beyond their own department?

Prof Franco Milano:
A simple and ambitious message: ***innovate, always.***

Rapid-fire Questions:

- ***One habit that makes a better clinical physicist:***
  Consider your patients as you would your own mother or father.
- ***One QA principle you would never compromise:***
  Continuous improvement.
- ***A book/resource you often recommend:***
  The next good book you have not yet read—because you must always keep reading.
- ***A misconception about medical physics you would like to correct:***
  That medical physicists are never wrong.
- ***The most important skill for the next decade:***
  Innovation.

Calendar of Events (Jan - Jun 2026)

SEAAPM 2026 Annual Meeting
When: Feb 5-7, 2026
Where: Renaissance Raleigh North Hills Hotel, North Carolina, USA
Website: https://seaapm.regfox.com/seaapm-2026-annual-meeting

2026 SWAAPM Annual Meeting
When: Feb 5-7, 2026
Where: Great Wolf Lodge, Texas, USA
Website: https://site.pheedloop.com/event/SWAAPM2026/home/

Biophysical Society 70th Annual Meeting
When: Feb 21-25, 2026
Where: Moscone Center, San Francisco, USA
Website: https://www.biophysics.org/2026meeting

21st European Molecular Imaging Meeting
When: Mar 24-27, 2026
Where: Cankarjev Dom, Ljubljana, Slovenia
Website: https://e-smi.eu/meetings/emim/2026-ljubljana/

2026 RSS Scientific Meeting
When: Mar 19-21, 2026
Where: Caribe Royale Orlando, Florida, USA
Website: https://therss.org/events/2026-rss-scientific-meeting

AIMBE 2026 Annual Event
When: Apr 11-13, 2026
Where: Renaissance Arlington, Virginia, USA
Website: https:/annualevent.aimbe.org/

2026 SBI Breast Imaging Symposium
When: Apr 16-19, 2026
Where: Seattle Convention Centre, Washington, USA
Website: https://www.sbi-online.org/events/2026-sbi-breast-imaging-symposium

ACR 2026
When: May 2-6, 2026
Where: Washington, DC, USA
Website: https://www.acr.org/Education-and-CME/Calendar/Annual-Meeting

ISMRM & ISMRT Annual Meeting & Exhibition
When: May 9-14, 2026
Where: Cape Town, South Africa
Website: https://www.ismrm.org/26m/

ESTRO 2026
When: May 15-19, 2026
Where: Stockholm, Sweden
Website: https://www.estro.org/Congresses/ESTRO-2026

58th National Conference on Radiation Control
When: May 18-21, 2026
Where Westin Chicago/Lombard, USA
Website: https://crcpd.org/abstract-2026-confirmation /

AAMD 51st Annual Meeting
When: Jun 7-10, 2026
Where: Orlando, Florida, USA
Website: https://www.medicaldosimetry.org/meetings/aamd-51st-annual-meeting

SIIM26 Annual Meeting + InformaticsTECH
When: June 10-12, 2026
Where Pittsburgh, Pennsylvania, USA
Website: https://annualmeeting.siim.org

PTCOG 64
When: Jun 8-13, 2026
Where: Deauville, Normandy, France
Website: https://ptcog64.org/

International Organization for Medical Physics

IOMP

HAPPY NEWYEAR 2026