



1979

Godfrey Hounsfield first commercially available CT scanner. He co-invented the technology with **Allan McLeod Cormack**. Named after Hounsfield, the HU is a measure of radiodensity used in CT. Hounsfield and Cormack received the 1979 Nobel Prize in Physiology or Medicine.



1950s

Progress in Radiotherapy. **Harold Johns** invented the ^{60}Co teletherapy unit in 1951. In 1953 the first clinical linear accelerator for cancer treatment was installed. This pioneering work helped establish medical physics as a unique field in healthcare.



1895

Röntgen discovered X-rays in 1895 that revolutionized medical diagnostics. In recognition of his work, Röntgen was awarded the first Nobel Prize in Physics in 1901.

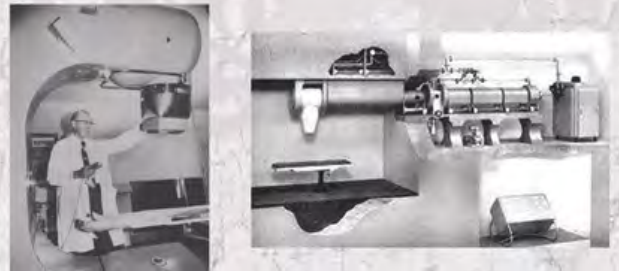
1980

John Mallard and his team obtained the first clinically useful image of a patient's internal tissues using the full-body MRI scanner they built. The first MRI images were produced in 1973 by **Paul Lauterbur** while MRI techniques were refined by **Peter Mansfield**. Lauterbur and Mansfield received the 2003 Nobel Prize in Physiology or Medicine.



1952

Franklin's work on X-ray diffraction helped to reveal the structure of DNA, which paved the way for the development of medical imaging technologies such as CT scans and MRI.



1903

Marie Curie and **Henry Becquerel's** pioneering research on radioactivity laid the foundation for the field of medical physics and helped to establish radiation therapy as a treatment for cancer.



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Editorial

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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"Detailed reports on IDMP 2023 global celebration activities are compiled in this issue, and I extend my gratitude to all members who submitted reports along with beautiful pictures"

Dear Colleagues,

I am thrilled to present to you the December 2023 issue of eMPW, marking Volume 39, No. 2 of our esteemed publication.

Fresh from the recently concluded 25th International Conference on Medical Physics (ICMP) 2023 in Mumbai, India, many of our colleagues have returned, having witnessed the tremendous success of the conference. With over 1300 delegates from 33 countries in attendance, a detailed report of the conference is included in this issue of eMPW.

Having served for 18 months since June 2022, the current IOMP ExCom (2022-2025) has exhibited remarkable commitment and dedication to fortifying global collaborations, elevating the medical physics profession to new heights. In this edition of eMPW, each Committee Chair will present their activities and achievements over the past six months.

The celebration of this year's International Day of Medical Physics (IDMP) resonated globally among medical physicists. Under the theme "IOMP's 60th Anniversary: Standing on the Shoulders of Giants," IOMP organized a global contest for the IDMP 2023 poster design, receiving an overwhelming response. Congratulations to **Enikő Koszta and Szilvia Gazdag-Hegyesi** from Budapest, Hungary, for their outstanding poster design, featured as the cover of this eMPW issue (special thanks to Joerg Lehmann for the cover design). IOMP also hosted a global webinar on IDMP, inviting three past presidents of IOMP (**Professors Azam Niroomand-Rad, Colin G Orton, and Fridtjof Nüsslin**) to share their personal memories and thoughts on the future of medical physics. Detailed reports on IDMP 2023 global celebration activities are compiled in this issue, and I extend my gratitude to all members who submitted reports along with beautiful pictures.

Editorial

Chai Hong Yeong, PhD

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

A comprehensive report on the **II Colombian Congress of Medical Physics**, endorsed by IOMP, is also featured in this issue. We express our thanks to the Colombian Association of Medical Physics for the report and congratulate them on the success of the congress.

Additionally, this issue includes two invited articles by Gisella Gennaro (on **“Quality Controls in Digital Breast Tomosynthesis”**) and J. Fragoso-Negrín, A. Vergara-Gil, L. Santoro, E. Deshayes, M. Bardiès (on **“OpenDose3D, an Open-Source Software for Advancing Clinical Molecular Radiotherapy Dosimetry”**) for the benefit of our readers. We hope you will find these articles beneficial and inspiring.

Lastly, I extend my gratitude to all IOMP ExCom members, MPWB committee members, Editorial Board members, and authors for their invaluable contributions in making this publication a success.

As the new year approaches, I wish each and every one of you a very happy and successful year ahead!



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President's Message

John Damilakis, PhD

President of IOMP



JOHN DAMILAKIS

President, IOMP

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"Over the past six months, the IOMP has experienced a period of remarkable productivity. This report highlights a few key accomplishments."

Over the past six months, the IOMP has experienced a period of remarkable productivity. This report highlights a few key accomplishments. Our revamped website, which debuted a few weeks ago, is a testament to IOMP's dedication to embracing modern technology and adapting to the changing demands of our audience. Its user-friendly interface ensures smooth navigation, allowing visitors to easily access and find the desired information. We are excited to invite you to visit the new IOMP website at www.iomp.org and explore its features. Your feedback is incredibly valuable to us, as it guides our ongoing efforts to refine our online presence to better serve the needs and interests of our members.

The International Day of Medical Physics (IDMP), celebrated every year on November 7th, is a significant event that highlights the vital contributions of medical physicists to healthcare. This year, we organized a special webinar titled "[The 60th Anniversary of IOMP – Personal Memories and Some Thoughts on the Future of Medical Physics.](#)" Speakers for the event included Azam Niroomand-Rad, Colin G. Orton, and Fridtjof Nüsslin, whose remarkable contributions and leadership have profoundly influenced the field of Medical Physics. This webinar was not just an educational event; it was also a celebration marking the 60th anniversary of the IOMP. It offered a unique opportunity to reflect on the organization's history, the personal experiences of its influential figures, and to ponder the future trajectory of Medical Physics. You can view the recording on our [YouTube Channel](#).

On behalf of the organizing committee, I extend our sincere appreciation for your enthusiastic participation in the [International Conference on Medical Physics \(ICMP-2023\)](#), held from December 6th to 9th in Mumbai, India. The conference was a success, drawing approximately 1400 colleagues from around the world. Your active engagement created an environment of rich learning and networking. It was indeed a rewarding experience for everyone involved, and we are grateful for your contributions.

President's Message

John Damilakis, PhD

President of IOMP

We also acknowledge the challenges encountered, particularly the visa issues that unfortunately prevented some of our colleagues from attending the Conference. These situations have offered valuable lessons and highlighted areas needing improvement for future conferences. We highly value your feedback and insights, as they are integral to the continuous improvement of our conferences. We encourage you to share any thoughts or suggestions you may have, as they will be instrumental in shaping the success of future events.

IOMP accreditation is recognized as a mark of quality, ensuring that these events adhere to the highest benchmarks in educational excellence. During the last months, the IOMP Accreditation Board received several applications for accreditation of medical physics events. These activities reflect the IOMP's ongoing commitment to endorsing and promoting high-quality educational programs that contribute to the advancement and dissemination of knowledge in medical physics. For more information on IOMP's accreditation process and standards, as well as accredited programs, please visit the '[accreditation](#)' section of IOMP's website.

IOMP plays a pivotal role in enhancing the quality of medical physics globally by endorsing and sponsoring educational and training events organized by its national member organizations. These initiatives are instrumental in ensuring that medical physicists are well-trained and updated, which is crucial for the safe and accurate treatment of patients. In recent months, IOMP has sponsored and endorsed several significant events. I have kept you updated on these events through my messages in IOMP's e-newsletter. These endorsements by the IOMP highlight its commitment to advancing the field of medical physics through continuous education and professional development, thereby contributing to the enhancement of patient care worldwide.

To support and empower medical physicists in low- and middle-income countries, the IOMP recently issued a call for expressions of interest to receive free copies of medical physics books. This initiative has received an enthusiastic response, with over 300 applications from interested colleagues. Currently, the publication committee is engaged in the selection process to determine the recipients of these books. This step is crucial in ensuring that the resources are distributed effectively and reach those who can benefit most from them. This initiative not only aids in the dissemination of knowledge but also aligns with the IOMP's commitment to advancing the field of medical physics globally, especially in regions where access to such resources may be limited.

I would like to express my sincere gratitude to all of you. This year, our collective efforts have led to exceptional progress. As we look ahead, let's continue to combine our strengths and aspirations for the benefit of our profession.

Wishing you a **Happy New Year 2024 and a joyful holiday season!**

Vice President's Message

Eva Bezak, PhD

Vice President of IOMP



EVA BEZAK

Vice President, IOMP

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"IOMP had a significant presence at ICMP 2023 in Mumbai, participating in various sessions, symposia, and both AFOMP and IOMP meetings"

Dear Colleagues,

I am pleased to present the Vice President's (VP) report covering the period from July to December 2023, highlighting key activities and achievements from the IOMP:

1. Bylaws amendments:

The rules committee, chaired by the VP, has considered and recommended a number of changes to IOMP bylaws that have been endorsed by the ExCom. These changes have been submitted for approval and approved by the Council.

2. AAPM annual meeting participation:

President, SC chair and the VP are presented at the AAPM 2023 annual meeting in Houston from 23 July in an IOMP/AAPM symposium on AI in medical physics. IOMP also had a booth and WC2025 was also advertised.

3. The Science Diplomacy paper:

The paper was published in the Health and Technology Journal: <https://doi.org/10.1007/s12553-023-00756-0>. It is a nice paper on and by an international collaboration: "Science diplomacy in medical physics—an international perspective"; by Eva Bezak, Cari Borrás, Francis Hasford, Nupur Karmaker, Angela Keyser, Magdalena Stoeva, Christoph Trauernicht, Chai Hong Yeong & Loredana G. Marcu.

4. IAEA meeting attendance:

VP attended and represented IOMP at the IAEA Technical Meeting on Advisory Services for Radiation Protection and Safety for Medical Exposures Virtual Event, 4-6 September 2023 (Ref. No.: EVT190572).

Vice President's Message

Eva Bezak, PhD

Vice President of IOMP

5. WHO Regional Committee for the Western Pacific Session:

VP participated in the 74th Session of the WHO Regional Committee for the Western Pacific (16-20 Oct 2023), online. Many themes were still around Covid but more emphasis emerging on sustainable healthcare and climate resilient/low carbon health systems. Please note that 2024-2033 has been declared by the United Nations as: International Decade of Sciences for Sustainable Development, 2024–2033.

6. Jamaican Medical Physics Conference:

IOMP actively participated in the Jamaican Medical Physics Conference, themed "Quality Assurance in Radiation Medicine for Sustainable Healthcare." The VP presented on behalf of IOMP, discussing the latest IOMP workforce survey results and contributing valuable insights to the conference.

7. MOU between IOMP School and ICTP:

Discussions are underway to establish a Memorandum of Understanding (MOU) with ICTP, Italy, for the IOMP School training workshop on the topic of the Intensity Modulated Radiation Therapy, with practical hands-on training, if possible. While the MOU is still in the preparation phase, progress is being made to develop radiation oncology workshop program that would serve the training requirements in LMI countries.

8. ICMP 2023:

IOMP had a significant presence at ICMP 2023 in Mumbai, participating in various sessions, symposia, and both AFOMP and IOMP meetings. The IOMP had an opening plenary session, involving the VP, presenting on current trends in spatially fractionated radiation therapy. The IOMP workforce survey was also presented, generating considerable interest among attendees.

9. ICRP Task Group (128) Involvement:

The IOMP Vice President has been appointed as an observer on the recently established ICRP Task Group (128) focusing on "Individualisation and Stratification in Radiological Protection: Implications and Areas of Application." More details about the task group can be found here: https://icrp.org/icrp_group.asp?id=204

10. Joint IOMP/AAPM Shielding Symposium:

IOMP played a key role in proposing a shielding symposium for a joint IOMP/AAPM session scheduled for AAPM2024. We are pleased to report that the proposal has been accepted by AAPM, marking another successful collaboration.

Vice President's Message

Eva Bezak, PhD

Vice President of IOMP

11. IMPCB BOD Meeting:

The Vice President participated in the International Medical Physics Certification Board (IMPCB) Board of Directors (BOD) meeting, engaging in constructive discussions and contributing to the board's initiatives.

12. IAEA Radiology Training in Adelaide:

Professor Eva Bezak is set to host the IAEA radiology training for Oceania countries in Adelaide, South Australia, from February 12-16, 2024. The training will focus on CT, Mammography, and X-rays, fostering collaboration and knowledge exchange.

13. World Congress on Medical Physics (WC2025):

Significant progress has been made in preparations for WC2025. A new website has been launched (<https://wc2025.org/>), and an MOU with IUPESM/IOMP/IFMBE is being signed. The MOU has undergone modernization. The exhibition and sponsorship prospectus have been developed and will be launched in near future. Abstract submissions for WC2025 are scheduled to open in September 2024.

We look forward to building on these achievements and advancing our mission in the coming months. Thank you for your continued support.

IOMP Past President and IUPESM President's Report

Madan Rehani, PhD

Past President of IOMP and President of IUPESM



MADAN REHANI

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"Strengthening expertise and creating awareness among all stakeholders is important"

Professor Rehani participated in the **7th International Symposium on System of Radiological Protection of the International Commission on Radiological Protection (ICRP)** held in Tokyo, Japan, on 7-9 November 2023 and in the meeting of Committee 3 of ICRP (Radiation Protection in Medicine) on 10-11 Nov as a representative of IOMP. He was a regular member of ICRP for 24 years (1997-2021) and was then made an Emeritus member for life.

Dr. Rehani was invited to speak at the **Symposium on An Unprecedented Era with Patients Receiving High (>100 mSv) Cumulative Doses: Collective Actions Needed**. He mentioned that while millions of patients benefit from medical imaging every single day, the studies published in the last 3 years have brought new results never before known. They have opened a new era wherein millions of patients are receiving cumulative doses in three digits of mGy of organ doses or three digits of mSv of cumulative effective dose (CED) every year, only through recurrent computed tomography (CT) exams. One out of 125 patients can be exposed to an effective dose >50 mSv from a single CT exam and 3 out of 10,000 patients undergoing CT exams could potentially receive cumulative effective doses >100 mSv in a single day.

Recurrent imaging with CT, fluoroscopically guided interventions (FGI), and hybrid imaging modalities such as positron emission tomography/computed tomography (PET/CT) are more prevalent today than ever before. Data is currently available on the percentage of patients with high doses (>100 mSv) undergoing FGI and PET/CT. Furthermore, patients with diseases that do not shorten life expectancy significantly are being exposed to high doses of radiation with the potential for radiation effects to manifest during life.

Strengthening expertise and creating awareness among all stakeholders is important. Moreover, there is a need to learn from the experience of institutions that have made full use of the best approaches of justification and optimization currently available and still have a large number of patients with high doses. That brings us to the limiting point of current approaches and recommendations.

IOMP Past President and IUPESM President's Report

Madan Rehani, PhD

Past President of IOMP and President of IUPESM

Given the opportunity by the call for suggestions for the new ICRP recommendations, there is a need to think critically to go beyond the implementation of recommendations, despite the fact that in large parts of the world, there is a need for implementation. Thus, both aspects are important. The message was that we are back to 1928 when ICRP was created with many radiation workers getting skin injuries and now with so many patients facing stochastic risks. The minutes of Committee 3 are publicly made available at >>>. The proceedings of the Symposium shall be published by ICRP in the usual manner as the Proceeding series of the Annals of ICRP. Please look for these publications on the ICRP website.

Dr. Rehani also participated virtually as a representative of IOMP in the **General Assembly and the Executive Council meeting of the International Union of Pure and Applied Physics (IUPAP)** held on 4-6 October 2023 at CERN, Geneva as a representative of IOMP. It was a hybrid event. IOMP Chairs the International Commission on Medical Physics of IUPAP, and we have been getting financial support from IUPAP for young scientists' awards and for our conferences (ICMP and WCs).



Treasurer's Report

Ibrahim Duhaini, PhD

Treasurer of IOMP



IBRAHIM DUHAINI

Treasurer, IOMP
duhaini@yahoo.com

"Overall, these activities collectively contribute to the financial health, administrative efficiency, and organizational coherence of the IOMP during the specified time frame"

A. Here are the Finance Subcommittee members:

1. Ibrahim Duhaini, Chair
2. Shigekazu Fukuda, Asia
3. Sanchez Palmer, Africa
4. Ana Maria Marques da Silva, Latin America

Ex-Officio:

5. John Damilakis, President, Europe
6. Eva Bezak, Vice President, Australia

B. During the last six months, the following activities have been executed:

1. Reviewing and approving ExCom expense claims, invoices, bills, and other incidentals:

- This involves a thorough examination and approval process for all expenses incurred by the Executive Committee (ExCom). This could include individual expense claims, invoices from vendors, bills related to organizational activities, and other miscellaneous expenses. The goal is to ensure transparency, accuracy, and compliance with financial policies.

2. Sending membership fees letters to all NMOs (National Member Organizations):

- This task involves communicating with NMOs regarding membership fees. It includes the creation and distribution of letters or notifications that outline the details of membership fees, payment instructions, and any relevant deadlines. This ensures that all NMOs are informed and reminded to fulfill their financial obligations to the organization.

3. Following up and processing transactions of the IOMP Company Account:

- This activity focuses on monitoring and managing transactions related to the IOMP Company Account. It includes tracking incoming and outgoing funds, reconciling bank statements, and ensuring that financial transactions align with the organization's financial goals and guidelines. The follow-up aspect implies resolving any discrepancies or outstanding issues promptly.

Treasurer's Report

Ibrahim Duhaini, PhD

Treasurer of IOMP

4. Performing other related duties with the ExCom members, IOMP Accountant, and Administration Office:

- This is a broad category that encompasses various additional responsibilities. Working collaboratively with ExCom members suggests active engagement in strategic discussions and decision-making processes. Collaborating with the IOMP Accountant involves coordinating financial activities, and interacting with the Administration Office suggests involvement in general administrative tasks that contribute to the smooth functioning of the organization.

Overall, these activities collectively contribute to the financial health, administrative efficiency, and organizational coherence of the IOMP during the specified time frame. The attention to detail in expense management, membership communication, financial transactions, and collaboration with key stakeholders reflects a commitment to responsible governance and effective organizational operations.



Science Committee's Report

M. Mahesh, PhD

Chair of IOMP Science Committee



M. MAHESH

IOMP Science Committee
Chair

MMAHESH@jhmi.edu

"There were more than 460 abstracts from 33 countries, out of which about 102 were accepted for oral presentations and about 359 accepted for poster presentations"

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

The second part of the year 2023 went very fast. The science committee was busy in terms of reviewing and endorsing requests on programs hosted by member societies.

Considerable work went towards organizing the **25th International Conference on Medical Physics (ICMP2023)** meeting. One of the primary responsibilities of the SC chair was to co-chair the Scientific Program Committee of the ICMP2023, that was in Mumbai, India from December 6-9, 2023. Regular meetings to develop the scientific program for the conference went all through the past few months until the day of the conference. Thanks to several members of the science committee and to others who participating in reviewing scientific abstracts and also special symposium topics for the conference. The scientific program committee reviewed all the abstracts submitted for the conference. There were more than 460 abstracts from 33 countries, out of which about 102 were accepted for oral presentations and about 359 accepted for poster presentations. In addition, the science committee reviewed special symposium proposals and selected top scoring 15 special symposium topics. In the end, the ICMP2023 was a great success. For more details regarding the ICMP 2023 meeting, please check out the article at <https://www.iomp.org/icmp-2023-report/>



Scientific Program Committee

Co-chairs: Dr. M. Mahesh, USA, Dr. Sunil Dutt Sharma, India, Dr. Shigekazu Fukuda, Japan

Coordinators: Dr. Rajesh Kumar, India, Dr. Sudesh Deshpande, India

Science Committee's Report

M. Mahesh, PhD

Chair of IOMP Science Committee

The following session was presented at the AAPM annual meeting in Washington DC:

Session title: **Data Analysis and Artificial Intelligence (AI) in relation to Medical Physics Profession: The IOMP's view**

Speakers: John Damilakis, Eva Bezak and M Mahesh (speaker & moderator)

INTERNATIONAL ORGANIZATION FOR MEDICAL PHYSICS (IOMP) AND AAPM
GLOBAL RESEARCH & SCIENTIFIC INNOVATION COMMITTEE (GRSIC) PRESENTS:

IOMP/AAPM WEBINAR | JULY 19TH 8 AM ET (12 PM GMT)

OPEN SOURCE TOOLS & DATA IN MEDICAL PHYSICS

Open source computational imaging of cellular microenvironments
KEVIN ELCEIRI, PHD
Professor of Medical Physics and Bioengineering, Director of Center for Quantitative Cell Imaging, University of Wisconsin Madison, United States

Open source tools from the Medical Imaging and Data Resource Center
HEATHER WHITNEY, PHD
Research Assistant Professor, University of Chicago, United States

Unlocking medical imaging with platipy
ROBERT FINNEGAN, PHD
Medical Physicist, North Sydney Cancer Center, Australia

MODERATOR
M. MAHESH, PHD
Scientific Committee Chair of the IOMP, Professor, Johns Hopkins University School of Medicine

REGISTER NOW!

QUESTIONS?
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GRSIC: Claire Park | cpark223@uwyo.edu | @ClaireKSPark

On behalf of IOMP, the SC organized a joint webinar with the AAPM on July 19th titled **“Open-Source Tools and Data in Medical Physics”**. The recording can be viewed at <https://www.youtube.com/watch?v=uWiau4rL42o>

IOMP SCHOOL WEBINARS

RADIOPHARMACEUTICAL THERAPY

25 OCTOBER 2023
12:00 GMT 13:00

REGISTER HERE
or Scan:

MODERATOR
M. Mahesh, PhD

SPEAKER
George Sgouros, PhD
Imaging and Dosimetry in Radiopharmaceutical therapy

SPEAKER
Ana Kiess, MD, PhD
Clinical Radiopharmaceutical Therapy, Dose-Response and Future Directions

www.iomp.org/iomp-school-webinars-2023

SC Chair, Dr Mahesh organized and moderated the IOMP webinar on **Radiopharmaceutical Therapy (RPT)** on October 25th, 2023. The webinar was well attended (nearly 1800 attendees) and the recording can be found at <https://www.youtube.com/watch?v=vdDvJIW7t1c>

The SC regularly reviews applications to the IOMP for sponsorship or support of educational and professional development conferences. Before recommending support or endorsement of a conference, the committee considers the quality of the program and proposed speakers, and the potential benefit to be derived by the intended audience. The past six months was hectic in terms of preparing for the ICMP 2023 that was held in Mumbai, India. There were more than 1300 delegates from 33 different countries attended the conference making it truly international.

The chair is immensely grateful to the members of the Science Committee for their responsiveness and thoughtful reviews of the applications and documents received by the committee.

Education and Training Committee's Report

Arun Chougule, PhD, FIOMP, FAMS

Chair of IOMP Education and Training Committee



ARUN CHOUGULE

IOMP Education & Training
Committee Chair

arunchougule11@gmail.com

" IOMP Accreditation Board has accredited 17 CPD educational programmes and allotted CPD points as per the duration/content of the educational program"

The Education and Training Committee (ETC) of IOMP is entrusted with development of programs related to education and training of medical physics, to promote internationally sponsored education and training programs, consider application from national and regional organisation for IOMP endorsement and funding, to harmonise and standardize medical physics education program, accreditation of educational, residency and CPD program. The member of ETC and Accreditation Board [AB] are working hard to fulfilling the aims and objectives of ETC and contributing for betterment of medical physics education & training in IOMP member countries.

- With feedback received from various resources, the details about Medical Physics Education programs being conducted in all the regions of IOMP have been updated on the IOMP website, however it require regular update. I request all the IOMP NMO's and concerned institutes running the medical physics education, training, and residency programmes to provide updates so that we upload the corrected/updated complete information. The updated information is available on IOMP website at <https://www.iomp.org/education-training-resources/>
- The IOMP Accreditation Board has started accreditation of MPE and CPD accreditation and efforts are put to expand and popularize it. As of now IOMP has accredited 5 postgraduate medical physics education programmes and one residency programme. The latest medical physics education and residency programme getting IOMP accreditation are from Fundación Médica de Río Negro y Neuquén (FMdeRNyN), and Facultad de Ciencias Médicas de la Universidad Nacional del Comahue (UNCo), Río Negro, ARGENTINA, the first from Latin America. IOMP Accreditation Board has accredited 17 CPD educational programmes and allotted CPD points as per the duration/content of the educational program.

Education and Training Committee's Report

Arun Chougule, PhD

Chair of IOMP Education and Training Committee

- In the continued process of popularising ETC IOMP and IOMP accreditation program during RO meetings, NMO meetings, an invited talk during medical physics conference.
- ETC IOMP has reviewed 10 applications received from the conference organizers/scientific activity for IOMP endorsement and/or funding and submitted report to IOMP EXCOM.

ETC IOMP Endorsed Programms during January- November 2023

- 1.Brachytherapy Treatment Techniques: Procedures and Planning at Christian Medical College and Hospital, Ludhiana, India during 28 -29 April 2023.
- 2.5th Summer School in Medical Physics 2023: Data Science and Machine Learning in Radiotherapy, DKFZ, Germany during 28 August - 22 September 2023
- 3.Scientific Workshop "Emerging Techniques in Radiotherapy" taking place on Nov. 29th – 30th, 2022 in Chile
- 4.ICTP School on Medical Physics for Radiation Therapy,11-22 September 2023, ICTP, Trieste, Italy
- 5.III Jornadas de actualización en radioterapia avanzada, 7-11 March 2023, Parana, Argentina
- 6.JSMP 2023 – the 125th scientific meeting of the Japan Society of Medical Physics in conjunction with Japan Radiology Congress in Yokohama, Japan in 13-16 April 2023
- 7.MEFOMP Medical Physics Conference 2023, Muscat, Oman, 19 – 22 May 2023
- 8.Summer School in Medical Physics 2023 in Chile: The role of imaging in the radiotherapy process from October 16th to December 15th, 2023
- 9.5th Summer School in Medical Physics 2023: Data Science and Machine Learning in Radiotherapy, Hybrid attendance phase: Marsilius-Kolleg in Heidelberg /Germany 28 August - 22 September 2023
- 10.II Colombian Congress of Medical Physics" being organized at Bucaramanga, Colombia during 3 - 4 November 2023.
11. Hybrid Scientific Workshop on Adaptive Radiation Therapy in Chile 14- 15 December 2023
12. The 127th scientific meeting of JSMP in conjunction with the 83rd JRS meeting, the 80th JSRT meeting, April 11-14, 2024, in Yokohama, Japan

ETC is decimating all the publications, announcement, and activities of IOMP to its member countries so that medical physicists get benefited.

ETC has organized several sessions on Education and Training in Medical Physics during ICMP2023.

Education and Training Committee's Report

Arun Chougule, PhD

Chair of IOMP Education and Training Committee

The IOMP Accreditation Board undertook the evaluation of IOMP accreditation application from **Fundación Médica de Río Negro y Neuquén (FMdeRNyN), and Facultad de Ciencias Médicas de la Universidad Nacional del Comahue (UNCo), Río Negro, ARGENTINA** for accreditation of its postgraduate medical physics education program and the residency program and completed the site visit during 3-5 April 2023. The program is now accredited for 3 years, with effective from 1 May 2023. IOMP has received US\$ 5000 as accreditation fees.

Also, IOMP accreditation board had received an application from **Warith International Cancer Institute [WICI], Karbala IRAQ** for accreditation of residency program. It was evaluated and site visit completed during 14-15 November 2023. Provisional accreditation for one year is recommended. IOMP received US\$ 3000 as accreditation fees.

Another accreditation application from **Gurve Radiotherapy Services, Caracas, Venezuela** for accreditation of residency program is received, the evaluation of submitted documents completed and the site visit is planned during 18 – 19 December 2023. IOMP has received US\$ 3000 as IOMP accreditation fees.

Communications are in progress with a few more programmes.

Further, IOMP Accreditation Board has evaluated 8 applications [June 2022- November 2023] for CPD accreditation and awarded CME points for the following education programs:

1. 4th Summer School in Medical Physics: Radiobiology and Biological Modelling for Radiotherapy, German Cancer Research Center (DKFZ), 5 – 30 Sept 2022
2. Course type 3: Online teaching course “Particle Therapy” online phase Oct. 17 – Nov. 20, 2022, online phase, 21 - 25, November 2022, German Cancer Research Center (DKFZ)
3. SCMPCR E-learning Program (ELP-06): Clinical Medical Physics in Modern Radiotherapy Date: 01 July 2022 – 22 July 2022
4. SCMPCR Hands-on Workshop (HW-06): Modern Quality Assurance in Modern Radiotherapy during 15th – 18th February 2023
5. MEFOMP2023 Medical Physics conference, 19 – 22 May 2023, Muscat, Oman
6. Online Teaching Course “Particle Therapy”, OCT. 09 – NOV. 19, 2023, German cancer Research Center (DKFZ)
7. Quality Assurance in Radiation Medicine for Sustainable Healthcare, November 13-17, 2023, organized by Jamaica Association for Physics in Medicine at the University of the West Indies, Mona, Kingston, Jamaica
8. SCMPCR E-learning Program (ELP-08): Radiation Dosimetry: External Beam Radiotherapy and Brachytherapy during 03 November 2023 – 24 November 2023

IOMP has received US\$ 1500 for the CPD accreditation from the above 8 programs.

Education and Training Committee's Report

Arun Chougule, PhD

Chair of IOMP Education and Training Committee

The details of IOMP accredited program up to 30 November 2023 are as follows:

A. List of CPD Accreditation by the IOMP Accreditation Board

1. CPD: Dosimetry of Small Fields in External Beam Therapy: Reference and Relative Dose Determination 2nd – 4th October 2019, SCMPCR Training Room and National Institute of Cancer Research and Hospital (NICRH), Dhaka, Bangladesh
2. ICMP 2019 (ALFIM), Santiago, Chile, 8 – 11 September 2019.
3. CPD: Hands-on Workshop: Commissioning, Planning and Quality Control for the IMRT/VMAT Treatment Techniques. 25th – 27th April 2020, University of Colombo, Sri Lanka and National Cancer Institute, Maharagama, Sri Lanka
4. Universität Heidelberg (Germany) Online Teaching Course: Particle Therapy, September 2020
5. CPD: SCMPCR E-learning Program (ELP-03): Basic Principles and Advanced Clinical Applications (webinar platform) 5-26 Feb 2021
6. MEFOMP virtual conference, 5 -7 April 2021.
7. Virtual Summer School 2021: Image Guided Radiation Therapy (IGRT) and Advanced Treatment Techniques during Sept. 20th – Nov. 14th, 2021, German Cancer Research Center (DKFZ)
8. “Online Teaching Course Particle Therapy” program during 22- 26 November 2021. German cancer Research Centre (DKFZ)
9. SCMPCR E-learning Program (ELP-05): Advanced Techniques in Radiotherapy 1- 22 October 2021, Dhaka, Bangladesh.
10. 4th Summer School in Medical Physics: Radiobiology and Biological Modelling for Radiotherapy, German Cancer Research Center (DKFZ) 5 – 30 Sept 2022
11. Course type 3: Online teaching course “Particle Therapy” online phase Oct. 17– Nov. 20, 2022, online phase Nov. 21 -Nov. 25, 2022, German Cancer Research Center (DKFZ)
12. SCMPCR E-learning Program (ELP-06): Clinical Medical Physics in Modern Radiotherapy, 01 July 2022 – 22 July 2022
13. SCMPCR Hands-on Workshop (HW-06): Modern Quality Assurance in Modern Radiotherapy during 15th – 18th February 2023
14. MEFOMP2023 Medical Physics conference, 19 – 22 May 2023, Muscat, Oman
15. Online Teaching Course “Particle Therapy”, OCT. 09 – NOV. 19, 2023, German cancer Research Center (DKFZ)
16. Quality Assurance in Radiation Medicine for Sustainable Healthcare, November 13-17, 2023, organized by Jamaica Association for Physics in Medicine at the University of the West Indies, Mona, Kingston, Jamaica
17. SCMPCR E-learning Program (ELP-08): Radiation Dosimetry: External Beam Radiotherapy and Brachytherapy during 03 November 2023 – 24 November 2023

Education and Training Committee's Report

Arun Chougule, PhD

Chair of IOMP Education and Training Committee

2. Master's in Medical Physics Programs Accredited by the IOMP Accreditation Board:

1. The Catholic University of Korea – Full Accreditation
2. KAIST University – Full Accreditation
3. Yonsei University – Full Accreditation
4. ICTP & Trieste University joint Master of Advanced Studies in Medical Physics – Full Accreditation
5. Fundación Médica de Río Negro y Neuquén (FMdeRNyN), and Facultad de Ciencias Médicas de la Universidad Nacional del Comahue (UNCo), Río Negro, ARGENTINA- The postgraduate program (3 years) in Medical Physics specialized in Radiotherapy, Nuclear Medicine, and Diagnostic/Interventional Radiology - Full accreditation.

C. Master in Medical Physics Program Re-accredited by the IOMP Accreditation Board:

1. ICTP & Trieste University joint Master of Advanced Studies in Medical Physics, Trieste, Italy. Re-accredited for 5 years (1 August 2022 – 31 July 2027)
2. The Catholic University of Korea, Seoul Republic of Korea – Re-accredited for 5 years (1 January 2023 – 31 December 2027)
3. KAIST University, Daejeon, Republic of Korea – Re-accredited for 5 years (1 January 2023 – 31 December 2027)
4. Yonsei University, Wonju, Republic of Korea – Re-accredited for 5 years (1 January 2023 – 31 December 2027)

D. Residency Programs Accredited by the IOMP Accreditation Board:

1. The Residency program (1 year) in Radiotherapy Physics at Fundación Médica de Río Negro y Neuquén (FMdeRNyN), and Facultad de Ciencias Médicas de la Universidad Nacional del Comahue (UNCo), Río Negro, ARGENTINA - Full Accreditation
2. The Residency program (1 year) in NM&DIR Physics at Fundación Médica de Río Negro y Neuquén (FMdeRNyN), and Facultad de Ciencias Médicas de la Universidad Nacional del Comahue (UNCo), Río Negro, ARGENTINA- Initial accreditation.

Further, ETC evaluated the revised ROMP, DMPI curriculum of ACPSEM and provided suggestions.

The detailed information regarding Accreditation Board activities, the relevant manuals/forms and the accredited programs are available at <https://www.iomp.org/accreditation/>. I request all of you to kindly take advantage of the IOMP accreditation facility to get accredited the medical physics education programs, residency programs, CPD accreditation of conferences/workshops/training programs and CME points. For further details or any query, please contact : ETC Chair and Chairman of Accreditation Board at arunchougule11@gmail.com

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 AHC has executed several awards and honours in 2023. We congratulate all the awardees for their outstanding performances and contributions"

The committee is composed of:

Name	Position	Country	email
Kwan Hoong Ng (Chair)	Emeritus Professor	Malaysia	ngkh@ummc.edu.my
Erato Stylianou Markidou (Vice Chair)	Medical Physics Expert – Radiotherapy	Cyprus	eratostylmark@gmail.com
Jeannie Wong (Secretary)	Associate Professor	Malaysia	jeannie.wong@ummc.edu.my
Meshari Al Nuaimi	Radiation Physicist	Kuwait	Mesh.Alnuaimi@gmail.com
Wayne Beckham	Provincial Medical Physics Leader & Adjunct Professor	Canada	WBeckham@bccancer.bc.ca
Cynthia McCollough	Professor of Medical Physics & BME	USA	McCollough.Cynthia@mayo.edu
C Barbara M'Ule	Radiation Therapy Physicist	Zambia	chandamule@gmail.com
Roger Price	Adjunct Professor	Australia	Roger.Price@health.wa.gov.au
Jose Luis Rodriguez	Medical Physicist	Chile	fmjlrp@yahoo.com

Awards & Honours Committee's Report

Kwan Hoong Ng, PhD

Chair of IOMP Awards & Honours Committee

The AHC has executed several awards and honours in 2023. We congratulate all the awardees for their outstanding performances and contributions.

CONGRATULATIONS



John Mallard Award 2023

Prof Dr Habib Zaidi
Geneva University Hospital, Geneva



CONGRATULATIONS



The winner of the 2023 IUPAP Early Career Scientist

Tan Hong Qi
SEAFOMP

Society of Medical Physicists Singapore



CONGRATULATIONS



The winner of the 2022 IUPAP Early Career Scientist

Dr Anam Choirul
SEAFOMP

Indonesian Association of Physicists in Medicine (AFISMI)



Awards & Honours Committee's Report

Kwan Hoong Ng, PhD

Chair of IOMP Awards & Honours Committee

For more details please visit <https://www.iomp.org/call-for-nominations/>





Dr Christoph Trauernicht
Tygerberg Hospital
Stellenbosch University, South Africa

Prof Jianrong Dai
The Cancer Hospital of the Chinese
Academy of Medical Sciences,
People's Republic of China

Prof Francis Hasford
Radiological and Medical Sciences
Research Institute, Ghana Atomic Energy
Commission, Ghana

Congratulations!

FELLOW OF IOMP

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IOMP HONORARY MEMBER

PROF. N. RAMAMOORTHY

Adjunct Professor, National Institute of Advanced Studies, Bangalore, India

www.iomp.org/ah-information



Congratulations



Mr Refaat Yousif AlMazrou
King Faisal Specialist Hospital
and Research Center, Kingdom
of Saudi Arabia



Dr Alamgir Hossain
University of Rajshahi,
Bangladesh



Dr James C L Lee
National Cancer Centre
Singapore, Singapore



**Miss Anna Maria Campos de
Araujo**
National Cancer Institute, Brazil



Dr Joël Greffier
Nîmes University Hospital,
France

IDMP AWARD 2023

Professional Relation Committee's Report

Simone K Renha, PhD

Chair of IOMP Professional Relation Committee



SIMONE K RENHA

IOMP Professional Relation
Committee Chair

simonekodulovich@gmail.com

"This year, IOMP was glad to receive the Malta Association of Medical Physics (MAMP) and the Palestinian Association of Medical Physics (PAMP) as NMOs."

IOMP PRC MEMBERS (2022-25):



Simone K Renha
(Brazil)



Ishmael Parsai
(USA)



Stephanie Parker
(USA)



Cecilia Haddad
(Brazil)



Huda AlNaemi
(Qatar)



Jacob Van Dyk
(Canada)



Nathaly Barbosa
(Colombia)



Taofeeq Ige
(Nigeria)



Sotiris Economides
(Greece)



Tomas Kron
(Australia)



Michelle Wells
(USA)



Vijitha Ramanathan
(Sri Lanka)



Alexandre Bacelar
(Brazil)



Freddy Haryanto
(Indonesia)



Weigang Hu
(China)

Throughout the year, the Professional Relations Committee (PRC) dedicated its efforts to supporting countries where Medical Physics Associations are not in place. This proactive initiative aims to foster and advance the field of medical physics in regions where such associations are not established. The committee's dedicated endeavors underscore its unwavering commitment to promoting inclusiveness and ensuring equitable access to valuable resources. The committee is disseminating "**Guidance to Establish Medical Physics Association**" to all medical physicists interested in initiating this process in their country. In addition, the PRC sent a questionnaire to representatives of these countries to obtain information that facilitates the committee to assist them, according to their resources, in creating national societies. We continue to receive responses to the questionnaire. In parallel, the committee members are planning meetings with medical physicists from these countries. It's the PRC's perspective that all medical physicists could benefit from a successful national medical physics association.

Professional Relation Committee's Report

Simone K Renha, PhD

Chair of IOMP Professional Relation Committee

For the countries that already have an association but are not a National Member Organization (NMO) of the IOMP, the PRC has been incentivizing and supporting them to initiate the process of becoming an NMO. This year, IOMP was glad to receive the **Malta Association of Medical Physics (MAMP)** and the **Palestinian Association of Medical Physics (PAMP)** as NMOs. This committee is anxious to expand the IOMP family with associations of medical physicists from all regions of the world.

The PRC also intends to promote more webinars related to professional topics, including communication, management and leadership. In April 2023, during the International Medical Physics Week, we were glad to hear Prof. Colin Orton talk about leadership in medical physics. For next year, the PRC is planning other webinars related to medical physics careers. This committee is open to receiving suggestions: Which topic should be in the next webinar?

At the end of the year, the PRC had the privilege of choosing nine medical physicists to be recipients of the **IUPAP travel grant**. This grant supported their participation in ICMP 2023 in Mumbai, India. We trust that these individuals were able to derive maximum benefit from their attendance at the conference. All committee members understand our critical role in promoting the profession of medical physics worldwide. We are committed to this goal and will dedicate more effort to it in the coming year. However, the PRC needs the collaboration and participation of all medical physicists.

The PRC is actively seeking to enhance communication with everyone to better meet the expectations and needs of our colleagues. Consequently, we extend an invitation to all to reach out to PRC members with your comments and thoughts. Your input is invaluable, and we genuinely want to hear from each and every one of you! Happy New Year!

[Click to view our NMOs](#)



International Organization for Medical Physics

Welcome to IOMP



National Member Organizations

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

"The refurbished website was soft launched in November 2023. We welcome all IOMP members to provide feedback and suggestions to further improve our website www.iomp.org"

From July to December 2023, the MPWB committee has mainly focused on revamping the IOMP website (www.iomp.org). The committee worked together with the ExCOM and has received multiple feedback from the ExCOM to enhance the layout and functionality of the website. Our website received a total of 75,247 visitors and 314,996 visits in year 2022. As one of the main tasks of the IOMP is to disseminate medical physics relevant info to all medical physicists worldwide, an informative yet simple-navigating website is paramount.

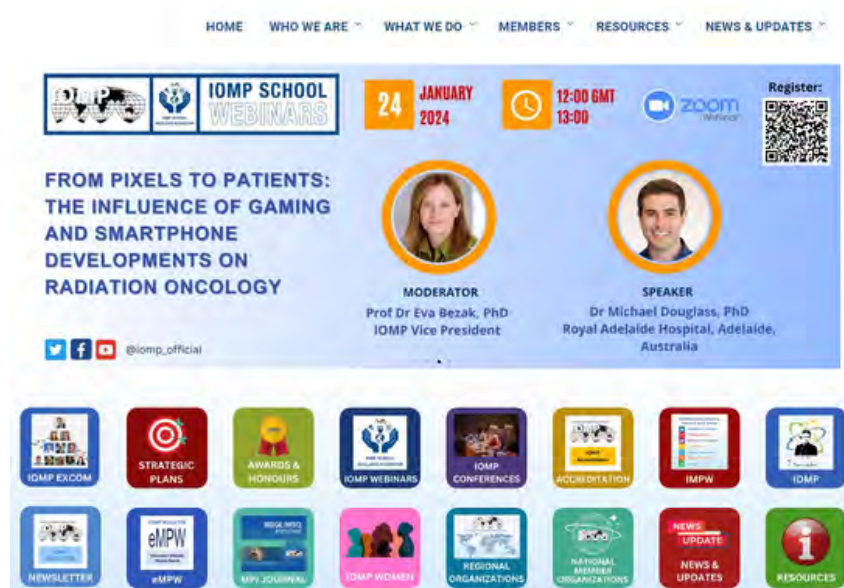
The refurbished website was soft launched in November 2023 and it is currently undergoing review by the ExCOM and IOMP members. We welcome all IOMP members to provide feedback and suggestions to further improve the website, please kindly send your comments to the MPWB Chair, Dr Chai Hong Yeong (yeongchaihong@gmail.com).

The committee has also published 3 issues of IOMP Newsletter between Jul-Dec 2023:

[IOMP Newsletter, Vol. 5, No. 6, December 2023](#)

[IOMP Newsletter, Vol. 5, No. 5, October 2023](#)

[IOMP Newsletter, Vol. 5, No. 4, August 2023](#)



Medical Physics World Board (MPWB)

Committee's Report

Chai Hong Yeong, PhD

Chair of IOMP Medical Physics World Board (MPWB)

The committee will continue to manage and operate the social media accounts of the IOMP. We would also like to invite all of you to follow/subscribe to our social media pages:

Instagram (<https://www.instagram.com/iomp.official/>)

Facebook (<https://www.facebook.com/InternationalOrganizationforMedicalPhysics>)

Linkedin ([linkedin.com/in/iomp-international-organization-for-medical-physics-a402b824b](https://www.linkedin.com/in/iomp-international-organization-for-medical-physics-a402b824b))

Twitter (https://twitter.com/IOMP_Official)

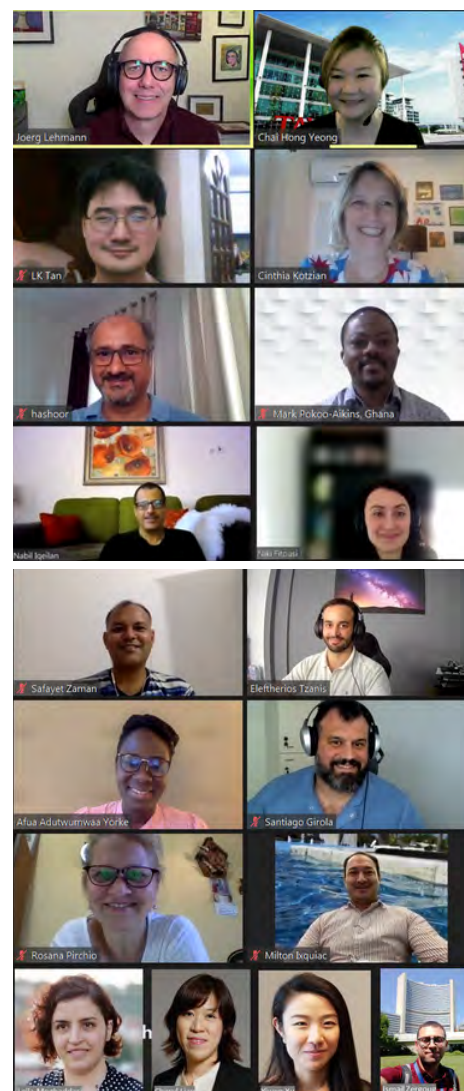
YouTube (<https://www.youtube.com/@IOMPOfficial>)

IOMP MPWB COMMITTEE MEMBERS (2022-25):

1. Chai Hong Yeong, Malaysia – Chair
2. Rosana Pirchio, Argentina - Secretary
3. Afua Yorke, United States
4. Cheryl Lian, Singapore
5. Habib Ashoor, Bahrain
6. Ismail Zergoug, Algeria
7. Joerg Lehmann, Australia
8. Milton Estuardo Ixquiac Cabrera, Guatemala
9. Niki Fitousi, Belgium
10. Safayet Zaman, Bangladesh

IOMP WEB SUB-COMMITTEE MEMBERS (2022-25):

1. Chai Hong Yeong, Malaysia – Chair
2. Cinthia Kotzian Pereira Benavides, Brazil
3. Eleftherios Tzanis, Greece
4. Leyla Moghaddasi, Australia
5. Li Kuo Tan, Malaysia
6. Mark Pokoo-Aikins, Ghana
7. Nabil Iqeilan, Qatar
8. Santiago Girola, Argentina
9. Yiwen Xu, Canada



www.iomp.org



Publication Committee's Report

Francis Hasford, PhD

Chair of IOMP Publication Committee



FRANCIS HASFORD

IOMP Publication Committee
Chair

haspee@yahoo.co.uk

"The IOMP is making available copies of eBooks on Medical Physics and Biomedical Engineering for free distribution to medical physicists from low- and middle-income countries (LMICs)"

Over the period of 18 months, the Publication Committee has developed guidelines for appointing Editorial Board members of Medical Physics International (MPI) journal, coordinated the appointment of new Editors-in-Chief (EiCs) for MPI, facilitated free subscription of the AAPM Medical Physics journal to medical physicists from LMICs, and spearheaded renewal of the agreement between IOMP and CRC Press for publication of IOMP's Book Series in Medical Physics and Biomedical Engineering.

Below are current activities being undertaken by the Publications Committee:

1. Establishment of New Journal:

In line with the vision of the IOMP ExCom to set up a new journal, the Publications Committee has set up a Journal Task Group to propose recommendations for ExCom's consideration. The Task Group is reviewing the journal's scope, potential publishers, guidelines for appointment of editorial board membership, financial and logistical considerations.

2. Medical Physics International (MPI):

December 2023 edition of the MPI journal is under preparation and will publish Book of Abstracts of the International Conference on Medical Physics (ICMP 2023) in Mumbai, India, 06 – 09 December 2023, and abstracts of theses from the Master of Medical Physics Programme at the International Centre for Theoretical Physics (ICTP).

3. Free eBooks on Medical Physics and Biomedical Engineering:

The IOMP is making available copies of eBooks on Medical Physics and Biomedical Engineering for free distribution to medical physicists from low- and middle-income countries (LMICs). Call for applications from interested professionals and students has been made through Google Form link https://docs.google.com/forms/d/e/1FAIpQLSeDwguZHq_K68liDgYUEDF_7Gd50p4KV3mY5WuwyPkod47HQ/viewform?usp=sharing

Publication Committee's Report

Francis Hasford, PhD

Chair of IOMP Publication Committee

IOMP PUBLICATIONS COMMITTEE 2022-2025:

Francis Hasford, Ghana – Chair
 Bamidele Awojoyogbe, Nigeria
 Gustavo Daniel Sanchez, Argentina
 Hafiz Mohd Zin, Malaysia
 Hasan Kharita, Syria
 Lorenzo Brualla, Germany
 Marina Sala, USA
 Michael Lee, Hong Kong
 Mohamed Metwaly, UK
 John Damilakis (Ex-Officio), Greece
 Eva Bezak (Ex-Officio), Australia
 Magdalena Stoeva (Health and Technology)
 Kang-Ping Lin (Health and Technology)
 Jamie Trapp (Physical and Engineering Sciences in Medicine)
 Jong Min Park (Progress in Medical Physics)
 Ambika Pradhan (Journal of Medical Physics)
 Chai Hong Yeong (e-Medical Physics World)
 John M. Boone (Medical Physics)
 Katia Parodi (Physics in Medicine and Biology)
 Michael David Mills (Journal of Applied Clinical Medical Physics)
 Simone K. Renha (Revista Latinoamericana de Física Médica)
 Nobuyuki Kanematsu (Radiological Physics and Technology)
 Iuliana Toma-Dasu (Physica Medica)
 Slavik Tabakov (MPI History Edition)
 Perry Sprawls (MPI History Edition)
 Sameer Tipnis (Editor, Medical Physics International)

Official Publications of IOMP:

Medical Physics International (Official Journal of the IOMP)
Physics in Medicine and Biology
Physiological Measurement
Medical Physics
Journal of Applied Clinical Medical Physics – an open access journal
Physica Medica – European Journal of Medical Physics
Journal of Medical Physics (JMP) – an open access journal
Radiological Physics and Technology
Physical and Engineering Sciences in Medicine (PESM)

Medical Physics International (MPI) Journal Report

Francis Hasford and Sameer Tipnis

co-Editors-in-Chief



FRANCIS HASFORD

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SAMEER TIPNIS

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The new team of Co-Editors-in-Chief (EiCs) took over from the founding co-EiCs, Slavik Tabakov and Perry Sprawls, in January 2023, through guidance from the latter, the new team worked to produce the July edition of the MPI publication (Vol. 11 No.1, 2023). The Issue had 280 pages comprising full journal articles and Books of Abstracts from the First Regional Conference of the Federation of African Medical Physics Organizations (FAMPO) held in Marrakech, Morocco, 10 – 12 November 2022, and the Conference of the Middle East Federation of Organizations of Medical Physics (MEFOMP) held in Muscat, Oman, from 19 – 22 May, 2023.

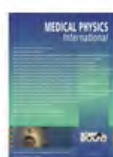
The December edition (Vol. 11 No. 2, 2023) will focus on publication of the Book of Abstracts of the International Conference on Medical Physics (ICMP 2023) in Mumbai, India, 06 – 09 December 2023. The conference has 100+ oral presentations and 350 poster presentations. The edition will also feature abstracts of theses from the ICTP Master of Medical Physics Programme.

Visit www.mpijournal.org/index.aspx for latest MPI publications and enjoy reading the exciting articles.



Content MPI Vol. 11 No. 1

Medical Physics International



Here you could download the full issue of MPI Vol. 11 No. 1 (6 MB PDF file)

History Sub-Committee's Report

Slavik Tabakov, PhD

Chair of IOMP History Sub-Committee, IOMP Past President



SLAVIK TABAKOV

IOMP History Sub-Committee
Chair

slavik.tabakov@emerald2.co.uk

"A number of the existing IOMP History Tables were updated and new tables were included on the [IOMP Website](#). Also, a paper on the [History of the IDMP](#) was included in the MPI - History Edition"

During 2023 the HSC had several activities related to the 60th Anniversary of IOMP.

A number of the existing IOMP History Tables were updated and new tables were included on the [IOMP Website](#). Also, a paper on the [History of the International Day of Medical Physics \(IDMP\)](#) was included in the Journal Medical Physics International – History Edition (MPI-HE).

Members of the HSC took part in various national activities during IDMP 2023, accenting on the IOMP 60th Anniversary. A specific topic on History was the [MPI-HE new issue No.9](#), published in June 2023. This issue followed the [MPI-HE issue No.8](#), dedicated to the IOMP 60th Anniversary (published in 2022). These issues are discussed in another Report to the Publication Committee about MPI-HE.

Report on the MPI-History Edition

S Tabakov, S Sprawls and G Ibbott
Editors-in-Chief

At the beginning of 2023, the Founding Editors in Chief of the IOMP Journal Medical Physics International (MPI) – Prof. S Tabakov and Prof. P Sprawls completed their second successful terms. The new team of MPI Editors in Chief Prof. F Hasford and Prof. S Tipnis prepared their first issue in July 2023. In this period the Founding Editors provided constant support and guidance on the forming of the new [MPI Issue vol. 11 No.1](#).

In parallel, the Editors in Chief of the Medical Physics International-History Edition (MPI-HE) Prof. S Tabakov, Prof. S Sprawls and Prof. G Ibbott prepared and published a new [issue \(No.9\) on the History](#) of our profession. The new issue had a focus on women's contribution to medical physics, but also included papers on the history of Nuclear Medicine Imaging. The following papers were included:

History Sub-Committee's Report

Slavik Tabakov, PhD

Chair of IOMP History Sub-Committee, IOMP Past President

- MICHEL TER-POGOSSIAN AND THE DEVELOPMENT OF POSITRON EMISSION TOMOGRAPHY (PET)
- THE RISE AND FALL OF THE RECTILINEAR SCANNER IN NUCLEAR MEDICINE
- HISTORY OF PIONEER WOMEN IN MEDICAL PHYSICS
- HISTORICAL VIGNETTES AND A CURRENT PERSPECTIVE ON WOMEN'S CONTRIBUTIONS TO BRACHYTHERAPY
- THE EXCEPTIONALS: WOMEN JOURNAL EDITORS IN THE FIELD OF MEDICAL PHYSICS
- WOMEN IN MEDICAL PHYSICS: ADDRESSING THE CHALLENGES, RECOGNIZING THE PROGRESS WITH IAEA
- WOMEN IN MEDICAL PHYSICS AND CONTRIBUTIONS THAT SHAPED THE PROFESSION IN AUSTRAL-ASIAN COUNTRIES
- THE HISTORY OF ESTABLISHMENT OF THE INTERNATIONAL DAY OF MEDICAL PHYSICS

ANNEX:

- THE ORIGINS OF POSITRON EMISSION TOMOGRAPHY
- POSITRON SCANNER FOR LOCATING BRAIN TUMORS
- A BRIEF HISTORY OF POSITRON EMISSION TOMOGRAPHY

The MPI-HE Issue No.9 included 115 pages of papers. During the first 2 months of its publishing, it attracted 7500 readers.

Currently the Editors in Chiefs of MPI-HE are preparing the next issue planned for publication in June of 2024.

MPI History Edition

The History of Medical Physics project was initiated back in 2007. It was activated in 2016 as an IOMP supported activity. The brief of the project was described in the Medical Physics International Journal ([MPI 2017, v.5 No1, p.68](#)), where all project results will be published in MPI-History Edition (previously known as MPI - Special Issues on History of Medical Physics). The project objective is to show the creation and evolution of different equipment and methods, as well as their clinical application; the overall development of the profession and the main contributors in the various topics in medical physics. This project will continue its development over many years ahead and will be left with open end in order to be constantly updated in future. The History of Medical Physics project is also related to the visibility of medical physicists, as it will show the contribution of our profession to the overall development of contemporary healthcare. Here below is the Content of the MPI-History Editions (MPI-HE, previously known also as MPI Special Issues) dedicated to History of Medical Physics.

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

"IOMP-W is already preparing for the next years International Women's Day that will be celebrated in March via a special webinar with the theme Celebrating International Women's Day with early career medical physicists"

The objective of the IOMP Women Subcommittee is aligned with the key IOMP mission, namely, 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. In view of the above, 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.

To fulfill the aforementioned goals, the IOMP Women subcommittee has set a number of action plans:

- 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 major activities during 2023:

(1) While a number of international activities were dedicated to **Women's Day (8th March 2023)**, a special webinar was organized by IOMP to highlight the role of women MPs in various tasks, both professional as well as scientific. The webinar was initiated by the former Chair of the Women Subcommittee, Magdalena Stoeva and by Eva Bezak, moderated by Loredana Marcu. In this regard, the webinar had 3 MP women as speakers: Virginia Tsapaki (IAEA), Huda Al Naemi (Qatar) and Iuliana Toma-Dasu (Sweden). The webinar was very well received, being attended by nearly 1000 participants.

IOMP Women Sub-Committee's Report

Loredana Marcu, PhD

Chair of IOMP Women Sub-Committee

(2) This year IOMP celebrated its 60th birthday, thus the Women Subcommittee has prepared a number of special issue papers on Women in medical physics and contributions that shaped the profession which were published in the MPI Journal History Edition:

- **The Exceptionals: Women Journal Editors in the field of Medical Physics**, by Chiaojung Jillian Tsai and Kathleen Marie Hintenlang
- **Women in Medical Physics: Addressing the Challenges, Recognizing the Progress with IAEA**, by Virginia Tsapaki and May Abdel-Wahab
- **Women in Medical Physics and Contributions that Shaped the Profession in Austral-Asian Countries**, by Magdalena Stoeva, Eva Bezak, Rajni Verma, Chai Hong Yeoung, Hasin Anupama Azhari, Zakiya Al Rahbi, Loredana Marcu.

(3) **Collaboration with IUPESM WiMPBME group**: owing to the great success of the last year's special symposia on women MPs organized within the World Congress (Singapore 2022) a new article was initiated discussing the topic of science diplomacy in medical physics. The paper has been published in the journal of Health and Technology:

- E. Bezak, C. Borrás, F. Hasford, N. Karmaker, A. Keyser, M. Stoeva, C. Trauernicht, C.H. Yeong, L. Marcu. Science diplomacy in medical physics - an international perspective. Health & Technology 13(3):495-503 (2023)

(4) IOMP-W is already preparing for the next years International Women's Day that will be celebrated in March via a special webinar with the theme **Celebrating International Women's Day with early career medical physicists**. The three invited speakers are early career medical physicists who will present their journeys through research in medical physics as well as their involvement in various professional matters.

IOMP WOMEN SUBCOMMITTEE MEMBERS (2022-25):

- | | |
|------------------------------------|-----------------------------------|
| • Loredana Marcu, Romania – Chair | • Simone Kodlulovich, Brazil |
| • Huda Al-Naemi, Qatar | • Anchali Krisanachinda, Thailand |
| • Zakiya Al-Rahbi, Oman | • Savanna Nyarko, Ghana |
| • Hanan Aldousari, Kuwait | • Nadia Octave, Canada |
| • Hasin Anupama Azhari, Bangladesh | • Elina Samara, Switzerland |
| • Laurentcia Arlany, Singapore | • Magdalena Stoeva, Bulgaria |
| • Eva Bezak, Australia | • Rajni Verma, India |
| • Kathleen Hintenlang, USA | • Rafidah Zainon, Malaysia |

IDMP2023
November 7

International Day of
Medical Physics

60th Anniversary

STANDING ON THE SHOULDERS OF GIANTS



1972

Godfrey Hounsfield first commercially available CT scanner. He co-invented the technology with **Allan McLeod Cormack**. Named after Hounsfield, the HU is a measure of radiodensity used in CT. Hounsfield and Cormack received the 1979 Nobel Prize in Physiology or Medicine.



1950s

Progress in Radiotherapy. **Harold Johns** invented the ^{60}Co teletherapy unit in 1951. In 1953 the first clinical linear accelerator for cancer treatment was installed. This pioneering work helped establish medical physics as a unique field in healthcare.

FACULTÉ DES SCIENCES DE PARIS
11, Rue d'Ulm
LABORATOIRE de Physique
P. M. CURIE



1895

Röntgen discovered X-rays in 1895 that revolutionized medical diagnostics. In recognition of his work, Röntgen was awarded the first Nobel Prize in Physics in 1901.

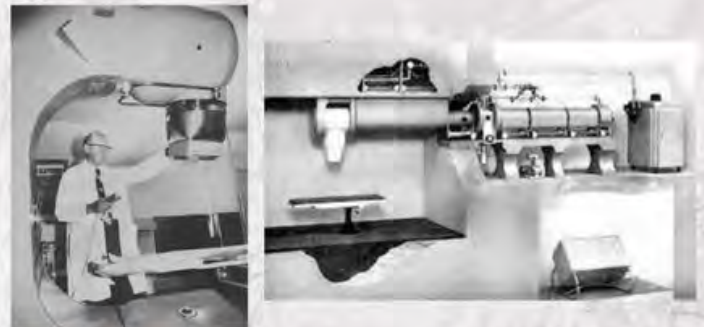
1980

John Mallard and his team obtained the first clinically useful image of a patient's internal tissues using the full-body MRI scanner they built. The first MRI images were produced in 1973 by **Paul Lauterbur** while MRI techniques were refined by **Peter Mansfield**. Lauterbur and Mansfield received the 2003 Nobel Prize in Physiology or Medicine.



1952

Franklin's work on X-ray diffraction helped to reveal the structure of DNA, which paved the way for the development of medical imaging technologies such as CT scans and MRI.



1903

Marie Curie and **Henry Becquerel's** pioneering research on radioactivity laid the foundation for the field of medical physics and helped to establish radiation therapy as a treatment for cancer.



Celebrate IOMP's 60th Anniversary!

Six decades of promoting the advancement of medical physics worldwide!

[Table of Content](#)

IDMP 2023 Report

Ibrahim Duhaini, PhD

IDMP 2023 Coordinator



I am thrilled to share with you the celebrations across the Globe for the International Day of Medical Physics (IDMP) in 2023: "60th Anniversary: Standing on the Shoulders of Giants." This theme holds profound significance as we celebrated a remarkable milestone in the evolution of Medical Physics over the past six decades.

60th Anniversary:

Today, as we observe the 60th Anniversary of IDMP, we reflect on the immense progress and contributions that the field of Medical Physics has made to healthcare worldwide. For six decades, medical physicists have been at the forefront, shaping advancements in diagnosis, treatment, and technological innovation. This milestone is a testament to our collective dedication to improving patient care through the application of physics principles in medicine.

Standing on the Shoulders of Giants:

The theme underscores the collaborative nature of our field and recognizes that our current achievements are rooted in the knowledge and work of those who came before us—the giants in the history of Medical Physics. We stand on their metaphorical "shoulders," benefiting from the invaluable contributions of pioneers and experts who have laid the foundation for our progress.

Celebrating IDMP 2023:

Many celebrations were held worldwide, bringing together medical physicists, healthcare professionals, and enthusiasts. These celebrations included:

1. Global Webinars and Workshops:

Engaging discussions and educational sessions to delve into the history, challenges, and future prospects of Medical Physics. The major Webinar was organized on November 7, 2023 by IOMP titled: The 60th Anniversary of IOMP – Personal Memories and Some Thoughts on the Future of Medical Physics The webinar recording has been posted online at [IOMP website](#) and [Youtube channel](#).

2. Recognition of Achievements:

Acknowledgment of the outstanding contributions made by individuals and institutions in advancing Medical Physics.

IDMP 2023 Report

Ibrahim Duhaini, PhD

IDMP 2023 Coordinator

3. Social Media Campaigns:

Utilizing the power of social media to spread awareness about the vital role of Medical Physics and encouraging conversations among professionals and the wider community. This involves videos recorded by prominent medical physicists to spread the awareness of our profession.



4. Conferences and Symposia:

International forums for sharing research findings, innovative practices, and the latest developments in the field.

5. Hospital Open Houses:

Virtual or in-person events allowing the public to explore the technologies and facilities where medical physicists work, fostering a deeper understanding of our profession.



IDMP 2023 Report

Ibrahim Duhaini, PhD

IDMP 2023 Coordinator

6. Celebration Photos Across the Globe:



IDMP 2023 Report

Ibrahim Duhaini, PhD

IDMP 2023 Coordinator

Messages by the Presidents



IDMP 2023 Report

Ibrahim Duhaini, PhD

IDMP 2023 Coordinator

Messages by the Presidents



IDMP 2023 Report

Ibrahim Duhaini, PhD

IDMP 2023 Coordinator

7. IDMP 2023 Awardees: Congratulations!



Reflection and Gratitude:

As we celebrated IDMP 2023, let us take a moment to reflect on the journey of Medical Physics, express gratitude to the pioneers, and recognize the collaborative spirit that propels our field forward. I extend my warm wishes to all my esteemed colleagues around the world for a Happy Medical Physics Day. May this celebration inspire us to continue our dedicated efforts in advancing healthcare through the principles of Medical Physics.



IDMP 2023 Report from ALFIM

By Dra Patricia Mora and MP Gustavo Sánchez, ALFIM

The profession of the medical physicist needs to be recognized every day, and the IDMP 2023 allowed us to celebrate it worldwide by recalling the journey and life of Marie Curie and all her contributions to today's medical physics.

In Latin America, many of our societies have had high-level academic and scientific programs, but at this moment, we would like to present how ALFIM celebrated this important day.

How ALFIM Commemorated IDMP 2023:



In observance of the International Day of Medical Physics, ALFIM orchestrated a series of commemorative events with a primary objective: the establishment of a repository containing succinct educational materials elucidating diverse processes within the realm of medical physics across various domains of radiological medicine. To accomplish this, ALFIM inaugurated the THIS IS HOW WE DO IT contest, inviting participation from the Latin American community of medical physicists. This competition sought to not only endorse and circulate but also to educate on the myriad procedures and methodologies integral to quality control of apparatus and detectors, radiological protection, facility safety, dosimetry, and other facets routinely undertaken by physicists in their clinical pursuits.

Dr. María Cristina Plazas spearheaded the contest, garnering substantial support from the organizing committee. Comprehensive instructions for participation, coupled with guidelines for crafting educational videos, were disseminated via the ALFIM website. At the conclusion of the registration phase, a total of 26 submissions were meticulously reviewed, the distribution being as follows: 7 in external radiotherapy, 4 in brachytherapy, 9 in nuclear medicine, and 6 in radiology.

IDMP 2023 Report from ALFIM

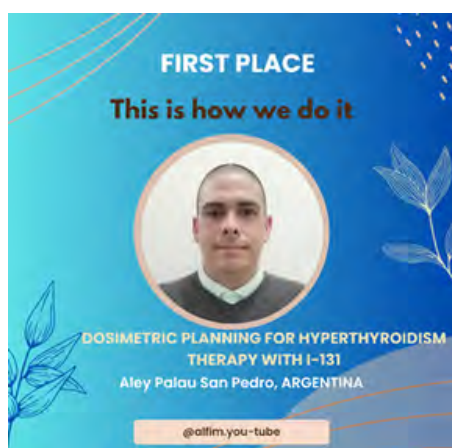
To ensure an impartial evaluation of the submissions, a distinguished panel of 23 judges—seasoned medical physicists from the region—deliberated on entries categorized by their respective domains. An evaluation template, encompassing criteria such as lucid objective delineation, methodological rigor, substantive discussion and conclusions, adroit handling of audiovisual formats, seamless narration, and overall work duration, was employed. In the initial screening, 6 submissions emerged as finalists (2 in external radiotherapy, 1 in brachytherapy, 2 in nuclear medicine, and 1 in radiology), as delineated below.

Given the importance, relevance, and pertinence of the topic for the region, the winning submissions were:

First place: Dosimetric planning for Hyperthyroidism Therapy with I-131, Aley Palau San Pedro, Argentina.

Second place: Validation of a Monte Carlo-based algorithm, José Luis Rodríguez, Chile.

Third place: Workbook for the determination of reference levels in the medical practice of nuclear medicine, Nataly Castellanos, Colombia.



Through the contest sponsors, Aley Palau will be awarded an airfare ticket to attend the X Latin American Congress of Medical Physics (Antigua Guatemala, March 2025), generously provided by the ROCOL company (<https://rocol.com.co/>). Accommodations during the congress will be graciously covered by Fixca (<https://www.linkedin.com/company/fixca/>). ALFIM will cover the conference registration for the winner, while the second and third-place winners will also receive conference registrations courtesy of ALFIM.

In addition to the contest, ALFIM hosted an entire week of sessions through conferences broadcasted on the ALFIM YouTube channel (<https://www.youtube.com/@alfim.you-tube/videos>). The results of doctoral works by various medical physicists in the region were announced, showcasing their scientific and technical contributions across diverse areas.

IDMP 2023 Report from ALFIM

A webinar titled "Scientific Publications in Medical Physics: Reality and Challenges" was conducted, featuring collaboration from AAPM through distinguished Professors John Boone, Stanley Benedict, and Elle Thomas from the Medical Physics Journal. We were also honored by the participation of our esteemed professor and researcher Ana Maria Marques da Silva, former president of ABFM and former editor of the Brazilian Journal of Medical Physics.

Finally, a session dedicated to the outcomes of the IAEA RLA 6091 Project, "Strengthening Medical Physics Capabilities to Enhance the Quality and Safety of Medical Practices," was conducted.

And...Which is the role of ALFIM about dissemination of Medical Physics information?

ALFIM has established a Policy for publications that includes, among its objectives, "Working to develop and sustain the Latin American Journal of Medical Physics, as an official organ of ALFIM". This objective is planned for the medium term.

Another objective is "Increase, sustain and support scientific publications in the region on topics of medical physics from ALFIM spokesperson magazines that, with our cooperation, assimilate the subject." Regarding this issue, ALFIM established agreements with the following magazines:

- ñ Revista Cubana de Física Médica ISSN 0253-9268 Sociedad Cubana de Física Médica y Facultad de Física de la Universidad de La Habana (Cuba)
- ñ Scientific journal "AVANCES". Centro de Información y Gestión Tecnológica, Pinar del Río. Cuba. ISSN 1562-3297; RNPS 1893
- ñ Journal of Health and Medical Sciences (JOHAMSC), Revista de la Facultad de Ciencias de la Salud de la Universidad de Tarapacá, Chile. ISSN 0719-949X

We were able to have a special issue of JOHAMSC dedicated exclusively to medical physics articles from our latin american colleges. This issue is now available at <https://www.johamsc.com/>. Since the number of articles received was numerous, we hope to have another special number of JOHAMSC in early 2024.

Also, since June 2023 ALFIM publishes a monthly newsletter. We will appreciate any help from the IOMP to spread this newsletter, specially between the Spanish spoken community.

All of this material is available at <https://www.alfim.info/publicaciones/>

BOLETIN INFORMATIVO	
No. 4, Noviembre 2023	
"Construyendo el futuro de la Física Médica"	
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IDMP 2023 Report from Bangladesh

By Md.Jobairul Islam, General Secretary, Bangladesh Medical Physics Society (BMPS)

The Bangladesh Medical Physics Society (BMPS) celebrated IDMP 2023 by launching the 11th issue of the electronic newsletter **"Voice of BMPS"**.

www.bmps.org.bd

Voice of BMPS

An official E-Newsletter of BMPS, Issue 11, November 2023

Marie Skłodowska-Curie
(7 November 1867 – 4 July 1934)

Editorial Board

- Prof Golam Abu Zakaria (Chair)
- Prof Hasin Anupama Azhari
- Dr Mohammad Anwarul Islam
- Dr Md Anwarul Islam
- KM Masud Rana
- Md Shahidul Islam
- Md Mokhlesur Rahman
- Md Jobairul Islam
- Dr Md Akhtaruzzaman (Coordinator)

Designed by
Fahim Muhammad

Voice of BMPS (An official E-Newsletter of BMPS), November 2023

IDMP 2023 Report from Croatia

By Hrvoje Hršak, Croatia



CROMPA Annual Meeting 2023

4th SYMPOSIUM

MEDICAL PHYSICS IN CROATIA



**Celebrating
International
Day of Medical
Physics!**

November 24, 2023
14:00

Department of Physics,
Faculty of Science
University of Zagreb,
Bijenička cesta 32

REGISTRATION:



info@crompa.hr

EXHIBITORS:

bit.ly/SymposiumCROMPA-23

**SIEMENS
Healthineers**

eurokontakt



ALTHEA LIFE



ORGANIZERS:



Symposium Programme

14.00 - 14.10

Introduction

14.10 - 14.25

Optimisation of the Agility MLC model in the Monaco TPS
based on clinical treatment plans

Miljenko Murković, University Hospital Centre Zagreb

14.25 - 14.40

Optimising dosimetric leaf gap for a stereotactic linear
accelerator

Mihaela Mlinarić, Specialty hospital Radiokirurgija Zagreb

14.40 - 14.55

Dosimetry Verification of the Convolution Algorithm for
Calculation of the Absorbed Dose in Leksell Gamma Knife Brain
Radiosurgery

Gabriela Jazvac, University of Zagreb, Faculty of Science

14.55 - 15.20

Introducing LUNA 3D: LAP leaps into Surface Guided Radiation
Therapy with cutting-edge innovation

Markus Zelch, LAP GmbH Laser Applikationen

15.20 - 15.45

Coffee break

15.45 - 16.00

IAEA CRO6021 PROJECT - AN OVERVIEW

Dea Dundara Debeljuh, University Hospital Rijeka

16.00 - 16.15

IAEA COMPREHENSIVE CLINICAL AUDIT IN QUALITY
IMPROVEMENT IN DIAGNOSTIC RADIOLOGY: EXPERIENCE FROM
UNIVERSITY HOSPITAL CENTRE OSIJEK

Ivana Bjelobrk, University Hospital Centre Osijek

16.15 - 16.30

Dosimetry measurements on Radgij 2 blood irradiator

Tomislav Viculin, Ekoteh dosimetry Ltd.

16.30 - 16.35

Announcement of activities within the i-Violin project

Ivana Kralik, Dubrava University Hospital

16.35 - 16.40

Announcement of activities within the PRISMA project

Ivana Kralik, Dubrava University Hospital

16.40 - 17.40

CROMPA assembly

17.40 -

Symposium reception

IDMP 2023 Report from EPSM

By Grace Healy, Christchurch Hospital

As part of the International Day of Medical Physics 2023, a quiz based on this year's theme "Standing on the Shoulders of Giants" was run during the EPSM (Engineering and Physical Sciences in Medicine) Conference held in Christchurch New Zealand.

Around the exhibitor stalls were posters of famous physicists. This meant people could visit the exhibitors, and while there, find the famous physicist, scan the QR code and answer the multi-choice questions about these giants of Medical Physics. One randomly drawn winner from the completed entries was announced at the closing of the conference.

The Posters placed around the exhibitor stalls can be found [here](#).

Examples of the posters are shown below:



International Organisation for Medical Physics
IOMP

60TH ANNIVERSARY

INTERNATIONAL DAY OF MEDICAL PHYSICS
7TH NOVEMBER 2023

STANDING ON THE SHOULDERS OF GIANTS

1. WILHELM RÖNTGEN

The German physicist, Wilhelm Conrad Röntgen was the first person to produce and detect electromagnetic radiation in a wavelength range today known as x-rays. His discovery earned him the Rumford Medal of the Royal Society of London in 1896 and the first Nobel Prize in Physics in 1901.

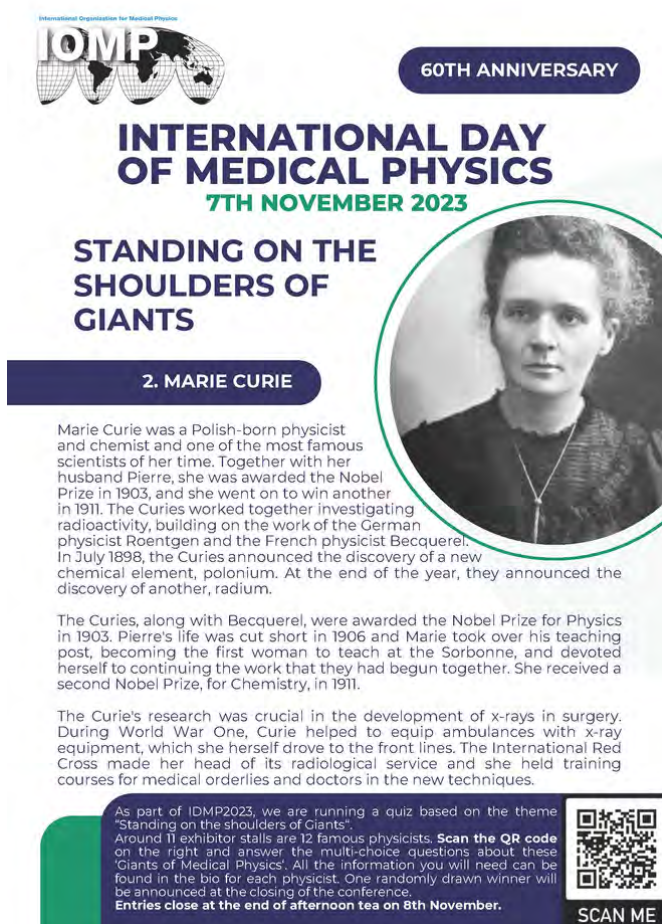
In 1895, he was examining a phenomenon that occurred when passing an electric current through a gas in an extremely low pressure tube. He soon discovered that rays (which he believed to be cathode rays) were having a fluorescent effect on cardboard coated with barium platinocyanide that he had placed around the tubes.

Röntgen conducted more experiments by placing different objects of varying sizes between the path of the rays and photographic plates. When he developed the plates he found that the thicker objects blocked more rays than thinner objects. He then asked his wife to place her hand in the rays' path. The image cast on the photographic plates showed shadows cast by her bones and a ring she was wearing. Röntgen determined that these were not cathode rays. In fact, they were a something completely new. He called these new rays, "x-rays."

As part of IDMP2023, we are running a quiz based on the theme "Standing on the shoulders of Giants". Around 11 exhibitor stalls are 12 famous physicists. **Scan the QR code** on the right and answer the multi-choice questions about these 'Giants of Medical Physics'. All the information you will need can be found in the bio for each physicist. One randomly drawn winner will be announced at the closing of the conference. **Entries close at the end of afternoon tea on 8th November.**



SCAN ME



International Organisation for Medical Physics
IOMP

60TH ANNIVERSARY

INTERNATIONAL DAY OF MEDICAL PHYSICS
7TH NOVEMBER 2023

STANDING ON THE SHOULDERS OF GIANTS


2. MARIE CURIE

Marie Curie was a Polish-born physicist and chemist and one of the most famous scientists of her time. Together with her husband Pierre, she was awarded the Nobel Prize in 1903, and she went on to win another in 1911. The Curies worked together investigating radioactivity, building on the work of the German physicist Roentgen and the French physicist Becquerel. In July 1898, the Curies announced the discovery of a new chemical element, polonium. At the end of the year, they announced the discovery of another, radium.

The Curies, along with Becquerel, were awarded the Nobel Prize for Physics in 1903. Pierre's life was cut short in 1906 and Marie took over his teaching post, becoming the first woman to teach at the Sorbonne, and devoted herself to continuing the work that they had begun together. She received a second Nobel Prize, for Chemistry, in 1911.

The Curie's research was crucial in the development of x-rays in surgery. During World War One, Curie helped to equip ambulances with x-ray equipment, which she herself drove to the front lines. The International Red Cross made her head of its radiological service and she held training courses for medical orderlies and doctors in the new techniques.

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SCAN ME



IDMP 2023 Report from India

By Mary Joan, Christian Medical College and Hospital Ludhiana, India

**International Day of Medical Physics
&
International Day of Radiology
7 - 8 November 2023**

**Departments of
Radiation Oncology and Radio Diagnosis
Christian Medical College and Hospital
Ludhiana**

Day	Time	Venue
		<u>Hospital Auditorium</u>

In recognition of the remarkable contributions made by medical physics and radiological sciences in providing quality care to patients in diagnosis and treatment, 7th November, birthday of **Madam Marie Curie** is celebrated as International Day of Medical Physics (IDMP) and 8th November, anniversary of the discovery of X-rays by German physicist **Prof W C Roentgen** is celebrated as IDoR around the world.

IDMP and IDoR celebrations are intended for the promotion of the subjects of radiation therapy, medical physics and radiology globally, increasing the visibility of the profession and outreach to fellow professionals and general public. The theme of this years IDMP celebrations is **'Standing on the Shoulders of Giants'**.

On 8th November 2023, a Continuing Medical Education (CME) Program on the theme 'Standing on the Shoulders of Giants' was organized by the Departments of Radiation Oncology and Radio Diagnosis Christian Medical College & Hospital, Ludhiana to commemorate the International Day of Medical Physics (IDMP) and the International Day of Radiology (IDoR) 2023. This CME program was accredited with 3 credit hours by the Punjab Medical Council. The CME program was held in the Guy & Constable Auditorium, Christian Medical College and Hospital, Ludhiana.

Contribution of Medical Physics in healthcare is multi-dimensional and it has improved the healthcare tremendously. The recent advancements in Medical Physics may it be in Radio diagnosis, Radiotherapy, Nuclear Medicine and various fields specially using ionizing radiation has made monumental sprints. To bring over it and recognize the contribution of Medical Physics to healthcare, International Organization for Medical Physics (IOMP) has started to celebrate 7th November, the birthday of Madam Marie Curie as International Day of Medical Physics (IDMP) since 2013.

The main purpose of IDMP celebrations include motivating the organization of activities that result in the promotion of the subject of medical physics globally, increasing the visibility of the profession and outreach to fellow professionals and general public. Since the 7th day of November 2013, the very first International Day of Medical Physics, where various academic and teaching institutes showcased the contributions of medical physicists to healthcare globally and continues to be celebrated annually thereafter. Discovery of X-rays on 8 November 1895 by German physicist Prof Wilhelm Roentgen has revolutionized the medical diagnosis and treatment. The anniversary of this discovery is celebrated around the world as IDoR in recognition of the remarkable contributions made by radiological imaging and radiological treatment to health care, and the role of radiation professionals in providing quality care to patients.

IDMP 2023 Report from India

Christian Medical College and Hospital Ludhiana has been always in the forefront to avail the best diagnostic and treatment facilities to treat patients since 1894. The teaching and training program for radiotherapy technologists in CMC Ludhiana dates to early 1960's and the MD Radiation Oncology program at the institute completed 30 years. The departments of Radiation Oncology and Radio Diagnosis collectively decided to commemorate the IDMP and IDoR 2023 and more than 260 healthcare professionals and trainees attended the CME.

The CME started with the inaugural ceremony which was graced by Dr William Bhatti, Director, CMC and Hospital, Ludhiana, Dr Jeyaraj Pandian, Principal Christian Medical College Ludhiana, Dr Allen Joseph, Medical Superintendent, CMC Hospital and Dr MK Mahajan Chief Guest and key note speaker. The inaugural program started with a prayer by Rev. Fr. Alex Peter and invocation song by the radiotherapy choir. Dr Pamela Jeyaraj, Prof and Head Department of Radiation Oncology and the Organizing Chairperson of the CME formally welcomed all the guests and delegates. Dr Harish Gambhir spoke about IDMP and IDoR and threw light on the objectives of the CME highlighting the contributions of Madame Marie Curie and Prof W C Roentgen. Dr. William Bhatti emphasized the importance of remembering the pioneers and their contributions and stated that we learn and grow in the process. Dr. Jeyaraj Pandian highlighted the importance of scientific acumen and shared insights to define and design research goals for dealing with the disease burden of the country. He also appreciated the efforts of the Department of Radiation Oncology for organizing this CME. Dr. Allen Joseph spoke on the need of keeping everyone updated with advanced treatment options and developing necessary skills and conveyed the IDMP and IDoR greetings. Prof Dr MK Mahajan a pioneer of Radiation Oncology in the region and giant in view of his services took the audience through the journey of development of Radiology and Radiation Oncology at CMCH Ludhiana. The inaugural ceremony ended with Dr. Mary Joan, Associate Professor and RSO and the Organizing Secretary of the CME extending a vote of thanks to the entire invited faculty, delegates and the team of support persons.

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STANDING ON THE SHOULDERS OF GIANTS

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Franklin's work on X-ray diffraction helped to reveal the structure of DNA, which paved the way for the development of medical imaging technologies such as CT scans and MRI.

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Progress in Radiotherapy. Harold Johns invented the "Co radiotherapy unit" in 1952. In 1954 the first clinical linear accelerator for cancer treatment was installed. This pioneering work helped establish medical physics as a unique field in healthcare.

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Marie Curie and Henry Becquerel's pioneering research on radioactivity laid the foundation for the field of medical physics and helped to establish radiation therapy as a treatment for cancer.

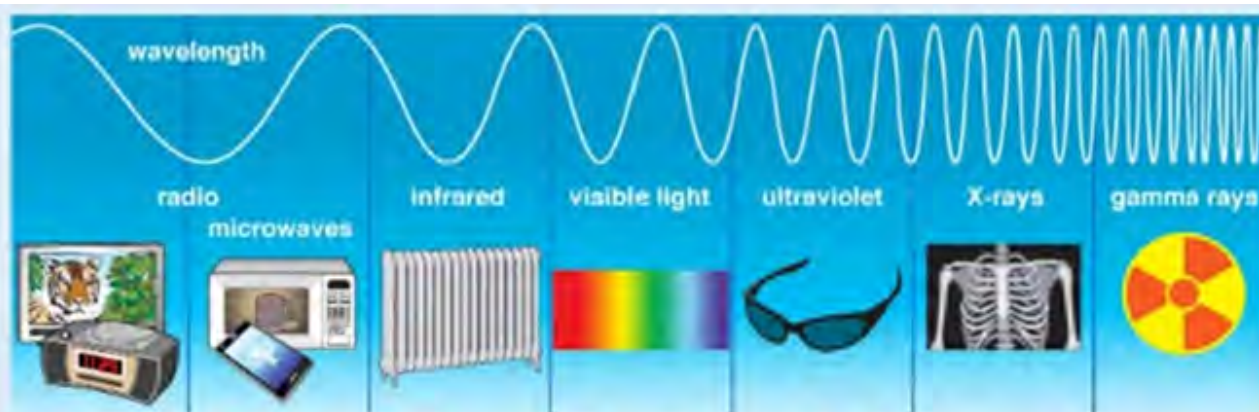
1895
Röntgen discovered X-rays in 1895 that revolutionized medical diagnostics in recognition of his work, Röntgen was awarded the first Nobel Prize in Physics in 1901.

A Legacy of Healing, Education and Research since 1894

The Christian Medical College & Hospital in Ludhiana was established in 1894. From the time of its inception, the Christian Medical College & Hospital has pledged itself to the service of the nation, her halls oft echoing its founder's refrain, 'My Work is for a King'. This motto underscores the philosophy of this premier institute which has been at the nation's service ever since. Young and old, rich and poor, high born or low born, of all faiths, the hospital has worked for all and endeavoured to give each living soul service of the best standard. Scores of young Indians have trained in its schools of medicine, dentistry, physiotherapy, paramedical and nursing, and all who leave CMC&H, take with them the same burden and privilege, to serve this vast nation to the best of their abilities. So at Christian Medical College & Hospital, be it in the traditional healing touch of the doctor, to the latest innovation in imaging, treatment, clinical, surgical or technological expertise, the vein of service still runs true. Service to each in the spirit of God remains our goal and vision.

"Lord, do with me what you will, only use me in the service of others"
— Dame Edith Mary Brown (Founder CMC & H)

IDMP 2023 Report from India



Scientific Schedule

(8th November 2023 Wednesday)

Morning session

Time	Proceedings	Chairperson
08.00AM- 08.30AM (30 min)	Registration	
08.30AM- 09.30AM (60 min)	Inauguration	
09.30AM- 10.00AM (25+5 min)	Standing on the shoulders of Giants Dr M K Mahajan	Dr. Harish Gambhir Dr. Gurpreet Kaur Thiara
10.00AM- 10.30AM (25+ 5 min)	Recent Advances in Neuro-Intervention Dr Rajeshwar Sahonta	Dr. Pamela Jeyaraj Dr. Amit Batra
10.30AM- 11.00AM (25+5 min)	Irradiation of cellular blood components- Transfusion Medicine perspective Dr Gurpreet Kaur Thiara	Dr. Roma Issac Dr. Harpreet Singh
11.00AM-11.30AM (30 min)	Tea	
11.30 AM-12.00Noon (25+ 5 Min)	Advancements in radiation dosimetry PTW	Dr. Mary Joan Dr. Abraham P Abraham
12.00Noon-12.30PM (25+ 5 Min)	Personnel Monitoring: What we should know? Dr Abraham P Abraham	Dr. Shekhar Kapoor Dr. Julie Mathew
12.30PM-01.00PM (25+5 Min)	Improving patient safety in Radiology- Minimizing human errors Dr Vineet Alexander Joseph	Dr. Manbir Singh Dr. Sunil Varghese
01.00PM-01.30PM (25+5 Min)	Facts and Myths in Radiation Protection Mrs Manjinder Kaur Dhanoo	Dr. Kamlesh Passi Dr. Gurbhej Singh Dr. Paul Sudhakar
01.30PM- 01.45PM (15 Min)	Poster Rapporteur Dr Mary Joan	Ms. Meghalamani Dr. Samuel David Dr. Lydia Solomon
01.45PM-02.00PM	Prize Distribution and Valedictory Function	

IDMP 2023 Report from India

The theme of this year's IDMP celebrations was 'Standing on the Shoulders of Giants' and it inspires us to continue our collective commitment to improving patient care, advancing medical technology, and enhancing the overall well-being of our communities. THE IDMP Day is dedicated to raising awareness about the role of medical physicists in healthcare and their contributions to the well-being of patients. Medical physicists play a crucial role in areas such as radiation therapy, diagnostic imaging, and nuclear medicine, ensuring the safe and effective use of medical technology. The International Day of Medical Physics serves to highlight the importance of their work in improving the diagnosis and treatment of diseases and promoting the well-being of individuals worldwide. The rapidly evolving applications of physics in medicine demand a new set of skills as well as outlooks to meet the challenges efficiently and successfully. This CME offered a forum for radiation professionals of various healthcare streams to come together and share invaluable experiences for improving the practice of applications of radiation in medicine. The scientific program included a keynote talk by veteran radiation oncologist and former Professor and Head of Department of Radiation Oncology, CMC Ludhiana on the theme 'Standing on the Shoulders of Giants'. He has emphasized not only the contributions of giant scientists and clinical medical physicists to the field of radiation oncology, but also reiterated the importance of the role of medical physicists in routine clinical activities of radiation oncology, academic and research work. The session was moderated by Dr Harish Gambhir, Sono-Radiologist, CMCH Ludhiana and Dr Gurpreet Kaur Thiara, Transfusion Medicine Head, CMCH Ludhiana. Following the keynote address, Dr Rajeshwar Sahonta, Associate Professor of Neurology and Interventional Neurology spoke about the 'Recent Advances in Neuro-Interventions, moderated by Dr Pamela Jeyaraj, Radiation Oncologist and Dr Amit Batra, Interventional Radiologist.

CMCH Ludhiana has a dedicated gamma blood irradiator facility for blood and blood components and Dr Gurpreet Kaur Thiara, Head, Transfusion Medicine talked about 'irradiation of cellular blood components: transfusion medicine perspective' moderated by Dr Harpreet Singh, Head of Radiation Oncology, Mohan Dai Oswal Cancer Hospital, Ludhiana and Dr Roma Issac, Head, Pathology, CMCL Ludhiana. Indications and contraindications for blood irradiation, when to use the irradiated blood, The talk was followed by a short quiz for the participants on blood irradiation. A promotional video from PTW on advances in radiation dosimetry was displayed after the tea break moderated by Dr Mary Joan, Medical Physicist and Dr Abraham P Abraham, Radiation Oncologist.

The next talk was 'Personal monitoring: What we should know' by Dr Abraham P Abraham, Radiation Oncologist moderated by Dr Shekhar Kapoor, Head, Oral Medicine and Radiology, CMCH Ludhiana and Dr Julie Mathew, Christian Dental College Ludhiana. The next talk was on 'Improving Patient Safety in Radiology- Minimizing Human Errors', by Dr Vineet Alexander Joseph a third-year PG resident in Radio Diagnosis moderated by Dr Manbir Singh, Head, Urology, CMCH Ludhiana and Dr Sunil Varghese, ENT, CMCH Ludhiana. Varying situations in Radiology in radiation safety and physical safety were discussed in the session along with practical examples from Urology and ENT. Following that the 'Facts and Myths in Radiation Protection' was discussed by Mrs Manjinder Kaur Dhanoa, Tutor and Senior Radiotherapy Technologist. This session was moderated by Dr Kamlesh Passi, Senior Medical Physicist, Mohan Dai Oswal Cancer Hospital, Dr Paul S John, Head of Neurosurgery, CMCH Ludhiana and Dr Gurbhej Sing, Head of Cardiology, CMCH Ludhiana. A thriving discussion followed including various practical situations and challenges in neurosurgery, cardiology and even considering patient safety and patient doses.

IDMP 2023 Report from India

A poster making competition on the theme 'Standing on the Shoulders of Giants' was organized for the graduate students to promote awareness and to nurture all round development. An enthusiastic participation from students comprising 52 posters and 2 models upheld the spirit of the IDMP celebrations. The rapporteuring of posters was done by Dr Mary Joan. Mr Nikhil Mathew and Ms Harshpreet Kaur won the first and second prizes for model and Ms Vedika Choudhary, Ms Samreen Ansari and Ms Komal Pal won the 1st, 2nd and 3rd Prizes in poster respectively. Dr Samuel David, Associate Director, CMCH Ludhiana presented the results and awards to the winners. Following the prize distribution, the CME came to an end with a vote of thanks and the ethos of 'Standing on the Shoulders of Giants' strongly reverberating in all participants.



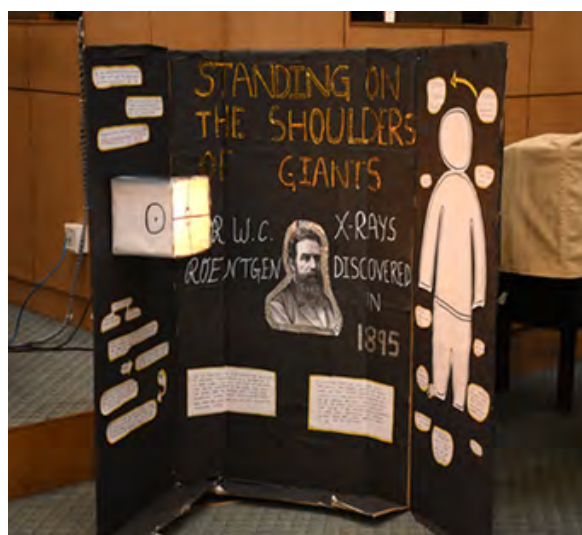
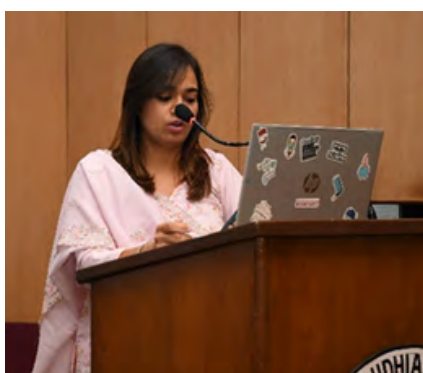
IDMP 2023 Report from India



IDMP 2023 Report from India



IDMP 2023 Report from India



IDMP 2023 Report from India

By Department of Radiation Oncology, All India Institute of Medical Sciences (AIIMS), Guwahati

The Department of Radiation Oncology at All India Institute of Medical Sciences (AIIMS) Guwahati marked the International Day of Medical Physics-2023 with great enthusiasm and reverence. The event witnessed the convergence of esteemed professionals, scholars, and experts from the field of Medical Physics, as well as the presence of the Executive Director of AIIMS Guwahati, Prof Ashok Puranik.



INTERNATIONAL DAY OF MEDICAL PHYSICS-2023

"60th Anniversary: Standing on the Shoulders of Giants"

Organized by Department of Radiation Oncology,
ALL INDIA INSTITUTE OF MEDICAL SCIENCES, GUWAHATI

Program Highlights:

- ❖ Lecture on **"Physics & Medicine- A historical perspective"** by Mr. Jibon Sharma, Senior Physicist & RSO, Gauhati Medical College & Hospital
- ❖ Lecture on **"Current status of Medical Physics Education & Training in India"** by Mr. Shachindra Goswami, Senior Medical Physicist & RSO, Dr. B. Borooah Cancer Institute
- ❖ Book launch of **"Medical Physics MCQs for RSO exam"**



 7th Nov, 2023  10:00 AM – 10:45 AM

 250 LT, 1st Floor, MEDICAL COLLEGE BUILDING, AIIMS GUWAHATI



Patron
Prof. (Col) Ashok Puranik
Executive Director
AIIMS Guwahati



Organizing Secretary
Dr. Gautam Sarma
Associate Professor & Head
Dept. of Radiation Oncology
AIIMS Guwahati



Co-organizing Secretary
Dr. Partha Pratim Medhi
Assistant Professor
Dept. of Radiation Oncology
AIIMS Guwahati



Scientific Secretary
Mr. Hrishukesh Kashyap
Medical Physicist & RSO
Dept. of Radiation Oncology
AIIMS Guwahati

The occasion was graced by two distinguished Senior Medical Physicists of Assam, India who enlightened the audience with their insightful lectures. Mr. Jibon Sharma, Senior Medical Physicist & RSO at the State Cancer Institute, Guwahati, India, presented a lecture titled "Physics & Medicine: A Historical Perspective." The second lecture, titled "Medical Physics Education & Training in India," was delivered by Mr. Shachindra Goswami, Senior Medical Physicist and RSO at the Dr. B. Borooah Cancer Institute in Guwahati, India.

IDMP 2023 Report from India

In addition to these enlightening presentations, a significant highlight of the event was the release of a comprehensive book titled "Medical Physics MCQs for RSO Exam." The book, meticulously edited and authored by a team of experts namely Dr. Gautam Sarma, Mr. Hrishikesh Kashyap, Mr. Bimugdha Goswami, & Dr. Partha Pratim Medhi, is poised to be a valuable resource for individuals seeking to excel in the field of Medical Physics and pass the Radiological Safety Officer (RSO) examination.

Prof. (Col) Ashok Puranik, the Executive Director of AIIMS Guwahati, graced the event with his presence and delivered inspiring words that motivated all attendees. His support for the growth and excellence in the field of Medical Physics was evident in his address.

The event was not only attended by the medical physics community but also garnered the presence of senior faculties, nursing officers, post-graduate students in medical physics and other staff from AIIMS Guwahati. This diverse audience showcased the wide-ranging impact and relevance of medical physics in healthcare.

The International Day of Medical Physics 2023 celebration at AIIMS Guwahati was a significant gathering that reaffirmed the importance of medical physics in the world of healthcare and highlighted the dedication of professionals in advancing this field.



Book titled **“Medical Physics MCQs for RSO Exam”** was launched in AIIMS Guwahati on the occasion of IDMP-2023. Authors from left to right are Mr. Bimugdha Goswami, Dr Partha Pratim Medhi, Dr. Gautam Sarma & Mr. Hrishike

IDMP 2023 Report from Japan

By Naoki Hayashi, Chair of International Affairs Committee of JSMP

The Japan Society of Medical Physics (JSMP) held medical physics-related events at five facilities on the International Day of Medical Physics (IDMP2023). The details of these events are as follows.

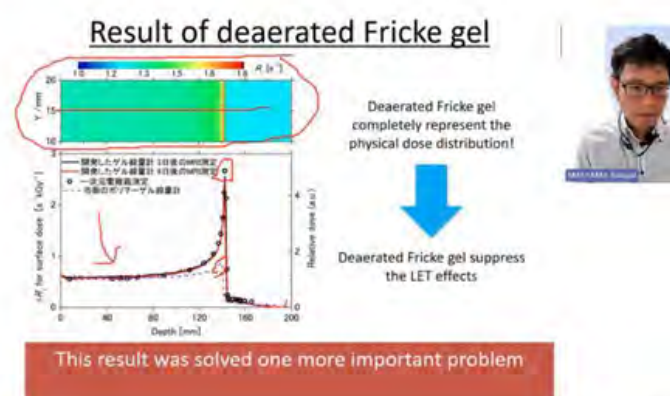
1) Hokkaido event

The Medical Physics Seminar was held at Hokkaido University. In this seminar, Dr. Takahiro Kanehira, Department of Medical Physics, Hokkaido University Hospital, reported his latest research on "Lymphocyte Decrease in Lung Cancer Radiotherapy. Although the lymphocyte count decrease due to radiotherapy has a significant impact on prognosis, it is not clear whether the lymphocyte count decrease is correlated with dose or clinical parameters. He discussed the construction of a model to predict lymphocyte count decrease based on correlation analysis with dose indices and clinical indices and the construction of a compartment model that considers lymphocyte circulation. A total of 15 people attended this event.



2) Chiba event

The IDMP2023 web seminar was held at National Institutes for Quantum Science and Technology as the joint event between the Japanese Qualification Board of Medical Physics (JBMP) and JSMP. First, Dr. Naoki Hayashi, Chair of the International Affairs Committee of the JSMP, explained the purpose of the IDMP. Then, Dr. Takuya Maeyama of Kitasato University gave a lecture entitled "Gel Dosimeters and Their Mechanisms." In general, the response of gel dosimeters varies depending on the radiation quality. In particular, there is a dependence on Linear Energy Transfer (LET), but the new gel dosimeters have reduced this effect. By clarifying the mechanism of the gel, such a new gel dosimeter could be developed. Finally, Dr. Shigekazu Fukuda, Chair of the International Affairs Committee of the JBMP, provided a summary of the lecture and closing remarks. A total of 35 people attended this event.



IDMP 2023 Report from Japan

3) Chubu event

The IDMP2023 event was held at Nagoya University Tsurumai Campus as a hybrid event. The theme was "Let's talk about the future of medical physics research." The event started with an opening address by Dr. Akihiro Takemura, Kanazawa University. Dr. Takuya Yabe, QST Takasaki Advanced Radiation Research Institute, gave a lecture on his study-abroad experience and research in Munich. There were many questions from the attendees about the difficulties that he faced while studying abroad and his preparation before studying abroad. This was followed by a lively, free discussion on medical physics research and career paths, research methods, and methods of writing papers. Through this seminar, we could see that the students were interested in the work and careers of medical physicists. The seminar was closed with a final address from Dr. Hayashi, Chair of the International Affairs Committee. A total of 31 people attended this event (in-person: 16, online: 15).



4) Kansai event

The IDMP2023 seminar was held at Kansai Medical University. After the introduction of the distinctive features and "promotion points" of each of the four medical physics educational facilities in Kansai (Kyoto University School of Medicine, Kyoto University Faculty of Engineering/Osaka Medical and Pharmaceutical University, Osaka University, and Kobe University), students were divided into five groups, with one moderator and three to four students, and discussed in groups on two themes: "What made you decide to become a medical physicist and what you envision as your career path" and "International exchange". The event was a great success with heated discussions among the Bachelor -Doctoral students and active inter-university exchanges. A total of 23 people attended this event.

IDMP 2023 Report from Japan



5) Kyushu event

The IDMP2023 seminar was held at the Teikyo University Fukuoka Campus as a hybrid event. Under the theme of "AI and the Future of Medical Physicists," a roundtable discussion was held with Dr. Noriyuki Nagami, Saga University Hospital, Dr. Hidetaka Arimura, Kyushu University, and Dr. Keisuke Maehata, Teikyo University as panelists. After the lectures by each speaker, the participants were able to discuss with medical physicists who match the coming era. A total of 35 people attended this event (in-person: 17, online: 18).



IDMP 2023 Report from Malaysia

(1) UMMC Medical Physics Seminar & IDMP Celebration 2023

By Azleen Mohd Zain, University of Malaya Medical Centre, Kuala Lumpur, Malaysia

The Department of Medical Physics, University of Malaya Medical Centre celebrated IDMP 2023, by organizing a two-day seminar on medical physics at Eastin Hotel, Petaling Jaya from 7-8 November 2023, with the theme **"Standing on the Shoulders of Giants."** This celebration is held annually on November 7, and this year marked the 11th anniversary of the event. Its purpose is to raise public awareness about the importance of medical physics in healthcare, especially in its role in diagnosing and treating diseases.



PUSAT PERUBATAN UNIVERSITI MALAYA

FEES
 UMMC / UM STAFF (RM350.00)
 OTHER (RM 500.00)
 With e-Certificate & CPD Point

7th & 8th NOV 2023
 Eastin Hotel, Petaling Jaya

UMMC MEDICAL PHYSICS SEMINAR & IDMP CELEBRATIONS 2023

"Standing on the Shoulders of Giants"

HIGHLIGHTS

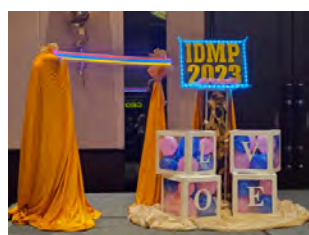
- Session 1 : Nuclear Medicine
- Session 2 : Radiotherapy
- Session 3 : Non-Ionising Radiation
- Session 4 : Radiation Protection
- Session 5 : Diagnostic Radiology
- Session 6 : Medical Physics Research
- Session 7 : Safety And Security
- Session 8 : Dosimetry

REGISTRATION LINK



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IDMP 2023 Report from Malaysia

(2) IDMP Celebration by the Penang State Health Department

By Prema Devi Chellayah, Hospital Pulau Pinang, Penang, Malaysia

A celebration has been put forward by the Penang State Health Department, marking the International Day of Medical Physics (IDMP) 2023 at Hospital Pulau Pinang. This significant event brought together physicists from various sectors, including government agencies, universities, and private hospitals in Penang.



(3) Celebration of IDMP 2023 from PPUSMB & IPPT USM

By Noor Diyana Osman, University Science Malaysia



IDMP 2023 Report from Nigeria

By Iyobosa B. Uwadiae, Secretary General, Nigerian Association of Medical Physics (NAMP)

On the 7th of November 2023, the Nigerian Association of Medical Physicists (NAMP) joined the rest of the world to mark the International Day of Medical Physics (IDMP). It was a time to reflect on the contribution Marie Curie made to the field. As women, we challenged ourselves to work harder so that one day, we too will make significant contributions to science and medicine. In terms of gender balance, NAMP still has a very long way to go to catch up with the rest of the world. There are still very few women who choose to study physics and by consequence, few take up careers in medical physics. As of the time of writing this, registered NAMP women make up a little over 10 % of the entire membership. Being a female in medical physics has its own challenges and opportunities not so different from the challenges and opportunities most women face in other professions dominated by men. Albeit there are still some unspoken biases unique to our culture.

The NAMP women tell us briefly what they love about medical physics and the challenges they face as women in the profession. Highlighted are the stories of three women who rose above the challenges they faced and how they created opportunities for themselves to get to where they are today. They are an inspiration to women practicing medical physics in Nigeria today.

Question: What do you love about medical physics and what challenge(s) do you face as a woman in medical physics?



Adaku Obilor: "It is a big privilege for me to be able to contribute to patient care as a Physicist. The main challenge I face as a woman is being a working mother. It's challenging to balance being a female Medical Physicist, a wife and a mother."

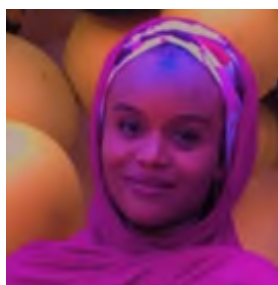


Aderonke Adedokun: "I love medical physics. From my point of view, one of the challenges of being a woman in medical physics is not being given the opportunity or the lack of confidence to take lead roles due to the mentality that women cannot balance family life with career life."



Dr Anwuli Tobi: "I love my contribution in enhancing quality and safety of ionizing radiation in health care. The challenge of being a woman in medical physics for me is balancing family responsibilities with demanding work schedules."

IDMP 2023 Report from Nigeria



Benazir Khallir: “I find fulfillment in promoting inclusivity in medical physics as a woman but navigating a male-dominated field poses occasional hurdles in gaining equal recognition.”



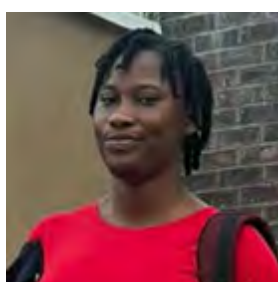
Dr Bidemi Akinlade: “Being able to apply some of the principles of measurements and laws of physics in the safe and effective use of radiation in medicine. Challenges of sharing time between career and many other commitments.”



Chidinma Megwa: “I find immense fulfillment in breaking gender barriers, contributing diverse perspectives and inspiring the next generation of female scientists.”



Dorathy David: “As a female in medical physics I have a sense of career fulfilment. The major challenge I face as a female, is the career break I must take for maternity and family care. When training opportunities come up, females are given less consideration.”



Esther Imisioluwa: “What I love about medical physics as a female is being part of a profession that saves lives. One of the Challenges as a female medical physicist is that women are more likely to change their work schedule due to marriage.”



Evelyn Hembadoon Aligba: “Being a woman in medical physics has opened up my mind in the world of research bringing me closer to the study of medicine. As a woman in medical physics, having a family has affected my productivity and efforts in moving up the ladder in the field of medical physics.”

IDMP 2023 Report from Nigeria



Farida Bala Mashi: “Medical Physics is a lovely field. As a bridge between science and medicine, I really enjoy being able to play a role in the treatment of cancer patients. As a married woman, the challenge that I experience is related to childbirth being that radiation is not foetus friendly and also balancing my role as a mother with work most especially when treatment extends beyond working hours.”



Hadiza Sani Birchi: “As a woman in medical physics I face challenges. I had my twins just at the time when I was trying to build a career in medical physics. I struggled a lot because of the pressure of training as well as work and then my twins who were still very young needed me the most. It was really hard to focus on my work. But thank God for everything I was able to succeed.



Hephzibah Umoren: “Medical Physics gave me another exciting option into the medical field; my challenges are, after working as a medical physicist for over 15 years in Nigeria, the non-recognition from our sister professionals (Oncologists, Radiologists and Nuclear Medicine Physicians), no cadre structure and lack of/no available equipment to work with.”



Inioluwa Ariyo: “Being a woman in Medical Physics gives me a chance to promote diversity. A major challenge for me is work- life balance.”



Janefrances Okpilike: “I appreciate the unparalleled support network for women which offers excellent opportunities for young women in medical physics to thrive professionally, making significant contributions to health care and advancing research. The challenge I face is that of accessing clinical training and equipment.”



Dr Mary-Ann Ekpo: “Physics is perceived globally as a course predominantly for males, so being a female Medical Physicist among men constantly reminds me of my extra abilities to take on challenges that ordinarily women would shy away from.”

IDMP 2023 Report from Nigeria



Rev Sr Ngozi Madubuonu: “As a medical physicist, I am fulfilled knowing that I help to alleviate the pain of those who go through the torture of cancer. My major challenge as a woman is the issue of Gender imbalance. For example, in my place of work I am the only female medical physicist in the whole university.”



Nusirat Adedewe: “As a woman in Medical physics built with the nature to nurture, I love that I am able to impact considerably to the growth of the profession and largely to the benefit of the patients. However, having very few female mentors whose experiences could be a learning path into navigating life and work is quite a challenge.”



Prof Rachel Obed: “What I like about being a Medical Physicist is the ability to optimize imaging procedures with respect to image quality and patient dosimetry and also to train future MPs. My challenge as a woman in Medical Physics is how to maintain a balance between my career (or job) and my family life.”



Sola Osunsami: “One of the things I really like about being a woman in Medical Physics is the ability to be confident about being a woman and bringing my own leadership style and skills to play in the profession. When I started in Medical Physics (over 30 years ago), it was still very male dominated and being a successful woman came with the temptation to be like a man. Interestingly, my greatest challenge came from other women who treated me as if I was less competent than my junior male colleagues.”



Sumaiya Yakubu: “As a woman in Medical Physics, I enjoy utilizing dynamic, innovative solutions and collaborating with diverse professionals to provide high-quality patient care.”



Temitope Orotayo: “What I love about medical physics are the teamwork, the significant contribution I make to improve the quality of life of people, problem solving, research and training. The major challenge I face is finding a balance between family and my career.”

IDMP 2023 Report from Nigeria



Becoming a Medical Physicist

I am **Francisca Eiterebhe Abdul**, a Medical Physicist at the University of Benin Teaching Hospital (UBTH), Edo-State. My journey as a Medical Physicist began when I gained employment to work as a Medical Physicist. Prior to this time, I never knew about Medical Physics, though I was conversant with Nuclear Physics. I remember in my third year as an undergraduate, I wrote on “The Diagnostic and Therapeutic Uses of Radiation”. I surfed the internet for this information and was fascinated by the benefits of the peaceful uses of radiation, most importantly in the health sector. My interest immediately came alive in this aspect of Physics, but I had to take my mind off it because I felt there were

no prospects in Nigeria. Little did I know that at the National Hospital, Abuja which was just a few kilometers to my residence, there were medical physicists working there. This was grossly due to ignorance and probably lack of exposure to other areas of Physics.

After graduation, I decided to get a post graduate degree in Geophysics as I had already developed interest in it while carrying out my final year undergraduate project. I also had mentors in the field. Shortly before resumption for my graduate program, I got employed at the University of Benin Teaching Hospital, Benin city, Edo state, Nigeria. I was thrilled when I discovered that the job placement was for Medical Physics. The excitement was so much that I could not hide it. During the training, someone boldly asked me why I was overjoyed. You know, that feeling of practicing what you studied and in your area of interest - it gives a deep sense of fulfillment.

The journey continued from that point to resumption at my workplace and to graduate school, I had to change my course from Geophysics to Biophysics/Medical Physics (that was the closest to my area of work). Somewhere along the line, I got married and the long-awaited National Residency Program was to kick off in the same month of my wedding. I completed the registration process as I was among the first cohort. After the marriage, I became pregnant and so I could not continue with the Residency Program. I lost that opportunity unfortunately. I had to return to my duties in the radiotherapy department but not with an open embrace as the then Director of my institution was not happy that I had to step out of the program because of my situation. This gave me mixed feelings as I wondered if it was a crime for a woman to want to build a family. I also wondered if it was possible to build a family and a career at the same time. I almost envied my male colleagues but had to encourage myself. My friends spoke kind words to me saying that I can achieve whatever I wanted to and still build a family. There were trainings I could not attend/not selected for, duties I could no longer carry out during the period of pregnancy, but I however was not deterred as the passion to become a better version of me kept pushing me ahead. After childbirth, I was faced with the rigour of nursing my babies and still trying to meet up with my career goals. I could no longer attend seminars/conferences as I used to, as I was confined to a routine. I felt stagnated by the pause in my career development, but my hopes were still high.

IDMP 2023 Report from Nigeria

I forged ahead to advance my career after I abandoned my previous PhD program, which I had commenced in 2010, due to lack of funds and equipment to work with. I re-registered for the program again in 2016. Several challenges ensued that almost got me discouraged but with undaunted faith and determination, I have been moving on and I am at the terminal stage of the research work.

I would like to end by stating that it would be great if there are more, or special opportunities carved out for women particularly to compensate for some of the lags we face trying to meet up with family demands. This will be a great encouragement to us, and it will further drive us not only to pursue our dreams, but to nurture, mentor and give hope to young women that it is possible to succeed as a female in the medical physics profession.

If I can do it, I believe every aspiring woman in medical physics can do it.



IDMP 2023 Report from Nigeria



Becoming a PhD Holder

My name is **Mary-Ann Etim Ekpo**, a Medical Physicist with the ASI Ukpo Comprehensive Cancer Centre. I just obtained a doctorate degree in Medical Physics from the prestigious University of Ibadan in May 2023. The journey to my PhD degree is not devoid of challenges but through it all, I was able to attain success in my academic pursuit.

I registered for my PhD in 2012 immediately after my master's degree program. The motivation to go ahead with the doctorate program were basically the good result obtained from the master's program, the assurance of financial/moral support from my family and lastly from my supervisor Prof Rachel Obed who had just returned from a fellowship overseas and gave me some interesting research ideas to choose from. She gave me several articles to study and chose anyone I would be able to carry out. I finally made a choice which she wholeheartedly supported and then the journey began.

The first challenge I had was the inability to fully understand and clearly define the scope of the study owing to my inadequate knowledge of diagnostic imaging. This is because my master's degree was in radiation and health physics, and I discovered that they were quite a number of preliminary courses which I should have done to establish a good foundation for my PhD research thesis. I practically spent the first 2years of my PhD reading and educating myself on the basics I needed to know including visiting a few hospitals to see and understand the working principles of a CT in order to identify the research problem, then go ahead and develop the proposal.

In 2013, my institution through my supervisor signed a memorandum of understanding with the ICTP under the Federation Scheme program where doctoral students are sent to ICTP for some workshop/training for a one-month period. Fortunately, I was the first beneficiary of the award, and I went to ICTP from September – October 2013. My visit to ICTP further broadened my understanding of the research problem. I gathered knowledge and made lots of collaborations and connections which helped me get the Sandwich Training Education Program (STEP) award fellowship in 2016 – 2017. The STEP fellowship opened me up to a whole new world of research.

Another challenge I encountered was access to hospitals across Nigeria with functional CT machines where I could effectively carry out my research. Due to this shortage of equipment and the fact that a greater number of the equipment are concentrated in western Nigeria. Also, I experienced challenges with having to perform quality assurance procedures on the equipment due to unavailability of QC kit in the country to go round all the centres. This issue necessitated the hiring of a QC kit from a private consultant which cost a lot. Technically, I started data collection 2017 and rounded up in 2018 although interrupted with machine breakdown, ethical issues, etc.

IDMP 2023 Report from Nigeria

A major challenge which is peculiar to the Nigerian educational system is the incessant industrial action by the academic staff of the universities. This action always cripples and interrupts academic calendars because it sometimes lasts 6months to 1 year.

Fast-forward to 2019, when I started analyzing my results, I encountered quite a few challenges which emanated from redesign of the research topic to increasing the scope, administrative bureaucracies etc. All these problems including the general problem of recurrent industrial strike actions kept pushing the graduation date further until May 2023. After satisfying all conditions, I successfully defended my thesis.

I would like to state here that, in all the challenges, **I didn't stop believing, my passion for the profession kept me constantly motivated.** My poise for excellence made me see the criticisms and corrections objectively so I could achieve good success and also come up with a research I'll always be proud of.



IDMP 2023 Report from Nigeria



Becoming a Board Certified Medical Physicist

In 2017 when IMPCB announced the commencement of their exams, I was elated. It came at a time when I had lost hope in NAMP and was long overdue for the submission of my portfolio for the IPEM route 2 scheme as advised by my friend Nadia Latif in the UK. The Hope of getting certified and recognized as a qualified clinical medical physicist, a requirement I knew was mandatory and necessary in a normal country. I immediately drew the attention of my colleague Bede Madu and we set sail on a mission to get the information out to other colleagues in the country. We made calls advocating for the need for us to take the exams. One particular call stood out, the call with a passionate ‘crazy’

physicist in Abuja, Obinna Asogwa, ‘crazy’ like us. The call ended in a dead end and took a different turn (story for another day).

I informed my family of the challenges and deficiencies surrounding me but they insisted that it only meant I had to work harder and go the extra mile to make up for the shortcomings. That I did!

Fast forward to late 2017, I informed my then PhD supervisor, Prof Fatai Balogun of my plans to take the exam and in his usual way said ‘go ahead’ but defend your thesis first. He even went ahead to tell his other students to prepare to take the exams even if it was only part 1. In March 2018 after defending my thesis, I informed my younger brother of my desire again and the challenges I had. He encouraged me greatly saying to make sure I surmount every one of those challenges and stop making excuses. He went ahead to pay for my hotel accommodation and flight ticket, to attend a conference where the exams would be held later that year, as then the exams were held in various sites overseas. Two weeks later, he passed on. My world crashed before my eyes, and I didn’t see the need to go on. All plans came to a halt! I dedicate this certification to him. My original mentor and love!

I took a leave of absence from my job with no plans. I just stayed at home with my family.

A few months later, Prof David Lurie (one of my mentors) at the University of Aberdeen, offered me a research fellowship in his FFC-MRI research group. He thought it would also be a good opportunity for me to take a break from home and clear my head. I reluctantly flew to Scotland, but it ended up being a very good decision and opportunity. My hope came alive and the decision to go back home and make a difference was re-kindled. I told him and Dr John McLellan (one of my MSc supervisors) of the plan to take the IMPCB exams and they encouraged me and even wrote the attestation letters I needed to process my application.

Fast forward to 2019, we got to know through Dr Taofeeq Ige (past FAMPO president) of two Nigerians in Saudi Arabia who had become IMPCB Diplomates: Lookman Abdullah and Adekunle Akintokun. We were excited about the news but it increased the pressure. I felt they were not in Nigeria and didn’t face our challenges. All I could hear in my head was ‘this cannot work in Nigeria’.

IDMP 2023 Report from Nigeria

We do not have a residency/formal training program! I basically designed my own program using the IAEA TCS 37, 56 and related documents. Dr Ige began advocating for NAMP members to take the exams and even offered to pay the registration fees of some who would show interest.

Come November 2019, I attended the annual NAMP conference in Lagos (after the then NAMP president Prof Moses Aweda made sure that I did). Thank God I did because I got to meet Lookman Abdullah in person. We interacted and I was happy to know that he had a heart for NAMP's development. I told him of my IMPCB plans and asked a simple question: "do you think I can make it?". He said "you? Why not?". Great! Little did he know that I was writing the exams in a month's time. December 2019 came and I took the exams at ICTP Trieste after postponing it 4 times and almost getting "threatened" by IMPCB to take or forfeit. I passed parts 1 & 2. Then the long road to part 3 oral exams began. A lot happened between 2020 and 2023 (this deserves its own write up!).

June 10 2023 came I took the exam again. When I saw the list of 5 +1 examiners, I fainted standing. They were intimidating! 3 hrs of questioning went by in a jiffy. One month later the result was out. I was conditioned and asked to resit category 3, which I failed, in 4 months. "Oh no, I can't do this again" I said. Grateful for my colleagues, senior colleagues, and mentor – Mary-Ann Ekpo, Bede Madu, Lookman Abdullah, Akin Omojola, Bamidele Olajide, Mark Umakha, Adekunle Akintokun, Ms Sola Osunsami, Dr Taofeeq Ige, Dr Claire Dempsey, Dr Peter Sandwall and Prof Saiful Huq, who celebrated the result and helped to reset my brain to focus on the 4 passed and not the 1 failed. October 7 came for the exam retake. It was the longest one hour of my recent life. "Please let this cup pass over me" I prayed and cried. I can 'breathe' well now that the result is out.

It's funny how much my colleagues and I celebrated the outcome of the result, and someone asked what the big deal was? It wouldn't be a big deal if our profession was recognized, if we were properly remunerated and if we had our residency program up and running with board certification like the rest of the normal world. Especially considering how much impact we make in the field of radiation medicine particularly. So yes, it was and still is a big deal!

In 2022/2023, the AAPM and NAMP partnered to develop a program for clinical medical physicists in the country under the leadership of two AAPM committees led by Prof Stephen Avery and Prof Wil Ngwa. The continuing education program was intended to improve the quality of medical physics practice in Nigeria. In addition, an interested few of us were privileged to be part of an ongoing weekly mentorship and TRS 398 teaching class led by Prof Saiful Huq. Both programs were a game changer for me in preparation for my exam as they helped in boosting my confidence and clearing up grey areas. We thank them greatly for the effort.

Earlier this year, the NAMP Executive Committee constituted a board under the leadership of Ms Sola Osunsami, tasked with the mandate of ensuring that all clinical medical physicists in the country become certified under our #Vision2024 goal termed "Project CertiPHY". The long-term goal being to develop a residency program with support from members of the AAPM, IPEM and the ACPSEM under the guidance of Dr Claire Dempsey. We also plan to get accreditation from the IMPCB.

IDMP 2023 Report from Nigeria

I am challenging my colleagues to get certified! We need to be certified! That is the first step to being a clinically qualified medical physicist. Anything less is not good enough for us. I am a better medical physicist today not just because of the IMPCB certificate but because of the process I went through to get here. The challenges made it better as it proves that success largely depends on the mindset of the individual.

In terms of women development, we intend to as an association, in the coming months and years, create and promote activities that would increase the number of women in the profession while at the same time creating a more inclusive environment for us to thrive. As the NAMP Secretary General and a female, I have had the utmost privilege of serving the association in the last two years and have been recently re-elected to serve for the next two years. **I believe if women are empowered, they have the capacity to do much more.**

We are currently open to ideas, suggestions, and collaborations. You can please write to women@namp.ng or to info@namp.ng for general NAMP communication. We would love to hear from you.

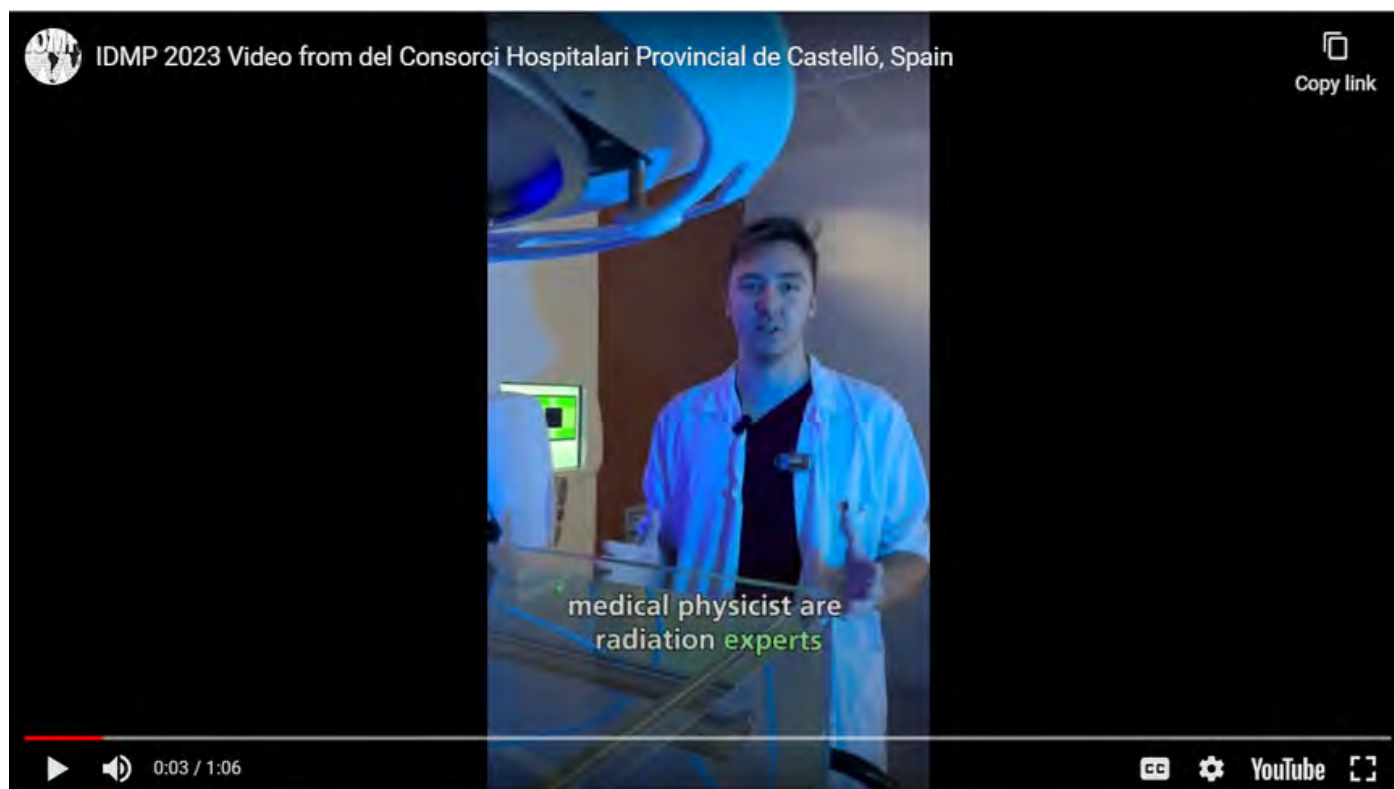
Thank you.



IDMP 2023 Report from Spain

By Xavier Jordi Juan Senabre, del Consorci Hospitalari Provincial de Castelló, Spain

The medical physicists from del Consorci Hospitalari Provincial de Castelló, located in the city of Castelló de la Plana, Spain has produced a reel that incorporates professionalism, a touch of humor and dynamic transitions to commemorate IDMP 2023. The reel was posted on several social networks: Instagram, Facebook, TickTock, X, Linkedin on 6 November 2023.



IDMP 2023 Report from Tanzania

By Rehema Mashaka Ramadhan, Ocean Road Cancer Institute, Dar es Salaam Tanzania

The medical physicists at the Ocean Road Cancer Institute, Dar es Salaam Tanzania celebrated IDMP 2023 by promoting the role of medical physicists with the message *"this is the time to rise awareness to the society about the importance of medical physics in healthcare, and its role in the diagnosis and treatment of diseases"*.







United Republic of Tanzania
Ministry of Health
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International Day of Medical Physics

7th November 2023
Theme: 'Standing on the Shoulders of Giants'

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International Organization for Medical Physics



International Conference on Medical Physics - 2023



AMPICON 2023 **AOCMP 2023** **ISEACOMP 2023**

Theme: Innovations in Radiation Technology & Medical Physics for Better Healthcare

December 6th - 9th 2023, DAE Convention Centre, Anushaktinagar, Mumbai, India

25th ICMP 2023 REPORT

25th ICMP 2023 Report

Sunil Dutt Sharma

President, Association of Medical Physicists of India (AMPI)

Co-Chair, Conference Organizing Committee & Scientific Committee, ICMP-2023

The 25th International Conference of the IOMP namely the “International Conference on Medical Physics 2023” (ICMP-2023) was jointly organized by Association of Medical Physicists of India (AMPI), IOMP, AFOMP and SEAFOMP during 6 to 9 December 2023 at DAE Convention Centre, Anushaktinagar, Mumbai, India. The theme of the conference was Innovations in Radiation Technology & Medical Physics for Better Healthcare. ICMP-2023 brought together the experts, researchers, and professionals from around the world to discuss the latest advancements and breakthroughs in the field of medical physics and associated disciplines. This conference was well attended by more than 1300 participants from 33 countries including 134 delegates/invitees/experts from outside India. The participation of more than 325 medical physics students and about 200 medical physics senior citizens was the testimony of the larger medical physics community of India. We can proudly state that the ICMP-2023 has brought together the medical physics professionals of four generations (4G). Thus, ICMP-2023 was indeed the 4G conference.

The opening ceremony of the conference presented the mixture of Indian tradition (lamp lighting, welcome to dignitaries by flower bouquets, felicitation of guests) and global scientific culture. Dr. Sudeep Gupta, a renowned medical oncologist who is currently the Director of Tata Memorial Centre (a premier cancer institution of India) in Mumbai India, was the chief guest for this function. Figure 1 is the photograph of the opening ceremony of ICMP-2023 showing release of souvenir and book of abstracts of the conference.



Figure 1: Photograph of the opening ceremony of ICMP-2023 [From left to right: V Subramani, Sunil Dutt Sharma, Eva Bezak, Dinesh Kumar Aswal, Sudeep Gupta, John Damilakis, Balvinder Kaur Sapra, Chai Hong Yeong, Rajesh Kumar]

25th ICMP 2023 Report

Sunil Dutt Sharma

President, Association of Medical Physicists of India (AMPI)

Co-Chair, Conference Organizing Committee & Scientific Committee, ICMP-2023

The scientific program of the conference was very comprehensive and it included almost all the topics of recent interests for deliberations such as artificial intelligence in medical physics, technology and techniques of radiation oncology, treatment planning, emerging and newer techniques of radiation therapy, imaging in radiation oncology, advanced technologies and techniques of medical imaging, emerging and newer techniques of medical imaging, radiation dosimetry and radiation safety, targeted therapy, radiation biology, modeling and simulation, translational research, education/training and certification in medical physics.

The scientific schedule included 4 plenary sessions (6 talks), 2 joint sessions (IOMP-IAEA and IOMP-IRPA with 4 talks), 6 IOMP schools (including 2 CMPI teaching sessions), 14 special symposiums (46 talks), 36 scientific sessions (36 invited talks plus 102 oral paper presentations), 2 technical sessions (11 technical talks from the exhibitors), 359 poster presentations, 4 poster rapporteur sessions (15 reporters briefing on the poster presented at the conference), and one evening lecture. Scintillating debates (2 sessions), namely “Will AI replace clinical medical physicists?” and “Whether harmonization in certification of medical physicists is required?” and medical physics quiz competition (2 sessions) were the special attractions for many participants. Live telecast of the scientific deliberations was made through YouTube and links for all the deliberations are made available at the conference website www.icmp2023.org. In addition, links of all the presentations have also been communicated to IOMP, AMPI, AFOMP, and SEAFOMP for uploading at their websites.



25th ICMP 2023 Report

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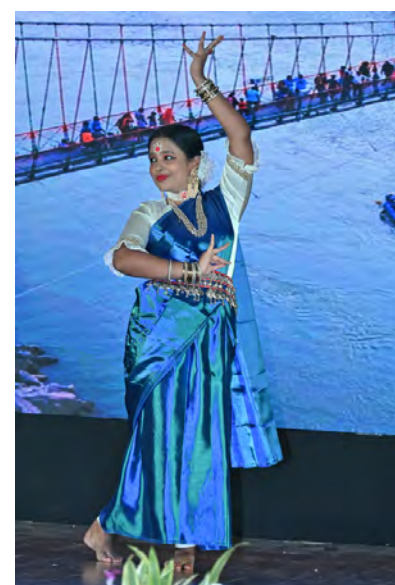
The inclusion of YOGA session (special thanks to Prof M. Mahesh for the proposal) in the mornings of 2nd, 3rd and 4th day of the conference was of special interests to many and it has been well appreciated. I am hopeful the Yoga session started from ICMP-2023 will be the part of many other conferences in the world.

In summary, the total deliberations of the conference included 233 oral presentations and 359 poster presentations. To cover such a large number of oral presentations, it was inevitable to conduct three parallel sessions (please see the scientific program available at www.icmp2023.org). It is worth mentioning here that IOMP introduced four cash prizes (two for best oral presentations and two for best poster presentations) to encourage and enhance the quality of presentations in addition to quality of scientific work. Thanks to the panel of judges who evaluated the proffered oral and poster presentations which was indeed a herculean task.

The social aspects of the conference were equally attractive and has received wide appreciation from all. Cultural program in the evening of first day and complimentary dinners in the evenings of 1st, 2nd, and 3rd days along with the arrangements for music and dancing was refreshing for all.

I take this opportunity to thank IOMP, AMPI, AFOMP, SEAFOMP, trade exhibitors/supporters, invitees, experts, delegates, members/chairs/co-chairs of all the committees of ICMP-2023 including members of local organizing committee and all those who have supported me directly/indirectly in making the biggest ever International Conference on Medical Physics (ICMP) of IOMP a satisfying and successful event. In fact, ICMP-2023 was the mega event of medical physics which has created a few records to serve as reference for organizers of future ICMPs.

Namaste!



II Colombian Congress of Medical Physics Report

By ACOFIMED Asociación Colombiana de Física Médica



The II Colombian Congress of Medical Physics, organized by the Colombian Association of Medical Physics, garnered tremendous success with the support rendered by the National University of Colombia and the Colombian Association of Radiotherapeutic Oncology. The event witnessed participation from 209 attendees, including 21 speakers and 33 sponsors from 13 companies, and was endorsed by the International Organization of Medical Physics (IOMP).

The conference featured 35 oral presentations, 39 poster presentations, five theoretical-practical workshops, and five pre-congress courses. The workshops covered a wide range of topics, including but not limited to radiotherapy, nuclear medicine, diagnostic imaging, and ionizing radiation metrology. The event saw the distribution of several awards, with four for the best oral talks, four for the best posters, and one for the best student work.

The congress served as an excellent avenue to exchange knowledge and discoveries in the fields of radiotherapeutic oncology, nuclear medicine, diagnostic imaging and radiation protection. It provided an opportunity for professionals, students in medical physics, radiotherapeutic oncologists, nuclear physicians, physicists, biomedical engineers, technologists, and other related professionals to interact and share their insights and experiences. The participation of international experts was a highlight, who added invaluable knowledge to the field.

Arun Chougule's keynote speech on the education and training of medical physicists garnered great interest and was followed by a lively panel discussion that provided further insights into the challenges and opportunities in the field.

We express our sincere thanks to the IOMP for endorsing the event, and Dr. Chougule for his invaluable support and guidance.

II Colombian Congress of Medical Physics Report

By ACOFIMED Asociación Colombiana de Física Médica



International speakers

 <p>Ioannis Sechopoulos</p> <p>Lidera el grupo Advanced X-ray Tomographic Imaging (AXTI) del Departamento de Imagen Médica del Centro Médico Universitario Radboud, en Nijmegen, Países Bajos.</p>	 <p>Ramiro Pino</p> <p>Jefe de Física Radioterápica, Houston Methodist Hospital Profesor</p>	 <p>Erick Mora Ramirez</p> <p>Especialista en Medicina Nuclear y Radioprotección, Profesor Catedrático Centro de Investigación en Ciencias Atómicas, Nucleares y Moleculares (CICANUM) Universidad de Costa Rica (UCR)</p>	 <p>Carlos Uribe</p> <p>Líder de Física de Medicina Nuclear, Provincial PET Functional Imaging, BC Cancer, Profesor Department of Radiology, UBC</p>	 <p>Antonio Torres</p> <p>Universidad de la Habana, Cuba, Instituto Tecnológico de Santo Domingo, República Dominicana.</p>
 <p>Rodolfo Alfonso Laguardia</p> <p>Doctor en Ciencias Técnicas y profesor del departamento de Ingeniería Nuclear de la Universidad de la Habana</p>	 <p>Milton Ixquiác</p> <p>Magister en Física en Universidad de San Carlos de Guatemala</p>	 <p>Daniel Venencia</p> <p>Jefe del Departamento de Física Médica de Instituto Zunino</p>	 <p>Ignacio Verdugo</p> <p>Físico, con Maestría en Ciencias (MSc) enfocada en Física Médica de la Universidad de São Paulo (Brasil)</p>	 <p>Danny Mena Cortes</p> <p>Especialista en Medicina Nuclear por la Universidad de Buenos Aires</p>
 <p>Ana Dolcet Llerena</p> <p>Física médica en España y miembro de la Sociedad Española de Física Médica</p>	 <p>Prof. (Dr.) Arun Chougule</p> <p>DRP, Ph.D., FAMS, FIOMP, FUICC, FICTP, FACSU, MSRP, FCMPI, FTWAS, Dean and Chief Academic Officer, Swasthya Kalyan Group, Jaipur</p>	 <p>Luis Carlos Bohorquez</p> <p>MS, DABR es el director de producto de RadCalc, software de segunda verificación (LifeLine Software, Grupo LAP) Estados Unidos.</p>	 <p>MSc. Gonzalo Aránguiz</p> <p>Físico Médico en CEMENER – Argentina</p>	 <p>Cristina Anson</p> <p>Física Médica, Hospital de la Santa Creu i Sant Pau</p>
 <p>Svante Liljgren</p> <p>Calibration Engineering Manager – Fluke Health Solutions</p>				

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y consolidación del mañana

Event photos



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Quality Controls in Digital Breast Tomosynthesis



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Digital Breast Tomosynthesis

Digital breast tomosynthesis (DBT) is an evolution of digital mammography, developed in the first decade of the 21st century, first approved for clinical use in 2011. DBT involves the acquisition of a series of low-dose projection images obtained by rotating the mammographic X-ray source within a relatively small arc (min 15°, max 50°), and the subsequent reconstruction of planar images parallel to the detector plane whose scrolling allows breast radiologists to enter the breast volume. DBT is a pseudo-3D technique that permits to overcome the inherent limitation of projection imaging to which mammography belongs, increasing both its sensitivity and specificity [1–3].

DBT has demonstrated advantages over mammography in both screening and diagnostic setting. Improved visualization of architectural distortions, microcalcifications, and thin masses has increased lesion detection rates while reducing false-positive interpretations and thus optimizing patient outcomes [4–6]. In addition, DBT serves as a valuable adjunct to image-guided interventions, including tomo-biopsies and needle localizations. Three-dimensional reconstructions enable precise lesion localization and procedure planning, thereby improving procedural efficiency and patient comfort [7].

In DBT, the acquisition of projection images typically ranges from 9 to 25, depending on the specific system used. Despite this greater number of images, radiation dose in tomosynthesis remains comparable to or marginally higher than that of standard mammography. Importantly, mean glandular dose (MGD) levels in DBT remain well aligned with established standards for breast cancer screening, ensuring that the diagnostic benefits of this advanced imaging modality are achieved without compromising patient safety or exceeding established dose limits [8–9]. However, an inherent challenge associated with DBT concerns the substantial increase in the volume of reconstructed images that radiologists are required to evaluate, thus lengthening interpretation time, a critical issue in high-volume screening applications. Moreover, management of the large amount of data in DBT requires an adequate IT infrastructure, including expansive storage solutions, high-bandwidth networks, and dedicated review workstations.

Quality Controls

Quality control (QC) is the basis for ensuring the safety and quality of diagnostic radiology applications. Typically, QC protocols are outlined by scientific organizations and/or regulatory agencies and include specific tests designed to achieve the following objectives:

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1. Acceptance/commissioning testing: These tests rigorously evaluate whether imaging equipment meets predefined performance criteria, regulatory mandates, and manufacturer specifications prior to clinical integration. The main purpose is to validate the functionality, accuracy, and adherence of the system to established benchmarks before its operational deployment. Acceptance/commissioning tests are normally repeated every 6-12 months or after relevant components (x-ray tube, detector, etc) are replaced.

2. Reproducibility QC testing: Reproducibility tests focus on monitoring the performance, consistency and reliability of the imaging system or equipment over extended periods. These tests are conducted periodically to ensure that the system maintains optimal functionality, adheres to quality standards, and consistently delivers reliable diagnostic results over time.

Performing QC testing requires the use of physical instruments and specialized test objects, commonly called “phantoms”, to assess the performance and operational integrity of imaging equipment. When new imaging modalities are introduced in clinical practice, an inherent challenge emerges regarding the formulation of appropriate QC tests and the subsequent design of specific phantoms. This is why QC protocols for a new imaging modality are almost always consolidated long after that modality has been widely accepted clinically. Typically, what is done is to start with the tests used for an existing imaging modality, modifying them as necessary for the new modality. An attempt is also made to use existing test objects before resorting to developing new test objects. QC in DBT follows exactly this path, beginning with a readjustment of existing protocols for digital mammography, with the addition of specific tests to verify certain parameters on the reconstructed images.

Development of New Phantoms

When a new imaging modality enters clinical practice, the development of new "phantoms" is always a fascinating topic for medical physicists. The introduction of DBT confronted the fact that almost all mammography phantoms had a homogeneous background, and the details inserted within the phantoms to produce an image on which physical parameters could be measured were almost always arranged in a plane and not distributed within the phantom volume. Using homogeneous test objects with all details in one plane to control a 3D imaging system developed to reduce the projective limitations of mammography by reducing anatomical noise appeared inadequate. For this reason, various attempts have been made to develop anthropomorphic phantoms using 3D printing techniques [10–12], or simpler homogeneous 3D test objects embedding volumetric details to achieve multiple parameters at once [13].

However, it must be considered that designing an effective test object is not easy and that for this test object to be used within a quality control protocol, its manufacture must be engineered so that the same test performed with different "phantoms" of the same type gives superimposable results (within a reasonable tolerance). Building reproducible test objects with both conventional and 3D printing techniques is not an easy task.

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Trying to follow QC protocols and guidelines under development, test object manufacturers have also tried to propose phantoms for DBT, as summarized in Figure 1.




Test object Manufacturer	Phantom Model	QC tests allowed	Picture
CIRS	CIRS021: Digital Breast Tomosynthesis QC Phantom Developed to meet work-in-progress requirements of EUREF & AAPM TG245	<ul style="list-style-type: none"> • Volume coverage missing tissues • Pixel Value Uniformity • Noise: SNR & SDNR • Resolution in X, Y and Z directions (MTF, ESF & PSF) • Geometric accuracy 3D • Artifact assessment Visual • Detectability: specs, masses & fibers 	
Leeds Test Objects	TOMO IQ This phantom set has been designed according to the EUREF Protocol Breast Tomosynthesis Quality Control Protocol Version 1.0	<ul style="list-style-type: none"> • EC checks • Detector homogeneity • Geometric distortion • SNR • CNR • Image resolution • Z-resolution 	
Gammex	Modular DBT™ Phantom Comply with developing protocols and standards, including EUREF, IEC2 and AAPM Task Group 245	<ul style="list-style-type: none"> • Image Quality • Missing Tissue Detection • 2D and 3D Accuracy • Line Spread Function (LSF) • Artifact Detection • Contrast-to-Noise Ratio (CNR) • Signal-to-Noise Ratio (SNR) • Compression • Modulation Transfer Function (MTF) 	

Figure 1: Some commercial phantoms available for quality control in digital breast tomosynthesis.

Existing QC Protocols

Currently, three distinct QC protocols for DBT have been published, each offering a framework tailored to specific clinical or organizational settings:

1 EUREF Protocol: The “Protocol for the Quality Control of the Physical and Technical Aspects of Digital Breast Tomosynthesis Systems” version 1.03 released in 2018 by EUREF, was the first one to propose QC tests in DBT, combining QC tests used in standard mammography with others adapted using mammographic phantoms to address the task of measuring image quality with a pseudo-3D modality [14].

2. TMIST Protocol: The “ECOG-ACRIN Tomographic Mammography Imaging Screening Trial EA1151 Mammography Quality Control” encapsulates the QC framework implemented within the Tomosynthesis Mammographic Imaging Screening Trial (TMIST), providing specialized guidelines tailored to the trial's specific objectives, patient populations, and diagnostic applications. Most of the tests included in this protocol are based on the phantom developed for the TMIST study. An automated software (TRIAD) has been developed and implemented to support real-time analysis of phantom images [13, 15].

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3. EFOMP Protocol: Published in 2023, the European Federation of Organisations for Medical Physics (EFOMP) protocol on "Quality Control in Digital Breast Tomosynthesis (DBT)" started from the EUREF Protocol with the aim to address the need for guidance on QC procedures for DBT systems [16].

Those protocols differ for QC test types, methods, phantoms used and recommended frequencies. A summary of the main tests included in the three protocols is given in Table 1. The frequency shown refers to tests repeated after the acceptance/commissioning of the equipment. In addition, many tests are recommended to be repeated after replacement of relevant hardware and/or software components.

Other work is underway to develop QC recommendations for tomosynthesis as part of Task Group No. 245 of the American Association of Physicists in Medicine (AAPM).

Table 1: Main QC tests included in the three published protocols for quality control in DBT (EUREF, TMIST, EFOMP).

QC category	QC test	EUREF	TMIST	EFOMP
X-Ray Source	Half Value Layer (HVL)	Acceptance		Routine
	Tube voltage	Every 6m		Routine
	Beam alignment and collimation	Every 6m		Routine
	Tube output	Every 6m		Routine
	Focal spot size and motion	Acceptance		
Compression	Compression force	Annual		Routine
	Displayed breast thickness value			Routine
Automatic Exposure Control (AEC)	AEC short-term repeatability	Every 6m		Routine
	AEC long-term reproducibility	Daily/Weekly	Weekly	Daily/Weekly
	AEC performance	Every 6m	Annual	Routine
Detector	Local dense area	Every 6m		Acceptance
	Detector response function	Every 6m		Acceptance
	Detector noise evaluation	Every 6m		Acceptance
	Detector element failure/mis correction	Every 6m		Daily/Weekly
	Projection MTF	Every 6m	Annual	Routine
Image Quality	Image quality of reconstructed images	Every 6m	Monthly	Routine
	Z-resolution	Every 6m	Annual	Routine
	Noise Power Spectra/NNPS	Every 6m	Monthly	
	Artefact spread function (ASF)	Every 6m	Monthly	Routine
	Missed tissue in the reconstruction image	Every 6m		Routine
	Geometric distortion	Acceptance	Annual	Acceptance
	Image homogeneity and artefact evaluation/ ghosting	Daily/Weekly	Weekly	Daily/Weekly
Radiation dose	Dosimetry	Every 6m		Routine

Quality Controls in Digital Breast Tomosynthesis

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Although considerable progress has been made in defining quality control protocols for digital breast tomosynthesis through the publication of several valuable guidelines, such as those of EUREF, TMIST, and EFOMP, the imperative to continue research, collaboration, and standardization efforts in this burgeoning field remains. The observed heterogeneity among existing protocols underscores the complexity inherent in DBT and highlights the need to harmonize quality control methodologies.

References:

1. Dobbins III J T, "Tomosynthesis imaging: At a translational crossroads", *Med Phys*. 2009 Jun; 36(6): 1956–1967
2. Sechopoulos I, "A review of breast tomosynthesis. Part I. The image acquisition process", *Med Phys* 2013 Jan;40(1):014301.
3. Sechopoulos I, "A review of breast tomosynthesis. Part II. Image reconstruction, processing and analysis, and advanced applications", *Med Phys* . 2013 Jan;40(1):014302.
4. Vedantham S, Karellas A, Vijayaraghavan GR, Kopans DB, "Digital Breast Tomosynthesis: State of the Art.", *Radiology*. 2015 Dec;277(3):663-84.
5. Hooley RJ, Durand MA, Philpotts LE, "Advances in Digital Breast Tomosynthesis", *AJR Am J Roentgenol*. 2017 Feb;208(2):256-266.
6. Chong A, Weinstein SP, McDonald ES, Conant EF, "Digital Breast Tomosynthesis: Concepts and Clinical Practice", *Radiology*. 2019 Jul;292(1):1-14.
7. Vijapura CA, Wahab RA, Thakore AG, Mahoney MC, "Upright Tomosynthesis-guided Breast Biopsy: Tips, Tricks, and Troubleshooting", *Radiographics* 2021 Sep-Oct;41(5):1265-1282.
8. Gennaro G, Bernardi D, Houssami N, "Radiation dose with digital breast tomosynthesis compared to digital mammography: per-view analysis", *Eur Radiol*. 2018 Feb;28(2):573-581
9. Pirchio R, Pérez GN, Ratto SS, Stefanic AM, "Dosimetry in digital breast tomosynthesis: cost-efficient approach for the South American perspectives", *Radiat Prot Dosimetry* . 2022 Jun 9;198(7):393-404.
10. Bliznakova K, "The advent of anthropomorphic three-dimensional breast phantoms for X-ray imaging", *Phys Med* . 2020 Nov;79:145-161.
11. Salomon E, Unger E, Homolka P, Cockmartin L, Petrov D, Semturs F, Songsaeng C, Panagiotis K, Vancoillie L, Figl M, Sommer A, Bosmans H, Hummel J, "Technical note: Realization and uncertainty analysis for an adjustable 3D structured breast phantom in digital breast tomosynthesis", *Med Phys*. 2023 Aug;50(8):4816-4824.
12. Zhang C, Fu J, "A new breast phantom suitable for digital mammography, contrast-enhanced digital mammography and digital breast tomosynthesis", *Phys Med Biol*. 2023 Feb 14;68(4).
13. Maki AK, Mawdsley GE, Mainprize JG, Pisano ED, Shen SZ, Alonzo-Proulx O, Yaffe MJ, "Quality control for digital tomosynthesis in the ECOG-ACRIN EA1151 TMIST trial", *Med Phys*. 2023 Dec;50(12):7441-7461.
14. EUREF Protocol version 1.03 "Protocol for the Quality Control of the Physical and Technical Aspects of Digital Breast Tomosynthesis Systems"
15. TMIST Protocol "ECOG-ACRIN Tomographic Mammography Imaging Screening Trial EA1151 Mammography Quality Control"
16. EFOMP Protocol "Quality Control in Digital Breast Tomosynthesis"

OpenDose3D, an Open-Source Software for Advancing Clinical Molecular Radiotherapy Dosimetry

J. Fragoso-Negrín, A. Vergara-Gil, L. Santoro, E. Deshayes, M. Bardiès

Introduction

The increasing dissemination of molecular radiotherapy calls for robust and accurate tools to perform clinical dosimetry. Several software solutions have emerged, including commercial FDA-cleared or CE-marked, or in-house academic software. In this context, we present OpenDose3D (version 1), a freely available and open-source software intended for both clinical dosimetry research purposes and benchmarking of clinical dosimetry software.

Technical Innovations and Features

OpenDose3D (OD3D) introduces several innovative elements that set it apart from existing dosimetry solutions:

- **3D Slicer Integration:** Embedded in the well-established 3D Slicer platform (<https://www.slicer.org/>), OD3D benefits from pre-existing 3D Slicer features (DICOMP import, display, registration, segmentation, etc.) and integrates specifically developed missing functionalities (time integration, absorbed dose (rate) algorithms).
- **Calibration module:** OD3D introduces a calibration module with automatic calculation of sensitivity and recovery coefficient (Figure 1), with automatic transfer of calibration variables to the dosimetry module.
- **Radioisotope Versatility:** OD3D supports a broad spectrum of radioisotopes, including ^{177}Lu , ^{90}Y and ^{131}I , makes it highly adaptable to various clinical needs and research scenarios (Figure 2).
- **Workflows and Modularity:** OD3D proposes 2 distinct clinical dosimetry workflows (CDW), activity and absorbed dose rate, to encompass different approaches of absorbed dose determination.
- **Simplified OAR Dosimetry:** OD3D includes a 'one-click', fast, fully automated organ-at-risk dosimetry procedure. This feature is made possible by the integration of AI-based segmentation tools (TotalSegmentator).

Accessibility and Research Applications

- **Freely available:** The open-source nature of the software ensures its sustainable accessibility to a growing range of users. The well-known GitLab framework allows providing user support (<https://gitlab.com/pendose/pendose3d>).
- **Research and Development:** The OD3D collaborative development encourages continuous innovation, by fostering worldwide researcher and clinician initiatives.
- **Benchmarking Tool:** Its versatility and ability to generate detailed intermediate results (checkpoints) makes OD3D an excellent benchmarking tool for clinical dosimetry software, thereby contributing to the improvement and standardization of dosimetric practice.

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Future Directions and Conclusion

OpenDose3D roadmap includes continuous enhancement, with next planned updates focusing on expanding the isotope library, improving pharmacokinetics characterization features and integrating uncertainty assessment and propagation in the CDW.

In summary, OpenDose3D represents a significant advancement in molecular radiotherapy dosimetry, offering a potent combination of precision, efficiency, traceability and accessibility. Its impact on both clinical practice and research is set to be substantial, setting new standards and paving the way for future innovations in the field.

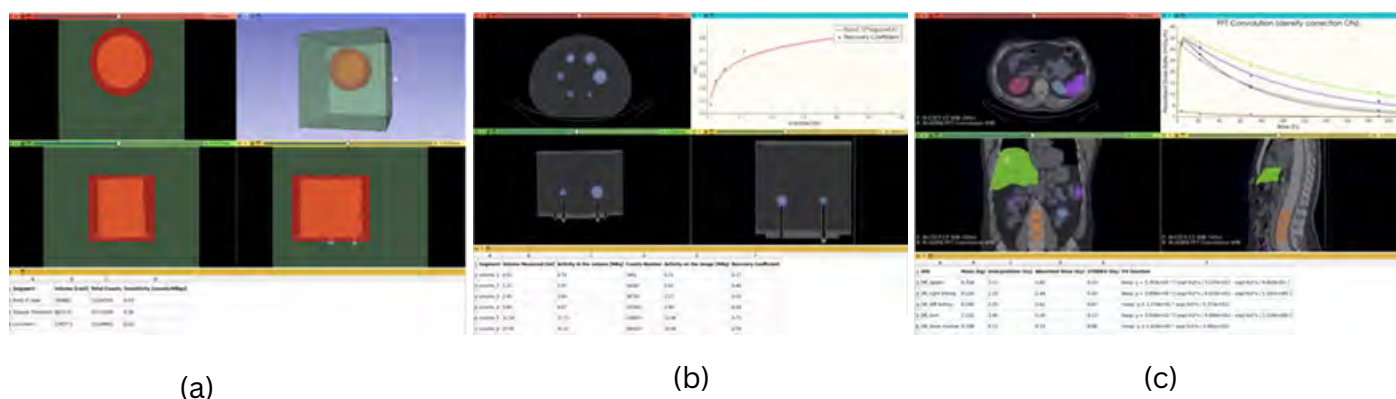


Figure 1. Calibration module: SPECT sensitivity (a) and Recovery coefficient (b) calculation. Overview of OpenDose3D absorbed dose results (c).

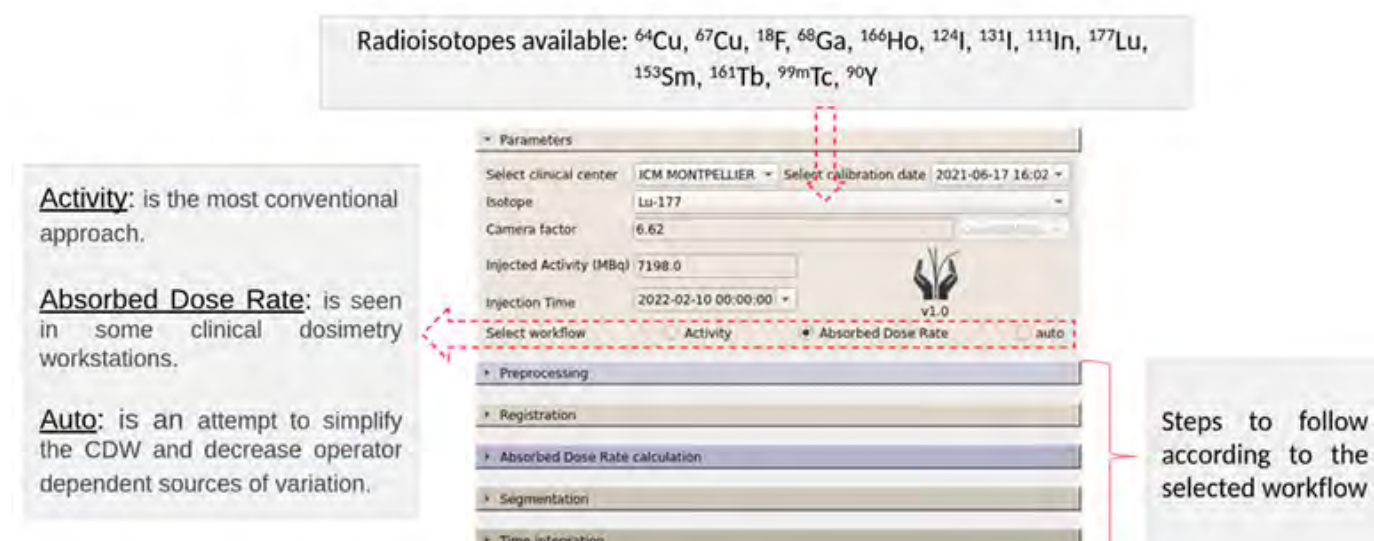


Figure 2. OpenDose3D parameters and workflows.

Calendar of Events (January - June 2024)

Ibrahim Duhainii

Calendar Editor

2024 SEAAPM Symposium & Scientific Meeting

When: Feb 7 – 10, 2024
Where: Omni Hilton Head Oceanfront Resort, USA

ACR 2024

When: Apr 13 – 17, 2024
Where: Washington, DC, USA

Biophysical Society 68th Annual Meeting

When: Feb 10 – 14, 2024
Where: Philadelphia, PA, USA

ESTRO 2024

When: May 3 – 7, 2024
Where: Glasgow, UK

2024 SWAAPM Annual Meeting | Theme: Celebrating the women of SWAAPM

When: Feb 15 – 17, 2024
Where: Hard Rock Hotel & Casino, Tulsa, Oklahoma

ISMRM & ISMRT Annual Meeting & Exhibition

When: May 4 – 9, 2024
Where: Singapore

2024 QA & Dosimetry Symposium

When: Feb 16 – 17, 2024
Where: Lisbon, Portugal

56th National Conference on Radiation Control

When: May 20 – 24, 2024
Where: Jacksonville, FL, USA

19th European Molecular Imaging Meeting

When: Mar 12 – 15, 2024
Where: Alfândega da Fé, 5350 Alfândega da Fé, Portugal

COMP 2024 Annual Scientific Meeting

When: Jun 5 – 8, 2024
Where: Regina, SK, Canada

2024 RSS Scientific Meeting

When: Mar 21 – 23, 2024
Where: Chicago, IL, USA

AAMD 49th Annual Meeting

When: Jun 9 – 12, 2024
Where: St. Louis, MO, USA

AIMBE 2024 Annual Event

When: Mar 24 – 25, 2024
Where: Washington, DC, USA

SIIM 2024 Annual Meeting

When: Jun 27 – 29, 2024
Where: Gaylord, National Harbor, MD 20745, USA

2024 SBI Breast Imaging Symposium

When: Apr 11 – 14, 2024
Where: Montreal, QC, Canada

Season's Greetings

2024

International Organization for Medical Physics

