

International Conference on

# Advances in Radiation Oncology

#ICARO3

16–19 February 2021

Organized by the



**IAEA**

International Atomic Energy Agency  
*Atoms for Peace and Development*



# International Conference on **Advances in Radiation Oncology**

## #ICARO3 EDUCATION EDITION - VIRTUAL CONFERENCE

Live and On-demand 16 – 19 February 2021

### #ICARO3 Overview:

- The ICARO-3 Education Edition seeks to maximise user accessibility during the ongoing COVID-19 global pandemic, by giving attendees (i.e. participants and observers) the flexibility to consume content through **both** *Live Sessions* and *On-demand* materials
- Attendance of ICARO-3 is possible either as:
  - A Participant with full access to the virtual conference platform, must be officially designated and register by sending a Participation Form ([Form A](#)) through their national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority) to the IAEA
  - An Observer with access to conference related material (e.g. abstracts, presentations, posters) and to other functions within the virtual conference platform. Registration as an observer can be completed by registering directly with the IAEA via this [link](#).
- Certificates of Attendance will be available on request to **both observers and participants**.
- An appropriate number of accredited continuing medical education (CME) credits will be **awarded ONLY** to **participants**. To claim CME credits participants will need to actively engage in the live sessions taking place as per the scheduled programme during the conference days on 16 – 19 February 2021 and answer the respective session evaluations (available once the live sessions have concluded).<sup>1</sup>
- ICARO-3 will feature three E-contouring workshops which will be broadcast on Tuesday 16 February and Wednesday 17 February 2021. The workshops will be run in cooperation with ASTRO and ESTRO and participation in these workshops will be open to all attendees. Registration for access to the e-contouring platform (EduCase) will be open from **18 – 25 January 2021**; further details will be made available on the ICARO-3 [homepage](#)

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<sup>1</sup> Note: Participants **will not be able to accumulate multiple credits from sessions taking place in parallel**. As per the rules of EACCME, **CME credits can only be claimed for those sessions (i.e. refresher courses) attended as per the 'live' scheduled programme' - no CME credits can be collected from refresher courses which are attended 'on-demand'**





## #ICARO3 Format

### Live sessions

Live sessions on Tuesday 16 February, Wednesday 17 February and Friday 19 February, will take place at a two specific time set in the programme for the convenience of those attendees in the global east and global west. The live sessions on Thursday 18 February will take place at one specific time and be dedicated to medical physics. Attendees can submit questions and answers in the session chat. Experts will communicate answers to participants through the chats. A session moderator will convey selected questions during the live 'Ask the Experts Session' on Friday, 19 February 2021 at 13:00 (CET).

### Refresher Courses

The ICARO Refresher Courses can be consumed on-demand and will be available for the duration of ICARO-3 from 16 February 2021 until 19 February 2021. Interaction will be possible via the inbuilt messaging system which will be incorporated in the virtual platform.

Those participants wishing to claim CME credits for their completion of the Refresher Courses, can only do so when taking the Refresher Courses at the indicated times on the scheduled programme.

### Oral Presentations and e-Posters

Proffered Papers will be presented as oral presentations, to be broadcast at specific times in the programme. Attendees can submit questions for the presenters in the session chat.

e-Posters and synopses will be available at set times in the scheduled programme and via the Synopses Library on the ICARO-3 conference app for the duration of ICARO-3 from 16 February 2021 until 19 February 2021.



## SCHEDULED TENTATIVE PROGRAMME - SHORT OVERVIEW

International Conference on Advances in Radiation Oncology #ICARO3

16 – 19 February 2021 (Virtual Event)

### Live Sessions:

Tuesday 16 February 2021	Wednesday 17 February 2021	Thursday 18 February 2021	Friday 19 February 2021
<p><u>Opening Session</u> <u>0800 – 0830 EAST</u> <u>1530 – 1600 WEST</u> (30 Minutes) Rafael GROSSI Najat MOKHTAR May ABDEL WAHAB</p>	<p><u>Brachytherapy</u> <u>0745 – 0815 EAST</u> <u>1530 – 1600 WEST</u> (30 Minutes) Christine HAIE-MEDER</p>	<p><u>Medical Physics sessions: Advanced Techniques and Technologies:</u> <u>0830 -1000</u> (90 Minutes) Chairs: Daniel BERGER &amp; Mauro CARRARA; Speaker: Ferid SHANNOUN &amp; Peter THOMAS Oliver JÄKEL Yolanda PREZADO Geoffrey IBBOTT Robin HILL Laurence Edward COURT</p>	<p><u>Refresher Courses: Parallel Sessions</u> <u>0800 – 1000</u> (See Parallel Session sheet)</p>
<p><u>The Evolution of ICARO From ICARO 2 to ICARO 3</u> <u>0830 – 0900 EAST</u> <u>1600 – 1630 WEST</u> (30 Minutes) Eduardo ROSENBLATT Geoffrey IBBOTT</p>	<p><u>Radiobiology</u> <u>0815 – 0900 EAST</u> <u>1600 – 1645 WEST</u> (45 Minutes) Mike JOINER Loredana MARCU</p>	<p><u>Paper Presentations 1</u> <u>1000 – 1110</u> (70 Minutes) Sonja WEGENER Iqbal AL AMRI Tania Filipa SOBRINHO DOS SANTOS Abdelkader TOUTAOUI Hwee Shin SOH Vibeke HANSEN Andrea MANTUANO</p>	<p><u>Radiotherapy in the National Cancer Control Plan</u> <u>1000 – 1030 EAST</u> <u>1430 – 1500 WEST</u> (30 Minutes) Lisa STEVENS</p>



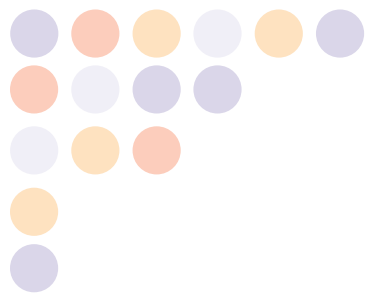
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Tuesday 16 February 2021	Wednesday 17 February 2021	Thursday 18 February 2021	Friday 19 February 2021
<u>Opportunities in addressing Global Cancer Challenges (Panel Discussion)</u> <u>0900 – 1030 EAST</u> <u>1630 – 1800 WEST</u> (90 Minutes) Chair: May ABDEL WAHAB Panellists: HRH PRINCESS Dina MIREN John SUH Rajendra Achyut BADWE Ali LANDMAN Princess Nothemba SIMELELA Sherif ABOUELNAGA Mary GOSPODAROWICZ Gustavo SARRIA	<u>Education and Training</u> <u>0900 – 0930 EAST</u> <u>1645 – 1715 WEST</u> (30 Minutes) Kim BENSTEAD	<u>Poster Viewing Session/ Break</u> <u>1120 – 1200</u> (50 Minutes)	<u>QUATRO</u> <u>1030 – 1100 EAST</u> <u>1500 – 1530 WEST</u> (30 Minutes) Stefaan VYNCKIER Aude VAANDERING
<u>Technological Gap</u> <u>1030 – 1100 EAST</u> <u>1800 – 1830 WEST</u> (30 Minutes) Michael BARTON Jacob VAN DYK	<u>The RTT Profession</u> <u>0930 – 1000 EAST</u> <u>1715 – 1745 WEST</u> (30 Minutes) Mary COFFEY	<u>Medical Physics sessions: Medical Physics Education:</u> <u>1200 – 1250</u> (50 Minutes) Chair: Debbie VAN DER MERWE Speaker: Giorgia LORETI Geoffrey IBBOTT, Arun CHOUGULE Brendan MCCLEAN	<u>Strategies in Ensuring Continuity of Radiotherapy Services in the Context of COVID-19</u> <u>1100 – 1130 EAST</u> <u>1530 – 1600 WEST</u> (30 Minutes) Matthias GUCKENBERGER
<u>Advanced Technologies - IT/AI</u> <u>1100 – 1130 EAST</u> <u>1830 – 1900 WEST</u> (30 Minutes) Ben HEIJMEN	<u>Clinical Research</u> (30 Minutes) <u>1000 – 1030 EAST</u> <u>1745 – 1815 WEST</u> Jai Prakash AGARWAL	<u>Sub Session: Global access to medical physics education: challenges and opportunities</u> <u>1250 – 1350</u> (60 Minutes) Jacob VAN DYK Graciela VELEZ Parminder S. BASRAN	<u>Advanced Technologies - Proton, Ion Beam Therapy</u> <u>1130 – 1200 EAST</u> <u>1600 – 1630 WEST</u> (30 Minutes) Damien WEBER





Tuesday 16 February 2021	Wednesday 17 February 2021	Thursday 18 February 2021	Friday 19 February 2021
		Giorgia LORETI Daniel VENENCIA	
<u>Oral Presentations: Paper Session 1 &amp; 2: Clinical Research &amp; Implementation of New Technologies</u> <u>1130 – 1230</u> (1 Hour) Reena ENGINEER; Petr BULYCHKIN; Kyrhatii TRIKHIRHISTHIT; Semia ZARAA  Micaela Agustina BERTERO; Anni BORKVEL; Minjmaa MINJGEE; Kennedy LISHIMPI	<u>Health Systems Research</u> <u>1030 – 1100 EAST</u> <u>1815 – 1845 WEST</u> (30 Minutes) Yolande LIEVENS	<u>Paper Presentations 2</u> <u>1350 – 1440</u> (50 Minutes) Sherisse DE FOUR Chi DODUC Ignatius KOMAKECH Nesrine ELAMRI Milagros GARCIA GUTIERREZ	<u>Telemedicine</u> <u>1200 – 1230 EAST</u> <u>1630 – 1700 WEST</u> (30 Minutes) Iain WARD
<u>Refresher Courses: Parallel Sessions</u> <u>1230 – 1430</u> (See Parallel Session sheet)	<u>Paediatric Radiotherapy</u> <u>1100 – 1130 EAST</u> <u>1845 – 1915 WEST</u> (30 Minutes) Ed SMITH	<u>Poster Viewing Session/Break</u> <u>1440 – 1530</u>	<u>60 years of the Directory of Radiotherapy Centres (DIRAC)</u> <u>1230 – 1300 EAST</u> <u>1700 – 1730 WEST</u> (30 Minutes) Alfredo POLO

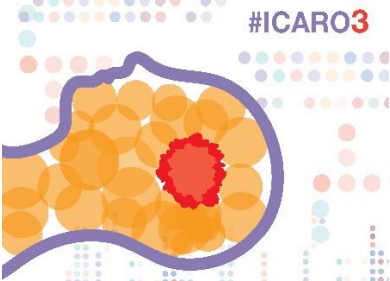




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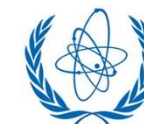
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Tuesday 16 February 2021	Wednesday 17 February 2021	Thursday 18 February 2021	Friday 19 February 2021
<p><u>E-Contouring Workshop (ASTRO)</u> 1430 -1530 (Two 30-minute sessions) Billy LOO Mack ROACH III</p>	<p><u>Oral Presentations: Paper Session 3 &amp; 4: Health Economics and Health Systems Research &amp; Radiobiology</u> 1130 – 1230 (1 Hour)</p> <p>Socheat TOUCH; YI Junlin; Jorge Andres VILLALOBOS-ROSALES; Soehartati A GONDHOWIARDJO; Miriam Joy CALAGUAS; Kizito MUBIRU</p> <p>Assya BOUGHALIA; Mitra SAFAVI-NAEINI; Manoor Prakash HANDE; Elena YERMILOVA</p>	<p><u>Medical Physics sessions: Audits, Quality and Safety:</u> 1530 – 1650 (80 Minutes)</p> <p>Chairs: Ola HOLMBERG; &amp; Debbie VAN DER MERWE</p> <p>Speaker: Andy NISBET Stephen F KRY Pavel KAZANTSEV Stefaan VYNCKIER Annette WYGODA Ola HOLMBERG</p>	<p><u>Live session: Q&amp;A: Ask the Experts</u> 1300 – 1400 LIVE 1730 – 1830 REPEAT (1 Hour)</p>
<p>END OF DAY 1</p>	<p><u>Refresher Courses: Parallel Sessions</u> 1230 – 1430 (See Parallel Session sheet)</p>	<p><u>Paper Presentations 3</u> 1650 – 1740 (50 Minutes)</p> <p>Petri SIPILA Ilkka JOKELAINEN Alexis DIMITRIADIS Magali EDOUARD Godfrey AZANGWE</p>	<p><u>Closing Remarks</u> 1400 – 1430 EAST 1830 – 1900 WEST (30 Minutes)</p>
 <p>#ICARO3</p>	<p><u>E-Contouring Workshop (ESTRO)</u> 1430 - 1530 (1 Hour) Sarah JEFFERIES</p>	<p><u>Refresher Courses: Parallel Sessions</u> 1800 - 2000 (See Parallel Session sheet)</p>	<p>END OF DAY 4 CLOSE OF CONFERENCE</p>
<p>END OF DAY 2</p>	<p>END OF DAY 2</p>	<p>END OF DAY 3</p>	<p>END OF DAY 4 CLOSE OF CONFERENCE</p>

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# REFRESHER COURSES PROGRAMME - SHORT OVERVIEW

International Conference on Advances in Radiation Oncology #ICARO3

16 – 19 February 2021 (Virtual Event)

## Refresher Courses:

On-demand for the duration of ICARO-3<sup>2</sup>

### Advanced Technologies / Beyond 3D - 80 Minutes

1. Multimodality imaging and deformable image registration (20 minutes) Vincenzo VALENTINI
2. Automated target volume / organs at risk delineation and treatment planning (20 minutes) Vincent GREGOIRE
3. Management of interfraction motion (IGRT, Adaptive RT) (20 minutes) X. Allen LI
4. Advances in dose delivery (MRI linac, transponders, FLASH) (20 minutes) Saiful HUQ

### Brachytherapy in the real world - 225 Minutes - Chair: Alfredo POLO

1. Status of Brachytherapy worldwide: a DIRAC study (5 minutes) Alfredo POLO
2. Health Economic Evaluation of Brachytherapy for cancer treatment (15 minutes) Alfredo POLO
3. Technological advances in Brachytherapy-TPS, new sources, new applicators, AI (20 minutes) Mauro CARRARA
4. Comprehensive Quality Management in Brachytherapy (25 Minutes) Daniel BERGER
5. Education and training of New Generations of Brachytherapy Practitioners (30 minutes) Supriya CHOPRA, Mauro CARRARA
6. Omitting brachytherapy in gynaecological cancer is deleterious for your patients (15 minutes) Supriya CHOPRA
7. Cervix cancer as a model for Image Guided Brachytherapy (25 minutes) Umesh MAHANTSHETTY
8. The migration from 2D to 3D and IGBT: implementation challenges (55 minutes) Daniel BERGER, Umesh MAHANTSHETTY
9. Practical Educational Session (50 Minutes) Daniel BERGER; Umesh MAHANTSHETTY

### Planning Quality Radiotherapy Services a City Approach - 120 minutes - Chairs: Rolando CAMACHO & Eduardo ZUBIZARRETA

1. C/Can model: Planning quality radiotherapy services (15 minutes) Diogo NEVES
2. Demand and supply analysis: a city framework (20 minutes) Rodolfo ALFONSO

<sup>2</sup> CME Credits can only be claimed for participants attending sessions during the stated broadcast times. To claim CME credits participants will need to **actively engage in the live sessions** taking place during the conference days on 16 – 19 February 2021 **and answer the respective session evaluations** (available once the live sessions have concluded).







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3. Building a successful public-private partnership in the health sector: key elements (20 minutes) Dhawal JHAMB
4. A practical example: Yangon City, Myanmar (15 minutes) Thet KO AUNG; KHIN CHO Win

### **Educational Milestones in the Profession of RTT - 90 Minutes – Chair: Michelle Leech**

1. Current Status of RTT education globally (15 minutes) Michelle LEECH
2. The advancing and changing role of the RTT (15 minutes) Aidan LEONG
3. Where are we going?: Future Directions for the RTT profession (15 minutes) Mary COFFEY
4. Panel Discussion: The current status of RT education in their region and opinions on the challenges and opportunities for RTTs in the coming decade (40 minutes) Chair: Michelle LEECH; Panellists: Gurvinder Singh WADHAWAN; Samuel OPOKU; Colette DIJCKS; John RYAN; Mary COFFEY, Aidan LEONG

### **Expanding Access to Radiotherapy - 120 minutes - Chair: Eduardo ZUBIZARRETA**

1. Global efforts (20 minutes) Mary GOSPODAROWICZ
2. Challenges (20 minutes) Surbhi GROVER
3. Translating incidence into needs (20 minutes) Michael BARTON
4. Sustainability and access (20 minutes) Alfredo POLO
5. Resources and costs (20 minutes) Eduardo ZUBIZARRETA
6. Investment framework (20 minutes) Danielle RODIN

### **Paediatric Radiation Oncology - 120 minutes - Chair: Sahaja ACHARYA**

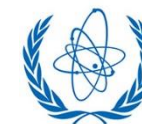
1. Global Partnerships (15 minutes) Paola FRIEDRICH, Catherine G. LAM
2. Delivering Paediatric Radiotherapy within Multidisciplinary team care (15 minutes) Karen MARCUS
3. Key learning points in Paediatric Radiotherapy: CNS (25 minutes) Sahaja ACHARYA
4. Key learning points in Paediatric Radiotherapy: Non-CNS (25 minutes) Susan HINIKER
5. Management of late effects and follow-up of the child into adulthood (15 minutes) Stephanie PERKINS
6. Panel discussion: Training in Paediatric Radiotherapy (20 minutes) Chair: Kirsten HOPKINS; Panellists: Verity AHERN; Rosangela CORREA-VILLAR; Mohammed ZAGHLOUL; Wondemagegnhu TIGENEH

### **Proton Radiotherapy - 120 Minutes - Chair: Karen KIRKBY**

1. Does it work: Developing and implementing clinical trials of PBT (20 minutes) Cai GRAU

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2. Medical Physics Issues in Proton Therapy: Changing from 2 phases to single phase simultaneous integrated boost (to better use the optimiser) and use of EUD for plan assessment (20 minutes) Matthew CLARKE
3. The patient-centred PBT pathway (15 minutes) Vicky HUGHES
4. Image Guidance in proton therapy (15 minutes) Katja LANGEN
5. Dose Accumulation in Proton Therapy (15 minutes) Antony J LOMAX
6. FLASH proton therapy? (15 minutes) Jack AYLWARD
7. Paediatric Proton Therapy (20 minutes) Tom MERCHANT

### **Radiation Oncology Education in the Interconnected World - 120 Minutes - Chairs: Sandra TURNER & Jesper ERIKSEN**

1. Global health competencies in radiation oncology education (15 minutes) Meredith GIULIANI
2. Integrating radiation oncology education and research (15 minutes) Miriam MUTEBI
3. Interprofessional education (15 minutes) Michelle LEECH
4. Strengthening Networks in Worldwide Radiation Oncology Education:
  - Perspectives: HIC (15 minutes) Daniel GOLDEN
  - Perspectives: LMIC (15 minutes) Lotfi KOCHBATI
  - Panel Discussion (45 minutes) Chair: Sandra TURNER; Panellists: Jesper Grau ERIKSEN; Daniel GOLDEN; Lotfi KOCHBATI

### **Radiobiology - 95 Minutes - Chair: Mike JOINER**

1. Radiobiology of high dose per fraction (30 minutes) Mike JOINER
2. Role of radiobiology in Spatial Fractionated Radiation Therapy and FLASH (30 minutes) Jolyon HENDRY
3. Radiobiological advances in Radiation Medicine (20 minutes) Marjan BOERMA
4. Personalized Radiotherapy: From bench to bedside (25 minutes) Loredana MARCU

### **Technological developments in radiation therapy practice - 90 Minutes - Chair: Michelle LEECH**

1. A changed set up?: Implementation of surface guided radiation therapy (15 minutes) Kenton THOMPSON
2. Advancing and changing practices: bringing the MRI-linear accelerator into clinical reality (15 minutes) Veronica POLLUTRI
3. Proton therapy- new directions in treatment delivery for RTTs. (15 minutes) Sharon WONG
4. Panel Discussion: The impact of new technologies on the development of the RTT profession and on the changing role of the RTT in meeting the challenges of rapid technological developments. (40 minutes) Chair: Michelle LEECH Panellists: Helen MCNAIR; Colleen DICKIE; Nicola BIZZOCHI; Veronica POLLUTRI; Sharon WONG

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## SCHEDULED TENTATIVE PROGRAMME - DETAILED VIEW

International Conference on Advances in Radiation Oncology #ICARO3  
16 – 19 February 2021 (Virtual Event)

### Live Sessions:

**TUESDAY, 16 FEBRUARY 2021**

Live Broadcast times (CET/UTC +1)	Session Title	Speaker	Affiliation	Designating Member State/ Organization	Title of Presentation	Description
<u>0800 – 0830 EAST</u> <u>1530 – 1600 WEST</u>	<b>Opening Session</b> (30 Minutes)	Rafael GROSSI  Najat MOKHTAR  May ABDEL WAHAB	Director General, IAEA  Deputy Director General, Department of Nuclear Sciences and Applications, IAEA  Director, Division of Human Health	International Atomic Energy Agency (IAEA)  International Atomic Energy Agency (IAEA)  International Atomic Energy Agency (IAEA)	Welcome Remarks	
	Keynote lectures:					
<u>0830 – 0900 EAST</u> <u>1600 – 1630 WEST</u>	<b>From ICARO 2 to ICARO 3</b>	Eduardo ROSENBLATT	Private Consultant	Spain	From ICARO 2 to ICARO 3: Radiation Oncology	This session will: Describe the developments and challenges in radiation oncology and medical





Live Broadcast times (CET/UTC +1)	Session Title	Speaker	Affiliation	Designating Member State/ Organization	Title of Presentation	Description
<u>0900 – 1030 EAST</u> <u>1630 – 1800 WEST</u>	(30 Minutes)	Geoffrey IBBOTT	International Organization for Medical Physics (IOMP); University of Texas MD Anderson Cancer Center	IOMP/United States	From ICARO 2 to ICARO 3: Physics	physics in the last 5 years since ICARO 2
	<b>Opportunities in addressing Global Cancer Challenges Panel Discussion</b> (90 Minutes)	May ABDEL WAHAB	Director, Division of Human Health, IAEA	International Atomic Energy Agency (IAEA)		This session will: Discuss the challenges in the access and implementation of radiation oncology globally; and Identify innovations and solutions to address challenges
		John SUH	Radiation Oncology Department, the Cleveland Clinic	United States	Global Network Approach	
		Rajendra Achyut BADWE	Director of the Tata Memorial Centre	India	Hub and Spoke Model	To provide a better understanding of the Hub and spoke model as an alternative model for the development of a Cancer network
		Ali LANDMAN	Senior Editor, Lancet Oncology	United Kingdom	Oncology Commissions and Impact in Global Cancer	To Understand the role of the Lancet Commissions and its role in facing global challenges in cancer care





Live Broadcast times (CET/UTC +1)	Session Title	Speaker	Affiliation	Designating Member State/ Organization	Title of Presentation	Description
		Princess Nothemba SIMELELA	Assistant Director-General, Special Advisor to the Director-General, Strategic Priorities, World Health Organization (WHO)	World Health Organization (WHO)	Cervical Cancer Elimination Strategy	To understand the importance of addressing the Cancer Challenges with a multi-sectoral global perspective showing the example of this current initiative, and touching on the inclusion of Radiotherapy in the initiative
		Sherif ABOUELNAGA	Pediatric Oncology, National Cancer Institute – Cairo University	Egypt	Non-traditional solutions for Setting up an Oncology Dept	To understand challenges and non traditional opportunities in the development of a cancer centre in Low Middle Income Countries
		HRH PRINCESS Dina MIREED	The King Hussein Cancer Foundation, Jordan	Jordan	Essential steps to successful development of a cancer centre	
		Mary GOSPODAROWICZ	President 2018-2020 Union for International Cancer Control (UICC) The Princess Margaret Cancer Centre, Toronto	Canada	Developing and managing of a Cancer centre	To provide an overview the different challenges in cancer care in a High Income Country setting
		Gustavo SARRIA	Instituto Peruano de Enfermedades Neoplasicas	Peru	Experience and Challenges	To understand challenges and opportunities in the development





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Live Broadcast times (CET/UTC +1)	Session Title	Speaker	Affiliation	Designating Member State/ Organization	Title of Presentation	Description
<u>1030 – 1100 EAST</u> <u>1800 – 1830 WEST</u>	<b>Technological Gap</b> (30 Minutes)	Michael BARTON	University of New South Wales, Australia	Australia	Technological Gap: Clinical Perspective	of a cancer centre in Low Middle Income Countries
		Jacob VAN DYK	The University of Western Ontario, Canada; Medical Physics for World Benefit (MPWB)	Canada/MPWB	Technological Gap: Physics Perspective	This session will: Discuss the requirements to ensure a safe and effective transition to new technologies
<u>1100 – 1130 EAST</u> <u>1830 – 1900 WEST</u>	<b>Advanced Technologies - IT/AI</b> (30 Minutes)	Ben HEIJMEN	European Society for Radiotherapy & Oncology (ESTRO); Erasmus University Medical Center Rotterdam (Erasmus MC) – Cancer Institute	ESTRO	Artificial Intelligence (AI) in Radiotherapy	This session will: Discuss recent advances in artificial intelligence / machine learning and their applications in radiation oncology; and Discuss challenges and considerations in the implementation
<b>Paper Session:</b>						
<u>1130 – 1230</u>	<b>Oral Presentations</b> (1 Hour)					Contributors will present proffered papers, and take part in a Q&A through the chat function in the ICARO-3 conference app

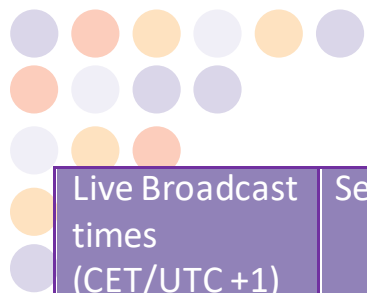
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Live Broadcast times (CET/UTC +1)	Session Title	Speaker	Affiliation	Designating Member State/ Organization	Title of Presentation	Description
	<b>Paper Session 1: Clinical Research</b>	Reena ENGINEER	Tata Memorial Centre, Mumbai	India	Is Watch and wait approach feasible for patients with complete response post neoadjuvant therapy in Low Middle Income Countries?	
		Petr BULYCHKIN	N.N. Blokhin National Medical Research Center of Oncology, Ministry of Health	Russian Federation	Modern possibilities of nuclear medicine in the treatment of patients with recurrence prostate cancer after radical prostatectomy	
		Kyrhatii TRIKHIRHISTHIT	Sawanpracharak hospital, Collaborative Project to Increase Production of Rural Doctor (CPIRD) Medical Education Center affiliated to Mahidol University, Nakhonsawan,	Thailand	Survival benefits of adding palliative whole brain radiotherapy in non-small cell lung cancer with brain metastases unsuitable for resection or radiosurgery: A clinical prediction rule	
		Semia ZARAA	Salah azaiz Institute, Department of Radiotherapy	Tunisia	EVOLUTION AND PROGNOSIS OF JUVENILE NASOPHARYNGEAL CARCINOMA: results from of a study on 68 children in Salah Azaiz Institute in Tunisia	

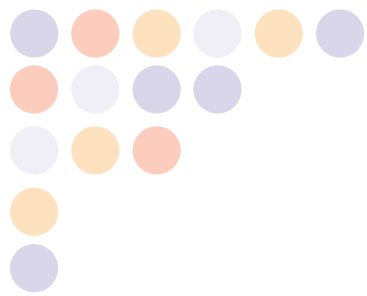




Live Broadcast times (CET/UTC +1)	Session Title	Speaker	Affiliation	Designating Member State/ Organization	Title of Presentation	Description
	<b>Paper Session 2: Implementation of New Technologies</b>	Micaela Agustina BERTERO	Leben Salud	Argentina	Optimization parameters in bladder and rectum for gynecologic cancer treatment with VMAT Technique through ProKnow platform	
		Anni BORKVEL	NEMC	Estonia	Evaluation of artificial intelligence based contouring tools in prostate cancer radiation therapy planning	
		Minjmaa MINJGEE	National Cancer Center of Mongolia	Mongolia	Current opportunities and challenges in a period of 2D to 3D transition in Radiation therapy in Mongolia	
		Kennedy LISHIMPI	Cancer Diseases Hospital - Radiation Oncology	Zambia	Implementing compensator IMRT using Low Cost Effective Solution - A Zambian Experience	
	<b>Refresher Courses:</b>					
<u>1230 – 1430</u>	<b>Parallel Sessions</b> (See Parallel Session sheet)					
	<b>Workshop:</b>					







Live Broadcast times (CET/UTC +1)	Session Title	Speaker	Affiliation	Designating Member State/ Organization	Title of Presentation	Description
<u>1430 -1530</u>	<b>E-Contouring Workshop (ASTRO)</b> (Two 30-minute sessions)	Billy LOO	Stanford University; American Society for Radiation Oncology (ASTRO)	United States	SABR for Lung Cancer	These sessions will: Describe the clinical and anatomical rationale for target volume and organs at risk delineation; Discuss the common pitfalls in delineation; Demonstrate the accurate delineation of target volumes and organs at risk.
		Mack ROACH III	UCSF Helen Diller Family Comprehensive Cancer Center; American Society for Radiation Oncology (ASTRO)	United States	Prostate Cancer	

END OF DAY 1





WEDNESDAY, 17 FEBRUARY 2021

Live Broadcast times (CET/UTC +1)	Session Title	Speaker	Affiliation	Designating Member State/ Organization	Title of Presentation	Description
	<b>Keynote lectures:</b>					
<u>0745 – 0815 EAST</u> <u>1530 – 1600 WEST</u>	<b>Brachytherapy</b> (30 Minutes)	Christine HAIE-MEDER	Institut de Cancérologie Gustave Roussy	France	Rationale for the migration from 2D to 3D brachytherapy	This session will: Present an overview of the history of brachytherapy, the main indications and available technologies, and the best practices for the implementation of brachytherapy in real life. This session will: Present an overview of the contemporary radiobiology, the main indications and available technologies, and the best practices for the implementation of radiobiological findings in radiation oncology.
<u>0815 – 0900 EAST</u> <u>1600 – 1645 WEST</u>	<b>Radiobiology</b> (45 Minutes)	Mike JOINER	Wayne State University School of Medicine, Michigan	United States	Radiobiology of High dose per fraction	
		Loredana MARCU	University of Oradea, Romania, University of South Australia, Australia	Romania/IOMP	Recent developments in Radiobiology	
<u>0900 – 0930 EAST</u> <u>1645 – 1715 WEST</u>	<b>Education and Training</b> (30 Minutes)	Kim BENSTEAD	Gloucestershire Hospitals NHS Foundation Trust; Chair ESTRO	United Kingdom	Competency Based Education in Radiation Oncology: Global	This session will: Discuss the recent developments and challenges in the assessment and certification aspect of radiation





Live Broadcast times (CET/UTC +1)	Session Title	Speaker	Affiliation	Designating Member State/ Organization	Title of Presentation	Description
<u>0930 – 1000 EAST</u> <u>1715 – 1745 WEST</u>	<b>The RTT Profession</b> (30 Minutes)	Mary COFFEY	School of Medicine - Trinity College Dublin	Ireland	Perspectives on the Assessment of Learning  The RTT profession	oncology education globally. The goal is to disseminate best practices and invite discussion towards assessment of learning at the global level. This session will: Identify the need to advance the education of radiation therapists worldwide; and, Discuss challenges and solutions
<u>1000 – 1030 EAST</u> <u>1745 – 1815 WEST</u>	<b>Clinical Research</b> (30 Minutes)	Jai Prakash AGARWAL	Tata Memorial Hospital	India	Clinical Research	This session will: Describe the challenges and solutions in ensuring equity in radiation oncology research; and, Identify solutions to increase participation of LMICs in clinical research.
<u>1030 – 1100 EAST</u> <u>1815 – 1845 WEST</u>	<b>Health Systems Research</b> (30 Minutes)	Yolande LIEVENS	University Hospital Ghent	Belgium	Health Systems Research	This session will: Describe the concept and application of health systems research; and Discuss the importance of health systems research in addressing the issue of access and sustainability.
<u>1100 – 1130 EAST</u> <u>1845 – 1915 WEST</u>	<b>Paediatric Radiotherapy</b> (30 Minutes)	Ed SMITH	The Christie NHS Foundation Trust	United Kingdom	Radiotherapy in Teenagers and Young Adults with cancer: Providing Care and Improving Outcomes	This session will: Discuss the challenges in the management of teenage and young adults with cancer; and





Live Broadcast times (CET/UTC +1)	Session Title	Speaker	Affiliation	Designating Member State/ Organization	Title of Presentation	Description
						Identify directions to improve treatment outcomes with radiotherapy
<u>1130 – 1230</u>	<b>Paper Session:</b> <b>Oral Presentations</b> (1 Hour) <b>Paper Session 3:</b> <b>Health Economics and Health Systems Research</b>	Socheat TOUCH	Khmer Soviet Friendship Hospital- University of Health Sciences	Cambodia	Revitalizing and strengthen the capacity of cancer management in Cambodia: Past-Present and future involvement of multi-stakeholders.	
		YI Junlin	National Cancer Center/Cancer Hospital, Chinese Academy of Medical Sciences	China	The basic situation of radiotherapy in mainland China : a national survey in 2019	
		Jorge Andres VILLALOBOS-ROSALES	CCSS-HSJD / UCR / ICAP	Costa Rica	Competences of Medical Dosimetrists and Radiation Therapy Technologists working in a Costa Rican Radiotherapy Department: A benchmarking approach to the recommended ESTRO Core Curriculum using a Training/Competency Matrix Abstract	
		Soehartati A GONDHOWIARDJO	Faculty of Medicine, Universitas	Indonesia	Closing the Radiotherapy Gap in Indonesia: Reflection	





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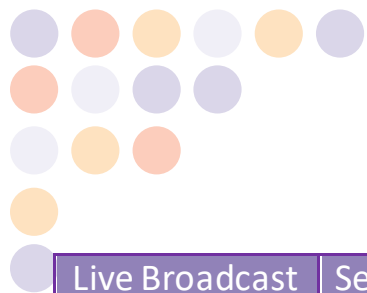
International Atomic Energy Agency

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Live Broadcast times (CET/UTC +1)	Session Title	Speaker	Affiliation	Designating Member State/ Organization	Title of Presentation	Description
	<b>Paper Session 4: Radiobiology</b>	Kizito MUBIRU	Indonesia – Department of Radiation Oncology, Dr. Cipto Mangunkusumo National General Hospital – Jakarta	Uganda	on National Roadmap Program	
		Assya BOUGHALIA	Kyambogo University	Algeria	Weighted Goal Programming Approach for Solving Budgetary Radiation Therapy Treatment	
		Mitra SAFAVI- NAEINI	Medical Physics Department, Nucleaire Research of Algiers	Australia	NTCP and estimation of secondary cancer risk in Modulated Arc Therapy for prostate carcinoma using in- house software.	
		Manoor Prakash HANDE	Australian Nuclear Science and Technology, ANSTO	Singapore	Neutron Capture Enhanced Particle Therapy (NCEPT): In vitro proof of concept	
		Elena YERMILOVA	National University of Singapore	Ukraine	Mechanism-Based Combination Therapy in Cancer: Studies on Cancer Cells	Concomitant boost in preoperative irradiation of rectal cancer

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Live Broadcast times (CET/UTC +1)	Session Title	Speaker	Affiliation	Designating Member State/ Organization	Title of Presentation	Description
	<b>Refresher Courses:</b>					
<u>1230 – 1430</u>	<b>Parallel Sessions</b> (See Parallel Session sheet)					
	<b>Workshop:</b>					
<u>1430 -1530</u>	<b>E-Contouring Workshop (ESTRO)</b> (1 Hour)	Sarah JEFFERIES	Addenbrooke's Hospital, Cambridge University Hospitals NHS Foundation Trust; European Society for Radiotherapy & Oncology (ESTRO)	United Kingdom	CNS E-Contouring Workshop	These sessions will: Describe the clinical and anatomical rationale for target volume and organs at risk delineation; Discuss the common pitfalls in delineation; Demonstrate the accurate delineation of target volumes and organs at risk.
<b>END OF DAY 2</b>						





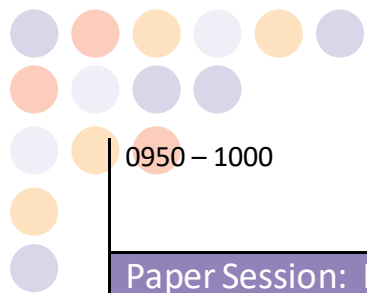
**THURSDAY, 18 FEBRUARY 2021**

**Medical Physics: Advanced Techniques and Technologies - 0830 -1120 (170 Minutes)**

Chairs: Daniel BERGER & Mauro CARRARA; Dosimetry and Medical Radiation Physics section, Division of Human Health, International Atomic Energy Agency (IAEA)

Live Broadcast times (CET/UTC +1)	Title	Speaker	Affiliation	Designating Member State/ Organization
0830 – 0850	1. The UNSCEAR 2020 report on medical exposure: approach, trends and challenges in the field of radiation therapy	1. Ferid SHANNOUN	United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)	United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)
		1. Peter THOMAS	Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)	Australia
0850 – 0910	2. Prescribing, Recording and Reporting Proton and Light Ion Beam Therapy (ICRU 78 and 93)	2. Oliver JAEKEL	German Cancer Research Center, Heidelberg; International Commission on Radiation Units and Measurements (ICRU)	ICRU/Germany
0910 - 0920	3. Spatially fractionated radiation therapy: from photons to charged particles	3. Yolanda PREZADO	European Federation of Organisations for Medical Physics (EFOMP); Research Center-Orsay, Institut Curie	EFOMP/France
0920 - 0940	4. Out of field doses	4. Geoffrey IBBOTT	International Organization for Medical Physics (IOMP); University of Texas MD Anderson Cancer Center	IOMP/ United States
0940 – 0950	5. kV therapy dosimetry: updates and challenges	5. Robin HILL	Chris O'Brien Lifehouse, New South Wales	Australia





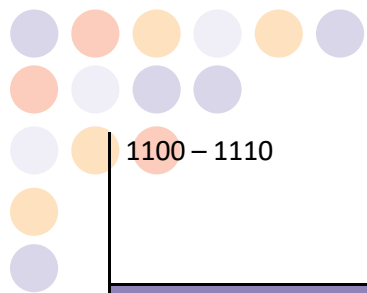
0950 – 1000	6. Radiation Planning Assistant: Automated contouring and treatment planning	6. Laurence COURT	M.D. Anderson Cancer Center (MDACC)M.D. Anderson Cancer Center (MDACC)	United States
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**Paper Session: Medical Physics Paper Session 1: Advanced Techniques and Technologies**

Live Broadcast times (CET/UTC +1)	Presentation Title	Speaker	Affiliation	Designating Member State/ Organization
1000 - 1010	1. Effect of detector choice for commissioning measurements propagated through beam modelling to final dose calculation	Sonja WEGENER	University of Wuerzburg, Radiation Oncology	Germany
1010 - 1020	2. Accuracy of an Eclipse treatment planning system for SRS	Iqbal AL AMRI	Royal hospital	Oman
1020 - 1030	3. Characterization of helical tomotherapy plans complexity	Tania SANTOS	University of Coimbra   IPOCFG,E.P.E.	Portugal
1030 - 1040	4. Retrospective evaluation of portal dosimetry pre-treatment quality assurance for volumetric-modulated arc therapy (VMAT) and stereotactic radiotherapy (SRT) plans	Abdelkader TOUTAOUI	Hôpital Chahids Mahmoudi, Tizi Ouzou	Algeria
1040 - 1050	5. A novel quantitative metrics for assessing IMRT plan complexity: A virtual phantom study	Hwee Shin SOH	Ministry of Health Malaysia	Malaysia
1050 - 1100	6. Clinical implementation of the MRLinac in Odense, Denmark	Vibeke Nordmark HANSEN	Laboratory of Radiation Physics, Odense University Hospital	Denmark







1100 – 1110	7. Fricke Dosimetry for Blood Irradiators	Andrea MANTUANO	Rio de Janeiro State University (UERJ)	Brazil
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BREAK 40 Minutes POSTER VIEWING SESSION

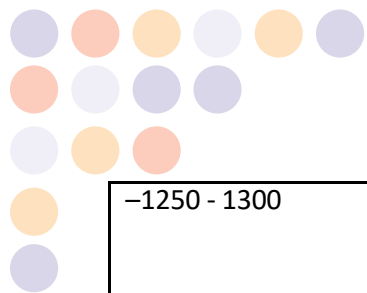
**Medical Physics: Education - 1200 -1430 (150 Minutes)**  
Chairs: Debbie VAN DER MERWE; Section Head, Dosimetry and Medical Radiation Physics section, Division of Human Health, International Atomic Energy Agency (IAEA)

Live Broadcast times (CET/UTC +1)	Presentation Title	Speaker	Affiliation	Designating Member State/ Organization
1200 - 1220	1. IAEA Activities in Support of Education and Recognition in Medical	1. Giorgia LORETI	Dosimetry and Medical Radiation Physics (DMRP) section, Division of Human Health	International Atomic Energy Agency (IAEA)
1220-1240	2. IOMP activities in medical physics education and training	2. Geoffrey IBBOTT	International Organization for Medical Physics (IOMP); University of Texas MD Anderson Cancer Center	IOMP/ United States
1240 - 1250	3. EFOMP activities in education and training of medical physicists in Europe	3. Brendan MCCLEAN	European Federation of Organisations For Medical Physics (EFOMP); St Luke’s Radiation Oncology Network	EFOMP/ Ireland

**Sub-Session: Medical Physics Education; Global Access to Medical Physics: Challenges and Opportunities**

Live Broadcast times (CET/UTC +1)	Presentation Title	Speaker	Affiliation	Designating Member State/ Organization
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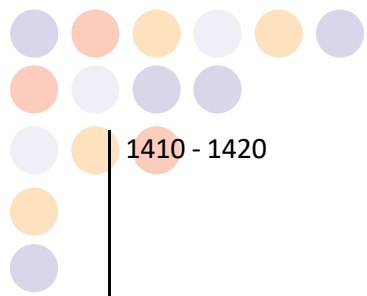


-1250 - 1300	1. Virtual mentoring in global medical physics education and training	1. Jacob VAN DYK	The University of Western Ontario, Canada; Medical Physics for World Benefit (MPWB)	MPWB/ Canada
1300 - 1310	2. Challenges in establishing a clinical training programme for MP	2. Graciela VELEZ	Dosimetry and Medical Radiation Physics (DMRP) section, Division of Human Health	International Atomic Energy Agency (IAEA)
1310-1320	3. The “Open Syllabus” project – improving global access to radiation oncology medical physicist residency training content	3. Parminder S. BASRAN	Medical Physics for World Benefit (MPWB)	Medical Physics for World Benefit (MPWB) / United States
1320 - 1330	4. Monitoring and Evaluation of IAEA e-learning Courses in Medical Physics	4. Giorgia LORETI	Dosimetry and Medical Radiation Physics (DMRP) section, Division of Human Health	International Atomic Energy Agency (IAEA)
1330 - 1340	5. Experience as a remote supervisor under the IAEA Doctoral CRP Programme	5. Daniel VENENCIA	Instituto Zunino- Fundación Marie Curie	Argentina

Paper Session: Medical Physics Paper Session 2: Education

Live Broadcast times (CET/UTC +1)	Presentation Title	Speaker	Affiliation	Designating Member State/ Organization
1350 – 1400	1. Volumetric Modulated Arc Therapy (VMAT): The gold standard for the present and future of radiotherapy?	Sherisse DE FOUR	St. James Medical Complex	Trinidad and Tobago
1400 – 1410	2. A study on the determination of relative output factors for very small fields in stereotactic radiosurgery	Chi DO DUC	Central Military Hospital, No.1	Vietnam





1410 - 1420	3. Establishment of an Incident reporting and learning System as a tool for Quality Management in Uganda's radiotherapy services: A case of the low resource setting	Ignatius KOMAKECH	Uganda Cancer Institute	Uganda
1420 - 1430	4. Evaluation of positioning and dosimetry uncertainties in patients treated with intensity modulation radiotherapy (IMRT) for nasopharyngeal cancers in Tunisia	Nesrine ELAMRI	University Tunis El Manar I	Tunisia
1430 - 1440	5. Determination and comparison of output factors in small field for field square and rectangular field with 5 detectors for For 6 Mv.	Milagros GARCIA GUTIERREZ	Red Auna - Clinica Delgado	Peru

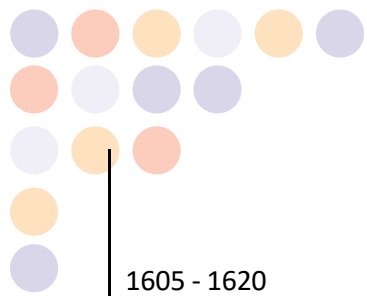
**BREAK 50 Minutes POSTER VIEWING SESSION**

**Medical Physics: Audits, Quality and Safety - 1530 -1740 (130 Minutes)**

Chairs: Chairs: Ola HOLMBERG ( Department of Nuclear Safety, Division of Radiation, Transport and Waste Safety, Unit Head (Radiation Protection of Patients Unit) & Debbie VAN DER MERWE; Section Head, Dosimetry and Medical Radiation Physics section, Division of Human Health: International Atomic Energy Agency (IAEA)

Live Broadcast times (CET/UTC +1)	Presentation Title	Speaker	Affiliation	Designating Member State/ Organization
1530 - 1545	1. What is new in radiotherapy medical physics auditing?	1. Andy NISBET	University College London	United Kingdom
1545 - 1605	2. Enhancing quality in radiotherapy through dosimetry audits (the IROC experience)	2. Stephen KRY	The Global Health Group (GHG)/	The Global Health Group (GHG)/ United States



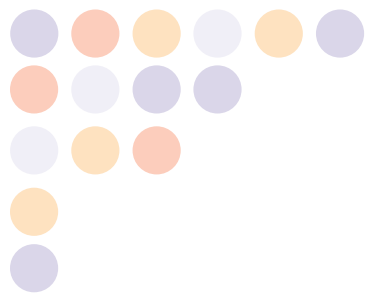


1605 - 1620	3. IAEA/WHO dosimetry audits: present and future	3. Pavel KAZANTSEV	M.D. Anderson Cancer Center (MDACC)M.D. Anderson Cancer Center (MDACC) Dosimetry and Medical Radiation Physics (DMRP) section, Division of Human Health	International Atomic Energy Agency (IAEA)
1620 - 1630	4. Experience and skills for medical physics auditing under the IAEA QUATRO activity	4. Stefaan Vynckier	UCL, Université catholique de Louvain, Imagerie Médicale, Radiothérapie et Oncologie (MIRO)	Belgium
1630 - 1640	5. Designing a framework for improving Radiotherapy Safety and Quality	5. Annette WYGODA	Quality and Safety of Radiotherapy Treatments, Radiation Control Unit, Ministry of Health - Israel	Israel
1640 - 1650	6. Enhancing safety in radiotherapy: the IAEA Safety Standards for Medical Uses	6. Ola HOLMBERG	Department of Nuclear Safety, Division of Radiation, Transport and Waste Safety, Unit Head (Radiation Protection of Patients Unit)	International Atomic Energy Agency (IAEA)

**Paper Session: Medical Physics Paper Session 3: Audits, Quality and Safety**

Live Broadcast times (CET/UTC +1)	Presentation Title	Speaker	Affiliation	Designating Member State/ Organization
1650 – 1700	1. Dose verification from imaging to delivery during site visits in radiotherapy	Petri SIPILÄ	Radiation and Nuclear Safety Authority (STUK)	Finland
1700 - 1710	2. Small field absorbed dose to water determinations in LINAC MV photon beams during site visit authority control of radiotherapy	Ilkka JOKELAINEN	Radiation and Nuclear Safety Authority (STUK)	Finland
1710 - 1720	3. Introduction of the IAEA Electron Beam Dosimetry Audit Service	Alexis DIMITRIADIS	Dosimetry and Medical Radiation Physics (DMRP) section, Division of Human Health	International Atomic Energy Agency (IAEA)





1720 - 1730	4. Following up on radiotherapy dosimetry audit discrepancies (2018-2020): the IAEA experience	Godfrey AZANGWE	Dosimetry and Medical Radiation Physics (DMRP) section, Division of Human Health	International Atomic Energy Agency (IAEA)
1730 - 1740	5. Medical physics outsourcing in radiotherapy in France: services, practices, limits and points of vigilance	Magali EDOUARD	Institut de Radioprotection et de Sûreté Nucléaire, Fontenay-aux-Roses (IRSN)	France

POSTER VIEWING SESSION

	<b>Refresher Courses:</b>					
1740 – 2000	<b>Parallel Sessions</b> (See Parallel Session sheet)					

END OF DAY 3





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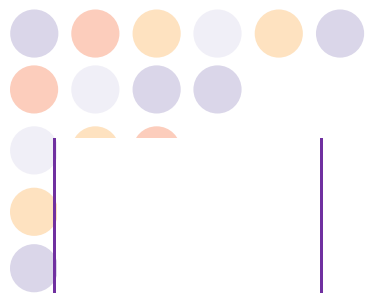
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**FRIDAY, 18 FEBRUARY 2021**

Live Broadcast times (CET/UTC +1)	Session Title	Speaker	Affiliation	Designating Member State/ Organization	Title of Presentation	Description
	<b>Refresher Courses:</b>					
<u>0800 – 1000</u>	<b>Parallel Sessions</b> (See Parallel Session sheet)					
	<b>Keynote lectures:</b>					
<u>1000 – 1030 EAST</u> <u>1430 – 1500 WEST</u>	<b>Radiotherapy in the National Cancer Control Plan</b> (30 Minutes)	Lisa STEVENS	Director, Programme of Action for Cancer Therapy (PACT)	International Atomic Energy Agency (IAEA)	Radiotherapy in the National Cancer Control Plan	This session will: Contribute to the understanding of the role of independent external audits which are a necessary part of a comprehensive quality assurance (QA) programme in radiation oncology. A comprehensive audit of a radiotherapy programme reviews and evaluates the quality of all the elements involved in
<u>1030 – 1100 EAST</u> <u>1500 – 1530 WEST</u>	<b>QUATRO</b> (30 Minutes)	Stefaan VYNCKIER	Cliniques Universitaires St. Luc; Université Catholique de Louvain	Belgium	The IAEA Quality Assurance Team for Radiation Oncology	

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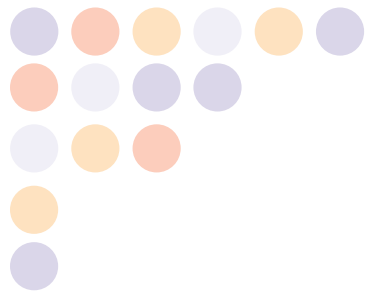
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						<p>radiation therapy, including staff, equipment and procedures, patient protection and safety, and, overall performance of the radiotherapy department, as well as its interaction with external service providers. Possible gaps in technology, human resources and procedures will be identified so that the institutions audited will be able to document areas for improvement.</p> <p>This session will: Describe the implementation of the IAEA QUATRO at the national level, with Belgium as a model.</p>
<p><u>1100 – 1130 EAST</u> <u>1530 – 1600 WEST</u></p>	<p><b>QUATRO</b></p>	<p>Aude VAANDERING</p>	<p>Cliniques Universitaires St. Luc; Université Catholique de Louvain</p>	<p>Belgium</p>	<p>Building National Quality Audit Programme for Radiotherapy</p>	
<p><u>1130 – 1200 EAST</u> <u>1600 – 1630 WEST</u></p>	<p><b>Strategies in Ensuring Continuity of Radiotherapy Services in the Context of COVID-19</b> (30 Minutes)</p>	<p>Matthias GUCKENBERGER</p>	<p>European Society for Radiotherapy &amp; Oncology (ESTRO); Universität Zürich</p>	<p>ESTRO</p>	<p>Strategies in Ensuring Continuity of Radiotherapy Services in the Context of COVID-19</p>	<p>Discuss hypofractionation as an example of COVID-19 impact on radiotherapy practice</p>
<p><u>1200 – 1230 EAST</u> <u>1630 – 1700 WEST</u></p>	<p><b>Advanced Technologies - Proton, Ion Beam Therapy</b> (30 Minutes)</p> <p><b>Telemedicine</b> (30 Minutes)</p>	<p>Damien WEBER</p> <p>Ian WARD</p>	<p>Paul Scherrer Institute (PSI) Centre for Proton Therapy (CPT)</p> <p>Canterbury Regional Cancer and Haematology Service, Christchurch Hospital</p>	<p>Switzerland</p> <p>New Zealand</p>	<p>‘Protons: Truth or Lies’</p> <p>Telemedicine in Radiation Oncology</p>	<p>Discuss the concept and limits of proton therapy</p> <p>This session will: Discuss the scope of telemedicine in radiotherapy; and Discuss the feasibility of telemedicine in the field of</p>





<p><u>1230 – 1300 EAST</u> <u>1700 – 1730 WEST</u></p>	<p><b>60 years of the Directory of Radiotherapy Centres (DIRAC)</b> (30 Minutes)</p>	<p>Alfredo POLO</p>	<p>Applied Radiation Biology and Radiology Section</p>	<p>International Atomic Energy Agency (IAEA)</p>	<p>60 years of the Directory of Radiotherapy Centres (DIRAC)</p>	<p>radiotherapy in low and middle income countries. This session will: Present an overview of the history of DIRAC, the current and planned functionalities, data quality assurance workflow; and Present a snapshot of the current situation of radiotherapy in 2020. This session will: Pose questions and answers from the week’s sessions, courses and discussion forums, put by a moderator to the conference contributors</p>
<p><u>1300 – 1400 LIVE</u> <u>1730 – 1830</u> <u>REPEAT</u></p>	<p><b>Live session: Q&amp;A: Ask the Experts</b> (1 Hour)</p>	<p>Involvement of the speakers and chairs from the keynote broadcasts and refresher courses.</p>				
<p><u>1400 – 1430 EAST</u> <u>1830 – 1900 WEST</u></p>	<p><b>Closing Remarks</b> (30 Minutes)</p>					

**END OF DAY 4 – CLOSE OF CONFERENCE**





# REFRESHER COURSES PROGRAMME – DETAILED VIEW

International Conference on Advances in Radiation Oncology #ICARO3

16 – 19 February 2021 (Virtual Event)

## Refresher Courses:

Available as scheduled parallel sessions and On-demand for the duration of ICARO-3

Advanced Technologies / Beyond 3D IAEA Chair: Lisbeth CORDERO, Division of Human Health, IAEA 80 Minutes		
<ol style="list-style-type: none"> <li>1. Multimodality imaging and deformable image registration (20 minutes)</li> <li>2. Automated target volume / organs at risk delineation and treatment planning (20 minutes)</li> <li>3. Management of interfraction motion (IGRT, Adaptive RT) (20 minutes)</li> <li>4. Advances in dose delivery (MRI linac, transponders, FLASH) (20 minutes)</li> </ol>	<ol style="list-style-type: none"> <li>1. Vincenzo VALENTINI, Gemelli, Universita Catolica del Sacro Cuore, Italy</li> <li>2. Vincent GREGOIRE, Centre du Lutte Contre Le Cancer, Centre Léon Bérard, Lyon France</li> <li>3. X. Allen LI, Medical College of Wisconsin, USA</li> <li>4. Saiful HUQ, University of Pittsburgh School of Medicine, USA</li> </ol>	<p>The learning objectives for this Refresher Course are:</p> <ul style="list-style-type: none"> <li>• To understand the basic principles of advanced radiotherapy techniques</li> <li>• To understand how to transition from basic to more advanced radiotherapy techniques</li> <li>• To learn the basis of quality and safety in advanced radiotherapy</li> <li>• To understand the cost-benefit of advanced radiotherapy</li> </ul>
Brachytherapy in the real world Chair: Alfredo POLO, Division of Human Health, IAEA 225 Minutes		
<ol style="list-style-type: none"> <li>1. Status of Brachytherapy worldwide: a DIRAC study (5 minutes)</li> <li>2. Health Economic Evaluation of Brachytherapy for cancer treatment (15 minutes)</li> </ol>	<ol style="list-style-type: none"> <li>1. Alfredo POLO, Division of Human Health, IAEA</li> <li>2. Alfredo POLO, Division of Human Health, IAEA</li> </ol>	<p>The learning objectives for this Refresher Course are:</p> <ul style="list-style-type: none"> <li>• To understand what are the main indications for brachytherapy</li> </ul>



<ol style="list-style-type: none"> <li>3. Technological advances in Brachytherapy - TPS, new sources, new applicators, AI (20 minutes)</li> <li>4. Comprehensive Quality Management in Brachytherapy (25 Minutes)</li> <li>5. Education and training of New Generations of Brachytherapy Practitioners (30 minutes)</li>   <li>6. Omitting brachytherapy in gynaecological cancer is deleterious for your patients (15 minutes)</li> <li>7. Cervix cancer as a model for Image Guided Brachytherapy (25 minutes)</li> <li>8. The migration from 2D to 3D and IGBT: implementation challenges (55 minutes)</li> <li>9. Practical Educational Session (50 Minutes)</li> </ol>	<ol style="list-style-type: none"> <li>3. Mauro CARRARA, Division of Human Health, IAEA</li> <li>4. Daniel BERGER, Division of Human Health, IAEA</li> <li>5. Supriya CHOPRA, Advanced Centre for Treatment, Research and Education in Cancer (ACTREC), India; Mauro CARRARA, Division of Human Health, IAEA</li> <li>6. Supriya CHOPRA, Advanced Centre for Treatment, Research and Education in Cancer (ACTREC), India</li> <li>7. Umesh MAHANTSHETTY, Tata Memorial Centre, India</li> <li>8. Daniel BERGER, Division of Human Health, IAEA</li> <li>9. Umesh MAHANTSHETTY, Daniel BERGER</li> </ol>	<ul style="list-style-type: none"> <li>• To understand how to transition from basic to more advanced brachytherapy techniques</li> <li>• To learn the basis of quality and safety in brachytherapy To understand how brachytherapy can be used to reduce costs in radiotherapy</li> </ul>
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**Planning quality radiotherapy services: a city approach** Chairs: Rolando CAMACHO, City Cancer Challenge Foundation & Eduardo ZUBIZARRETA, Division of Human Health, IAEA  
**120 minutes**

<ol style="list-style-type: none"> <li>1. C/Can model: Planning quality radiotherapy services (15 minutes)</li> <li>2. Demand and supply analysis: a city framework (20 minutes)</li> <li>3. Building a successful public-private partnership in the health sector: key elements (20 minutes)</li> <li>4. A practical example: Yangon City, Myanmar (15 minutes)</li> </ol>	<ol style="list-style-type: none"> <li>1. Diogo NEVES, Senior Manager, Technical Assistance and Partnerships, City Cancer Challenge Foundation</li> <li>2. Rodolfo ALFONSO, University La Habana, Cuba</li> <li>3. Dhawal JHAMB, Senior Investment Officer, PPP Transaction Advisory Services, International Finance Corporation</li> <li>4. Thet KO AUNG, Technical Assistance Officer, City Cancer Challenge Foundation;</li> </ol>	<p>The learning objectives for this session are:</p> <ul style="list-style-type: none"> <li>• To identify key methodological elements to estimate demand of radiotherapy services within a defined catchment area (city), and</li> <li>• To become familiar with key success factors and strategies when designing city-wide approaches.</li> </ul>
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4. Ms KHIN CHO Win, Myanmar Society of Radiation Oncology, Myanmar

### Educational Milestones in the Profession of RTT

Chair: Michelle LEECH, Trinity College Dublin, Ireland

IAEA co-chair: Kamal AKBAROV, Division of Human Health, IAEA

90 Minutes

1. Current Status of RTT education globally (15 minutes)
2. The advancing and changing role of the RTT (15 minutes)
3. Where are we going?: Future Directions for the RTT profession (15 minutes)
4. Panel Discussion: The current status of RT education in their region and opinions on the challenges and opportunities for RTTs in the coming decade (40 minutes)

1. Michelle LEECH, Trinity College Dublin, Ireland
2. Aidan LEONG, University of Otago, New Zealand
3. Mary COFFEY, Trinity College Dublin, Ireland
4. Chair: Michelle LEECH  
Panellists: Gurvinder Singh WADHAWAN, Rajiv, Gandhi Cancer Institute and Research Centre, India;  
Samuel OPOKU University of Ghana, Ghana;  
Colette DIJCKS, Maastrro Clinic, Maastricht Netherlands;  
John RYAN, RMIT University Australia;  
Mary COFFEY, Trinity College Dublin, Ireland;  
Aidan LEONG University of Otago, New Zealand

The learning objectives for the Educational Milestones in the Profession of RTT Refresher Course are:

- To discuss current status of RTT education worldwide
- To identify challenges and future directions for the RTT profession

### Expanding Access to Radiotherapy

Chair: Eduardo ZUBIZARRETA, Applied Radiation Biology and Radiotherapy Section, International Atomic Energy Agency

#ICARO3



**120 minutes**

<ol style="list-style-type: none"> <li>1. Global efforts (20 minutes)</li> <li>2. Challenges (20 minutes)</li> <li>3. Translating incidence into needs (20 minutes)</li> <li>4. Sustainability and access (20 minutes)</li> <li>5. Resources and costs (20 minutes)</li> <li>6. Investment framework (20 minutes)</li> </ol>	<ol style="list-style-type: none"> <li>1. Mary GOSPODAROWICZ, the Princess Margaret Cancer Centre, Toronto, Canada</li> <li>2. Surbhi GROVER, Hospital of the University of Pennsylvania, USA</li> <li>3. Michael BARTON University of New South Wales, Australia</li> <li>4. Alfredo POLO, Division of Human Health IAEA</li> <li>5. Eduardo ZUBIZARRETA, Division of Human Health IAEA</li> <li>6. Danielle RODIN, University of Toronto, Canada</li> </ol>	<p>The learning objectives for this Refresher Course are:</p> <ul style="list-style-type: none"> <li>• To review current initiatives and identify global challenges in improving.</li> <li>• To provide understanding about the different methods to calculate the needs.</li> <li>• To explain and facilitate available tools for calculation of radiotherapy resources and costs associated.</li> <li>• To discuss strategies in developing investment cases for radiotherapy</li> <li>• To understand the meaning of Valued-based healthcare in radiotherapy</li> </ul>
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**Paediatric Radiation Oncology**

**Chair: Sahaja ACHARYA, St Jude Children's Research Hospital, USA**

**IAEA co-chair: Kirsten HOPKINS, Division of Human Health, IAEA**

**115 minutes**

<ol style="list-style-type: none"> <li>1. Global Partnerships including St Jude's activities and the GICC workshops (15 minutes)</li> <li>2. Delivering Paediatric Radiotherapy within Multidisciplinary team care (15 minutes)</li> <li>3. Key learning points in Paediatric Radiotherapy: CNS (25 minutes)</li> <li>4. Key learning points in Paediatric Radiotherapy: Non-CNS (25 minutes)</li> </ol>	<ol style="list-style-type: none"> <li>1. Paola FRIEDRICH, Catherine G. LAM, St. Jude Children's Research Hospital, USA</li> <li>2. Karen MARCUS, Harvard Medical School, USA</li> <li>3. Sahaja ACHARYA, St. Jude Children's Research Hospital, USA</li> <li>4. Susan HINIKER, Stanford University Medical Center, USA</li> <li>5. Stephanie PERKINS, Washington University School of Medicine in St. Louis, USA</li> <li>6. Chair: Kirsten HOPKINS, IAEA</li> </ol>	<p>The learning objectives of this Refresher Course are:</p> <ul style="list-style-type: none"> <li>• To highlight the benefits and opportunities of global partnerships</li> <li>• To refresh the processes for multidisciplinary management of children with cancer including treatment of late effects and follow up into adulthood</li> <li>• To refresh contouring skills in common challenging sites in paediatric radiation therapy</li> </ul>
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<p>5. Management of late effects and follow up of the child into adulthood (15 minutes)</p> <p>6. Panel Discussion: "What training in Paediatric Radiotherapy is delivered in your country for:</p> <ul style="list-style-type: none"> <li>• Radiation Oncology residents</li> <li>• Radiation Oncologists taking a substantive role in Paediatric Radiotherapy" (20 minutes)</li> </ul>	<p>Panellists: Verity AHERN, University of Sydney, Australia; Rosangela CORREA-VILLAR, Universidade de Sao Paulo, Brazil; Mohammed ZAGHLOUL, Cairo University, Egypt; Wondemagegnhu TIGENEH, Addis Ababa University, Ethiopia</p>	<ul style="list-style-type: none"> <li>• To review current training in paediatric radiotherapy and identify innovative ideas in diverse global settings</li> </ul>
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## Proton Radiotherapy

Chair: Karen KIRKBY, Professor of Proton Beam Physics, University of Manchester, UK

IAEA co-chair: Kirsten HOPKINS, Division of Human Health, IAEA

120 Minutes

<ol style="list-style-type: none"> <li>1. Does it work: Developing and implementing clinical trials of PBT (20 minutes)</li> <li>2. Medical Physics Issues in Proton Therapy: Changing from 2 phases to single phase simultaneous integrated boost (to better use the optimiser) and use of EUD for plan assessment (20 minutes)</li> <li>3. The patient-centred PBT pathway (15 minutes)</li> <li>4. Image Guidance in proton therapy (15 minutes)</li> <li>5. Dose Accumulation in Proton Therapy (15 minutes)</li> <li>6. FLASH proton therapy? (15 minutes)</li> <li>7. Paediatric Proton Therapy (20 minutes)</li> </ol>	<ol style="list-style-type: none"> <li>1. Cai GRAU, Aarhus University, Denmark</li> <li>2. Matthew CLARKE, University of Manchester, UK</li> <li>3. Vicky HUGHES, The Christie NHS Foundation Trust, UK</li> <li>4. Katja LANGEN, Emory University, USA</li> <li>5. Antony J LOMAX, Paul Scherrer Institute, Switzerland</li> <li>6. Jack AYLWARD, University of Manchester, UK</li> <li>7. Tom MERCHANT, St. Jude Children's Research Hospital, USA</li> </ol>	<p>The learning objectives of this Refresher Course are:</p> <ul style="list-style-type: none"> <li>• To understand how the multidisciplinary proton team research, update and deliver state of the art proton therapy</li> <li>• To highlight conundrums that proton beam therapy presents in medical physics and radiobiology</li> </ul> <p>To review the specific role and evidence for proton therapy in the management of children with cancer</p>
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**Radiation Oncology Education in the Interconnected World**  
**Chairs: Sandra TURNER, The University of Sydney, Australia; Jesper Grau ERIKSEN, Aarhus University, Denmark**  
**IAEA co-chair: Ben PRAJOGI, Division of Human Health, IAEA**  
**120 Minutes**

<ol style="list-style-type: none"> <li>1. Global health competencies in radiation oncology education (15 minutes)</li> <li>2. Integrating radiation oncology education and research (15 minutes)</li> <li>3. Interprofessional education (15 minutes)</li> <li>4. Strengthening Networks in Worldwide Radiation Oncology Education:             <ul style="list-style-type: none"> <li>○ Perspectives: HIC (15 minutes) Daniel GOLDEN</li> <li>○ Perspectives: LMIC (15 minutes) Lotfi KOCHBATI</li> <li>○ Panel Discussion (45 minutes)</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. Meredith GIULIANI, University of Toronto, Canada</li> <li>2. Miriam MUTEBI, Aga Khan University Hospital, Nairobi, Kenya</li> <li>3. Michelle LEECH, Trinity College Dublin, Ireland</li> <li>4. Daniel GOLDEN, UChicago Medicine, USA</li> <li>4. Lotfi KOCHBATI, Institut Salah-Azaïz de Cancerologie, Tunisia</li> <li>4. Chair: Sandra TURNER, The University of Sydney, Australia; Panellists: Jesper Grau ERIKSEN, Aarhus University, Denmark; Daniel GOLDEN, UChicago Medicine, USA; Lotfi KOCHBATI, Institut Salah-Azaïz de Cancerologie, Tunisia</li> </ol>	<p>The learning objectives of this Refresher Course are:</p> <ul style="list-style-type: none"> <li>• To discuss the needs and innovative methods to integrate perspectives and skills for international collaboration and advocacy roles into radiation oncology education</li> <li>• To share best practices on the integration of oncology education and research</li> <li>• To discuss the value of interprofessional education and propose innovative educational methods to teach and assess interprofessional collaboration skills</li> <li>• To discuss various initiatives to strengthen radiation oncology through world-wide education</li> </ul>
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**Radiobiology**  
**Chair: Mike JOINER, Wayne State University School of Medicine, USA**  
**IAEA co-chair: Oleg BELYAKOV, Division of Human Health, IAEA**  
**95 Minutes**

<ol style="list-style-type: none"> <li>1. Radiobiology of high dose per fraction (30 minutes)</li> </ol>	<ol style="list-style-type: none"> <li>1. Mike JOINER, Wayne State University School of Medicine, Michigan, United States</li> </ol>	<p>The learning objectives for this Refresher Course are:</p>
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<ol style="list-style-type: none"> <li>2. Role of radiobiology in Spatial Fractionated Radiation Therapy and FLASH (30 minutes)</li> <li>3. Radiobiological advances in Radiation Medicine (20 minutes)</li> <li>4. Personalized Radiotherapy: From bench to bedside (25 minutes)</li> </ol>	<ol style="list-style-type: none"> <li>2. Jolyon HENDRY, The University of Manchester, UK</li> <li>3. Marjan BOERMA, UAMS College of Pharmacy, Little Rock, USA</li> <li>4. Loredana MARCU, University of Oradeaa, Romania, University of South Australia, Australia</li> </ol>	<ul style="list-style-type: none"> <li>• To learn the basic and advanced concepts of radiobiology</li> <li>• To review advances in translational radiation biology and their applications in radiation oncology</li> <li>• To understand what the main methods and implications of radiation biology to radiation medicine are</li> </ul>
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### Technological developments in radiation therapy practice

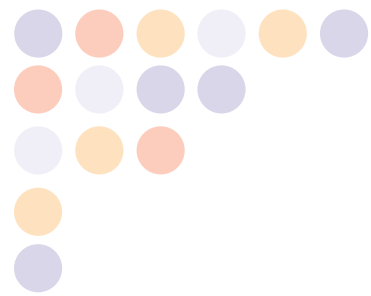
Chair: Michelle LEECH, Trinity College Dublin, Ireland

IAEA co-chair: Kamal AKBAROV, Division of Human Health, IAEA

90 Minutes

<ol style="list-style-type: none"> <li>1. A changed set up?: Implementation of surface guided radiation therapy (15 minutes)</li> <li>2. Advancing and changing practices: bringing the MRI-linear accelerator into clinical reality (15 minutes)</li> <li>3. Proton therapy- new directions in treatment delivery for RTTs. (15 minutes)</li> <li>4. Panel Discussion: The impact of new technologies on the development of the RTT profession and on the changing role of the RTT in meeting the challenges of rapid technological developments. (40 minutes)</li> </ol>	<ol style="list-style-type: none"> <li>1. Kenton THOMPSON, Peter MacCallum Cancer Centre, Australia</li> <li>2. Veronica POLLUTRI, Fondazione Policlinico Universitario "A. Gemelli", Italy</li> <li>3. Sharon WONG, Division of Radiation Oncology, National Cancer Centre Singapore</li> <li>4. Chair: Michelle LEECH Panellists: Helen MCNAIR, The Royal Marsden NHS Foundation, UK; Colleen DICKIE, University of Toronto, Canada; Nicola BIZZOCHI, Paul Scherrer Institute, Switzerland; Veronica POLLUTRI Fondazione Policlinico Universitario "A. Gemelli", Italy; Sharon WONG, Singapore Institute of Technology, Singapore</li> </ol>	<p>The learning objectives for this Refresher course on Technological developments in radiation therapy practice are:</p> <ul style="list-style-type: none"> <li>• To discuss the impact of new technologies on the development of the RTT profession</li> <li>• To discuss the changing role of the RTT in meeting the challenges of rapid technological developments</li> </ul>
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## POSTER PRESENTATIONS - OVERVIEW

International Conference on Advances in Radiation Oncology #ICARO3  
16 – 19 February 2021 (Virtual Event)

INDIC O ID No.	Presenter	Affiliation	Designating Member State/ Organization	Title of Presentation	Authors	Co-authors	Track
#5	Taweap SANGHANGTHUM	Division of Radiation Oncology, Department of Radiology, Faculty of Medicine, Chulalongkorn University	Thailand	Dosimetric comparison between volumetric modulated arc therapy and intensity modulated proton therapy for whole brain irradiation with hippocampal sparing	Taweap SANGHANGTHUM	Sivelee SURIYAPEE; Tanawat TAWONWONG	Advanced Techniques
#6	Maria DO CARMO LOPES	Medical Physics Dept., IPOCFG, E.P.E., Coimbra	Portugal	Independent verification of the pre-installed beam model in helical tomotherapy	MARIA DO CARMO LOPES; Tania Filipa SOBRINHO DOS SANTOS; Tiago VENTURA; Miguel CAPELA		Advanced Techniques
#25	Božidar CASAR	Institute of Oncology Ljubljana	Slovenia	On the dose linearity of	Božidar CASAR	Ignasi MENDEZ; Eduard GERSHKEVITSH; Sonja	Advanced Techniques





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				detectors for small field dosimetry		WEGENER; David JAFFRAY; Robert HEATON; Csilla PESZNYAK; Gabor STELCZER; Wojciech BULSKI; Krzysztof CHEŁMINSKI; Georgiy SMIRNOV; Natalia ANTIPINA; Andrew W. BEAVIS; Nicholas HARDING; Slaven JURKOVIĆ; Min-Sig HWANG; M. Saiful HUQ	
#28	Ismail ZERGOUG	Medical Physics department - Oncopole l'espoir Oran Algeria	Algeria	TPS commissioning for IMRT/VMAT	ISMAIL ZERGOUG	Nawel KLOUCH; Hakima BAH	Advanced Techniques
#37	Claus Maximilian BAECKER	West German Proton Therapy Centre Essen	Germany	Development of proton range verification by use of titanium implants and PET	Claus Maximilian BÄCKER; Christian BÄUMER; Carina BEHREND; Ken HERRMANN; Walter JENTZEN; Sandra KAZEK; Kevin KRÖNINGER; Fleur SPIECKER; Beate TIMMERMANN; Jens WEINGARTEN; Jörg WULFF		Advanced Techniques
#43	Ezequiel LARGER	Leben Salud	Argentina	Simple method for evaluating flatness and symmetry	Ezequiel LARGER; Maria SOL GALLO;		Advanced Techniques

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				based on EPID and MATLAB	Joaquin DE BRIDA; Ricardo RUGGERI		
#65	Aik Hao NG	Ministry of Health Malaysia	Malaysia	Assessing the target shift and its effect on dose distribution using deformable image registration method for head and neck patients undergoing IMRT	Aik Hao NG; Hwee Shin SOH		Advanced Techniques
#67	Abdelkader TOUTAOUI	Hôpital Chahids Mahmoudi	Algeria	Dosimetric comparison between VMAT and dedicated stereotactic planning tool for single isocenter stereotactic radiotherapy for patients with multiple brain metastases	Abdelkader TOUTAOUI; Billel METCHAT; Samir BENCHEIKH; Ryma LOUELH; Mourad BELMESSAOUD; Hamida MAHMOUDI; Tassadit BAROUDI; Soraya RILI		Advanced Techniques
#71	Jonas RINGHOLZ	University of Wuerzburg	Germany	Small field output correction factors at 18 MV	Jonas RINGHOLZ	Sonja WEGENER; Otto A. SAUER	Advanced Techniques
#77	Carla MOTA	State University of Rio de Janeiro	Algeria	Commissioning of an X-Ray Biological Research Irradiator	Carla L. MOTA; Arissa PICKLER; Andrea MANTUANO; Camila SALATA; Luis Alexandre GONCALVES MAGALHAES;		Advanced Techniques



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					Carlos E. DE ALMEIDA		
#91	Nkosingiphile MAPHUMULO	National Metrology Institute of South Africa	South Africa	Determination of field output correction factors in small static photon fields following TRS-483 CoP	Nkosingiphile MAPHUMULO		Advanced Techniques
#120	Tinnagorn DONMOON	Department of Radiotherapy, Mahavajiralongkorn Thanyaburi Hospital, Thailand	Thailand	Verification of two beam-matched linear accelerators using volumetric modulated arc therapy plans	Tinnagorn DONMOON		Advanced Techniques
#134	Kishore JOSHI	Department of Radiation Oncology, ACTREC, Tata Memorial Centre	India	Evaluation of Knowledge-based planning of Volumetric Modulated Arc Therapy (VMAT) for Nasopharyngeal cancer	Kishore JOSHI; Jamema SWAMIDAS	Sarbani Ghosh LASKAR; Subhabrata GHOSAL; Jeevanshu JAIN; Reena Devi PHURAILATPAM; Shrikant KALE; Naveen MUMMUDI; Jai Prakash AGARWAL	Advanced Techniques
#136	Sadia SADIQ	Pakistan Atomic Energy Commission	Pakistan	Dosimetric Comparison of VMAT and IMRT for NPC and Prostatic Carcinoma	Sadia SADIQ; Nauman AMJAD		Advanced Techniques
#137	Reena Devi PHURAILATPAM	Homi Bhabha National Institute	India	Total Marrow with Lymphoid Irradiation (TMLI) as a conditioning regimen using	Reena Devi PHURAILATPAM; Kishore JOSHI; Supratip KAPAT; Ann Christy SAJU;		Advanced Techniques

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				VMAT technique: Planning and dosimetry validation	Jayant S. GODA; Chandrasekhar TAMBE; Rajesh KINHIKAR; Siddhartha S LASKAR		
#139	Maria Elena GRECH	Sir Anthony Mamo Oncology Centre, Malta	Malta	A Measure of the Target Reposition Errors for Lung Volumetric Arc Therapy as Observed on Three-Dimensional Cone-Beam Computed Tomography, in a Single Radiotherapy Department in Malta	Maria Elena GRECH	Gemma BURKE; Dorothy Anne AQUILINA	Advanced Techniques
#140	Ilya LVOVICH	Rambam Health Care Center	Israel	Bladder filling before radiation therapy treatments to the prostate – Evaluating volume, dose and reproducibility of constraints	Ilya LVOVICH; Tomer CHARAS; Eleonora KUPTZOV; Orit KAIDAR-PERSON; Riki CARMI; Rima BAHCHEVAN; Egor BOROZOV; Salem BILLAN		Advanced Techniques
#18	Jerickson Abbie FLORES	Jose R. Reyes Memorial Medical Center, Department of Radiotherapy	Philippines	Safety in Radiation Oncology (SAFRON) Incident Learning System in the Philippines:	Jerickson Abbie FLORES; Jaffar PINEDA; Lilian RODRIGUEZ; Miriam Joy CALAGUAS; Jake		Audits, quality, safety

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				Learning through Experience	John GALINGANA; Margareth TAVAS-AGUSTIN; Jhonatan RIPARIP; Rolando TOLEDO; Julia VALES; Eleanore Florida ALTUBAR		
#21	Jhonatan RIPARIP	Jose R. Reyes Memorial Medical Center, Department of Radiotherapy	Philippines	Obstacles in Error Reporting System Among Radiotherapy Facilities: Basis for an Enhanced ILS Policy	Jhonatan RIPARIP; Jerickson Abbie FLORES; Juan Carlo BENTINGANAN; Lilian RODRIGUEZ; Julia VALES; Jake John GALINGANA		Audits, quality, safety
#30	Jaffar PINEDA	Jose R. Reyes Memorial Medical Center, Department of Radiotherapy	Philippines	Failure Modes and Effects Analysis in Image Guided High-Dose-Rate Brachytherapy: A Single Institutional Study	Jaffar PINEDA	Jerickson Abbie FLORES; Margareth TAVAS-AGUSTIN; Lilian RODRIGUEZ; Rolando TOLEDO; Eleanore Florida ALTUBAR	Audits, quality, safety
#42	Eliana QUINTEROS	Leben Salud	Argentina	Implementation of a comprehensive verification program for 3D high-dose rate brachytherapy plans: "QA-Brachy"	Eliana QUINTEROS	Ricardo RUGGERI; Joaquin DE BRIDA; Maria Sol GALLO	Audits, quality, safety
#62	Arisa PICKLER	LCR/UERJ	Brazil	Analysis of The Fricke-Pmma Interaction and its Effects in Fricke Dosimetry	Arisa PICKLER	Andrea MANTUANO; Camila SALATA; Carla L. MOTA; Mariano G. DAVID; Glorimar J. de AMORIM; Luis A.G.	Audits, quality, safety





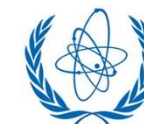
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						MAGALHÃES; Carlos E. DEALMEIDA	
#135	Manuel CASTRILLON	Clinica Las Condes	Chile	Comparison of monitor units and dose calculation between two independent second-check verification software	Manuel CASTRILLON; Jose RODRIGUEZ		Audits, quality, safety
#143	Una FINDLAY	Public Health England	United Kingdom	Optimising Learning from a National Incident Learning System in Radiotherapy: The PHE Experience	Una FINDLAY		Audits, quality, safety
#70	Mwape MOFYA	Cancer Diseases Hospital	Zambia	A comparative study of two treatment planning systems for IMRT optimization	Mwape MOFYA; Marco D'ANDREA; Lidia STRIGARI		Medical Physics Education
#78	Saba HUSSAIN	International Center for Theoretical Physics (ICTP)/University of Trieste,	Italy	Small-field output factor determination for Versa HD flattened and flattening filter-free beams with various detectors	Saba HUSSAIN	Mariaconcetta LONGO; Stefania CORA; Francescon PAOLO	Medical Physics Education
#105	Rosa PETIT	International Center for Theoretical Physics (ICTP)	International Center for Theoretical Physics (ICTP)	Statistical Control Process in Tomotherapy pre- treatment QA	Rosa PETIT; Eleonora VANZI; Gianmarco DE OTTO; Micheangelo		Medical Physics Education





					BIONDI; Fabrizio BANCI		
#115	Edith Villegas GARCIA	International Center for Theoretical Physics (ICTP)	International Center for Theoretical Physics (ICTP)	Brain Radiotherapy during pregnancy: a dosimetric study for fetal dose with OSLD	Edith VILLEGAS GARCIA; Federica GUIDA; Alessandra GERMANI; Francesca DE MONTE; Marco FUSELLA; Antonella ROGGIO; Alessandro SCAGGION; Roberto ZANDONA; Fabio BUSATO; Marta PAIUSCO		Medical Physics Education
#124	Mohammed ABUJAMI	International Center for Theoretical Physics (ICTP)	International Center for Theoretical Physics (ICTP)	Confidence in 6 MV and 6 MV FFF VMAT EPID QA adopting the AAPM-TG119 approach	Mohammed ABUJAMI	Stefano RIGA; Marco FELISI; Angelo Filippo MONTI; Maria Grazia BRAMBILLA; Claudia CARBONINI; Hae Song MAINARDI; Cristina De MATTIA; Maria BERNADETTA Ferrari; Alberto TORRESIN	Medical Physics Education
#7	Awusi KAVUMA; Daniel KANYIKE	Uganda Cancer Institute - Kampala	Uganda	The distribution and treatment outcomes of paediatric cancer patients referred for radiotherapy in low and middle- income countries – The Uganda experience	Awusi KAVUMA	Daniel KANYIKE; Israel LUUTU	Clinical Research





#31	Dorothy Faye TAN	Jose R Reyes Memorial Medical Center	Philippines, SEAROG	The Immunomodulating Effects of Biobran (Rice Bran Arabinoxylan Compound) on Hematologic Profile, Nutritional Status and Quality of Life among Head and Neck Carcinoma Patients Undergoing Radiation Therapy: A Double Blind Randomized Control Trial	Dorothy Faye S. TAN; Jerickson Abbie S. FLORES	MaryAnn REYNA	Clinical Research
#36	Marc Vincent BARCELONA	Jose R. Reyes Memorial Medical Center	Philippines	Induction Chemotherapy Followed by Concurrent Chemoradiotherapy in a 14 Year Old Patient With Poorly Differentiated Nasopharyngeal Carcinoma: A Case Report on the use of the ARAR0331 Protocol	Marc Vincent BARCELONA	Jerickson Abbie FLORES; Mario GO Jr.; Jochyrs ESTANISLAO	Clinical Research
#39	Misael CRUZ	Central Luzon Integrated Oncology Center, City of San	Philippines	Treatment outcome comparison between 33 versus 35 fractions among	Misael CRUZ; Mary Ann Rose AGUSTIN; Madonna VALENZUELA		Clinical Research





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		Fernando Philippines		nasopharyngeal carcinoma using helical approach: A retrospective study			
#40	Misael CRUZ	Central Luzon Integrated Oncology Center, City of San Fernando Philippines	Philippines	Randomized Controlled Trial Comparing Virgin Coconut Oil and Salt and Soda Mouthwash Versus Salt and Soda Mouthwash Alone in Preventing Grade 2 and Above Radiation- Induced Mucositis In Patients With Nasopharyngeal Carcinoma (VCO- PRIM STUDY)	Misael CRUZ; Enrico TANGCO; Marigie OLVINA; Thelma SARMIENTO; Gonzalo BANUELOS; Cyndy PUSAG; Carl Ruperto AGUILAR; M.A. HABANA; C. CORDERO; J. MANTARING		Clinical Research
#96	Meriem BOHLI	Radiotherapy Department, Abderrahman Mami Hospital	Tunisia	What is the optimal radiotherapy regimen for thoracic palliative radiotherapy in lung cancer?	Meriem BOHLI	Dorra AISSAOUI; Raouia Ben AMOR; Ghada ABDESSATAR; Jamel YAHYAOUI; Rim MOUJAHED; Awatef HAMDOUN; Lotfi KOCHBATI	Clinical Research
#97	Semia ZARRAA	Salah Azaiz Institute, Department of Radiotherapy, Faculty of Medicine, Tunis	Tunisia	Evolution and Prognosis of Juvenile Nasopharyngeal Carcinoma: results from of a study on 68 children in Salah	Semia ZARRAA; Safia YAHYAOUI	Noubbigh Ghaiet EL FIDA; Souheil JEBALI; Said GRITLI; Chiraz NASR	Clinical Research





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				Azaiz Institute in Tunisia			
#99	Alia MOUSLI	University Tunis El Manar	Tunisia	Stereotactic Radiotherapy for Brain Metastases: Experience of Salah Azaiez Institute in Tunisia	Alia MOUSLI	Khalil MAHJoubi; Lotfi Ben SALEM; Mounir BESBES; Chiraz NASR; Asma BELAID	Clinical Research
#123	Raouia AMOR	Radiation Oncology Department, Abderrahmen Mami Hospital	Tunisia	Effectiveness of single fraction radiotherapy (8Gy) in Metastatic spinal cord compression	Raouia Ben AMOR; meriem BOHLI; Dorra AISSAOUI; Lotfi KOCHBATI		Clinical Research
#22	Miriam Joy CALAGUAS	St. Luke's Medical Center	Philippines	Patterns of Radiotherapy Practices in Breast Cancer in Asia: A Challenge in Diversity	Miriam Joy CALAGUAS; Jerickson Abbie FLORES; Candice Chin-chin YUI		Health Economics and Health Systems Research
#23	Jerickson Abbie FLORES	Jose R. Reyes Memorial Medical Center	Philippines	Impact of Covid-19 in Radiation Oncology Practice in the Philippines: A Situational analysis	Jerickson Abbie FLORES; Misael CRUZ; Gonzalo BANUELOS; Thelma SARMIENTO; Enrico TANGCO; Fritzie VILLEGAS; Marigie OLWINA; Carl Ruperto AGUILAR; Cyndy PUSAG; Jaemelyn Marie FERNANDEZ-RAMOS; Katherine SEBASTIAN-		Health Economics and Health Systems Research

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					ENRIQUEZ; Karl Jeremy LO		
#35	Thomas Vincent VERGARA	St. Luke's Medical Center - Quezon City	Philippines	Responding to the COVID-19 Pandemic: Perspectives from Two Radiation Oncology Departments in the Philippines	Thomas Vincent VERGARA	Miriam Joy CALAGUAS; Manuel Martin LOPEZ; Juan Martin MAGSANOC; Angela PENA-CAMACHO; Angela GAERLAN- TAGLE; Caissa Elvira TANGCO-ABAO	Health Economics and Health Systems Research
#49	Handoko HANDOKO	Faculty of Medicine, Universitas Indonesia – Department of Radiation Oncology, Dr. Cipto Mangunkusumo National General Hospital – Jakarta	Indonesia	Breaking COVID-19 Transmission: Leveraging on Telemedicine for Cancer Management in Indonesia	Handoko HANDOKO; Nicholas NICHOLAS; Endang NURYADI; Denny HANDOYO; Soehartati A GONDHOWIARDJO		Health Economics and Health Systems Research
#52	Soehartati A GONDHOWIARDJ O	Faculty of Medicine, Universitas Indonesia – Department of Radiation Oncology, Dr. Cipto Mangunkusumo National General Hospital – Jakarta	Indonesia	Indonesia National Action Plan for Cancer Control 2020 – 2024	Soehartati A GONDHOWIARDJO ; Tiara Bunga Mayang PERMATA; Steven OCTAVIANUS; Nurhanita NURHANITA; Novi Elis KHUMAESA; Putri MAHARANI; Nicholas NICHOLAS; Lusi Tania RAHMARTANI		Health Economics and Health Systems Research

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#54	Angela GISELVANIA	Faculty of Medicine, Universitas Indonesia – Department of Radiation Oncology, Dr. Cipto Mangunkusumo National General Hospital – Jakarta	Indonesia	Leveling of Radiation Oncology Services in Indonesia	Angela GISELVANIA; Steven OCTAVIANUS; Handoko HANDOKO; Henry KODRAT; Sri Mutya SEKARUTAMI; Soehartati A GONDHOWIARDJO		Health Economics and Health Systems Research
#55	Melyda MELYDA	Faculty of Medicine, Universitas Indonesia – Department of Radiation Oncology, Dr. Cipto Mangunkusumo National General Hospital – Jakarta	Indonesia	Human Resources and Facilities for Radiotherapy Service Requirements in Indonesia: A Prediction Model over a Ten-year Period	Angela GISELVANIA; Steven OCTAVIANUS Melyda MELYDA; Steven OCTAVIANUS; Soehartati A GONDHOWIARDJO		Health Economics and Health Systems Research
#114	Julio ROJAS MARTINEZ	Instituto Nacional del Cancer	Paraguay	Current Status of Radiation Oncology Services in Paraguay	Julio ROJAS MARTINEZ; Guisella Raquel RIVELLI ZEA		Health Economics and Health Systems Research
#121	Raouia AMOR	Radiation Oncology Departement , Abderrahmen Mami Hospital	Tunisia	Is hypofractionated radiotherapy in breast cancer a cost effective approach?	Meriem BOHLI; Raouia Ben AMOR; Dorra AISSAOUI; Lotfi KOCHBATI		Health Economics and Health Systems Research
#10	Mohammed CHABANI	Central Hospital of The Army, Radiation Oncology, Algiers	Algeria	Prostate cancer: Simultaneous integrated boost with Radixact® System, about a	Mohammed CHABANI; Imad ARAREM; Samia CHAMI		Implementation of New Technologies





				series of 74 patients			
#26	Kartika Erida BROHET	Radiotherapy department, Dharmais Hospital National Cancer Center (Indonesia National Cancer Center)	Indonesia	Geometrical Analysis of IMRT/VMAT on Head and Neck Case Using New and Reused Thermoplastic Maskin Dharmais Hospital National Cancer Center Indonesia	Kartika Erida BROHET; Syarifatul ULYA		Implementation of New Technologies
#69	Jaymee FERNANDEZ-RAMOS	Department of Radiotherapy, Jose R. Reyes Memorial Medical Center, Manila	Philippines	Transitioning from 2-D to 3-D Image-Guided Brachytherapy (IGBT) in Gynecologic Malignancies in the Philippines: Looking Back and Moving Forward	Miriam Joy CALAGUAS; Jerickson Abbie FLORES; Jaemelyn FERNANDEZ-RAMOS; Lilian RODRIGUEZ; Rey Delos REYES		Implementation of New Technologies
#74	Kennedy LISHIMPI	Cancer Diseases Hospital	Zambia	Adaptation of an Extended Five Field technique for the treatment of Head & Neck Cancer at Cancer Diseases Hospital	Kennedy LISHIMPI; Barbara Chanda M'ULE		Implementation of New Technologies
#106	Shoon Mya AYE	Radiotherapy department, Yangon General Hospital	Myanmar	Can accelerated hypofractionated radiotherapy (AHRT) be an acceptable	Shoon Mya AYE	Lin Lin KYI; Moe HLAING; Aye Aye MYINT; Khin Cho WIN	Implementation of New Technologies





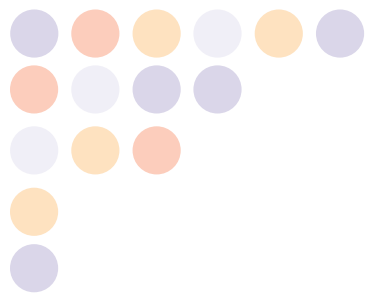
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				treatment option in inoperable non-small cell lung cancer Myanmar patients?			
#112	Thongtra NANNA	Ramathibodi Hospital, Mahidol University	Thailand	Treatment outcomes of stereotactic body radiotherapy for early stage non-small-cell lung cancer and lung metastasis	Thongtra NANNA	Keeratikarn BOONYAWAN; Putipun PUATAWEEPONG; Thitiporn SUWATANAPONGCHED ; Nattinee WATTAKIYANON; Rawee RUANGKANCHANASETR ; Thiti SWANGSILPA	Implementation of New Technologies
#27	Edwin Mark CHIONG	Jose R. Reyes Memorial Medical Center	Philippines	Correlation Between the Levels of Salivary A-Amylase Activity and Xerostomia in Head and Neck Cancer Patients Undergoing Radiation Therapy	Edwin Mark CHIONG; Jerickson Abbie FLORES		Radiobiology
#50	Endang NURYADI	Department of Radiation Oncology, Dr. Cipto Mangunkusumo National General Hospital - Faculty of Medicine Universitas Indonesia, Jakarta	Indonesia	Precision medicine in radiotherapy; discover a potential biomarker for treatment resistance	Endang NURYADI; Handoko HANDOKO	Takahiro OIKE; Handoko HANDOKO; Tiara Bunga Mayang PERMATA; Tatsuya OHNO; Soehartati A. GONDHOWIARDJO	Radiobiology





#56	David Andi WIJAYA	Department of Radiation Oncology, Dr. Cipto Mangunkusumo National General Hospital - Faculty of Medicine Universitas Indonesia, Jakarta	Indonesia	In Vitro Study of Various Extracts and Bioactive Compounds Potential Role in Increasing Radiation Efficacy in Human Cancer Cell Lines	Endang NURYADI; Handoko HANDOKO; David Andi WIJAYA; Soehartati A. GONDHOWIARDJO	Tiara Bunga Mayang PERMATA; Agung Tri CAHYONO, Aslim TASLIM, Tisa T. PUTRI, Henry KODRAT, Ida Ayu T. KUMALA Dewi, Sri Mutya SEKARUTAMI	Radiobiology
#72	Jose RAJ	Christian Medical College	India	Feasibility on use of gel electrophoresis-based quantification of DNA double strand break.	Jose RAJ	Rabi SINGH; Timothy SANTHOSH	Radiobiology

