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King Faisal Specialist Hospital & Research Centre
Gen. Org. مؤسسة عامة

IAEA WHO وزارة الصحة Ministry of Health مدينة الملك عبد الله للطاقة الذرية والمتجددة KA·CARE SFDA Radiological Society of Saudi Arabia الجمعية العلمية السعودية للأشعة

ICRM2014

INTERNATIONAL CONFERENCE ON RADIATION MEDICINE

CLINICAL APPLICATIONS AND INNOVATIVE APPROACHES

RABI-AL THANI 16-20, 1435/FEBRUARY 16-20, 2014

www.radmed.org

SCIENTIFIC MEETING PROGRAM

GENERAL INFORMATION

INTRODUCTORY MESSAGE

Dear Colleagues,

Building on the celebrated success of the ICRM2010 and ICRM2012, the King Faisal Specialist Hospital and Research Centre, in collaboration with leading national and international organizations and professional societies, will conduct the 2014 International Conference on Radiation Medicine (ICRM2014) in Riyadh, Saudi Arabia, from February 16 - 20, 2014.

We invite you to attend the ICRM2014! It will offer a series of diverse continuing education courses and workshops in the applications of radiation in medicine. The program activities shall be led by experts and distinguished speakers from different leading institutions worldwide. Our prospective audience includes physicians, medical physicists, clinical scientists, technologists and other healthcare professionals.

This event aims to provide participants working in radiation medicine with a venue in maintaining cutting-edge knowledge and skills in their fields including radiation oncology, radiology, nuclear medicine, nuclear cardiology, radiobiology, medical physics and radiation protection and other related disciplines. More importantly, ICRM2014 aims to promote radiation medicine, its practice and advancement in the region.

Abstracts were invited and accepted in either oral or poster presentation formats. In this conference, we had online submissions managed by a professional company.

The ICRM2014 will also include technical exhibition, where leading companies will display state-of-the-art products that have found clinical applications with particular relevance to the delivery of quality patient care.

There will also be a number of social events during the Conference. Such events include: Gala dinners; visits to famous landmarks and historical sites; and opportunities to see the traditional way of life in Riyadh.

Please visit our website at www.radmed.org for more information and updates about ICRM2014 and previous conferences. On behalf of the ICRM2014, we look forward to seeing you at the conference and wish you a pleasant stay in Riyadh!

With best regards.

Sincerely,

Organizing Committee, ICRM2014

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FMS

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Power and productivity

Philips Brilliance CT Big Bore oncology

Philips Healthcare continues its tradition of innovation in oncology with a CT solution that specifically addresses your needs: the Brilliance CT Big Bore scanner.

Philips Brilliance CT Big Bore is the industry's only 85 cm aperture bore, allowing for the scanning of patients with various medical devices in the treatment position. Respiratory-correlated imaging for motion assessment, metal artifact reduction (MAR), tumor localization (Tumor LOC) for absolute isocenter marking, and CT simulation make this a complete Oncology CT offering.

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Brilliance CT Big Bore oncology configuration provides powerful tools designed to improve patient care, minimize your efforts, and increase your daily throughput. Its unique 85 cm bore and true 60 cm scan field of view (FOV) enable you to scan patients with immobilization devices, patient monitoring devices, intravenous delivery devices, respiratory devices and other apparatus without compromising image quality or positioning. This helps you speed patient setup and increase workflow efficiency.

PHILIPS

ABOUT ICRM2014

ICRM2014 is the 3rd International Conference on Radiation Medicine (ICRM) organized by King Faisal Specialist Hospital & Research Centre (KFSH&RC) in collaboration with leading national and international organizations and professional societies. The previous conferences were successfully organized in 2010 and 2012.

The goal of ICRM is to bring together renowned clinicians, scientists and other health professionals to share and discuss the current clinical applications and future innovative approaches in the field of radiation medicine. The objective is to create a conducive environment promoting basic science, applied research as well as clinical applications in radiation medicine.

A unique feature of ICRM2014 is being conducted jointly with the Annual Meetings of both the Radiological Society of Saudi Arabia (RSSA) and the Saudi Society of Medical Radiological Technologists (SSMRT). These concerted and integrated organization will strengthen the overall program for this major scientific event.

Among the main highlights of the conference are more than 100 distinguished speakers, 14 Continuing Education Courses (CEC), 36 Workshops, more than 1500 expected attendees, a wealth of social activities, including desert trip and falcon show and a major technical exhibition.

ICRM2014 Organizing Committee welcomes and encourages all interested people to avail of this unique opportunity.

To provide a more comprehensive scientific program and to enhance the quality of its content ICRM 2010 & 2012 formed partnerships with the salient professional organizations in the world. Thus, ICRM2014 has several partners, including the following national and international professional organizations:

- International Atomic Energy Agency (IAEA)
- World Health Organization (WHO)
- Ministry of Health (MoH)
- King Abdullah City for Atomic and Renewable Energy (K.A.CARE)
- Saudi Food and Drug Authority (SFDA)
- Radiological Society of Saudi Arabia (RSSA)
- Saudi Society of Medical Radiologic Technology (SSMRT)
- Saudi Medical Physics Society (SMPS)
- Saudi Society for Radiation Therapy (SSRT)
- Saudi Cancer Society (SCS)
- Saudi Oncology Society (SOS)
- American Association of Physicist in Medicine (AAPM)
- American Society for Radiation Oncology (ASTRO)
- European Society for Therapeutic Radiology and Oncology (ESTRO)
- European Association of Nuclear Medicine (EANM)

CONFERENCE OBJECTIVES

This five-day meeting will provide a medium to share, discuss and disseminate innovative approaches, techniques, applications and best clinical practices, as well as educate healthcare professional about the state-of-the-art technology pertaining to the use of radiation in medicine including, but not limited to, radiation oncology, diagnostic imaging, radiobiology and radiation protection.

CONTACT INFORMATION

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Email: josfin@kfshrc.edu.sa

WHO SHOULD ATTEND

- Cardiologists
- Clinical Scientists
- Dosimetrists
- Medical/Health Physicists
- Nuclear Medicine Physicians
- Nurses
- Radiation Oncologists
- Radiobiologists
- Radiologists
- Technologists
- Engineers
- Neurosurgeons
- Radiation Therapists
- Students
- Vendor Representatives

M.D.'s Message

شركة الخليج الطبية المحدودة
GULF MEDICAL CO. LTD.

When I started Gulf Medical Company in **1983**, I had a vision to bring the most innovative and state-of-the-art medical technology to the Kingdom of Saudi Arabia and the Gulf. Today, more than two decades on that vision not only lives on but continues to gain momentum. Thanks to our customers and suppliers who contributed with precision and excellence to enrich this vision.

The acquisition of the **House of Naghi** in 1992 and its great financial strength gives stability to the company and allows it to realize its tremendous growth potential both in its desired areas of specialization as well as in geographical areas of coverage.

During the last 15 years Gulf Medical has been witnessing a steady growth of 30-40% yearly to become the market leader in Saudi Arabia in its specialty.

The company continues its mission to play a significant role in developing the skills of leading medical practitioners.

For the first time in the Middle East, Gulf Medical has introduced the **Robotic Surgical technology** at the King Khaled University Hospital Riyadh (KKUH), the King Faisal Specialist Hospital & Research Center Riyadh, King Fahad Specialist Hospital Dammam, King Abdul Aziz university Hospital Jeddah (KAUHJ) and King Fahad National Guard Hospital Riyadh (KFNGH) where all operations were conducted successfully.

For the first time in the Middle East, we have successfully introduced **OR-1 Systems** at King Faisal Specialist & Research Center Riyadh, ARAMCO Dhahran, King Khaled University Hospital Riyadh, five new O**R-1 Systems** at the King Fahd National Guard Hospitals in Riyadh, Jeddah and Al Hofuf, we installed 8 OR-1 rooms at King Fahad Hospital Gizan and 8 rooms at King Fahd Hospital Jeddah & we are now installing 8 more rooms at King Abdul Aziz University Hospital Jeddah in addition to 4 New rooms at King Khaled University Hospital Riyadh. During 2008/2009 we installed OR-1 14 rooms at the King Abdullah Medical City in Mena. We completed the 8 rooms at Aseer Central Hospital, in addition to the 4 rooms at King Faisal Specialist Hospital Jeddah.

Gulf Medical installed the **First CyberKnife Radio Surgery System** in the Middle East at the King Faisal Specialist Hospital & Research Center in Riyadh, & we are expecting 2 more system installations during this year. The great business development of **Carl Zeiss, Maquet Surgical Work Place, Getinge & Maquet Critical Care** did enhance our market leader position in the area & will help in keeping the momentum of the steady yearly double digit growth for some years to come.

The **Service department** is taking a lot of the higher management attention to make sure we are exceeding our customers' expectations.

Human resource development being the core of GMC's investment in the past few years, GMC always makes sure that they recruit highly professional, dedicated and multilingual workforce of biomedical engineers and health care specialists. To cope with the growing need of the market, GMC highly invests in continuously educating and training its employees and in increasing the workforce as required.

Dr. Ismail Ahmed Managing Director

ZEISS CARL ZEISS MEDITEC

شركة الخليج الطبية المحدودة
GULF MEDICAL CO. LTD.

INTRABEAM® TARGIT® Therapy System

Over the years, diagnostic and therapeutic interventions have developed into more patient-focused, individualized, less invasive techniques. A perfect example of this paradigm shift is the INTRABEAMR system produced by Carl Zeiss. This revolution in radiotherapy comprises many advantages and affords a new dimension of flexibility.

- Efficient local tumour control
- Safety shown by clinical experience
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- Optimized system mobility

Effective internal radiation

"Go where the tumor is" is the philosophy that impels INTRABEAMR. The sterile INTRABEAMR applicator can be positioned directly into the tumor bed, allocating the precise radiation dose exactly where it is needed most. Radiotherapy delivery with the INTRABEAMR system stands for highly effective radiation with low doses. This approach is possible because the INTRABEAMR X-ray source generates low energy X-rays characterized by high relative biological effectiveness (RBE) allowing superior tumor-cell killing.

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- ✓ **Significant reduction of logistics, paper work, source exchanges and QC workload**
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- ✓ **Compatible with all imaging technologies**
- ✓ **Wide range of applicators, templates and accessories for All Body Sites**

	Ir-192 Changes/4 Months	Co-60 Changes/5 Years
10 years	29	1
15 years	44	2

REGISTRATION

To register for the conference, please compete the Registration Form and send it by fax or email to the indicated mailing address in the form.

Early registration fees are to be paid in full with submission of early registration form. Workshops have different registration fees and admission is given priority to early registration participants. Late workshop registration will only be possible if seating is available (note that there is a limited workshop occupancy limit). Payments can be made in cash or certified cheque payable to "KFSH&RC Research Grant Fund". Interested attendees are urged to early register so that conference seating is guaranteed and workshop participation is ensured.

REGISTRATION CATEGORY	BEFORE JANUARY 15, 2014	AFTER JANUARY 15, 2014	ON-SITE
Regular for Conference	SR 400 / $ 110	SR 500 / $ 135	SR 600 / $ 160
Regular one day only	SR 150 / $ 40	SR 200 / $ 55	SR 250 / $ 70
Regular Workshop	SR 150 / $ 40	SR 200 / $ 55	SR 250 / $ 70
Pre-ICRM2014	SR 200 / $ 55	SR 250 / $ 70	SR 300 / $ 80
MRI in Practice	SR 500 / $ 135	SR 550 / $ 150	SR 600 / $ 160
Conference Student Fee	SR 100 / $ 30	SR 150 / $ 40	SR 200 / $ 55

PAYMENT METHOD

The registration fees should be transferred to the following bank account:

Bank Name: Al Rajhi Bank	Account Number: 11460801010200-5
Bank Address: P.O. Box: 28, Riyadh 11411, Head Office, Kingdom Of Saudi Arabia	Account Name: Grant Fund Account
Branch Name: King Faisal Specialist Hospital	Swift Code: RJHISARI
Branch Number: 11400	IBAN: A2880000114608010102005

IMPORTANT INFORMATION

- Please send your registration form along with the details of transfer information by fax or email to the indicated mailing address in the registration form.
- It is mandatory to send the registration form before the early registration deadline, but the payment can be made at the conference site.
- Students should attach to the registration form a proof of eligibility such as a copy of their student ID or present their ID during the registration at the conference.
- Early registrants will be given the priority for enrolling in the workshops.
- Registration fee is nonrefundable.

HOTEL ACCOMMODATION

It is the responsibility of the participant to make local hotel reservations. However, please contact our Conference Secretariat Office (phone: 966-11-4427879) if you need any assistance. Contact information for some hotels in Riyadh is listed on the conference webpage. Please note that single females will be required to provide a letter from their employer to hotel management concerning their stay in Riyadh. The KFSH&RC will provide transportation to and from some of the hotels, at the beginning and end of each day.

INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

The International Atomic Energy Agency (IAEA) is the world´s center of cooperation in the nuclear field. It was set up as the world´s "Atoms for Peace" organization in 1957 within the United Nations family. The Agency works with its Member States and multiple partners worldwide to promote safe, secure and peaceful nuclear technologies. The IAEA´s mission is guided by the interests and needs of Member States, strategic plans and the vision embodied in the IAEA Statute. Three main pillars - or areas of work - underpin the IAEA´s mission: Safety and Security; Science and Technology; and Safeguards and Verification.

http://www.iaea.org

WORLD HEALTH ORGANIZATION (WHO)

The World Health Organization (WHO) is the directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends.

Reference: http://www.who.int/en/

MINISTRY OF HEALTH

Public health and disease control have been among Saudi Arabia's top priorities since its founding. In 1925, the Public Health Department was founded in Makkah. In 1951 the Ministry of Health was established per Royal Decree Num. 8697\11\5 as a result of increasing need for healthcare services nationwide. Today the Ministry of Health provides the modern national healthcare services at its state-of-the-art hospitals and healthcare centers.

http://www.moh.gov.sa/

KING ABDULLAH CITY FOR ATOMIC & RENEWABLE ENERGY (K.A. CARE)

K.A.CARE was established by Royal order A/35 of H.M. King Abdullah bin Abdulaziz Al Saud on 17th April 2010 with the fundamental aim of building a sustainable future for Saudi Arabia by developing a substantial alternative energy capacity fully supported by world-class local industries.

Saudi Arabia has a rapidly growing population that places an ever-increasing pressure on the country's non-renewable hydrocarbon resources. Therefore, it was concluded that alternative, sustainable and reliable sources of energy for generating power and producing desalinated water should be introduced that will reduce consumption of the nation's fossil fuel reserves. It was also determined that a balanced energy mix of alternative and conventional energy is strategically important to Saudi Arabia's long-term prosperity, energy security, and its leading position in the global energy market.

Following extensive technical and economic analysis the decision has been taken to introduce atomic and renewable energy for a significant portion of Saudi Arabia's future energy mix. The two sectors will provide substantial capacity, advanced technology, efficient use of resources and will be fully compliant with international best practices, conventions and treaties. Fulfillment of this decision enables the Kingdom to plan for increased demand for power and desalinated water whilst ensuring the rate of national development continues apace. The introduction of alternative resources now places Saudi Arabia to the fore in the development and utilization of atomic and renewable energy whilst providing numerous opportunities for national and international private sector companies to grow their businesses in the Kingdom, and Saudi nationals to enhance their knowledge and skills.

http://www.kacare.gov.sa/en/

For KACARE Information Contact P.O. Box 2022, Riyadh 11451, Saudi Arabia

Telephone: +966 11 808 5555, Fax: +966 11 808 5666, Email: info@energy.gov.sa

CME CREDIT APPLICATIONS

A total of thirty (30) CME credit hours have been accredited by the Saudi Commission for Health Specialties (SCHS) for the entire conference including the workshops. The ICRM2014 conference has also been approved by the American Academy of Continuing Medical Education (AACME). A total of 42.5 CME credit hours have been accredited by the AACME. The AACME certificates will be provided after the conference based on the request. To obtain the AACME certificate, a fee of forty five (45) SR has to be paid by the individual.

CERTIFICATE OF ATTENDANCE

Certificate of attendance will be available on the 4th day of the meeting only. Please collect your certificate from the registration desk just in front of the Prince Salman Auditorium before you leave.

SMOKING POLICY

The King Faisal Specialist Hospital & Research Centre recognizes the negative implications of smoking. Therefore, our policy is "No Smoking" in the auditorium, exhibition and registration areas, dining hall and restrooms.

KFSH&RC "LIMOUSINE" SERVICE

An in-house taxi service—popularly called by locals as "limousines"—is available upon request at hospital telephone extension 35555 for reasonable rates.

MOBILE PHONE POLICY

Mobile phones and pagers must be turned off or set on silent/vibrate mode during the meeting sessions.

CONFERENCE VENUES AND DATES & TIMES

The conference will be held in two different locations. The following table demonstrates the venues, the day and the time changes during the conference days.

DATE	TIME	VENUE
Sunday, February 16	All Day	King Faisal Specialist Hospital and Research Centre
Monday, February 17	All Day	Intercontinental Hotel
Tuesday, February 18	All Day	Intercontinental Hotel
Wednesday, February 19	8:00am - 1:00pm	Intercontinental Hotel
Wednesday, February 19	1:30pm - 5:00pm	King Faisal Specialist Hospital and Research Centre
Thursday, February 20	8:00am - 12:00pm	King Faisal Specialist Hospital and Research Centre

SAUDI FOOD & DRUG AUTHORITY (SFDA)

The Saudi Food and Drug Authority (SFDA) was established under the Council of Ministers resolution no (1) dated 07/01/1424 H, as an independent body corporate that directly reports to the Premier. The Authority objective is to ensure safety of food and drug for man and animal, and safety of biological and chemical substance as well as electronic products.

A Board of Directors chaired by HRH the Second Deputy Premier and Minister of Defense, Aviation and Inspector General, will managed the Authority. Its membership includes HRH Minster of Municipality and Rural Affairs as vice-chairman, and all pertinent ministers (HRH Minister of Interior, Minister of Health, Minister of Commerce and Industry, Minster of Agriculture, Minister of Water and Electricity, Minister of Finance and Minister of Economic and Planning). As well as, the Director General of Saudi Arabian Standards and Specification Organization, the Chairperson of Council of Chambers of Commerce and Industry in the Kingdom, the Authority's Executive Chief, and a person specialize in food and drug.

Vision

To be the leading regional regulatory authority for food, drugs and medical devices with professional and excellent services that contributes to the protection and advancement of the health in Saudi Arabia.

Mission

To ensure the safety of food; the safety, quality and efficacy of drugs; and the safety and effectiveness of medical devices, by developing and enforcing an appropriate regulatory system.

Authority's Main Objectives

The main purpose of the SFDA establishment is to regulate, oversee, and control food, drug, medical devices, as well as to set mandatory standard specifications thereof, whether they are imported or locally manufactured. The control and/or testing activities can be conducted in the SFDA or other agency's laboratories. Moreover, the SFDA is in charge of consumers' awareness on all matters related to food, drug and medical devices and all other products and supplies.

For SFDA Information Contact
Dr. Muhammed Al Kanhal, Chief Executive Officer, Saudi Food and Drug Authority, Riyadh, Kingdom of Saudi Arabia
Tel: +966 1 275 9222 ext: 100, Fax: +966 1 275 1164, E-Mail: sfda@sfda.gov.sa

SAUDI SOCIETY OF MEDICAL RADIOLOGIC TECHNOLOGY (SSMRT)

Saudi Society of Medical Radiologic Technology (SSMRT) is a non-profitable society, established in 29 May 2011 and hosted by Saudi Commission for Health Specialties. The SSMRT is the umbrella of all technical medical radiologic and medical imaging professionals, and others whom are interested in the field of radiological sciences technology. The aim of SSMRT is to create a platform speak in the name of radiological sciences technology professionals and adopt their issues and express their concerns , to serve as a channel through which to unite their efforts to serve them and serve the profession and the society in the framework of government policies.

RADIOLOGICAL SOCIETY OF SAUDI ARABIA (RSSA)

RSSA - Radiological Society of Saudi Arabia is a scientific society "Not For Profit Organization" hosted at King Abdul Aziz University, Jeddah.

The Society established officially in 2004 after the approval of the Saudi Government to be the umbrella of all radiology professionals, including scientists, doctors, experts, technologists, engineers, and students as well as patients and all whom are interested in the field of radiology, it's applications, and related technology.

Main Objectives & Goals

- To increase public awareness about the field of Radiology
- To open communicational route with other Medical and Scientific Societies local and international.
- To support and encourage Scientific Activities
- To contribute & organize Conferences, Seminars and Lectures
- To establish scientific interest groups with the aim of developing all practitioners.
- To connect RSSA members with each other in order to facilitate the exchange and sharing of experience, information, and enable Technology transfer.
- To contribute to the development of radiological community through the issuance of radiological journals and publications

For SFDA Information Contact

Office Number: B/6445, MRI Unit - Department of Radiology, King Abdul Aziz University Hospital

E-mail: info@rssa.org.sa, saudiradilogy@yahoo.com

for Arabic SMS: 0569192055, for English SMS: 0544622887

iba Molecular

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- Pinctada® Indium
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- Terimo® Iodine 124

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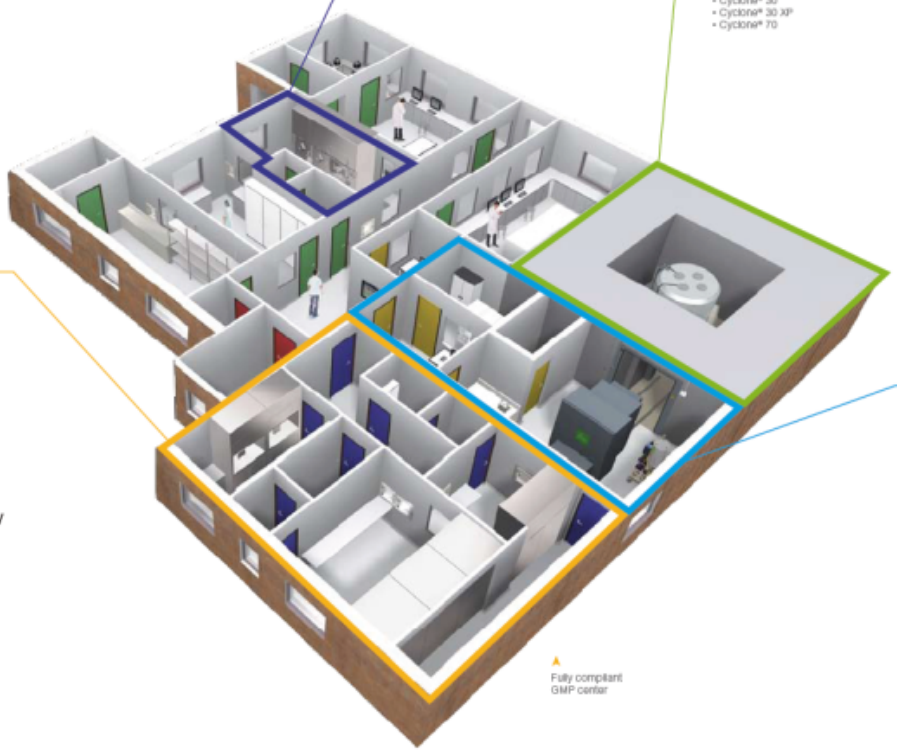
- Nirta® Amonia
- Nirta® Fluorine
- Nirta® Oxygen
- Nirta® Solid compact four the production of non-conventional radio-isotopes
- Nirta® Iodine 123



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ICRM2014 COMMITTEES

THE ORGANIZING COMMITTEE

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Dr. Mark S. Akselrod is Chief Scientist and Executive Manager of Landauer, Inc. and Adjunct Professor at the Physics Department of Oklahoma State University. He manages Stillwater, Oklahoma, Crystal Growth Division of Landauer Inc.. He received his B.Sc. degree in Mechanical Engineering and Semiconductor Technology from the Urals State Technical University in Yekaterinburg, Russia in 1975 and Ph.D. degree in Solid State Physics from the same university in 1983.

His main research interests and achievements are in the field of radiation solid state physics, crystal growth, optical spectroscopy, luminescence dosimetry and optical data storage. He developed super sensitive Al2O3:C single crystal for radiation dosimetry. Novel Al2O3:C, Mg crystals were developed and patented as two-photon absorbing volumetric Optical Data Storage (ODS) media and Fluorescent Nuclear Track Detector (FNTD). Pulsed Optically Stimulated Luminescence (POSL) dosimetry technique was developed and patented while Dr. Akselrod was working at OSU. It was licensed by Landauer, Inc and commercially used together with Al2O3:C OSL material in LUXEL™ and InLight™ technology and instruments. The results of research have been described in more than 70 papers published in peer reviewed scientific journals and conference proceedings. 10 developments of TL and TSEE materials, technologies and devices have been patented in the former USSR. 15 US patents were obtained for materials and application of optical data storage, optically stimulated luminescence, radiation field imaging, and fluorescent nuclear track detector technology.

Dr. Akselrod is a member of Optical Society of America, American Association of Crystal Growth, International Solid State Dosimetry Organization. He served on the Scientific Advisory Committees of 11th, 12th, 13th, 14th, 15th and 16th Solid State Dosimetry Conferences and is Treasure of the International Solid Sate Dosimetry Organization from 1998 to 2010. He is a reviewer for international scientific journals: "Radiation Measurements", "Journal of Luminescence", "Journal of Crystal Growth" published by Elsevier and "Journal of Radiation Protection Dosimetry" published by Oxford University Press. Invited papers and session chairman at international and national conferences.

PEDRO ANDREO, FLNSTP, CPHYS

Professor P Andreo graduated in Theoretical-Physics in 1974, obtaining his PhD in 1982 at the University of Zaragoza (Spain). He moved to the Dept of Medical Radiation Physics, Karolinska Institute-University of Stockholm (Sweden) as a Research Fellow in 1987, becoming Associated Professor in 1989. He was appointed Full Professor in Radiotherapy Physics at the University of Lund(Sweden) in 1993 and in Medical Radiation Physics at the University of Stockholm in 2000. During 1995-2000 he was Head of the IAEA Dosimetry and Medical Radiation Physics Section, and between 2003-2008 Director of the IAEA Division of Human Health, comprising the Radiobiology and Radiotherapy, Medical Physics, Nuclear Medicine, and Nutrition Sections.

His scientific profile on Radiation Dosimetry for photon, electron, proton and heavier ion beams, includes determination of physical constants and coefficients using Monte-Carlo methods. His CV lists more than 350 publications, scientific papers, and conference abstracts and proceedings, having been co-author of the IAEA Codes of Practice TRS-277, TRS-381 and TRS-398, ICRU Reports 59 and 64, and ICRP-86.

His career in medical physics started in 1973, holding training positions in Oxford, London, Sutton and Stockholm. He worked as a hospital physicist for more than 15 years, mainly in the area of radiotherapy but also in nuclear-medicine and radiodiagnostics. He is a Certified Medical Physicist and a Specialist in Sweden. In 2006 he received the Award of Merit in Medical Physics of the International Union for Physical and Engineering Sciences in Medicine "for outstanding achievements in Physical Sciences in Medicine", becoming the 7th medical physicist world-wide to be honored with this award since its inception.

SITTI ARIFFIN, PHD

Siti Rahayah Ariffin is a Professor in Educational Curriculum and Training Evaluation. She contributed in various organizations and industries through her role as advisor, panel member and expert consultant in the area development of Psychometric Measurement Tool, development training program and development educational curriculum. She was appointed as member of Board of Director for National University of Malaysia and Johns Hopkins Gifted and Talented Program, course expert to Human Health Program at International Atomic Energy Agency (IAEA) United Nation, Qatar Education Ministry and United Arab Emirate Gifted and Talented Program. She was a Visiting Professor at Vienna Technical University from 2011-2012.

She conducted research and development in Multiple Intelligences and Learning Style System, Emotional Intelligence, Spiritual Quotient and training program for teachers teaching gifted and talented students. She heads the team conducting research funded by various grants including British Council, World Bank, Qatar and Japan Foundations. In 2010, Siti Rahayah won the Best Award for Malaysian Generic Skills System product, in 2007 won silver medal award in Geneva Invention Conference and in 2004 won gold medal award in Seoul International Invention. She spend so much of her time conducting research, Siti Rahayah has produced 4 education product Patents, 5 trademarks and 5 copyright registered with the World Intellectual property organization (WIPPO). She has also conducted research with Malaysian Qualification Accreditation Agency (MQAA) and was appointed as a consultant (2007-2010) to develop the Higher learning ranking System to be used to rank and rate public universities in Malaysia.

During her academic career she has published more than 200 academic papers and has also presented keynote addresses and guest papers at many conferences held in the country and abroad. She has published 12 academic books and 150 journal articles in various international and national media. She was appointed Professor in 2007 and became a Dean of the Education Faculty. She was the Deputy Director of the Centre for Academic Advancement (2001-07). She headed the UKM Gifted and Talented Program in 2007 until 2010. In 2011-2012 she was appointed as guest writer at United Nation and in 2008-2010 at Korean National University, Seoul.

She was the Chief Editor for Education Dean's Council Journal (2007-2011) and Board of Editor for International Journal of Learning and Instruction (2010 to present). Siti Rahayah contributes actively to the community and in her profession at the national and international level. She was the Vice President of Malaysian Reading Association and SPSS Software Association.

MANUEL BARDIES, PHD

Manuel Bardiès obtained his Doctorate on radiopharmaceutical dosimetry (with distinction) from Paul Sabatier University (Toulouse III) in November 15, 1991. He has been developing his research in radiopharmaceutical dosimetry within INSERM since 1991, in Nantes then in Toulouse.

Under his responsibility: 10 PhD dissertations have been defended since 2000, 2 PhD projects are ongoing, 2 PhD projects is ongoing under the form of a co-supervision. Master training: about 30 Master student projects since 1995. Other training (Engineering students): about 20 students since 1996. Several academic or industrial projects have been funded and involved recruiting Post-Doctoral scientists. Manuel Bardiès has authored or participated to more than 60 articles referenced in MedLine.

The team led by Manuel Bardiès in Toulouse is primarily involved in radiopharmaceutical dosimetry, at various scales (cell, tissue, organ). This requires the ability to assess radiopharmaceutical pharmacokinetics in vivo, through quantitative SPECT or PET small-animal imaging. An important part of research activity is related to Monte-Carlo modeling of radiation transport through biologic structures of interest, in order to give account of energy deposition within tumour targets – or conversely critical non-tumour tissues/organs. The objective is to improve molecular radiotherapy by allowing patient-specific treatments (personalized medicine).

Memberships: American Association of Physicists in Medicine (AAPM) - Member of task-group No. 7/Consultants on Radionuclide Therapy de l'AAPM (since 2000); European Association of Nuclear Medicine (EANM) - Member of the EANM Dosimetry Committee from 2001, Chairman of EANM Dosimetry Committee (2009-2011), Senior adviser of EANM Dosimetry Committee (2012-2013); European Federation of Organisations for Medical Physics (EFOMP) - Vice-Chairman of Scientific Committee (2013), Chairman of Scientific Committee from de 2014.

RAPHAEL BLANC, PHD

Dr. Raphaël Blanc is an interventional and diagnostic neuroradiologist. He received his MD, MSc degrees from Paris University. He was resident in radiology in Paris Hospitals from 1998 to 2003. He has done his fellowship in Neuroradiology in Henri Mondor Hospital in Creteil from 2003 to 2008. He has been on staff in the department of interventional neuroradiology at Rothschild Foundation hospital since that time, and is deputy head since 2010.

The department is active in the diagnosis and treatment of vascular malformations of the brain and the spine in adult and children and in the treatment of Retinoblastoma by intraarterial chemotherapy of the ophthalmic artery in children.

Recently, the endovascular treatment of acute stroke has taken a large place in the activity of the team.

Research interests include Brain AVM MRI and angiographic advanced imaging, aneurysms treatment, development of new technologies and devices for endovascular treatment.

MICHAEL BOLEN, MD

Michael Bolen, MD is a staff radiologist in the cardiovascular and thoracic sections at the Cleveland Clinic main campus, and serves as the fellowship director for cardiovascular imaging. Dr. Bolen received his bachelor degree and M.D. from the Ohio State University. He completed internship at Montefiore Hospital in the Bronx, N.Y., and radiology residency at Georgetown University Hospital. He was then a fellow in cardiothoracic imaging at Massachusetts General Hospital. He has also completed fellowship training in transthoracic echocardiography at the Cleveland Clinic. Dr. Bolen is board certified in Radiology. He joined the Cleveland Clinic faculty in 2008, with primary appointment in the imaging institute, and secondary appointment in the Heart and Vascular Institute. His clinical practice includes cardiovascular and thoracic imaging (encompassing plane film, CT, MRI, and ultrasound modalities), as well as image guided biopsy and ablation in the chest.

JOOP BOKHORST

Dr. Joop Bokhorts obtained his Drs. Degree in Physics from the Free University, Amsterdam The Netherlands in 1983, and Ph.D. in Nuclear Physics from the Australian National University,Canberra Australia in 1987. He is currently the Area General Manager for Middle East & Africa responsible for Sales Marketing and Service of HDR & LDR Brachytherapy. He served as Sales Director Asia & MEA for Eckert & Ziegler Bebig GmbH, Berlin Germany, General Manager for European Office, North American Scientific/Nomos, Pittsburgh USA, Product Manager Brachytherapy for MDS Nordion, Ottawa Canada, andGeneral Sales Manager for Isotopen Technik Dr. Sauerwein GmbH, Haan Germany, and work with Nucletron Engineering BV, Veenendaal The Netherlands.

SJIRK BOON, PHD

Dr Sjirk Boon received his PhD from University of Groningen in 1998 with the thesis "Dosimetry and quality control of scanning proton beams"

After obtaining his PhD he moved to industry, working for Philips Healthcare. He started in R&D as a system designer Image Quality mobile C-arm systems. After that he became a clinical scientist, focusing on the clinical evaluation of new technologies such as cone beam CT. He worked for 4 years as an expat in the US. After his return to the Netherlands he became responsible for the clinical study program related to dose and IQ of interventional X-ray systems. Dr Sjirk Boon is a member of the MITA (Medical Imaging Technology Alliance) Interventional X-ray working group, which targets optimization of radiation usage during interventional procedures, in a collaborative effort with organizations such as FDA, Image Gently and AAPM.

JERROLD BUSHBERG, PHD, FAAPM

Prof.Jerrold T. Bushberg is Clinical Professor of Radiology and Radiation Oncology, University of California (UC) Davis School of Medicine; Director of Health Physics Programs, UC Davis and UC Davis Health System; and Director, Environmental Health and Safety Department, UC Davis Health System.

Dr. Bushberg was elected Senior Vice President in 201, to the Council in 2002, and currently serves on the Board of Directors and as Scientific Vice-President and chair of its advisory committee on Radiation Protection in Medicine. Trained as a health and medical physicist, Dr. Bushberg is certified by several national professional boards with specific sub-specialty certification in radiation protection and medical physics and is an expert on the biological effects and safety of ionizing and nonionizing radiation. Dr. Bushberg received both a M.S. and Ph.D. from the Department of Bionucleonics at Purdue University. Prior to coming to the University of California, Davis, Dr. Bushberg was on the faculty of Yale University School of Medicine. In addition to his academic appointment in Radiology and Radiation Oncology, Dr. Bushberg is Director of Health Physics Programs and has served as an advisor to government agencies and institutions throughout the nation and around the world on the biological effects of ionizing and nonionizing radiation exposure. Dr. Bushberg has responsibility for medical postgraduate education in medical physics, radiation (ionizing and nonionizing) protection, and radiation biology. The textbook "The Essential Physics of Medical Imaging," 2nd ed, authored by Bushberg, Seibert, Leidholdt, and Boone, is used extensively by Radiology Residency programs through the United States.

Dr. Bushberg was appointed by Governor Deukmejian as chair of an expert advisory panel on radiological emergency preparedness for the State of California and has conducted numerous training programs on radiological emergency medical management throughout the United States. Dr. Bushberg served as a member of the State of California's Nuclear Emergency/Terrorism Task Force that developed the radiological emergency response plan for the Governor's Office of Emergency Services and he served as a member of the Radiological sub-committee of the State of California Strategic Committee of Terrorism. Dr. Bushberg also serves as a subject matter expert in radiological emergency medical management for the U.S. Department of Homeland Security and the International Atomic Energy Agency.

Dr. Bushberg's doctoral dissertation at Purdue University was on various aspects of the biological effects of microwave radiation and he is a member of International Committee on Electromagnetic Safety (ICES) which reviews and evaluates the scientific literature on the biological effects of non-ionizing electromagnetic radiation (NIEMR) and establishes exposure standards. He also serves on the ICES Risk Assessment Working Group that is responsible for evaluating and characterizing the risks of NIEMR. Dr. Bushberg was also appointed to the International Engineering in Medicine and Biology Society Committee on Man and Radiation which has as its primary area of interest the biological effects of NIEMR.

KEVIN BROWN, MA, CPHYS, FNSTP

My qualification is in physics and early in my career I joined Elekta (what was then MEL and later Philips Radiotherapy) on the design of Radiotherapy systems. This involved design work on the world's first totally computer controlled medical linear accelerator; full field computer controlled Multileaf Collimator and a Stereotactic Radiotherapy System.

I lead the development of Elekta Synergy, the world's first medical linear accelerator with integrated volumetric imaging. This involved the novel development of CBCT using an amorphous silicon flat panel imager and the workflow software to make the information from the imaging system useful in the clinic.

For the last 15 years I have been responsible for the management of research collaboration between Elekta and key hospitals worldwide.

I founded the 'International IMRT consortium'; the 'Elekta Synergy Research Group' and latterly the 'Elekta MR Linac consortium'. These groups are staffed by world class clinicians and physicists from our collaborating cancer centres. The success of these groups has helped Elekta to achieve rapid advancements in technology its application in the clinic. In turn this has helped Elekta to become the world's fastest growing Radiotherapy company.

I advise our Executive Management Team and Board on scientific matters relating to our strategy and I am responsible for the company's technical strategy for the next 3 to 5 years. I am the inventor of several patents and a regular presenter at industry meetings.

BENJAMIN CALVO, MD

Benjamin Calvo, MD practices as an Oncologist in Chapel Hill, NC. He is a male Internist, has 29 years of experience and practices in Surgery, Surgical Oncology, Internal Medicine, Cardiology, Cardiovascular Disease, and Medical Oncology. He provides endocrinology services in Chapel Hill, NC. An Endocrinologist is a physician who specializes in diagnosing and treating conditions that are related to the endocrine system. They are concerned with the glands and hormone production. They work to correct problems stemming from over and under production of hormones or the body's inability to properly produce hormones.

Dr. Calvo's research focuses on non-receptor protein-tyrosine kinases (PTKs), which are important in signal transduction from cytoskeletal structures. He is also intesested in the EGFR family of receptor tyrosine kinases as they relate to solid malignancies. He is actively pursuing the use of quantitative PCR and biochip technology to determine mRNA levels of these various kinases in carcinomas of the colon, breast and melanomas. Dr. Calvo has been actively involved in the development of new techniques for cyroablation of liver metastases from colon cancer as well as participating in a number of active multi-modality therapeutic programs for patients with colon and rectal carcinoma.

Dr. Calvo is taking the lead, in conjunction with Dr. Mark Graham from Medical Oncology and Dr. Robert Briggaman from Dermatology, in developing a melanoma program at UNC. Their work will focus on the development of combined chemotherapy and biologic treatments along with novel immunologic strategies that will include vaccine and antibody based efforts.

MARCO CHINOL, PHD

Dr. Marco Chinol is the Director of Radiopharmacy, European Institute of Oncology, Milano, Italy. He obtained his Doctorate in Chemistry, Institute of Organic Chemistry, from the University of Florence, Italy in 1977, and Radiopharmancy Certification by the European Association of Nuclear Medicine in 2007. Dr. Chinol's major professional interest is devoted to the development of innovative radiopharmaceuticals for application to targeted tumor therapies. In order to decrease the cost involved in the prepartion of such products, especially in developing countries, he has studied and optimized the production of a radionuclide generator in order to obtain Yttrium-90 in-situ thus avoiding to purchase it from commercial sources. Dr. Chinol is the book entitled "Radionuclide Peptide Cancer Therapy", Taylor & Francis Group, New York, 2006.

NORMAN COLEMAN, MD

Dr. Coleman received his BA in mathematics, from the University of Vermont summa cum laude and his MD from Yale University in 1970. He is board certified in internal medicine from University of California San Francisco, medical oncology from the National Cancer Institute and radiation oncology from Stanford University. He was Assistant and tenured Associate Professor of Radiation and Medical Oncology at Stanford from 1978-85 and from 1985-99 and he was Professor and Chairman of the Harvard Medical School Joint Center for Radiation Therapy. Since 1999, he has been Associate Director, Radiation Research Program and Senior Investigator, Radiation Oncology Branch of National Cancer Institute. His research interests include molecular radiation biology laboratory research, programs to address cancer health disparities (underserved) and combined modality cancer therapy. He has been on the Board of Directors of the American Society of Therapeutic Radiology and American Society of Clinical Oncology and has been president of the Radiation Research Society and Society of Chairman for Radiation Oncology Programs. Among his honors are the Gold Medal from the American Society for Radiation Oncology (ASTRO), honorary fellowships in the Royal College of Radiologists (UK) and the Royal College of Surgeons (Ireland) and fellowships in professional societies: FACP, FACR, FASTRO and FASCO.

SLOBODAN DEVIC, PHD, FCCPM

Dr. Devic obtained his M.Sc. degree in non-ideal plasma physics and his Ph.D. degree in Solid State Physics in 1997 at the University of Belgrade, Serbia. He moved to the USA in 1998 where he worked as a Research Associate in Radiation Oncology Physics at the Mallinckrodt Institute of Radiology, St. Louis, Missouri.

Subsequently, he moved in 2000 to the Montreal General Hospital and McGill University where he was enrolled into the Medical Physics Residency program.

Upon finishing his residency in 2002 he joined the Medical Physics Unit at the McGill University and, in 2008, he moved to his current position at the SMBD Jewish General Hospital in Montreal. He is a Fellow of the Canadian College of Physicists in Medicine and his major research interests are radiochromic film dosimetry and its applications, image guided brachytherapy with particular interest in pre-operative endorectal brachytherapy, and the incorporation of the functional imaging information into radiotherapy treatment planning process. Dr. Devic is also teaching Physics in Nuclear Medicine course at the McGill University and as of 2009 he became a member of the Editorial board of the Medical Physics journal.

THEODORE LESLIE DEWEESE, MD

Dr. Theodore DeWeese is a member of the faculty of the Department of Oncology, Division of Radiation Oncology, and the Department of Urology at the Johns Hopkins University School of Medicine. Dr. DeWeese received his Doctor of Medicine degree from the University of Colorado School of Medicine where he graduated with honors. He completed a residency in Radiation Oncology at The Johns Hopkins Hospital and also served as Chief Resident of that department. Dr. DeWeese next completed a research fellowship in Urologic Oncology at Johns Hopkins in the department of Oncology and The Brady Research Institute.

Dr. DeWeese currently practices Radiation Oncology at The Johns Hopkins Hospital with a subspecialty focus on malignancies of the genitourinary system. Dr. DeWeese's laboratory research efforts primarily focus on the DNA-damage response of cancer cells (primarily prostate cancer) to ionizing radiation, including repair, cell cycle perturbations and growth factor regulation. In addition, Dr. DeWeese and his collaborators investigate the interaction of cytotoxic and differentiating drugs with radiation in human prostate cancer cells. This research holds promise of identifying interesting drug-radiation combinations that may be applied to the clinic.

NATHALIE DUCHESNE, MD, FRCPC

Dr. Nathalie Duchesne has been working in breast imaging and intervention since 1996, is now Breast radiologist at Hopital du Saint-Sacrement in Quebec city. She is Academic Clinical Associate Proffessor at Universite Laval in Quebec City.

Nathalie received her Medical Doctorate in 1990 and her Diagnostic Radiology postfraduate degree in 1995, both from University Laval, Quebec city. She has performed rotations in university hospitals both in Australia and The Netherlands, and worked on a fellowship program in interventional MRI and bone tumors at Harvard University. The latter was completed in breast imaging at the Universite de Montreal. She also hold a BSc degree in Biology.

Dr. Duchesne's main clinical and research interests include breast biopsy tool development, minimally-invasive therapy, as well as new types of breast imaging and cancer detection. She is a pioneer in vacuum-assited breast biopsy, having done many world and Canadian premieres for various devices. She is an internationally known speaker having given numerous national and international confereces, with a track record of publications in the areas of breast imaging and intervention. She has lectured in the Breast Imaging and Intervetion Series (2001-2003). She is a member of various international scientific societies, and has received many awards from her peers, such as the Young Radiologist Investigator Award of the Year for 2005 by the Canadian Association of Radiologists, and the 2008 Personality of the Year in Radiology from the Societe Canadienne-Francaise de Radiologie / Association des Radiologistes du Quebec for her personality, scientific contribution, and humanitarian work.

Finally, Dr. Bathalie Duchesne is the founder and Director of the Breast Practices, organizing the now world famous interdisciplinary the Breast Course and the Breast Days. Through these courses, more than 2,000 physicians from 61 countries have received teaching, contributing to the improvement of breast and women's health worlwide.

BRADLEY ERICKSON, MD, PHD

Dr. Erickson is a neuroradiologist and chair of imaging informatics at Mayo Clinic. He received his MD and PhD degrees from Mayo, and has been on staff since that time.

He is a SIIM fellow and former president of SIIM, as well as the current chair of the SIIM TRIP workflow project. He is a recipient of multiple National Institutes of Health (NIH) grants and contracts, and is currently a part of the National Institute of Biomedical Imaging and Bioengineering (NIBIB)-sponsored image sharing project.

Research interests include computer aided diagnosis as well as the study of effects of image compression on diagnosis. This includes the development and validation of algorithms that can detect change (progression or regresion) of brain cancer and multiple sclerosis. These are being applied to patients with MS in which there are biopsy data characterizing the lesions. In addition, multiple studies of various irreversible (lossy) image compression methods have been undertaken to determine the maximum ratio which can be applied without loss of information.

KEITH FAULKNER, PHD

Following graduation from Imperial College, London with a degree in Physics, Keith decided to pursue a career in medical physics. He subsequently obtained a Master's degree from London University and a PhD from the University of Manchester. Keith is an internationally recognised Public Health Specialist in the areas of cancer screening and in the safety of ionising radiation. In the United Kingdom, Keith is a Fellow of the Institute of Physics and Engineering in Medicine, the Institute of Physics and the Society for Radiological Protection

Keith has initiated and led through to the successful completion, a number of large scale multinational research projects. Most recently, he led the team which produced a set of acceptability criteria of radiological equipment for the European Commission.

Keith's interests in the public health aspects of ionising radiations has been maintained through work with various international bodies, including the United Nations, International Atomic Energy Agency, World Health Organisation, Pan American Organisation and the European Commission Keith has also been nominated to committees of the International Electrotechnical Commission in relation to safety standards for mammography equipment and working parties of the International Commission of Radiological Protection.

Keith was one of the authors of the IAEA document on Clinical Audit in Diagnostic radiology. Keith has a wide experience of clinical audit through his work in cancer screening. In addition, Keith has participated in IAEA clinical audits in Bosnia and Herzegovina and the United Arab Emirates.

SCOTT FLAMM, MD, MBA

Scott D. Flamm, MD, is Head of the Section of Cardiovascular Imaging in the Cleveland Clinic Division of Radiology. He is a staff physician with joint appointments to the Robert and Suzanne Tomsich Department of Cardiovascular Medicine and the Division of Pediatrics. Dr. Flamm is board-certified in diagnostic radiology. In addition, he has certification in Cardiovascular Magnetic Resonance and in Protecting Human Research Subjects in Biomedical and Genetic Research. His specialty interests include cardiovascular MRI, cardiovascular CT, ischemic heart disease and congenital heart disease.

Dr. Flamm has an undergraduate degree from the University of California at Berkeley and a medical degree from George Washington University Medical Center in Washington, DC, where he was born. He took a medical internship in the Department of Medicine at George Washington Medical Center and did his residency in diagnostic radiology at the University of California, Los Angeles. He continued his medical training at the University of California, San Francisco, with a fellowship in cardiovascular imaging/MRI.

Dr. Flamm trained in research at the University of California, San Francisco and in the Division of Nuclear Medicine at the Massachusetts General Hospital in Boston. He has received major grants for research in cardiac magnetic resonance imaging. His research work has garnered awards including a 2005 Young Investigator Award from the North American Society for Cardiac Imaging and a 2004 1st Place Award from the International Society for Magnetic Resonance Technologists.

Prior to his 2006 appointment to the Cleveland Clinic, Dr. Flamm was a Clinical Associate Professor in the Department of Medicine (Cardiology) and in the Department of Radiology at Baylor College of Medicine in Houston, where he served as program director for the Cardiovascular Magnetic Resonance Imaging Fellowship Program and Director of MRI and Cardiovascular MRI Research. He had joint appointments at the Texas Heart Institute and at St. Luke's Episcopal Hospital, both in Houston. During the 1990s, Dr.Flamm was a staff physician at the Cleveland Clinic in the Divisions of Radiology and Pediatrics.

Dedicated to community service, Dr. Flamm was a participant in public planning meetings for Civic Vision 2000 in Cleveland as well as serving as a member of the Cleveland Waterfront Coalition in the late 1990s. He also has volunteered his radiology expertise to healthcare clinics in California.

Dr. Flamm has authored or co-authored numerous articles and abstracts in peer-reviewed journals on his research findings and clinical experiences. He sits on the editorial board of the Journal of Cardiovascular Magnetic Resonance, International Journal of Cardiovascular Imaging and the Texas Heart Institute Journal, is a consultant to the editor of Radiology, and was previously on the editorial board of Circulation. He has been an invited lecturer to national symposia and conferences. In addition, Dr. Flamm has served as a Board Member (2004-2007) for the Society for Cardiovascular Magnetic Resonance, and was recently elected to the position of Vice Secretary-Treasurer; he also serves as a Board Member for the North American Society of Cardiovascular Imaging.

He is a member of the International Society for Magnetic Resonance in Medicine, the International Society for Adult Congenital Cardiac Disease, the North American Society for Cardiac Imaging, the Radiological Society of North America, the Society for Cardiovascular Magnetic Resonance, the Society of Cardiovascular Computed Tomography (Founding member), the American Roentgen Ray Society, the American Heart Association (Council on Cardiovascular Radiology), the American Medical Association, and the Texas Heart Institute Cardiac Society

GLENN FLUX, PHD

Dr Glenn Flux is Head of Radioisotope Physics at the Royal Marsden Hospital and Institute of Cancer Research in Sutton, UK. His main research focus is on translational molecular imaging and its application to internal dosimetry for molecular radiotherapy. Has been involved in the development of dosimetry methods for a number of clinical procedures, including I-131 mIBG treatment of neuroblastoma, I-131NaI for thyroid cancer, radiopeptide treatments for neuroendocrine tumours and the treatment and palliation of bone metastases from prostate cancer with Re-186 HEDP and Ra-223. His other research interests include PET imaging of novel tracers and radiobiology. He has published over 80 peer reviewed articles and book chapters and has received grant funding from many bodies including Cancer Research UK the EU. He currently chairs the EANM Dosimetry Committee and the British Nuclear Medicine Society molecular radiotherapy committee and the UK CTRad group on Molecular Radiotherapy. He is currently largely concerned with helping molecular radiotherapy to become recognised as a mainstream cancer treatment.

ETIENNE GARIN, MD, PHD

Etienne Garin is specialized in Nuclear Medicine. He is working in the Cancer Institute Eugène Marquis of Rennes since 1997. He has more than 15 years of experience with radioembilization. His research activity is focussed on radioembolization of hepatic tumors with numerous studies done using 131I lipiodol and 90Yttrium labelled microspheres. He obtained his PhD degree with the development of a new compound, the 188Re-SSS lipiodol, which is actually tested in a phase 1 study. He has undergone a lot of work regarding dosimetry. Etienne Garin is Professor of the University of Rennes 1 and belongs to the research team U 991 of the National Institute of Medical Reseach.

DONALD GOER, PHD

Donald A. Goer, Ph.D., received his doctorate in physics in 1973 from The Ohio State University. He is a recognized expert on linear accelerator technology and is the author of a number of articles on the subject, including the chapter on radiation therapy linear accelerators for the Encyclopedia of Medical Devices and Instrumentation. After post-doctoral study in metallurgical engineering, Dr. Goer joined Varian Associates. Dr. Goer has forty years experience in the sales, marketing and product development of linear accelerators. From 1977 through 1985, Dr. Goer was responsible for the product development of Varian's cancer therapy equipment. Five new cancer treatment units were successfully introduced to the market during this period, resulting in the sale of more than 700 treatment systems. Between 1985 and 1990, Dr. Goer was responsible for market development and strategic planning at Varian. Dr. Goer's last position at Varian was Manager of Sales Operations with principal responsibilities in the international market. In 1991, Dr. Goer joined SRC as President, where he helped apply x-band accelerator technology to medical applications. In 1991, Dr. Goer assisted in founding Accuray, Inc., a medical company providing dedicated accelerators for radiosurgery, and in 1993, Dr. Goer co-founded Intraop Medical Corporation, the developer and manufacturer of the Mobetron, the world's only mobile and self-shielded linear accelerator designed for IOERT treatment. Dr. Goer served as President from 1993 to 2007, and is now the Company's Chief Scientist. Dr. Goer also serves on several IOERT Quality Assurance Committees, helps develop IOERT protocols, and is a corporate liaison to both the International Society of IORT and the American Society of Therapeutic Oncology (ASTRO). He has authored a chapter on the use of IORT for breast cancer in "Surgical Management of the Breast", a textbook on breast cancer that is scheduled for publication by Springer in 2014.

PETER HALL, MD, PHD

Peter Hall is Editor-in-Chief of the Journal of Pathology and the newly established Clinical Journal of Pathology. He qualified in medicine from St Bartholomew's Hospital Medical School (London) in 1982 and trained in histopathology at the London Hospital. After completing MD and PhD research at St Bartholomew's Hospital Department of Medical Oncology and the ICRF Laboratories in London, he became Senior Lecturer in Pathology at the RPMS. He has held Professorial appointments in the Universities of London, Dundee and was the Musgrave Professor of Pathology at Queen's University Belfast. Until recently he was Chairman of the Department of Molecular Oncology and also Senior Consultant & Adviser to the CEO at the King Faisal Specialist Hospital & Research Centre in Riyadh. He was also Professor of Molecular Pathology at the Alfaisal University College of Medicine. He is now an Adjunct Principal Scientist at KFSH&RC. His interests lie in molecular pathology and understanding the pathobiology of disease. He is the author of more than 230 research publications and was in 2006 awarded the Pathological Society's Goudie Medal for seminal contributions to pathological research. Before becoming Editor-in-Chief of the Journal of Pathology in 2008, he had been Editor of Haematological Oncology and Associate Editor of the Journal of Pathology.

DIMITRE HRISTOV, PHD

Dimitre Hristov is an Assistant Professor in the Department of Radiation Oncology at the Stanford University Medical Center with 15+ years of clinical, research and industry experience. He has previously been a faculty at McGill University, a senior medical physicist at King Faisal Hospital and Research Center in Saudi Arabia, and a senior physicist and a collaboration manager with the Innovation Group at Siemens Medical Solutions. His research focus is on the development and investigation of novel imaging systems for advancing radiotherapy. Dr. Hristov has contributed to the development of some commercially offered radiotherapy solutions such as a free-hand 3D ultrasound system for treatment simulation/delivery guidance and a megavoltage cone beam computed tomography system. He has been principal investigator and co-investigator on several grants including joint projects with major medical device companies. These projects have resulted in 50+ peer-reviewed articles, conference proceeding papers and book chapters as well as 7 patents and patent applications. Dr. Hristov is a member of the Canadian College of Physicists in Medicine and is serving on the AAPM Therapy Imaging Subcommittee and the Working Group for New Research Initiatives.

M. SAIFUL HUQ, PHD

M. Saiful Huq received his PhD degree from the College of William and Mary in Virginia, USA, in 1984. After completing a Post Doctoral Fellowship in Medical Physics at Yale University in 1990, he joined the faculty at Jefferson Medical College of Thomas Jefferson University and Thomas Jefferson University Hospital in Philadelphia, where he stayed for 14 years. He is currently a Professor of Radiation Oncology at the University of Pittsburgh School of Medicine and University of Pittsburgh Cancer Institute and the Director of the Medical Physics Division in the Department of Radiation Oncology at UPMC Cancer Centers, where he is responsible for the development of scientific activities of a large group of physicists and management of clinical medical physics operations of 21 cancer centers in Western Pennsylvania. He is certified by the American Board of Radiology in Therapeutic Radiological Physics and has published over 92 manuscripts in peer reviewed journals.

Dr. Huq has served in many capacities in various national and international organizations. He is a Fellow of both the British Institute of Physics and the American Association of Physicists in Medicine (AAPM) and is a recipient of AAPM's Farrington Daniels Award. He is past president of the AAPM Delaware Valley Chapter and is currently a member of the AAPM Science Council, Vice Chair of the AAPM Therapy Physics Committee, and Chair of the AAPM Task Group 100. He has served on numerous AAPM Task Groups, notably TG51. Dr. Huq has also served as an expert on many IAEA initiatives, developing various documents which provide guidance to the world-wide radiotherapy community regarding various aspects of cancer therapy using external beam radiation. He is a co-author of the IAEA TRS398 Code of Practice and will be giving a continuing education course at this conference on this Code of Practice.

MANNUDEEP KALRA, MD

Dr. Mannudeep K. Kalra is Associate Professor in Harvard Medical School and Assistant Radiologist in Cardiac and Thoracic Imaging in the Massachusetts General Hospital (MGH). He is the Director of the MGH Webster Center for Radiation Research and Education. Dr. Kalra has keen research interest in CT technology assessment, radiation dose reduction, and thoracic and cardiac applications of dual energy CT. He has published extensively in the field of CT radiation dose reduction technologies including automatic exposure control, noise reduction filters and iterative reconstruction techniques. He has received numerous awards for this cutting edge research in the field of CT radiation dose and protocol optimization.

IANN JUDD

Ian Judd has been involved in the UK Radiology market for more than 20 years. He has been personally associated with the most successful Radiology IT projects in the UK. He led the team responsible for the design and deployment of the largest RIS (Radiology Information System) in the UK which was deployed to 80% of NHS sites over a 2 year period. This work was a direct precursor to the 100% adoption of PACS within the NHS. Where some 25million imaging procedures were stored annually on this national solution.

The team created the first dose collection software in the mid 1990's and this system was slowly enhanced in line with the stringent UK requirements on patient radiation dose. The team joined Sectra in 2012 and took ownership of the Sectra DoseTrack product set. In this role Ian has been the Product Manager and main consultant in the ongoing direction, development and sales of the DoseTrack product.

His practical experiences, built up since the mid 1990's to date in the field of dose management allow a unique perspective on this subject and have driven a more holistic approach to patient dose management and reduction.

He has lectured on the subject of patient dose management for the last 2 years to numerous audiences throughout the world. He has written a number of white papers and news publications on the subject. he is considered a high profile advocate of technology to reduce the risk of radiation to patients in a medical environment.

AHMED RASHAD KASSEM, PHD

Dr. Ahmed Rashad kassem, Head of Bioscience and Environment Dept, Arab Atomic Energy Agency, is a professor of radiation biology (biochemistry). He Supervised and formulated many AAEA activities relevant to applications of the peaceful uses of Atomic Energy in the field of agriculture, water resources management, health and Environmental sustainable development. The AAEA activities include: Training courses, workshops, expert meetings/missions, scientific visits, conferences and cooperation with Arabic and international organization. Over 700 trainees from Arab countries get benefit yearly from the projects of AAEA in Energy, Safety, Security, Biosciences and Industry.

Tomas Kron was born and educated in Germany. After his PhD at the University of Frankfurt he migrated to Australia in 1989 to work in MRI research at the University of NSW. In 1990 he took up a position as clinical medical physicist at the Prince of Wales Hospital in Sydney and became Chief Physicist at the Newcastle Mater Hospital in 1993 after a spending some time at the Illawarra Cancer Care Centre. From 2001 to 2004 Tomas worked at the London Regional Cancer Centre in Canada on the commissioning of one of the first helical tomotherapy units. Since 2005 he is principal research physicist at Peter MacCallum Cancer Centre and Honorary Professor at RMIT and Wollongong Universities.

Tomas has an interest in dosimetry of ionising radiation, treatment verification, image guided radiotherapy and clinical trials quality assurance. He has co-authored a radiotherapy textbook, edited a book on Radiation Protection in Medicine and published more than 130 papers in refereed journals. Over the years he has maintained an interest in education reflected in many invited conference presentations, consultancies for the International Atomic Energy Agency (IAEA) and the International Society for Radiation Oncology (ISRO), and involvement in workshops and training in Australasia. From 2008 to 2009 Tomas Kron was president of the Australasian College of Physical Scientists and Engineers in Medicine (ACPSEM) the professional organisation representing medical physicists and biomedical engineers in Australia and New Zealand.

TOMAS KRON, PHD, FCCPM

Pedro C. Lara, (Granada,Spain 1961), obtained his Medical Degree in 1985 in the University of Granada. During his medical studies was appointed as medical student in the Oncology Dept of the Granada University Hospital where was trained in Radiation Oncology from 1987 to 1991, including training stages at Instituto de Tumori de Milano (1987) MD Anderson Cancer Houston (1988) and Academisch Medisch Centre Amsterdam (1990). During this period he was also involved in traslational research obteining the PhD degree in the University of Granada in 1988

In 1991 moved to the Radiation Oncology Dept of the University Hospital of Las Palmas, as Associate Professor of Radiation Oncology. In 1995 was hired by the European Cancer Center, to develope a project on radiation oncology traslational research in the Netherlands Cancer Insitute in Amsterdam. Being appointed as Professor of Radiation Oncology in the University of Las Palmas (1996) returns to the Canary Islands. At the present time, Prof Lara is Head of the Dept of Radiation Oncology, Coordinator of the Strategic Plan for Cancer Research and President of the Ethic and Clinical Research Commitee at the Dr Negrín University Hospital. He is also Director of the Canarian Insitute of Cancer Research and member of several oncological spanish and european societies.

His main fields of interest are clinical treatment of tumours, specially those related to squamous carcinomas and traslational research on predictive assays on tumour response to oncological therapies. He is actively publishing, editing and reviewing scientific articles and participating in national and international meetings. He is also founder of CEAMED,SA a biotechnology enterprise related to transference of technology from plants to antitumour active compounds.

He created and serves as volunteer in the Canary Against Cancer Program, devoted to make cancer prevention information available for the canarian society.

PEDRO LARA, MD, PHD

David Lloyd qualified as a zoologist in the University of Wales. In 1971 he began a career in human radiation cytogenetics with the UK National Radiological Protection Board. This institute later mutated into the UK Health Protection Agency and then into Public Health England. He formally retired from PHE in 2008 but continues working in an emeritus research position. His radiobiological research has been to use radiation induced chromosomal aberrations to probe how radiation affects cells and DNA and how the effects change with various physical parameters such as dose, dose rate, linear energy transfer. He has also studied clastogenic effects of mobile telephone radiation and of power frequency magnetic fields. His biomedical research has been the investigation of victims of radiation accidents, world-wide, in order to establish radiation doses from biological indicators of cellular damage, in particular, chromosomal alterations. He set up and directed a national biological dosimetry service for the UK and this also provides a service for some other countries. He is a member of the UK national radiological emergency response team. He is a consultant to the International Atomic Energy Agency, the World Health Organization and the International Organization for Standardization.

DAVID CHARLES LLOYD, PHD

SERGIO MALUTA, MD

Graduated in Medicine at the Padua University in 1972. He worked in the Radiotherapy Dept. of University-Hospital of Padua. From 1976-77 to 1989 professor with contract at the Padua University. From 1989 to 1994 head of Radiotherapy Dept. and the Oncological Unit of S. Chiara Hospital of Trento (Italy). Here starts the activity of IORT by using a conventional linear accelerator in sarcomas, large abdominal tumors, pancreas cancers. From 1994 to 1997 head of Radiotherapy Dept. and Oncological Unit of SS. Giovanni e Paolo Hospital of Venice (Italy). From 1997 to now head of Radiotherapy Dept. of University-Hospital of Verone (Italy). Here he introduced IORT by using a mobile dedicated linear accelerator . He treated more than 500 breast cancer by IORT. Since 1997 he was elected as professor with contract in the University of Verone and at the Radiotherapy speciality of Faculty of Medicine of Modena University.

Membership: 2000. Member of Italian Group of Intraoperative Radiotherapy (IORT), 2002. Member of Board of European Society Hyperthermic Oncology (ESHO), 2003. Teamleader in the Network of Excellence (NoE) EUROTHERM , 2004. Member of Editorial Board of International Journal of Hyperthermia, 2004. Member of Consensus Group in Hyperthermia at Kadota Forum (Osaka June 2004), 2005. Founder and Coordinator of Italian Study Group of Hyperthermia of A.I.R.O (Italian Association of Radiation Oncology), 2005-2014. Member of Atzelsberg Circle of Erlangen for Research in the field of oncological hyperthermia.

AHMED MEGHZIFENE, PHD

Ahmed Meghzifene was born in Algeria in 1954. After a graduate degree in engineering in 1981, he entered the field of radiation dosimetry and obtained his PhD in 1989. He was a awarded a post-doc research grant and worked as a research fellow at the French Henri Becquerel Laboratory (1989) and the Canadian National Research Council (1991) dosimetry laboratory. He has experience in both clinical radiotherapy physics and also in standardization at the level of primary and secondary standards laboratories. After an extensive involvement in the establishment of dosimetry and medical physics infrastructure in his home country, he joined the International Atomic Energy Agency (IAEA) in 1997 as a radiation physicist and in charge of the IAEA/WHO Network Secondary Standards Dosimetry Laboratories (SSDLs). In 2007, he was appointed Section Head of the Dosimetry & Medical Radiation Physics Section of the IAEA and also co-secretary of the IAEA/WHO Network of SSDLs. During the past 15 years, his profile has a dominant component of international activities, co-authoring publications and reports on radiotherapy physics and dosimetry. In the recent years, he has developed a special interest and commitment to promote the medical physics profession and support education and clinical training activities in IAEA Member States. He has published over 20 papers, 2 book chapters and delivered numerous key note talks at international conferences.

THOMAS MERCHANT, DO, PHD

Thomas Merchant, DO, PhD, completed his medical training and residency at Memorial-Sloan Kettering Cancer Center in New York. He joined the St. Jude faculty in 1996 and is presently the Chief of Radiation Oncology. He is currently the national leader in pediatric radiation oncology serving as chairman of the radiation oncology committee in the Children's Oncology Group. The focus of his research is the treatment of childhood brain tumors with advanced methods of radiation therapy. He is leading the development of a proton therapy center for St. Jude, the first of its kind dedicated to the treatment of children.

Moulay Meziane, MD, is Head of the Section of Thoracic Imaging in the Department of Dignostic Radiology at Cleveland Clinic. He is also a Staff Physician in the Department of Pulmonary, Allergy and Critical Care Medicine. He received his medical degree from the University of Algiers Medical School, Algiers, Algeria, where he also completed a rotating internship, focusing on internal medicine, pediatrics and surgery. He completed his residency in diagnostic radiology at The Johns Hopkins Hospital, Baltimore, M.D.

Dr. Moulay Meziane identified specializing in Diagnostic Radiology and Radiology. He is certified in Radiology.

Dr. Meziane attended medical school at Universite d'Alger Institut National d'Enseignement Superieur en Sciences Medicales and graduated in 1979 having 35 years experience. Additional Radiology training was conducted at Johns Hopkins Hospital.

MOULAY MEZIANE, MD

Dr. Marc Million is the Scientific Director of Landauer Europe, Paris, France. He received his B.Sc. degree in Physics from Joseph Fourier University in Grenoble, France in 1995 and his PhD. degree in Nuclear Instrumentation from University of Paris VII in 1999.

His main research interest and achievements are in the field of nuclear instrumentation, dosimetry and radiological protection. From 2000 to 2007, he held a researcher position in the company Smith Detection. He was more particularly working on X-ray screening systems for trucks and containers. He also designed new detection systems for illicit material detection. At that time another subject of interest to him was the field of radiological safety.

In 2007 he joined Landauer Europe in Paris as the Technical Manager. There he has worked on developing a new automatic reader platform for the CR39 neutron dosimeter processing. Next his focus was on improving the Inlight reader platform in order to achieve better metrological performances at low dose.

He was appointed Scientific Director of Landauer EUROPE in 2011. He is now in charge of defining the R&D programs for to support the company development through the EMEA (Europe, Middle East and Africa region).

The most recent achievements of this R&D programs is the new dosimeter generation based on Al2O3:C OSL material, the InLightTM+.

His focus is alos on operational issue. He has developed a turnkey platform including hardware and software for individual monitoring lab. He has installed more than 10 laboratories in EMEA countries; many of which in the context of IAEA projects.

He is a member of ISO and IEC working groups on standards related to dosimetry.

MARC MILLION, PHD

Daud Mohamad was appointed Deputy Director General for Nuclear Sciences and Applications, effective 1 January 2011. Prior to joining IAEA Director General Amano's senior management team, Mr Daud held the position of Director General of Malaysian Nuclear Agency (Nuclear Malaysia) since September 2004. He had joined Nuclear Malaysia in 1978 and was one of the pioneer staff of the organization.

From 2008 to 2010, Mr Daud served on the IAEA's Standing Advisory Group on Nuclear Applications (SAGNA), and from 2001 to 2010 on the Steering Committee on Training and Education in Radiation Protection and Waste Safety. He had taken up many expert missions to a number of Member States on self-reliance and sustainability programme of nuclear institutions in Asia and the Pacific under the framework of the IAEA.

Mr Daud holds a Bachelor of Science degree from Universiti Kebangsaan in Malaysia, a Master of Science degree from McMaster University in Canada, and a PhD in High Level Radioactive Waste Management from University of Glasgow/Scottish Universities Research Reactor Centre in the UK. He has published more than 70 technical papers and was Chief Editor for the book entitled 'Nuclear Science and Technology'.

Mr Daud is married to Prof. Dr. Siti Rahayah Ariffin. They have six children.

DAUD MOHAMAD, PHD

MAJID MOHIUDDIN, MD

Dr. Mohiuddin is originally from Philadelphia and graduated from Brown University. He received his medical degree from Brown University Medical School and completed his radiation oncology residency at the Massachusetts General Hospital, Harvard Medical School. He also trained in brachytherapy at the Brigham & Women's Hospital, Harvard.

Dr. Mohiuddin was an Assistant Professor at the University of Maryland in Baltimore. He has been an invited speaker to the American Society for Radiation Oncology (ASTRO) and the Federal Drug Administration (FDA). In June 2009, Dr. Mohiuddin joined Northwest Radiation Oncology in Houston, TX with a clinical appointment at the University of Houston Medical School. In 2012, he joined Radiation Oncology Consultants Ltd in Chicago, IL, where he additionally works with the Illinois Cyberknife and the Chicago CDH Proton center. He has been an invited speaker on behalf of Varian brachytherapy at the ASTRO and ACRO (American College of Radiation Oncology) national meetings, and on Spatial Fractionation GRID Radiation Therapy (SFGRT) on behalf of .decimal and the AAPM.MAJID MOHIUDDIN, MD

Dr. Mohiuddin is originally from Philadelphia and graduated from Brown University. He received his medical degree from Brown University Medical School and completed his radiation oncology residency at the Massachusetts General Hospital, Harvard Medical School. He also trained in brachytherapy at the Brigham & Women's Hospital, Harvard.

Dr. Mohiuddin was an Assistant Professor at the University of Maryland in Baltimore. He has been an invited speaker to the American Society for Radiation Oncology (ASTRO) and the Federal Drug Administration (FDA). In June 2009, Dr. Mohiuddin joined Northwest Radiation Oncology in Houston, TX with a clinical appointment at the University of Houston Medical School. In 2012, he joined Radiation Oncology Consultants Ltd in Chicago, IL, where he additionally works with the Illinois Cyberknife and the Chicago CDH Proton center. He has been an invited speaker on behalf of Varian brachytherapy at the ASTRO and ACRO (American College of Radiation Oncology) national meetings, and on Spatial Fractionation GRID Radiation Therapy (SFGRT) on behalf of .decimal and the AAPM.

PETER MORRIS, PHD

Trained in theoretical physics at Cambridge and supervised for a PhD in solid state NMR by Sir Peter Mansfield in Nottingham, I helped to construct a whole body MRI system (now in the London Science Museum) and to establish the fundamental principles of MRI ("Mansfield and Morris", 1982). I moved to the Medical Research Council's National Biomedical NMR Centre and then to Cambridge, where I was the first to study cardiac calcium transients in intact hearts. I returned to Nottingham in 1990 as Professor of Physics and (following Sir Peter's retirement in 1994) Head of its Sir Peter Mansfield MR Centre. I lead a research programme on the development of techniques for ultra-high-field MRI, multimodal imaging (fMRI, EEG and MEG) and the use of 1H and 13C MRS to understand the metabolic basis of neural activation – work recognised in the award of the Sylvanus Thompson Lecture and Medal of the British Institute of Radiology. I have served as Board Member of the MRC (twice), on the Physics Panel of the Canadian Science and Engineering Research Council and currently serve on the Advisory Board of the Max Planck Institute for Human Cognitive and Brain Sciences, and the Clinical Medicine Sub-panel for the 2014 Research Excellence Framework.

ARNO MUNDT, MD

A native of Honolulu, Hawaii, Dr. Mundt graduated from Stanford University with a degree in Philosophy and went on to Medical School at the University of Michigan in Ann Arbor. Following Medical School, he completed an Internship in Internal Medicine and a Residency in Physical Medicine and Rehabilitation at George Washington University in Washington DC. During his PM&R training, Dr. Mundt developed an interest in Oncology and decided to enter the field of Radiation Oncology.

Following a residency in Radiation Oncology in the Department of Radiation and Cellular Oncology at the University of Chicago, Dr. Mundt joined the faculty at that institution initially as an Assistant Professor and was later promoted to Associate Professor. He also served as the Director of the Residency Training Program and Medical Director of the University of Illinois at Chicago. In March 2006, Dr. Mundt was recruited to be Professor and Chair of the Department of Radiation Oncology at the University of California, San Diego (UCSD).

Dr. Mundt is an internationally recognized radiation oncologist. He has published over 100 journal articles, book chapters and reviews predominantly focusing on the use of novel radiotherapy approaches including intensity-modulated radiotherapy (IMRT), image-guided radiotherapy (IGRT) and stereotactic radiosurgery. He has edited 3 oncology textbooks, including two devoted to novel radiation technologies: IMRT: A Clinical Perspective and IGRT: A Clinical Perspective. The latter includes contributors from over 77 institutions in 18 countries. He has been an invited speaker at over 150 seminars, symposia and workshops in the United States and abroad, including in Australia, Brazil, Canada, Chile, China, England, Japan and Taiwan. He has been a visiting professor at numerous prestigious Universities, including the Mayo Clinic, the University of Michigan, Washington University, and Emory. He is a guest reviewer for 8 cancer journals and serves on multiple Advisory and Editorial Boards. Named Top Doctor for Cancer as well as a Top Doctor by the Chicago Magazine, he has recently been named a Top Doctor by the San Diego Magazine.

Outside the hospital, Dr. Mundt is an avid classical pianist and racquetball player. He enjoys travel and has a considerable interest in foreign languages, having studied 8 languages (his best are French, German and Italian). A life-long tennis enthusiast, Dr. Mundt was a frequent tennis partner of Barack "Barry" Obama while growing up in Hawaii.

NIZAR NAMBIAR

Mr. Nishant Nambiar is the Director and Healthcare Consultant of the Inforich Technology in Trivandrum Kerala, India. His specialty is in the field of Healthcare IT. He obtained his MBA in International Marketing from India. He has been instrumental in building Customizable Electronic Medical Records and complying healthcare standards with rich user interface and technology extensibility for different platforms and variant levels of clients like clinics/hospitals and governments. The software built using this framework has been already deployed in Maldives, India and Qatar government health project.

MEDHAT OSAMAN, PHD

Dr. Osman is an Associate Professor and the Medical Director of the Division of Nuclear Medicine and PET/CT. He is board certified in Nuclear Medicine.

Dr. Osman obtained both PhD and Master's of Science degrees from The Johns Hopkins University in Baltimore, MD. His Nuclear Medicine residency and PET fellowship were also at The Johns Hopkins University in Baltimore, MD. His medical degree was received from Assiut University Hospital, Egypt.

Dr. Osman's research interest includes positron emission tomography (PET).

He created and serves as volunteer in the Canary Against Cancer Program, devoted to make cancer prevention information available for the canarian society.

BRIAN O'SULLIVAN, MD, FRCPC

Brian O'Sullivan is a Professor in the Department of Radiation Oncology at the University of Toronto, Toronto, Ontario, Canada. He also holds the Bartley-Smith/ Wharton Distinguished Chair in Radiation Oncology in the Department of Radiation Oncology at the Princess Margaret Hospital, University of Toronto. He received his medical degree from the National University of Ireland at University College in Dublin in 1976, and completed internship and general internal medicine at St. Vincent's Hospital in Dublin. Additional postgraduate training includes a fellowship in medical oncology, and a residency and clinical fellowship in radiation oncology, all at Princess Margaret Hospital in Toronto, Canada.

Professor O'Sullivan is the Head and Neck Oncology Program Chair at Princess Margaret Hospital and immediate past-Chair of the Head and Neck Oncology Committee of the National Cancer Institute of Canada Clinical Trials Group (NCIC CTG) and incoming co-Chair of the US NCI Head and Neck Steering Committee. He is the recipient of numerous international awards, and research grants. He has published more than 280 peer reviewed papers, in excess of 50 book chapters, and has written or edited 6 oncology textbooks. His interests includes sarcoma and head and neck cancer, translational research, IMRT delivery and the principles of image guided radiotherapy, chemo-radiotherapy and molecular targeting. He is a member of the TNM Committee of the Union for International Cancer Control (UICC), Chair of the UICC Prognostic Factors Sub-Committee and represents the UICC as head and neck cancer liaison to the American Joint Committee on Cancer (AJCC).

WILLIAM PARKER, MSC

Mr Parker obtained a BSc degree in Physics from Concordia University, Montreal, Quebec, Canada; and MSc in Medical Physics from McGill University, Montreal, Canada. He is a Fellow of the Canadian College of Physicists in Medicine. Mr Parker has been working for 18 years in the field of Medical Physics and currently, Mr Parker is the Clinical Chief of the Department of Medical Physics and the Director of the Radiation Oncology Residency Program, McGill University Health Centre, Montreal, Canada; and an Assistant Professor at the Department of Oncology and Medical Physics Unit, McGill University, Montreal, Quebec, Canada. Mr Parker's research focuses on paediatric radiotherapy, Quality assurance and dosimetric measurements of IMRT beams. He has been involved in teaching of Medical Physicists, Radiation Oncology Residents, and Radiotherapy technologists. He has provided consultation services to many centres around the world and is a Technical Expert for the International Atomic Energy Agency.

GIOVANNA PEPE, MD

Giovanna Pepe, MD was born in Acquaviva delle Fonti (BA) South of Italy. She graduated in Medicine and Surgery at the University of Bari where she also completed her higher training in nuclear medicine in 2007. She attended part of the nuclear medicine training in United Kingdom at the University College London Hospital with prof. Peter J. Ell. In 2008 she attended also the Great Ormond Street Hospital for Sick Children – Institute for Children Health, London. In Milan in 2009 she has been a research fellow for one year at the IEO - European Institute of Oncology with dr. Giovanni Paganelli. Since 2010 she is working as consultant nuclear medicine in the equipe of Arturo Chiti at Humanitas Research Hospital, being active part in both clinical and research activities.

Her main interests are in PET-CT in oncology and RT planning, for which she has been invited as PET expert during a recent IAEA workshop in South Africa, and in the diagnosis and treatment of neuroendocrine tumours as she is in the NET multidisciplinary tumour board at Humanitas Hospital. Since 2013 she is involved in the educational field, tutoring students in nuclear medicine for the activities of the University of Milan. She is currently member of the European Association of Nuclear Medicine and of the Italian Association of Nuclear Medicine. She particularly appreciates art, music and poetry.

MARIA DEL ROSARIO PEREZ, MD

Dr María del Rosario Pérez is a medical doctor who has worked at the Unit Interventions on Healthy Environments (IHE), Department of Public Health and Environment (PHE) of the World Health Organization (WHO) since April 2007.

Her main responsibility at WHO is the technical coordination of the WHO Global Initiative on Radiation Safety in Health Care Settings. Her work at WHO also includes the development of guidance, norms and standards on ionizing radiation and human health and the provision of technical support to preparedness and response in radiation emergencies.

Dr. Pérez has been involved in the revision of the International Basic Safety Standards (BSS) for Protection against Ionizing Radiation and for the Safety of Radiation Sources since her arrival at WHO. In June 2009 she was nominated to represent WHO at the Joint BSS Secretariat as well as at the IAEA Radiation SafetyStandards Committee (RASSC). She also represents WHO at the Inter-Agency Committee on Radiation Safety (IACRS),and serves as WHO observer the ICRP Committee 3 on Medical Exposures, the Group of Scientific Experts referred to in Article 31 of the Euratom Treaty and its Working Party on Medical Exposures.

Dr Pérez received her M.D. in 1980 from the School of Medicine of Buenos Aires University in Argentina, where she later specialized on Radiation Oncology. In 1990 she obtained a diploma in Radiation Protection and Nuclear Safety at the IAEA post-graduate course jointly hosted by the School of Engineering of Buenos Aires University and the Argentine National Atomic Energy (CNEA), and completed her formation in Epidemiology in the National Academy of Medicine.

Her professional activity has been related with radiation protection and human health for more than twenty years. She contributed to the implementation of programs of education and training in radiation protection in Latin America, where she actively promoted regional cooperation on medical and public health response in emergencies.

Dr. Pérez was the head of the Radiopathology Laboratory at the Nuclear Regulatory Authority, director of the REMPAN Liaison Institution in Argentina, member of the National Advisory Council in Radioisotopes and Radiations, alternate representative of Argentina at United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) and consultant of UNSCEAR on Effects of Ionizing Radiation of the Immune System. She participated in international expert teams involved in the preparedness and response in radiation emergencies. She coordinated research projects on the effects of ionizing radiation on the immune system, foetal brain, and dermal endothelial cells, and co-authored more than 90 technical papers in her areas of expertise.

RUUD PIJNAPPEL, MD, PHD

Dr. Ruud Pijnappel is a breast radiologist practicing at the Department of Radiology at the University Medical Centre Utrecht ; The Netherlands and at the National Expert and Training Center for Breast Cancer Screening (LRCB).He received his medical training at the University of Amsterdam. His special interest in Breast imaging and intervention was developed during a fellowship at University of Utrecht where he received his Ph.D in 2002 on the subject of 'The diagnosis of non-palpable breast lesions'.

Since 1996 Dr Pijnappel main clinical and research interests include breast imaging and intervention. Working with and teaching residents and fellow's in a multidisciplinary breast assessment setting serves his particular interests. He is part of LRCB foundation, the National Expert and Training Center for Breast Cancer Screening playing a key role as a teacher.

Dr Pijnappel also serves as a member of the advisory board of the Dutch National Screening Program for Breast Cancer. He is a very well known speaker having given numerous lectures at international level.

In addition to the Radiological Society of the Netherlands, Dr. Pijnappel is a member of the Radiological Society of North America, an international member of the American College of Radiology, the American Roentgen Ray Society, the European Society of Radiology, and the European Society of Breast Imaging (EUSOBI).

At present he is President of the Dutch College of Breast Imaging, Boardmember of the International Relations Committee of the EUSOBI, Boardmember of the Subcommittee Breast ECR 2014.

BRIAN O'SULLIVAN, MD, FRCPC

Martin Sabel (born 1971, Swiss citizen) is a Senior Product Manager – Eclipse Product Management for Varian Medical Systems based in the international headquarters in Cham Switzerland. In his 15 years career with Varian he has held various positions such as EMEA Marketing Manager, Product Manager for Eclipse and as Support Physicist for Eclipse. In his current position, he is responsible as a product manager for the algorithms in the Eclipse treatment planning system.

ERVIN PODGORSAK, PHD, FAAPM

Ervin B. Podgorsak was born in Vienna, Austria and grew up in Slovenia where he earned his undergraduate degree in technical physics from the University of Ljubljana. He pursued graduate work in physics under Drs. John R. Cameron and Paul R. Moran at the University of Wisconsin, receiving his M.Sc. in 1970 and Ph.D. in 1973. He then specialized in medical and clinical physics as a post-doctoral fellow under Drs. Harold E. Johns and John R. Cunningham at the Ontario Cancer institute and the University of Toronto. In 1975 he joined McGill University in Montreal, Canada and remained there until his retirement in 2010 from positions of Professor of Medical Physics, Director of McGill academic and residency programs in Medical Physics, and Director of Medical Physics department at the McGill University Health Centre. Currently, he holds a position of Professor Emeritus at McGill University.

The author of 160 peer reviewed publications, 3 medical physics textbooks, 20 invited book chapters, 70 conference proceedings, and 166 invited presentations, Dr. Podgorsak, in addition to his administrative and educational duties, has been involved in medical physics research, such as solid state dosimetry, linac target design, and development of new cancer therapy techniques, most notably dynamic stereotactic radiosurgery. He is certified in radiation oncology physics by the Canadian College of Physicists in Medicine (CCPM) and the American Board of Medical Physics (ABMP). He is Fellow of the CCPM, American College of Medical Physics (ACMP), American Association of Physicists in Medicine (AAPM), and the Canadian Organization of Medical Physicists (COMP). For his educational, research and administrative activities he received several awards and honors, most notably the William D. Coolidge Award from the AAPM in 2006, Gold Medal from the COMP in 2008, and the Peter Kirkby Memorial Medal from the Canadian Association of Physicists (CAP) in 2011.

HILARY RUSSELL, MD

Hilary Russell PhD MResEth is an experienced teacher and researcher and author of nearly 100 peer reviewed papers and other works including books. After graduating from Queen's University Belfast she undertook doctoral studies in molecular virology before post-doctoral work in human molecular genetics at Trinity College Dublin. She was then appointed to the Faculty of the Department of Medical Genetics at Queen's University Belfast and then moved to establish the Ovarian Cancer Research Laboratory in the Department of Oncology. Until recently she was Adjunct Principal Scientist in the Research Centre KFSHRC and remains Chair of the Northern Ireland Research Ethics Committee. She was formerly Reader (Professorial grade) in Molecular Oncology at Queen's University Belfast.

RIAD SALEM, MD

Riad Salem, MD MBA is a Vice-Chair, Image-Guided Therapy and Chief, Interventional Radiology and Oncology in the Department of Radiology at Northwestern University (Chicago). His areas of interest include the use of image-guided techniques for the treatment of malignancies. These include chemoembolisation, bland embolisation, radioembolisation, radiofrequency and cryo/alcohol ablation. He is a graduate of McGill University in Montreal, Canada. He completed his radiology residency in Washington, DC. He has also completed a fellowship in interventional radiology (University of Pennsylvania), as well as a Master's in Business Administration (Finance). He is a member of Alpha Omega Alpha medical honor society and a Fellow of the Society of Interventional Radiology. He has lectured internationally and published extensively on the subject of image-guided interventions and interventional oncology. Recently, he completed his term on the NCCN guidelines panel for hepatocellular carcinoma (2007-2010). His current research focus on hepatocellular carcinoma includes advances in minimally invasive therapies as well as imaging methodologies following locoregional treatment. He serves as co-PI of 2 international, randomised phase III trials involving locoregional therapy (radioembolisation) and sorafenib (STOP-HCC, YES-p).

FRANCIS SCHOLZ, MD

Francis J Scholz, M.D., FACR, FACG is a graduate of Georgetown University School of Medicine. He did his residency at Lahey Clinic and then served as a staff member at Brigham and Womens Hospital. Since 1975 Dr. Scholz has been a staff radiologist and Director of Abdominal Imaging at Lahey Hospital and Medical Center in Burlington, Massachusetts, USA. A Professor of Radiology at Tufts University School of Medicine in Boston, Dr. Scholz is also a lecturer at the American Institute of Radiologic Pathology in Washington, D.C. and a monthly visiting lecturer at Massachusetts General Hospital.

An oral examiner of the American Board of Radiology since 1984, Dr. Scholz has been awarded their Lifetime Achievement Award. A member of the Society of Abdominal Radiology (SAR) since 1977, he has been awarded the society's Lifetime Achievement Award, their Marshak International Lecturer award, and has been named a Fellow of that society.

He has lectured and presented abstracts and posters at the RSNA, ARRS, SAR, and ESGAR as well as international meetings speaking at meetings in 13 countries including at the International Tumor Imaging Conference sponsored by King Fahad Hospital in Dammam, Saudi Arabia in 2010. He has published 56 papers, 6 textbook chapters, and presented 13 exhibits at national and international meetings.

His interests include all diseases of the alimentary tract especially the small intestine. His favorite diagnostic tools are fluoroscopy and CT and he designed and patented a fluoroscopic compression and palpation device, the F Spoon, which is widely used for examining the bowel.

HELMUTH SCHULTZE-HAAKH, PHD

Dr. Helmuth Schultze-Haakh received his PhD in Biomedical Engineering in 1986 from Rutgers University and joined Siemens Medical in their then new MRI department providing applications training, MRI education as well as marketing and sales support. He developed and optimized MR scanning protocols and wrote multiple papers on MR clinical and technological topics while assisting MR facilities in setting up their clinical MR practices.

Dr. Schultze-Haakh has lectured in many countries including Germany, Japan, Canada, then Yugoslavia and South Africa on the principles and technology of MRI. Special interest areas were advanced applications in cardiac, fast imaging techniques, angiography and especially breast MRI.

In 2001 he was co-founder of a series of Breast MRI courses and Breast MRI workshops with Bruce Porter, MD, FACR in Seattle, WA, USA, teaching physicians from many countries the intricacies of breast MRI. The workshops adhere to the breast MRI accreditation requirements of the American College of Radiology. Dr. Schultze-Haakh was instrumental in creating the high-resolution protocols used on Siemens MR scanners worldwide for breast MRI. He is now an independent consultant for breast MRI and other MR related topics, while also lecturing and assisting various institutions in research and publications.

M.F. BEN SLIMENE

Dr. Mohamed Faouzi Ben Slimane is a Professor in Biophysics and Nuclear Medicine and the head of the Nuclear Medicine Department in the Salah Azaiez Institute of Tunis. After graduating in Biophysics and in General Human Physiology from Claude-Bernard University in Lyon, France, he undertook doctoral studies in Medicine. Prior to his PhD he completed postgraduate studies working mainly in Tomography and Medical Imaging. Since 2006 Professor Ben Slimene is a referee at the French Journal of Nuclear medicine. He is also a member of the Administrative Council of the Salah Azaiez Institute (Cancer Center of Tunis).

HARRY SOLOMON

Harry Solomon has had a 35-year career in computer communication protocols, and is responsible for promoting product connectivity between GE products and collaborating systems in cardiology, radiology, and pathology. He holds leadership positions in the HL7, DICOM, and IHE standards organizations, and was the recipient of the 2010 Kite and Key Award of the National Electrical Manufacturers Association for his work in healthcare interoperability standards and education.

RICHARD STATES, DHSC, CNMT

Dr. Richard Blaine States; is the Chair of Diagnostic Services Department in the College of Health Professions at The University of Findlay. He is also the Director of the Healthcare Management, Medical Laboratory Science, Nuclear Medicine Technology and the Positron Emission Tomography / Computed Tomography Programs. He also serves as the Radiation Safety Officer for The University of Findlay.

A Certified Nuclear Medicine Technologist, Dr. States has worked in the private sector as well as in community and university hospitals and maintains licensure in nuclear medicine technology in the States of Ohio and Texas (United States). He is a member of the advisory board and radiologic advisor for Texas Tech University's HealthNet program in integrated healthcare education. He is an active member of nuclear medicine societies at the state and national level. He serves as a delegate and Chair for the Nuclear Medicine Chapter of the American Society of Radiologic Technologists. An engaged member of the University of Findlay community, Dr. States serves on numerous faculty committees. Dr. States currently serves as the UF Faculty Representative to the UF Board of Trustees Institutional Advancement Committee.

His colleagues recognize him for his professionalism, his spirit of collaboration and community, his keen organizational skills, and his positive attitude; they describe him as "a valued colleague." His students describe him as being an unbelievably dedicated teacher. To this end, Dr. States can be found in his office or one of the NMI labs or classroom or on campus most hours of the day and on weekends. Advisor and mentor to more than one hundred students, Dr. States attends to the details of their academic schedules and to the progress of their career preparation. They describe him as an excellent teacher and advisor who inspires independent learning. One student identified him as someone who encourages his students to learn "through his enthusiasm for teaching".

ELIZABETH SUTTON, MD

I am a radiologist who is board-certified in both the United States (by the American Board of Radiology) and Canada (by the Royal College of Physicians and Surgeons of Canada). I also have fellowship training in molecular imaging and in breast and body oncologic imaging. After completing my fellowships, I joined the faculty of Memorial Sloan Kettering Cancer Center.

I work primarily within the Department of Radiology's Breast Imaging Service, where I interpret mammograms, breast ultrasounds, and breast MRI as well as perform all interventional breast procedures. My clinical focus is breast MRI with a particular interest in the potential use of multi-parametric imaging for high-risk screening and breast cancer diagnosis.

ALPHONSE TAGHIAN, MD, PHD

Dr Alphonse Taghian, Professor of Radiation Oncology at Harvard Medical School, earned his MBBCh from Alexandria University in Egypt. He completed his residency in Radiation Oncology at Centre Alexis Vautrin in France, after which he pursued clinical and research fellowships at Gustave-Roussy Institut, Paris.

After obtaining his PhD in Radiobiology from Paris XI University, Dr Taghian spent four years of basic research, followed by clinical research in the Department of Radiation Oncology at Massachusetts General Hospital, Harvard Medical School. He is now the Director of Breast Radiation Oncology and Co-Director of the Breast Cancer Research Program at Massachusetts General Hospital.

An internationally recognized leader in breast radiation oncology, in particular in the field of Accelerated Partial Breast Irradiation (APBI), Dr Taghian has published more than 160 peer reviewed articles, general reviews and chapters. He has edited 2 books, one of them on the multidisciplinary approach in the treatment of breast cancer. He was awarded several NIH grants totaling around $2.7 Million for research in breast cancer and lymphedema. His main interests include ways to avoid cardiac exposure to radiation, APBI, post-mastectomy radiation and screening and early intervention for lymphedema.

JOHN TALBOT, MSC

John is a senior lecturer at Anglia Ruskin University, Cambridge. He qualified as a diagnostic radiographer in 1981 and worked for twenty years in the National Health Service; formerly as a superintendent radiographer at Walton Hospital in Liverpool, and latterly in Education and Research as a radiographer at Oxford MRI/ University College Oxford.

He developed an early interest in MRI as a school-leaver in 1977, and was one of the first radiographers in the world to gain an MSc in the field of medical imaging (MRI) in 1997. After leaving Oxford, John worked for a few years as Education Manager for the world's largest private healthcare company before being invited to apply for a senior lecturer post at Anglia Ruskin University to run MRI related pathways.

John's main interest is exploiting the parallelism between technology and learning and he is currently working on new concepts in the field of virtual learning environments, including the construction of a computer-generated "virtual-reality" MRI scanner for teaching.

John is also a registered Apple developer for mobile touch-screen applications (apps).

John regularly presents at international meetings for the Australian Institute of Radiology, The Royal Australian and New Zealand College of Radiologists, The Norwegian Society of Radiographers, The Romanian Society of MRI Radiologists, The European Federation of Radiographic Societies, The Radiological society of Saudi Arabia and Trinity College Dublin.

E. TURGUT TALI, MD

Dr. Tali, Professor of Radiology and Neuroradiology, is Director of Division of Neuroradiology of Gazi University Medical School, Department of Radiology, Ankara, Turkey. He earned his MD degree and completed his residency at the Hacettepe University Medical School and its Department of Radiology. He did his visiting neuroradiology fellowship at the University of Iowa Medical School, Department of Radiology. His main interest is CNS infections. Other area of interests included contrast media, spine imaging and intraoperative MRI. He is currently President of European Society of Neuroradiology and Turkish Society of Neuroradiology, and Member of Executive Committee of World Federation of Neuroradiological Societies. He is also President of XXth Symposium Neuroradiologicum, World Congress of Neuroradiology, which will be held in Istanbul in 2014. He also organizes European Course in Neuroradiology, which is the main path for the European Diploma in Neuroradiology. He published more than 80 manuscripts in major peer-reviewed journals. He is currently Co-editor-in-chief of "The Neuroradiology Journal" and at the Advisory Board of "European Radiology", Editorial Board member, Guest Editor of many journals. He delivered 142 lectures at major neuroradiology and radiology meetings as an invited speaker. He is one of the founder member of European Board of Neuroradiology and examiner of European Board of Radiology. He has "Honorary Membership" of major neuroradiology societies including American Society of Neuroradiology, and Russian Society of Neuroradiology.

MATTHEW THAKUR, PHD

Dr. Thakur obtained his BS degree in Chemistry from the University of Bombay and then his MS and PhD in Radiochemistry from the University of London. After his post-graduate year at the Mallinckrodt Institute of Radiology, Washington University School of Medicine he was appointed as Associate Professor of Radiology in the Dept. of Radiology at Yale University Medical School. He then moved to his current position as the Professor of Radiology and Director of the Laboratories of Radiopharmaceutical Research and Molecular Imaging at Thomas Jefferson University Hospital. He made extensive contributions to Nuclear Medicine, including the development of many instrumental radiopharmaceutical products and the publication of thirty-nine book chapters, more than three hundred research articles, several editorials and edit oversight on four additional books. For this work, he's received many prestigious, national and international awards including the Maurice Chamberland Award of the American Chemical Society, as well as the Paul Aebersol, Charles Hevesey and Cassen Awards of the Society of Nuclear Medicine. He is the past president of the International Society of Radiolabeled Blood Elements, the Indo-American Society of Nuclear Medicine, the Society of Nuclear Medicine and its Molecular Imaging Center of Excellence. Dr. Thakur currently serves on the Board of Directors for the Society of Nuclear Medicine and Chairs several of its committees.

ELWIN TILSON, ED.D.

Dr. Elwin Tilson began his career in radiologic sciences in the late 1960s when he received his initial radiography training though the U.S. Army. He earned his bachelor's degree in Radiologic Sciences from Arizona State University, his master's degree in Education from San Francisco State University, and his doctorate in a computer related area from the University of Georgia.

After seven years of full time clinical practice, Dr. Tilson became an Assistant Professor of Radiologic Technology but continued to be involved clinically. His clinical specialty is in the area of Computed Tomography and digital imaging. In 1982, he became the founding member and head of the Department of Radiologic Sciences at Armstrong Atlantic State University in Savannah, GA where he has been ever since.

Elwin has been very active professionally over the years and has held positions in professional societies for many years including Chair of the Board for the Association of Educators in Radiologic and Imaging Sciences. He has made over 60 professional presentations with over 30 at national and international meetings, as well as publishing over 50 articles in professional publications, and co-authored two books and one computer program. He also served as Editor of the journal Radiologic Sciences & Education.

Dr. Tilson's current research interests are centered around the interplay between radiation dose and image quality.

NADA TOMIC, MSC, FCCPM

Nada Tomic obtained her M.Sc. in physics at the University of Belgrade in 1996 working on semi-magnetic semiconductors. From 1998-2000, she worked as a Research Assistant at Washington University, St-Louis, MO in NMR spectroscopy. From 2002-2004 she was enrolled in Medical Physics program at McGill University. She obtained M.Sc. in Medical Physics in 2004 and she was working as a Research Assistant in PET Research Computer laboratory at Montreal Neurological Institute. Since 2004, Nada Tomic works as a clinical medical physicist at the Jewish General Hospital in Montreal. In 2006, she finished Medical Physics residency program at McGill University and in 2007 she became a Member of the CCPM. Since 2009 she holds a position of Lecturer within Medical Physics Unit at McGill University and her research activities revolve around imaging in radiotherapy, radiochromic film dosimetry at kilovoltage photon beams, and setups for radiobiological experiments. Nada Tomic is actively involved in the peer-review process of the Medical Physics journal as an Associate Editor and she became a Fellow of the Canadian College of Physicist in Medicine in September 2013.

CATHY WESTBROOK, MSC

Catherine Westbrook MSc, FHEA, PgC (HE), DCRR, CTCert, is a Senior Lecturer and post-graduate pathway leader at The Faculty of Health & Social Care, Anglia Ruskin University, Cambridge, UK where she is responsible for the post-graduate course in MRI. Catherine is also an independent teaching consultant lecturing on the MRI in Practice Course and other renowned international courses and conferences. She is also the author of Handbook of MRI Technique and MRI at a Glance, also published by Wiley.

I qualified as a Diagnostic Radiographer at St Thomas Hospital in London in 1981 and worked in London as a general radiographer until 1987. I then trained as a neuro-radiographer at the Radcliffe Infirmary in Oxford where I worked until 1990. I started my career in MRI in 1989 and set up the Oxford MRI Centre. I joined Oxford University as the Research Lead in MRI in 1996. In 1999 I joined a US private healthcare company called HealthSouth as the Director of Education and Development in their diagnostic division. I carried on this role with MIA Lodestone until 2004 when I joined Anglia Ruskin University as a Senior Lecturer in Radiography. I have written three of the best selling MRI books in the world "MRI in Practice", "Handbook of MRI Technique" and "MRI at a Glance". I am an invited international lecturer on many MRI seminars and conferences.

SHAN YAU, MSC

Mr Shan Yau is a Director of Medical Physics of the Sydney West Radiation Oncology Network, Australia. The medical physics team has 13 medical physicists, 3 physics trainees and an engineering team of 6 technical staff. The team is to provide medical physics and engineering service for Westmead and Nepean Hospital, treating 2400 patients with 6 medical linear accelerators and 200 patients with 2 orthovoltage treatment units in a year. Mr Yau earned his MSc degrees at the University of Technology Sydney and BSc degree from the University of Hong Kong. His current interests involve the use of 4D-CBCT, KV real time imaging and FFF beam delivery in the SABR treatment of lung and spine. Other area of interests included the use of deformable image fusion software packages to facilitate image registration from multi-modality image dataset and applying deformable adaptive re-contouring of the PTV/CTV and ROI. Mr Yau is a committee member of Radiation Oncology Certification Panel of the Australasian College of Physical Scientists & Engineers in Medicine. His key role in this committee is conducting practical and oral certification examinations in Australia. Through IAEA, Mr Yau is also active in training local experts from Thailand, Philippine and Malaysia; advise them how to establish a regional or national clinical training program for medical physicists. He is the consultant of the IAEA project, Upgrading Medical Physics Services in ARASIA State Parties through Education and Training. He can be contacted at shan(dot) yau(at) health(dot)nsw(dot)gov(dot)au.

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Dr. Pier Luigi Zinzani is a professor in the Dipartimento di Medicina Specialistica, Diagnostica e Sperimentale, Università degli Studi di Bologna, Via Massarenti 9 - 40138 Bologna (Italy). He graduated in Medicine and Surgery, with honours at the University of Bologna, in 1984 and obtained the Speciality in Hematology, with honours at the University of Bologna, in 1987. He was awarded a "Post-Doctoral Fellowship in Medical Physics" released by the "Roger Williams Cancer Ospitale" of Providence (USA) in 1989. He is a resident physician at the Institute of Hematology and Medical Oncology "L. & A. Seràgnoli" since 1990. Since 2002 he has been involved as investigator in 150 national and international clinical trials according to IGH-GCP and FDA regulations with experience of conducting clinical studies to ICH GCP standard.

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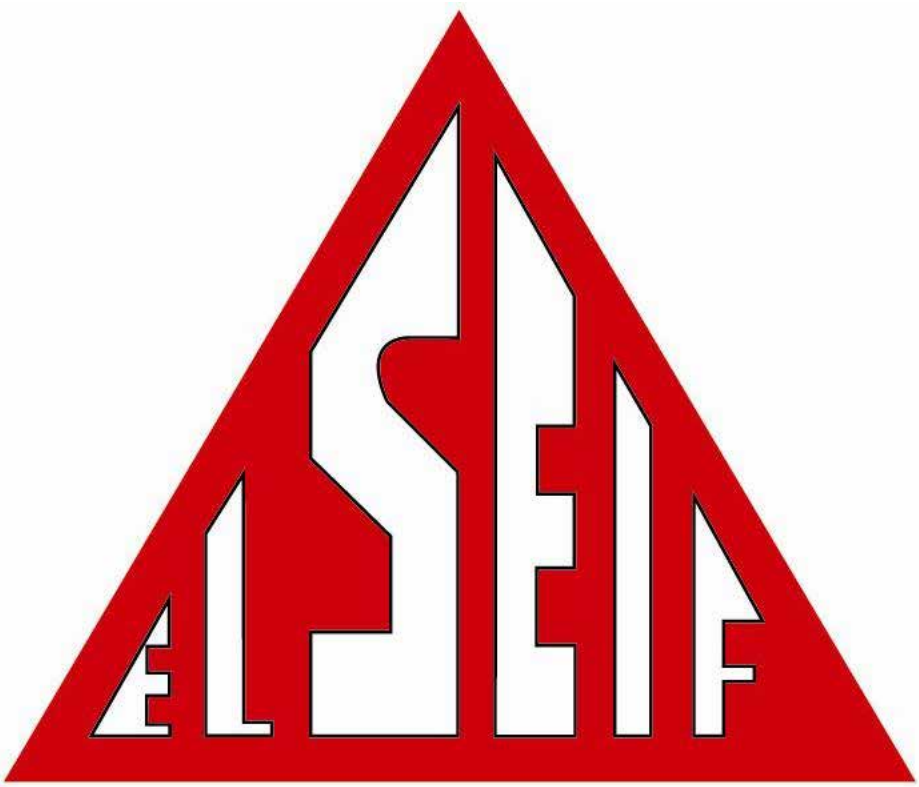
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CONFERENCE PROGRAM

International Conference on Radiation Medicine: Clinical Applications and Innovative Approaches

Intercontinental Hotel, Riyadh, Saudi Arabia, February 17 –20, 2014

Time	8:00 – 9:30 AM	9:30 – 9:45 AM	9:45 – 12:15	12:15 – 1:15 PM	1:00 – 3:30 PM	3:30 – 4:00 PM	4:00 – 5:15 PM	8:00 – 11:00 PM
Sun, Feb. 16	**PRE-ICRM2014 (Post Graduate Center, KFSH&RC)** CEC1 - World of Medical Physics CEC4 - MRI in Practice CEC10 - Basic Safety Standards (BSS) Implementation in Health Care (Joint WHO/IAEA/KFSH&RC Course) CEC11 - Quality Assurance Team for Radiation Oncology (QUATRO) & Quality Assurance Audit for Diagnostic Radiology (QUAADRILL) Improvement and Learning (Joint IAEA/ KFSH&RC Course)							
Mon, Feb. 17	**CONTINUING EDUCATION COURSES (Intercontinental Hotel)** CEC1 - World of Medical Physics CEC2 - Breast Cancer CEC3 - Advanced RT Techniques CEC4 - MRI in Practice CEC5 - Women's Breast Imaging CEC6 - Advanced Diagnostic Imaging Techniques CEC7 - Advanced Nuclear Medicine Techniques CEC8 - SPEC, PET, & CT for Technologist CEC9 - Health Informatics CEC12 - Introduction to Radiation Medicine CEC13 - Radiobiology and Radiation Safety CEC14 - Scientific Writing & Publishing	Coffee Break	Opening Ceremony Plenary Session	Prayer Lunch Break Poster Viewing Session	PARALLEL SESSIONS Radiation Oncology Diagnostic Imaging Radiation Protection & Radiobiology Breast Imaging MRI in Practice	Prayer & Coffee Break	PANEL DISCUSSION Innovative Approaches in Radiotherapy Innovative Approaches in Diagnostic Imaging Innovative Approaches in Radiation Protection & Radiobiology MRI in Practice	Evening Presentation / Dinner
				ICRM2014 Exhibits				
Tues, Feb. 18		Coffee Break	Plenary Session	Prayer Lunch Break Poster Viewing Session	PARALLEL SESSIONS Radiation Oncology Diagnostic Imaging Radiation Protection & Radiobiology Nuclear Medicine MRI in Practice	Prayer & Coffee Break	PARALLEL SESSIONS Who's who at ICRM2014 Radiation Oncology Abstracts Radiation Oncology Physics Abstracts Diagnostic Imaging Abstracts Radiation Protection & Radiobiology Abstracts Technologist Abstracts MRI in Practice	
					ICRM2014 Exhibits			
Wed. Feb. 19		Coffee Break	Plenary Session Closing Ceremony	Prayer Lunch Break Poster Viewing Session	WORKSHOPS (KFSH&RC)	Prayer & Coffee Break	WORKSHOPS (KFSH&RC)	Evening Presentation / Dinner
			ICRM2014 Exhibits					
Thurs, Feb.20	WORKSHOPS (KFSH&RC)	Coffee Break	WORKSHOPS (KFSH&RC)	Prayer Lunch Break	Closing Ceremony / Distribution of Certificates (Venue: Prince Salman Auditorium)		Al Thumamah Park & Falcon Show/ Evening Dinner	

Pre-ICRM2014 Courses and Workshops				
TIME 7:00–8:00 AM	**On-Site Registration** **Venue:** *Post Graduate Center, KFSH&RC*			
TIME 8:00–8:15 AM	**Pre-ICRM Welcome** **Dr. Belal Moftah,** Chairman, ICRM Organizing Committee **Prof. Daud Mohamed,** Deputy Director General, IAEA **Prof. Rashed Al Rashed Al Hmaid,** Chief Operating Officer, *KFSH&RC* **Venue:** *Post Graduate Auditorium, KFSH&RC*			
8:15–9:45 AM	**Session 1: Continuing Education Courses (Part I)**			
Course No	CEC 1	CEC 4	CEC 11	CEC 12
Course Title	World of Medical Physics	MRI in Practice	Joint IAEA/KFSH&RC QUATRO & QUADRILL	Joint AAEA/KACARE/KFSH&RC Introduction to Radiation Medicine
Venue	KFSH&RC, Post Graduate Classroom 1	KFSH&RC, Post Graduate Auditorium	KFSH&RC, Post Graduate Classroom 3	KFSH&RC, Post Graduate Classroom 4
Coordinator	Slobodan Devic, PhD	Nabeel Mishah, MBA	Ahmed Meghzifene, PhD	Belal Moftah, PhD
Chairpersons	Waleed Al-Najjar, PhD	John Talbot, MSc; Cathy Westbrook, MSc	Ahmed Meghzifene, PhD	Abdulrahman Alarfaj, PhD
CEC Lecture 8:15–8:45 AM	**L1: Evolving Trends in Academic and Clinical Education of Medical Physicists** Ervin Podgorsak	**L1: Basic Principles** Cathy Westbrook	**L1: Opening and Workshop Objective** Ahmed Meghzifene	**L1: King Faisal Specialist Hospital & Research Centre** Mamdouh Albaqumi
			L2: Risk Management in Radiotherapy Tomas Kron	
			L3: Overview of IAEA Guidelines on Comprehensive Audits Ahmed Meghzifene	**L2: Arabic Atomic Energy Agency** Ahmad Kassem
CEC Lecture 8:45–9:15 AM	**L2: Medical Physics in Saudi Arabia: Past, Present, and Future** Belal Moftah		**L4: The Need for Comprehensive Audits in Radiation Oncology: Radiation Oncologist's Perspective** Mohammad Al Shabanah	
			L5: The Need for Comprehensive Audits in Radiation Oncology: Medical Physicist's Perspective Tomas Kron	**L3: King Abdullah City for Atomic and Renewable Energy** Mohammed Garwan
CEC Lecture 9:15–9:45 AM	**L3: Tutorial on Advanced Radiotherapy Techniques** Waleed Al-Najjar		**L6: The Need for Comprehensive Audits in Radiation Oncology: Therapy Radiographer's Perspective** Gurmeet Singh	**L4: Radiation in Medicine: Introduction** Belal Moftah
9:45–10:00 AM	**Coffee Break**			
10:00 AM–12:15 PM	**Session 2: Continuing Education Courses (Part II)**			
Chairpersons	Cameila Constantinescu, PhD	John Talbot, MSc; Cathy Westbrook, MSc	Tomas Kron, PhD	Refaat AlMazrou, MSc
CEC Lecture 10:00–10:30 AM	**L4: Tutorial on Radiation Therapy Process** Mohammad Al Shabanah	**L2: Image Contrast** Cathy Westbrook	**L7: IAEA Support to National Dosimetry Audits** Ahmed Meghzifene	**L5: Radiopharmaceuticals and Tracers** M. F. Ben Slimene
CEC Lecture 10:30–11:00 AM	**L5: Practical Aspects of Medical Physics Certification Examinations** Ervin Podgorsak		**L8: Auditing Advanced Technology** Tomas Kron	**L6: Nuclear Medicine: Physics Aspect** Refaat AlMazrou
CEC Lecture 11:00–11:30 AM		**L3: Instrumentation** John Talbot	**L9: Discussions on Clinical Audits of Radiotherapy Practice** All Faculty (A. Meghzifene, B. Moftah, M. Al Shabanah, T. Kron, K. Faulkner, G. Singh) and Participants	**L7: Nuclear Medicine: Clinical Aspect** Mahmoud Tuli
CEC Lecture 11:30–12:15 PM	**L6: First Anonymous Practical Examination** Ervin Podgorsak			**L8: Cardiology and CathLab** Hani Al-Sergani

12:15–1:15 PM	Prayer and Lunch Break Venue: Post Graduate Classrooms 7 and 8 Foyer			
1:15–3:30 PM	**Session 3: Continuing Education Courses (Part III)**			
Chairpersons	**Slobodan Devic, PhD**	**John Talbot, MSc; Cathy Westbrook, MSc**	**Keith Faulkner, PhD**	**Belal Moftah, PhD**
CEC Lecture 1:15-2:00 PM	**L7: Tutorial on X-ray Imaging for Radiotherapy** Nada Tomic	**L4: Safety** John Talbot	**Comprehensive Clinical Audits of Diagnostic Radiology Practices: A Tool for Quality Improvement: Quality Assurance Audit for Diagnostic Radiology Improvement and Learning (QUAADRIL)** **L10: Introduction to Clinical Audits in Diagnostic Radiology** Keith Faulkner **L11: The Need for Comprehensive Audits: A Radiologist's Perspective** Irfan Mamoun	**L9: Applications of Non-ionizing Radiation** Dimitre Hristov
CEC Lecture 2:00-2:30 PM	**L8: Tutorial on MRI and PET for Radiotherapy** Slobodan Devic		**L12: The Need for Comprehensive Audits: A Medical Physicist's Perspective** Keith Faulkner **L13: The Need for Comprehensive Audits: A Medical Technologist's Perspective** Naheed Gamali	**L10: Radiation Oncology: Physics Aspects** Belal Moftah
CEC Lecture 2:30-3:00 PM	**L9: Tutorial on Radiation Biology** Ghazi Alsbeih		**L14: Incidents and Their Investigation: An Interactive Session** Keith Faulkner	**L11: Radiation Oncology: Clinical Aspects** Mohammad Al-Shabanah
CEC Lecture 3:00-3:30 PM	**L10: Tutorial on Brachytherapy** Slobodan Devic		**L15: Experience of Undertaking QUADRIL Audits** Keith Faulkner **L16: Discussions on Clinical Audits of Diagnostic Radiology Practices** All Faculty (K. Faulkner, N. Gamali, T. Kron, I. Mamoun, A. Meghzifene) and Participants	**L12: Diagnostic Imaging: Clinical Aspect** Salahudin El Naas
3:30-4:00 PM	Asr Prayer and Coffee Break			
4:00–5:30 PM	**Session 4: Continuing Education Courses (Part IV)**			
Chairpersons	**Slobodan Devic, PhD**	**John Talbot, MSc; Cathy Westbrook, MSc**	**Ahmed Meghzifene, PhD**	**Adnan AlWatban, PhD**
CEC Lecture 4:00-4:30 PM	**L11: Tutorial on Energy Transfer and Energy Absorption in Photon Interactions with Matter** Ervin Podgorsak	**L5: Spin Echo** John Talbot	**Discussion session** • What are the Challenges for Setting Up Compressive Audits at the National Level? • How Can the Concept of Audits be Promoted? Do we Need Regulations? • How do we Deal/Follow-up with Serious Shortcomings • Other Discussion Items from the Audience	**L13: Diagnostic Imaging: Physics Aspect** Adnan AlWatban
CEC Lecture 4:30-5:00 PM	**L12: Tutorial on Interaction of Charged Particles with Matter** Ervin Podgorsak		**Conclusions/Recommendations** All Faculty and Participants	**L14: Radiography** Ahnaf Arafah
CEC Lecture 5:00-5:50 PM				

TIME 7:00–8:00 AM	On-Site Registration **Venue:** Intercontinental Hotel											
8:00–9:30 AM	**Session 5: Continuing Education Courses (Part V)**											
Course No	**CEC 1**	**CEC 2**	**CEC 3**	**CEC 4**	**CEC 5**	**CEC6**	**CEC 7**	**CEC 8**	**CEC 9**	**CEC 12**	**CEC 13**	**CEC 14**
Course Title	**World of Medical Physics**	**Breast Cancer**	**Advanced RT Techniques**	**MRI in Practice**	**Women's Breast Imaging**	**Advanced Diagnostic Imaging Techniques**	**Advanced Nuclear Medicine Techniques**	**SPECT, PET & CT for Technologists**	**Health Informatics**	**Introduction to Radiation Medicine**	**Radiation Protection & Radiobiology**	**Scientific Writing & Publishing**
Venue	**AlFardousa**	**AlLazurd**	**Hall C**	**AlZumurrud**	**AlMasmak**	**Buraidah Hall**	**AlYaqoot**	**Oasis**	**Qasr Khozam**	**AlHareeq**	**Hall A**	**AlHaief**
Coordinator	**Slobodan Devic, PhD**	**Yasser Khafaga, MD**	**Rana Mahmood, MD**	**Nabeel Mishah, MBA**	**Nuha Khoumais, MD**	**Lamia Jamjoom, MD**	**Mahmoud Tuli, MD**	**Gary Sayed, PhD**	**Metab Alkubeyyer, MD**	**Belal Moftah, PhD**	**Ghazi Alsbeih, MD, PhD**	**Peter Hall, MD, PhD**
Chairpersons	**Nabil Maalej, PhD**	**Majid Al-Othman, MD, Yasser Khafaga, MD**	**Essam Murshid, MD, Rana Mahmood, MD**	**John Talbot, MSc; Cathy Westbrook, MSc**	**Nuha Khoumais, MD; Iman Baroum, MD**	**Irfan Mamoun, MD; Adnan AlWatban, PhD**	**Ahmad Almuhaideb, MD; Saleh Othman, MD**	**Gary Sayed, PhD**	**Metab Alkubeyyer, MD**	**Abdelraheem Kinsara, PhD**	**Abdelilah Aboussekhra, PhD**	**Peter Hall, MD, PhD; Hilary Russell, PhD**
CEC Lecture 8:10-8:30 AM	**L13: Tutorial on Target and Flattening Filter in Production of Megavoltage X-ray Beams: Theoretical and Practical Aspects** Ervin Podgorsak	**L1: Review of All Female Breast Cancer Cases from the Saudi Cancer Registry** Dahish Ajarim	**L1: PET-CT Applications in RT Planning** Giovanna Pepe	**L6: Image Production** John Talbot	**L1: Breast MRI in 2014** Nathalie Duchesne	**L1: Multi-Parametric Advanced MR Imaging of Brain Tumors: Practical Approach** Manzoor Ahmed	**L1: PET Radiopharmaceuticals: Valuable Tools in Tumor Therapy** Marco Chinol	**L1: Overview of CT Technology and Current Practices** Elwin Tilson	**L1: 20 years of PACS: 10 Lessons Learned** Bradley Erickson	**L15: Radiation Protection I** Ibraheem AlAnazi	**L1: An Update of Radiation Induced Genetic Damage** Nasir Ali Afsar	**L1: The Changing World of Scientific Publishing** Peter Hall
CEC Lecture 8:30-8:50 AM	**L14: Tutorial on Medical Linear Accelerator Operation** Shan Yau	**L2: Imaging of Brachial Plexus** E. Turgut Tali	**L2: Intensity Modulated Radiation Therapy for Gynecologic Cancers: Past, Present and Future** Arno Mundt		**L2: Breast MRI – Scanning Protocol** Helmuth Schultze-Haakh	**L2: A Multimodal Imaging Approach to the Study of Schizophrenia** Peter Morris	**L2: Determining Efficacy of Breast Cancer Therapy by PET Imaging of HER2 mRNA** Matthew Thakur	**L2: Overview of SPECT/CT Technology and Current Practices** Richard States	**L2: Introduction to IHE – Integrating the Healthcare Enterprise"** Harry Solomon	**L16: Radiation Protection II** Ibraheem AlAnazi	**L2: Biological Effects of non-Ionizing Radiation** Abdelilah Aboussekhra	**L2: What Makes Good Writing?** Hilary Russell
CEC Lecture 8:50-9:10 AM	**L15: Tutorial on Calibration of Photon Beams Following TRS398 Recommendations** Mohammed Saiful Huq	**L3: Imaging of the Axilla** Ruud Pijnappel	**L3: MRI Simulation for Radiotherapy Treatment Planning** Slobodan Devic		**L3: MR-Update on the Upcoming Version of the BIRADS Lexicon** Elizabeth Sutton	**L3: Flow Diverters in the Treatment of Complex Brain Aneurysms** Khalil Kurdi	**L3: PET-CT Applications in RT Planning** Giovanna Pepe	**L3: Overview of PET/CT Technology and Current Practices** Gary Sayed	**L3: Status of Healthcare IT** N. Nishant	**L17: Basic Safety Standards** Maria Perez	**L3: Introduction to Radiation Protection** Belal Moftah	**L3: Understanding the Peer Review Process & Journal Production** Peter Hall
CEC Lecture 9:10-9:30 AM	**L16: Tutorial on Calibration of Electron Beams Following TRS398 Recommendations** Mohammed Saiful Huq	**L4: Breast Anatomy for Radiation Treatment** Rita Pant	**L4: MR Integrated with Radiotherapy** Kevin Brown			**L4: Systemic Diseases and Spine** E. Turgut Tali	**L4: Neuroendocrine Tumors Diagnosis (OctreoScan to 68Ga-DOTA Peptide PET-CT)** Giovanna Pepe		**L4: Status of DICOM standards for Radiology, Radiation Oncology, and Radiaiton Protection** Harry Solomon	**L18: Responsibilities of Radiation Safety Officers and Workers (RSO)** Abdulrahman Alarfaj	**L4: Radiation Emitting Medical Device Regulation** Ali Aldalaan	**L4: The Structure of a Paper and The Art of Concise Writing** Hilary Russell
9:30–9:45 AM	**Coffee Break**											

9:45-10:30 AM	Session 6: ICRM2014 Opening Ceremony Venue: *Intercontinental Hotel* *Buraidah Hall*				
	ICRM 2014 Opening Ceremony				
	Recitation of the Holy Quran: Zyad Al Zahrani, Medical Student **Opening Remarks:** Dr. Belal Moftah, Chairman, ICRM Organizing Committee **Co-Organizer's Welcome Addresses:** Dr. Maria del Rosario Perez, Responsible Officer for the Global Initiative on Radiation Safety in Health Care Settings, World Health Organization (WHO) H.E. Dr. Daud Mohamad, Deputy Director General, International Atomic Energy Agency (IAEA) H.E. Dr. Mohammed Al-Meshal, President, Saudi Food and Drug Authority (SFDA) H.E. Dr. Hashem Yamani, President, King Abdullah City for Atomic and Renewable Energy (KA CARE) **Patronage Welcome Address:** H.E. Dr. Qasim Al Qasabi, Chief Executive Officer, King Faisal Specialist Hospital and Research Centre (KFSH&RC)				
10:45AM-12:15 NN	Session 7: Plenary Keynote Lectures I Venue: *Buraidah Hall* Chairpersons: *Saleh Al Mofada, MD and Khalid Abu Khabar, PhD*				
10:45-11:15 AM	**PKN Lecture 1** **Atoms for Peace: Meeting Basic Human Needs Through Science and Technology** Daud Mohamad, PhD				
11:15-11:45 AM	**PKN Lecture 2** **Health Care: Is Access to Health Care a Basic Human Right or Privilege?** Ervin Podgorsak, PhD				
11:45 AM-12:15 PM	**PKN Lecture 3** **Non-ionizing Electromagnetic Radiation Exposure from Cell Phones & Base Stations: What's the Nature of the Exposure and Its Associated Risk** Jerrold Bushberg, PhD				
12:15-1:15 PM	Prayer and Lunch Break Poster Viewing Session Opens at Exhibition				
	Session 8: Parallel Tracks I				
1:15-3:30 PM	Session 8 A: Radiation Oncology Track Chairpersons: *Ali Al-Zahrani, MD and Suliman Al-Ghamdi, MD*	Session 8 B: Diagnostic Imaging Track Chairpersons: *Omer Demirkaya,PhD and Mohamed Doger, MD*	Session 8 C: Radiation Protection & Radiobiology Track Chairpersons: *David Lloyd, PhD and Ghazi Alsbeih, MD, PhD*	Session 8 D: Breast Imaging Track Chairpersons: *Wafa Alkhyal, MD and Ommalkhair Abulkhair, MD and Rita Pant, MD*	CEC4 MRI in Practice Nabeel Mishah, MBA
Venue	Hall C	Buraidah Hall	Hall A	AlHareeq	AlZumurrud
1:15-1:40 PM	**RO Lecture 1** **The Ongoing Search for Optimal Multimodality Therapy for Nasopharyngeal Carcinoma (NPC)** Brian O'Sullivan, MD	**DI Lecture 1** **Basics of MRS** E. Turgut Tali, MD	**RRPO Lecture 1** **Overview of the New BSS and Relevant Requirements for Medical Settings** Maria Pérez, MD	**BI Lecture 1** **Breast Cancer Screening in 2014** Nathalie Duchesne, MD	**L7: Image Optimization** Cathy Westbrook
1:40-2:05 PM	**RO Lecture 2** **Indications for Radiation Treatment after Neoadjuvant Chemotherapy in Patients Treated for Breast Cancer** Alphonse Taghian, MD	**DI Lecture 2** **How to Use Diffusion and Perfusion in Brain Tumors** Bradly Erickson, MD, PhD	**RRPO Lecture 2** **Acute Biological Effects of High Dose Radiation Exposure: An Overview** Jerrold Bushberg, PhD	**BI Lecture 2** **Challenges Facing Breast Cancer Screening in the Kingdom of Saudi Arabia** Iman Baroum, MD; Fatmah Almulhim, MD; Fatinah Altahan, MD; Maha Alfehaily, MD	
2:05-2:30 PM	**RO Lecture 3** **Prostate Cancer Specific Alteration of DNA Repair: A New Path Toward Radiation Sensitization** Theodore Leslie DeWeese , MD	**DI Lecture 3** **Cardiothoracic Imaging in Oncology** Michael Bolen, MD	**RRPO Lecture 3** **GRID Technique** Majid Mohuiddin, MD		
2:30-2:55 PM	**RO Lecture 4** **Image-Guided Radiation Therapy: A Physician's Perspective** Arno Mundt, MD	**DI Lecture 4** **Spinal Tumors** E. Turgut Tali, MD	**RRPO Lecture 4** **Radiobiology of the Prodromal Responses and Acute Radiation Syndrome Following High Doses** David Lloyd, PhD	**BI Lecture 3** **DCIS Imaging Spectrum** Asma'a Aldabbagh, MD	
2:55-3:20 PM	**RO Lecture 5** **Workflow and Standardization of the Radiation Therapy Process** Dimitre Hristov, PhD	**DI Lecture 5** **Radiation Exposure in Medical Imaging: Effective Risk/Benefit Communication Techniques** Jerrold Bushberg, PhD	**RRPO Lecture 5** **Biological Dosimetry for Mass Casualties Radiation Events** David Lloyd, PhD	**BI Lecture 4** **Breast MRI Challenges** Helmuth Schultze-Haakh, PhD **BI Lecture 5** **Imaging of the Axilla** Ruud Pijnappel, MD	
3:20-3:30 PM	**Discussion**	**Discussion**	**Discussion**	**Discussion**	

3:30-4:00 PM	Asr Prayer and Coffee Break			
4:00-5:55 PM	Session 9: Panel Discussions			
	Session 9 A: Innovative Approaches in Radiation Therapy Moderators: *Mohammed Mohiuddin, MD and Belal Moftah, PhD*	Session 9 B: Innovative Approaches in Diagnostic Imaging Moderators: *Sattam Lingawi, MD and Ali Almesned, MD*	Session 9 C: Innovative Approaches in Radiation Protection & Radiobiology Moderators: *David Lloyd, PhD* and *Jerrold Bushberg, PhD*	CEC4 MRI in Practice Nabeel Mishah, MBA
Venue	Hall C	Buraidah Hall	Hall A	AlZumurrud
4:00-4:10 PM	**RT PD1** **Bone Marrow Sparing-IMRT Approaches** Arno Mundt, MD	**DIRS PD1** **Microbubble Contrast Enhanced Ultrasound: Evaluation of Axillary Lymph Nodes** Kadria El Haddad, MD	**RRS PD1** **Radiation Protection in Health Care – Challenges and Opportunities** Maria Pérez, MD	
4:10-4:20 PM	**RT PD2** **Imaging for Stereotactic Radiosurgery and Stereotactic Ablative Body Radiotherapy** Mohammed Saiful Huq, PhD	**DIRS PD2** **Innovations in PET Breast Imaging Techniques** Matthew Thakur, MD	**RRS PD2** **Radiation Protection in Medicine** Keith Faulkner, PhD	
4:20-4:30 PM	**RT PD3** **Partial Breast Irradiation: A New Paradigm** Alphonse Taghian, MD	**DIRS PD3** **MRI Guided HIFU of Breast Tumors: Current Status and Future** Ruud Pijnappel, MD	**RRS PD3** **NCRP Update on Report Activity with Emphasis on Radiation Protection in Medicine** Jerrold Bushberg, PhD	
4:30-4:40 PM	**RT PD4** **Academic and Clinical Education of Medical Physicists** Ervin Podgorsak, PhD	**DIRS PD4** **Structural and Functional MRI at Ultra-High Field** Peter Morris, PhD	**RRS PD4** **Traceability of Measurements in Radiation Protection Dosimetry** Ahmed Meghzifene, PhD	**L8: Artefacts 1** John Talbot
4:40-4:50 PM	**RT PD5** **Radiation-Inducible Molecular Targets - Using Radiation as a Drug** Norman Coleman, MD	**DIRS PD5** **Innovative Approaches in Radioembolization** Riad Salem, MD	**RRS PD5** **Latest Advances in Luminescent Materials and Radiation Instrumentation** Mark Akselrod, PhD	
4:50-5:00 PM	**RT PD6** **Protons & carbons - myths & realities** Pedro Andreo, PhD	**DIRS PD6** **Advanced Imaging of the Brain for Assessing Anti-Angiogenic Agents** Bradley Erickson, MD, PhD	**RRS PD6** **New OSL Dosimeter for Radioprotection of Personnel** Marc Million, PhD	
5:00-5:10 PM	**RT PD7** **Head and Neck Radiotherapy in the era of HPV, hypoxia markers and other non-anatomic prognostic and predictive factors** Brian O'Sullivan, MD	**DIRS PD7** **Innovative Approaches in Internal Radiation Dosimetry** Glenn Flux, PhD	**RRS PD7** **Biodosimetry for Radiation Events** David Lloyd, PhD	
5:10-5:20 PM	**RT PD8** **Warburg Effect – Quo Vadis PET/CT?** Slobodan Devic, PhD	**DIRS PD8** **Innovative Approaches Towards Low Dose CT for Pediatrics and Adults** Mannudeep Kalra, MD	**RRS PD8**	**L9: Artefacts 2** John Talbot
5:20-5:50 PM	**Discussions** All Panelists	**Discussions** All Panelists	**Discussions** All Panelists	
7:30 PM	Gala Dinner			
8:00-10:00 PM	Gala Dinner and Evening Presentation Sponsored by *Al-Faisaliah Medical Systems* Venue: *Intercontinental Hotel*			

TIME 7:00–8:00 AM	On-Site Registration **Venue:** Intercontinental Hotel											
8:00-9:30 AM	Session 10: Continuing Education Courses (Part VI)											
Course No	CEC 1	CEC 2	CEC 3	CEC 4	CEC 5	CEC 6	CEC 7	CEC 8	CEC 9	CEC 12	CEC 13	CEC 14
Course Title	World of Medical Physics	Breast Cancer	Advanced RT Techniques	MRI in Practice	Women's Breast Imaging	Advanced Diagnostic Imaging Techniques	Advanced Nuclear Medicine Techniques	SPECT, PET & CT for Technologists	Health Informatics	Introduction to Radiation Medicine	Radiation Protection & Radiobiology	Scientific Writing & Publishing
Venue	AlFardousa	AlLazurd	Hall C	AlZumurrud	AlMasmak	Buraidah Hall	AlYaqoot	Oasis	Qasr Khozam	AlHareeq	Hall A	AlHaief
Coordinator	Slobodan Devic, PhD	Yasser Khafaga, MD	Rana Mahmood, MD	Nabeel Mishah, MBA	Nuha Khoumais, MD	Lamia Jamjoom, MD	Mahmoud Tuli, MD	Gary Sayed, PhD	Metab Alkubeyyer, MD	Belal Moftah, PhD	Ghazi Alsbeih, MD, PhD	Peter Hall, MD, PhD
Chairpersons	Abdelhamid Saoudi, PhD	Jamal Elhusaini, MD, Abdoulrahman Al Hadab, MD	Maha Al Edrisi, MD, Abdullah Alsuhaibani, MD	John Talbot, MSc; Cathy Westbrook, MSc	Laila Ashkar, MD and Maha AlFehaily, MD	Amr Ajlan, MD; Khalid Khashoggi, MD	Hossam El-Zeftawi, MD; Hani Al-Sergani, MD	Lina Hammad, PhD	Moneif Eid	Musaed AlMalki, PhD	Khaled Al-Hadyan, MSc	Peter Hall, MD, PhD; Hilary Russell, PhD
CEC Lecture 8:10-8:30 AM	**L17: IMRT – an overview** Mohammed Saiful Huq	**L5: Breast Boosts Techniques** Yassir Bahadur	**L5: Patient Selection Criteria for IOERT** Benjamin Calvo		**L4: DCIS Imaging Update** Ruud Pijnappel	**L5 CT and MRI of the Aorta** Michael Bolen	**L5: Cardiac SPECT: Myocardial Perfusion and Viability** Ahmed Fathala	**L4: Overview of Image Fusion/ Processing Technology and Current Practices** Omer Demirkaya	**L5: Clinical Image Sharing Technologies for Medical Imaging Enterprises** Bradley Erickson	**L19: Education and Training Requirements** Sitti Ariffin	**L5: Variation of Radiosensitivity Between Individuals** Ghazi Alsbeih	**L5: Getting it Right First Time: Instruction to Authors** and **Getting it Right First Time: Titles and Abstracts** Peter Hall
CEC Lecture 8:30-8:50 AM	**L18: Tutorial on Implementation of Image Guided Radio Therapy** Nada Tomic	**L6: Improving Breast Radiotherapy: from Imaging to Delivery** Dimitre Hristov	**L6: The Principles of H&N Cancer Management in The Era of IMRT and IGRT** Brian O'Sullivan			**L6: Esophageal Trauma** Francis Scholz	**L6: Cardiac PET: Myocardial Perfusion and Viability** Mouaz Al-Mallah	**L5: A Panoramic Overview of OB/GYN and Emergency Ultrasound** Saleh AbdulAly	**L6: E-Learning Management System in Imaging Department** Metab Alkubeyyer		**L6: Patient Dose and Deleterious Effects** Ibraheem Al-Anazi	**L6: Getting it Right First Time: Dealing with References** and **Getting it Right First Time: Language, Structure, Phrasing and Writing Style** Hilary Russell
CEC Lecture 8:50-9:10 AM	**L19-20 Tutorial on Small Field Dosimetry** Pedro Andreo	**L7: The Use of Proton Beam in The Treatment of Breast Cancer** Alphonse Taghian	**L7: RapiArc and RapidPlan** Martin Sabel		**L5: Mammogram and Ultrasound-Update on The Upcoming Version of The BIRADS Lexicon** Elizabeth Sutton	**L7: CT Guided Biopsy and Ablation in the Chest** Michael Bolen	**L7: Cardiac CT: Combined Assessment of Coronary Artery and Perfusion** Mirvat Alasnag	**L6: Professional Motivational Session** Saleh Alalaiyan	**L7: Vendor Neutral Achieve** Nabeel Mishah	**L20: Health Physics** William Parker	**L7: VOMIT: Victim of Medical Imaging Technology** Nigel Pashely	**L7: Getting it Right First Time: Figures, Table and Graphs** Peter Hall
CEC Lecture 9:10-9:30 AM		**L8: Radiation Associated Second Breast Cancer** Yasser Khafaga	**L8: Advances in Cranial-Spinal Radiation Therapy** William Parker		**L6: Mammographic Presentation of High Risk Lesions** Ruud Pijnappel	**L8: QA in Mammography** Keith Faulkner	**L8: Cardiac MRI: Assessment of Myocardial Perfusion and Viability** Scott Flamm	**L7: Image Critique** Habis Alhalaika	**L8: Making the Most of DICOM – Keys to improved workflow** Harry Solomon	**L21: Radiation Biology** Ghazi Alsbeih	**L8: OSL Detectors for Radiation Dosimetry** Mark Akselrod	**L8: Getting it Right First Time: Other Things Journals Ask for and the Problem of The Cover Letter Metadata** Peter Hall
9:30-9:45 AM	Coffee Break											

9:45 AM -12:15 PM	**Session 11: Plenary Keynote Lectures II** **Venue: Buraidah Hall** **Chairpersons:** *Ather Radwi, MD and Abdulaziz Al-Sugair, MD*				
9:45-10:15 AM	**PKN Lecture 4** **Advances in Cardiac Imaging, CT and MRI** Scott Flamm, MD				
10:15-10:45 AM	**PKN Lecture 5** **Structural and Functional MRI at Ultra-High Field** Peter Morris, PhD				
10:45-11:15 AM	**PKN Lecture 6** **Molecular Breast Imaging: PET/CT, BSGI and PEM** Elizabeth Sutton, MD				
11:15 AM-11:45 PM	**PKN Lecture 7** **Radioembolization for HCC: State of the Science** Riad Salem, MD				
11:45-12:15 PM	**PKN Lecture 8** **Radioimmunotherapy in the Scenario of Follicular Lymphoma Treatment** Pier Zinzani, MD				
12:15-1:15 PM	**Prayer and Lunch Break**				
	Session 12: Parallel Tracks II				
1:15-3:30 PM	**Session 12 A: Radiation Oncology Track** **Chairpersons:** *Mohamed Zaghloul, MD and Mohamed Bayoumy, MD*	**Session 12 B: Diagnostic Imaging Track** **Chairpersons:** *Nizar Nakshabandi, MD and Mohammed Abubacker, MD*	**Session 12 C: Radiation Protection & Radiobiology Track** **Chairpersons:** *Ghazi Alsbeih, MD, PhD and Mark Akselrod, PhD*	**Session 12 D: Nuclear Medicine Track** **Chairpersons:** *Hamad Al-Suhaibani, MD and Abdulraouf Maimani, MD*	**CEC4** **MRI in Practice** **Chairpersons:** *John Talbot, MSc and Cathy Westbrook, MSc*
Venue	Hall C	Buraidah Hall	Hall A	AlHareeq	AlZumurrud
1:15-1:40 PM	**RO Lecture 6** **Medulloblastoma and Ependymoma: Evolution in Radiotherapy Part I** Thomas Merchant, MD	**DI Lecture 6** **Imaging of Postoperative Breast** Elizabeth Sutton, MD	**RRPO Lecture 6** **Stochastic Biological Effects of Low Dose Radiation Exposure: An Overview Cancer and Noncancer Risks** Jerrold Bushberg, PhD	**NM Lecture 1** **Radioembolization for Colorectal and Other Liver Metastases** Riad Salem, MD	**L10: k-Space 1** Cathy Westbrook
1:40-2:05 PM	**RO Lecture 7** **Medulloblastoma and Ependymoma: Evolution in Radiotherapy Part II** Thomas Merchant, MD	**DI Lecture 7** **Genetic Approach to PET imaging of Breast Cancer: Why Do We Need This Approach?** Matthew Thakur, MD	**RRPO Lecture 7** **Responding to a Radiological or Nuclear Terrorism Incident: A Guide for Decision Makers (NCRP Report No. 165)** Jerrold Bushberg, PhD	**NM Lecture 2** **Personalized Dosimetry and Tumoral Dose Intensification with TheraSphere in Hepatocellular carcinoma: A New Personalized Promising Concept** Etienne Garin, MD	
2:05-2:30 PM	**RO Lecture 8** **Minimizing Short- and Long-term Complications of Radiation Therapy for Soft Tissue Sarcoma"** Brian O'Sullivan, MD	**DI Lecture 8** **Acute Mesenteric Ischemia** Francis Scholz, MD	**RRPO Lecture 8** **Biological Dosimetry: Two Cases Study** David Lloyd, PhD	**NM Lecture 3** **TheraSphere in Other than HCC Indications; Renn-es Experience in Cholangiocarci-noma, Contrala-teral Hypertrophy** Etienne Garin, MD	
2:30-2:55 PM	**RO Lecture 9** **Consistency in Radiotherapy Dosimetry: Current Issues with Reference Quality** Pedro Andreo, PhD	**DI Lecture 9** **MRI in the Management of Patients with Cardiomyopathy** Scott Flamm, MD	**RRPO Lecture 9** **Fundamentals of Luminescent Materials and Instrumentation for Medical Physics and Dosimetry** Mark Akselrod, PhD	**NM Lecture 4** **Lu-177/ Y-90 DotaTate/Toc Therapy in NET** Giovanna Pepe, MD	
2:55-3:20 PM	**RO Lecture 10** **IAEA Support for Compressive Audits in Radiation Medicine** Ahmed Meghzifene, PhD	**DI Lecture 10** **Dual Energy CT: Approaches and Applications** Mannudeep Kalra, MD	**RRPO Lecture 10** **Quality Assurance and Patient Safety in a Modern Radiation Oncology Department** William Parker, MSc	**NM Lecture 5** **PET-CT in Lymphoma** Salahudin El Naas, MD **NM Lecture 6** **The Role of Radioimmunotherapy in Other B-cell Lymphomas** Pier Zinzani, MD	
3:20-3:30 PM	**Discussion**	**Discussion**	**Discussion**	**Discussion**	
3:30-4:00 PM	**Asr Prayer and Coffee Break**				

	Session 13: Parallel Sessions						
4:00-5:50 PM	Session 13 A: Who's Who at ICRM 2014 Chairpersons: *Sultan AlSedairy, PhD and Khalid AlOthman, MD*	Session 13 B: Radiation Oncology Abstracts Chairpersons: *Medhat ElSebaie, MD and Ibrahim Al-Omary, MD*	Session 13 C: Medical Physics Abstracts Chairpersons: *Ahmad Nobah, MSc and Sami Alshaikh, PhD*	Session 13 D: Diagnostic Imaging Abstracts Chairpersons: *Khalid Salman, MD and Ali Y. Zailai, PhD*	Session 13 E: Radiation Protection & Radiobiology Abstracts Chairpersons: *Ghazi Alsbeih, MD, PhD and Khaled Al-Hadyan, MSc*	Session 13 F: Technologist Track Chairpersons: *Essam Mattar, PhD.*	CEC4 MRI in Practice Chairpersons: *John Talbot, MSc and Cathy Westbrook, MSc*
Venue	Buraidah Hall	Hall C	AlHareeq	AlYaqoot	Hall A	Oasis	AlZumurrud
4:00-4:10 PM	- King Faisal Specialist Hospital and Research Centre (KFSH&RC): Prof. Dr. Rashed Al-Rashed Al-Hmaid - King Abdullah City for Atomic and Renewable Energy (KACARE): Dr. Mohammed Garwan - Saudi Food and Drug Authority (SFDA): Dr. Saleh Al Tayyar - Ministry of Health (MOH): Dr. Ali Almesned - World Health Organization (WHO): Dr. Maria del Rosario Perez - International Atomic Energy Agency (IAEA): Prof. Daud Mohamad - National Cancer Institute (NCI): Prof. Norman Coleman - International Organization of Medical Physics (IOMP): Dr. Tomas Kron - American Association of Physicist in Medicine (AAPM): Prof. Mohammed Saiful Huq	**RO Abstract 1** **The Effect Of Radiotherapy Timing On Loco-regional Recurrence Among Advanced Breast Cancer Patients: A Single Institution Experience** G. Al-jawi, W. Basfar, A. Baothman, I. Al- Omary, Y. Bahadur, B Al-Saywid	**ROP Abstract 1** **Radiochromic Film Dosimetry of Image Guidance Systems in Radiotherapy** S. Aldelaijan, A. Nobah, S. Devic, N. Tomic, J. Seuntjens, M. Al Shabanah, B. Moftah	**DI Abstract 1** **Evaluation of Diffusion Weighted Imaging Techniques for Radiotherapy of Prostate Cancer** **T. Alharthi , G. Liney, L. Holloway, E. Juresic, L. Cassapi, M. Sidhom, P. Gibbs, D. Manton**	**RBS Abstract 1** **Investigation of Suitable Radiopharmaceutical Production Facility for Different Centers at Different Region of Saudi Arabia** S. Miliebari, D. Alothmany	**TC Abstract 1** **Multimodality Imaging of structure and Function (PET/CT & SPECT/CT) in Eastern Province** A. Al-gallaf	**L11: k-Space 2** Cathy Westbrook
4:10-4:20 PM		**RO Abstract 2** **Accelerated Partial Breast Irradiation Dosimetric Study Using 3DCRT and IMRT** S. Moorthy, K Jayesh, H. Sakr, S. Mohammed, S. Janahi, J. Sameul, N. Pillai, N. Mohammed, H. Malik, A. Othoob	**ROP Abstract 2** **Quantification of Dwell Position Inaccuracy and Dose Heterogeneity in 60° Varian Ring & Tandem Applicator using OSL-Nano Dots** A. Jangda, S. Ahmed, L. Rehman, M. Naqvi, N. Ali	**DI Abstract 2** **Characterization of Carotid Plaque Neovascularization** W. Abutaleb, J. Gillard	**RBS Abstract 2** **Clostridium Cluster XIVa Species is an Early Biomarker in Radiation Injury** R. Papineni, I. Ahmed, W. McLaughlin, S. Umar	**TC Abstract 2** **Identifying Competencies for Saudi Medical Imaging Technologist Based on Professional Consensus** A. Al Hoti	
4:20-4:30 PM		**RO Abstract 3** **Target Equivalent Uniform Dose as a Quality Indicator for Head-and-Neck IMRT Treatment Plans** C. Constantinescu, R. Al-Wassia, A. Al-Hebshi, Y. Bahadur	**ROP Abstract 3** **Delineations of Tumor target Volume on PET/CT images using Active Contour Models** I. Al-Saihati, K. Wells, D. Sassi	**DI Abstract 3** **Evaluation of Patient Doses During CT Angiography** H. Omer, A. Sulieman, K. Alzimami, A. Elnour, E. Babikir	**RBS Abstract 3** **TL Dosimetric Properties of Gamma Irradiated Barium Oxyfluroborate Glass System** H. Donya	**TC Abstract 3** **MRI of Prostate Cancer: Multi Exponential T2 Relaxation in the Prostate** W. Alharbi	
4:30-4:40 PM		**RO Abstract 4** **PET and MR Based Selective Dose Escalation With Simultaneous Integrated Boost (SIB) Using Image Guided Intensity Modulated Radiotherapy in Rectum Cancer** R. Mahmood, A. AlSuhaibani, M. ElSebaie, N. AlSanea, B. Moftah, M. Mohiuddin	**ROP Abstract 4** **The Impact of Scatter on CBCT Image Quality and Point Dose Measurements** N. Mail, A. Fahad, R. Khan, A. Saoudi, M. Yusuf, H. Natto, F. Nadwi, N. Alothmony, D. Alothmony, N. Molla, S. Natto, A. Kinsara	**DI Abstract 4** **Thyrotoxicosis: Fifteen Years' Experience of Radioactive Iodine Therapy in Thyrotoxic Patients** S. Munayer	**RBS Abstract 4** **Occupational Radiation Exposure During Interventional Cardiology Procedures** A. Sulieman, K. Alzimami, E. Babikir, H. Omer	**TC Abstract 4** **Neonatal Sacral Dimples: MRI or US? Which Way to Go?** K. Alshaye	
4:40-4:50 PM		**RO Abstract 5** **Bone Marrow Sparing Image Guided Intensity Modulated Radiotherapy with Simultaneous Integrated Boost (SIB) in Locally Advanced Cervix Cancer** M. Hegazy, R. Mahmood, I. Al-Badawi, H. Al-Husaini, C. Higby, B. Moftah	**ROP Abstract 5** **Characterization of GAFCHROMIC EBT3 Film as a Radiation Dosimeter for Photon and Electron Beams** M. Alasmary, N. Maalej, W. Abdel Rahman	**DI Abstract 5** **Improving In-Target Production of [13N]-Ammonia using High Energy Proton Beam** N. Surendra, F. Al Rumayan, A. Al Gaith, M. Ahmed, M. Al Qahtani	**RBS Abstract 5** **Software for the Registration of Radioactive Materials and Management of Radioactive Waste** M. Ahmed	**TC Abstract 5** **A Study on Optimum Patient Position for Sonographic Examination of the Kidneys** L. Hammad	
4:50-5:00 PM		**RO Abstract 6** **A Comparative Study of Volumetric Intensity Modulated Arc Therapy Versus Conventional IMRT in Head and Neck Cancer Patients** M. Daoud, M. Alidrisi, A. Shehata, S. Abdelkhalek	**ROP Abstract 6** **Feasibility Testing Intra-Operative Radiation Therapy Using Low Energy Protons** B. Moftah, F. Alrumayan, S. Aldelaijan, M. Shehadeh, F. al-Zorkany, J. Seuntjens, M. Al Shabanah, S. Devic	**DI Abstract 6** **Pediatric Cardiac CT: Is Dose Justified?** M. Bukhari, Z. Abubaker	**RBS Abstract 6** **Radiation Optimization Issues in Diagnostic Radiology Practice: A Saudi Arabia Case Study** L. Abdullah, J. Al-Mokhlef	**TC Abstract 6** **Interventional Radiology and ESRD- HD Patients: Skills Vs. Technology** I. Aljediea	

5:00-5:10 PM	- Canadian Organization of Medical Physics (COMP)/Canadian College of Physicist in Medicine (CCPM): Prof. Ervin Podgorsak - Radiological Society of Saudi Arabia (RSSA): Dr. Ather Radwi - Saudi Society of Medical Radiologic Technology (SSMRT): Dr. Essam Mattar - Saudi Oncology Society (SOS): Dr. Essam Murshid - Saudi Medical Physics Society (SMPS): Dr Saleh Bamajboor	**RO Abstract 7** **The Comparison Between Two Different Head Rests Used for the Treatment of Head and Neck Cancer in Tomotherapy** H. Al Asfor, A. Al Somali, A. Willis, N. Al Rajhi	**ROP Abstract 7** **Implementation of TG-100 for the Gamma Knife service at PSMMC** M. Adili, S. Hassan	**DI Abstract 7** **Estimation of Patient and Staff Radiation Doses During Ascending and Descending Urethrography** H. Gabir, H. Omer, A. Sulaiman	**RBS Abstract 7** **A Reality Check up on Medical Response Team's Preparedness in Facing Radiation Emergency in Malaysia** S. Salleh, N. Yusof, A. Idrose		**L12: Revision** John Talbot
5:10-5:20 PM		**RO Abstract 8** **RapidArc Technique Versus 3DCRT in Regards to Organs Preservation** A. Alhamad, A. Alzahrani, M. Adili, M. Kandil, M. Aboziada	**ROP Abstract 8** **Implantable in Vivo Dosimetry Using Gallium Nitride Detector in Radiotherapy** A. Chaikh, J. Balosso, J-Y Giraud, P. Pittet	**DI Abstract 8** **High Pitch Helical Dual Source CT Pulmonary Angiography: Comparing Free Breathing vs. Breath-Holding Techniques** D. Jadkarim, S. Ben Zager, I. Jamjom, A. Ajlan	**RBS Abstract 8** **Assessment of Occupational Radiation Dose in KFSHRC from 2005 to 2012** B. Moftah, F. Mahyoub, I. Algain, M. Ezzat, T. Salim, M. Ahmed		
5:20-5:30 PM		**RO Abstract 9** **Volumetric-Modulated Arc Therapy (V-MAT) Versus 3D Conformal Involved-Field Mediastinal Radiation Therapy for Hodgkins Disease; A Dosimetric Comparison** C. Higby, Y. Khafaga	**ROP Abstract 9** **Characterization of Two Newly Developed Polymer Gels for Radiotherapy Verification** A. Almousa, K. Rabaeh, A. Basfar, A. Al Kafi, B. Moftah	**DI Abstract 9** **Monte Carlo Modeling of a Mammography X-ray Machine** A. Ayaz, N. Maalej	**RBS Abstract 9** **Establishing Biological Dosimetry Laboratory for the Assessment of Radiation Overexposure in Cases of Radiological Accidents in Saudi Arabia** G. Alsbeih, K. Al-Hadyan, S. Elwisy, N. Venturina, M. El-Sebaie, M. Shoukri, B. Moftah		
5:30-5:40 PM		**RO Abstract 10** **External Beam Radiotherapy Versus Image-Guided High Dose Rate Endorectal Brachytherapy in the Management of Rectal Cancer: A Retrospective Study** A. Alsuhaibani, T. Niazi, S. Devic, G. Stroian, R. Hashem, T. Vuong	**ROP Abstract 10** **Verification of the Craniospinal Radiotherapy in the Supine Position** M. Abdulraheem, H. Kanaan, I. Jaradat, A. Ibrahimi, R. Abu-Hijlih, A. Almousa	**DI Abstract 10** **Optimization of Radiation Dose and Image Quality in Projection Radiography** E. Babikir, K. Alzimami, A. Sulieman	**RBS Abstract 10** **The Effect of Extremely Low Frequency Magnetic Fields on Rats Brain** O. Abdalla, A. Ahmed, A. Mustafa, A. Eldouma		
5:40-5:50 PM		**RO Abstract 11** **Volumetric Arc Therapy (VMAT) is Superior to 3D Conformal Radiotherapy (CRT) for Locally Advanced Cervix Cancer - A Dosimetric Comparison** C. Higby, B. Moftah, R. Mahmood, A Nobah, G. Nazer, O. Hassad	**ROP Abstract 11** **The Influence of a Modeled Treatment Couch on Dose Distributions in IMRT and RapidArc for High-Energy Photon Beams** G. Aldosary, A. Nobah, F. Al-Zorkani, S. Devic, B. Moftah	**DI Abstract 11** **Enhancement of Ultrasound Images Using Filtering Techniques** N. Elmakki, Y. Abdallah			

8:00-9:30 AM	Session 14: Continuing Education Courses (Part VII)											
Course No	**CEC 1**	**CEC 2**	**CEC 3**	**CEC 4**	**CEC 5**	**CEC6**	**CEC 7**	**CEC 8**	**CEC 9**	**CEC 12**	**CEC 13**	**CEC 14**
Course Title	**World of Medical Physics**	**Breast Cancer**	**Advanced RT Techniques**	**MRI in Practice**	**Women's Breast Imaging**	**Advanced Diagnostic Imaging Techniques**	**Advanced Nuclear Medicine Techniques**	**SPECT, PET & CT for Technologists**	**Health Informatics**	**Introduction to Radiation Medicine**	**Radiation Protection & Radiobiology**	**Scientific Writing & Publishing**
Venue	**AlFardousa**	**AlLazurd**	**Hall C**	**AlZumurrud**	**AlMasmak**	**Buraidah Hall**	**AlYaqoot**	**Oasis**	**Qasr Khozam**	**AlHareeq**	**Hall A**	**AlHaief**
Coordinator	**Slobodan Devic, PhD**	**Yasser Khafaga, MD**	**Rana Mahmood, MD**	**Nabeel Mishah, MBA**	**Nuha Khoumais, MD**	**Lamia Jamjoom, MD**	**Mahmoud Tuli, MD**	**Gary Sayed, PhD**	**Metab Alkubeyyer, MD**	**Belal Moftah, PhD**	**Ghazi Alsbeih, MD, PhD**	**Peter Hall, MD, PhD**
Chairpersons	**Jazi Al-Mokhlef, MSc**	**Osama AlMalik, MD, Ihab Anwar, MD**	**Adnan AlHebshi, MD, Eyad Alsaeed, MD,**	**John Talbot, MSc; Cathy Westbrook, MSc**	**Noor Alnaimy, MD; Asma Tulbah, MD**	**Lamia Jamjoom, MD; Mohammad Badran, MD**	**Ghulam Khan, MD; Salem Sassi, PhD**	**Khalid Abdulhafeed, BSc**	**Nabeel Mishah**	**Abdelhamid Saoudi, PhD**	**Ibrahim Al-Anzi, MSc**	**Peter Hall, MD, PhD; Hilary Russell, PhD**
CEC Lecture 8:10-8:30 AM	**L21: Tutorial on Health Physics** William Parker	**L9: Intraoperative Radiotherapy in Breast Cancer: The TARGIT Evidence** Pedro Lara	**L9: Total Skin Electron Therapy (TSET) and Total Body Irradiation** Shan Yau	**L13: Gradient Echo I** Cathy Westbrook	**L7: The Use of Breast US in 2014** Nathalie Duchesne	**L9: CT of Pelvic Hernias, Indirect Inguinal Hernia, Direct Inguinal Hernia, Obturator Hernia, Spigelian Hernia** Francis Scholz	**L9: Introduction to Internal Dosimetry for Molecular Radiotherapy** Manuel Bardies	**L8: Our Profession and Professionalism** Elwin Tilson	**L9: Workflow Engines and Content Management Systems: The Next Step for Imaging Departments** Bradley Erickson	**L22: Radiation Emergencies and Incidents** David Lloyd	**L9: Optimization of Protection in Mammography** Ibraheem Al-Anazi	**L9: Submitting your Manuscript** Peter Hall
CEC Lecture 8:30-8:50 AM	**L22: Tutorial on Electron Beam Therapy** William Parker	**L10: Intraoperative Radiotherapy (IORT) in Breast Cancer Using Electrons** Sergio Maluta	**L10: Motion Management in Radiotherapy** Tomas Kron		**L8: Radiology Pathology Correlation Following Breast Biopsy** Nanthalie Duchesne	**L10: Advanced Imaging in Cerebral AVM from Diagnostic to Endovascular Treatment** Raphael Blanc	**L10: Clinical applications of Internal Dosimetry to Molecular Radiotherapy** Glenn Flux	**L9: National and Regional Professional Resources for Technologists** Essam Mattar	**L10: PACS Implementation Strategy** Kostas Chantziantoniou	**L23: Future Needs of Medical Physics Services in the Kingdom** Refaat AlMazrou	**L10: Radiation Protection at Hadron Therapy Facilities** Ibrahim Algain	**L10: Dealing with Rejection** Peter Hall
CEC Lecture 8:50-9:10 AM	**L23: Second Practical Examination** Ervin Podgorsak	**L11: Regional Lymph Nodes Radiation: Indications and Complications** Alphonse Taghian	**L11: IOERT Protocol Studies: Challenges in Implementation** Donald Goer			**L11: Closed Loop and Internal Hernia Obstructions** Francis Scholz	**L11: Digital PET/CT- clinical application** Medhat Osman	**L10: International Professional Resources for Technologists** Elwin Tilson, Richard States	**L11: Saudi e-health Exchange and the Interoperable Electronic Health Record (iEHR)** Ammar Al-Badarneh	**L24: Vendor neutral archieve** N. Nishant	**L11: An Overview of Biological Dosimetry** David Lloyd	**L11: Publication Ethics** Hilary Russell
CEC Lecture 9:10-9:30 AM		**L12: CT-based Treatment Planning: Defining the Target for Breast Radiation** Alphonse Taghian	**L12: Androgen Suppression and Radiation in the Treatment of Prostate Cancer: Why Do We Sequence Them the Way We Do?"** Theodore DeWeese		**L9: Digital Breast Tomosynthesis** Ruud Pijnappel	**L12: Making CT Protocol: Recipe of the Just Right Scanning Ingredients** Mannudeep Kalra	**L12: Impact of ^{131}I SPECT-CT on Nodal Staging of Differentiated Thyroid Ca-rcinoma** M. F. Ben Slimene	**L11: Graduate Education Opportunities for Technologists** Gary Sayed	**L12: Saudi National Digital Image Sharing and Tele-Radiology Platform** Moneif Eid	**L25: Future Opportunities in Radiation Medicine** Abdelhamid Saoudi	**L12: National Biodosimetry Laboratory in Saudi Arabia** Ghazi Alsbeih	**L12: Overview and Discussion** Peter Hall, Hilary Russell
9:30–9:45 AM	**Coffee Break**											

9:45 AM -12:15 PM	**Session 15: Plenary Keynote Lectures III** **Venue:** ***Buraidah Auditorium*** **Chairpersons:** ***Imaddudin Kanaan, MD and Amani Alkofide, MD***
9:45-10:15 AM	**PKN Lecture 9** **Radiation Sciences: Unique Opportunities in Service to Society** Norman Coleman, MD
10:15-10:45 AM	**PKN Lecture 10** **Craniopharyngioma: Disease Control and Late Effects** Thomas Merchant, MD
10:45-11:15 AM	**PKN Lecture 11** **CT Radiation: The Serious and the Care Worthy Risks** Mannudeep Kalra, MD
11:15-11:45 PM	**PKN Lecture 12** **Hazard or Risk Based Quality Management Program: The Next Frontier for Improving Quality and Patient Safety** Mohammed Saiful Huq, PhD
11:45-12:15 PM	**PKN Lecture 13** **The Intersection of Informatics and Medical Imaging** Bradley Erickson, MD
12:15-12:30 PM	**Closing Ceremony** **Sultan AlSedairy, PhD – Executive Director KFSH&RC**
12:30-1:30PM	**Prayer and Lunch Break**
1:15 PM	**Bus Pick-up to King Faisal Specialist Hospital & Research Centre**

Venue: King Faisal Specialist Hospital & Research Centre

1:45 – 5:55 PM	**Session 16: Continuing Education Courses & Workshop (Part VIII)**	**Session 17: WORKSHOPS (Part I)** **(See Below)**
Code	**CEC4**	
Workshop Title	**MRI in Practice**	
Venue	**KFSH&RC, PGC Auditorium**	
Coordinator	**Nabeel Mishah, MBA**	
Chairperson	***John Talbot, MSc; Cathy Westbrook, MSc***	
1:45-3:30 PM	**L14: Gradient Echo II** Cathy Westbrook	
3:30 – 4:00 PM	**Prayer and Coffee Break**	
4:00-5:00 PM	**L15: Flow & MRA** John Talbot	
5:00-5:50 PM	**L16: Quiz** John Talbot	

7:30 PM	**Bus Pick-up to Intercontinental Hotel**
8:00-10:00 PM	**Evening Presentation and Dinner** **Sponsored by GE** **Venue:** ***Intercontinental Hotel***

Session 17: Workshops (Part I): 1:30 PM – 5:30 PM			
Code	**Venue**	**Workshop Title**	**Coordinator**
RADIATION ONCOLOGY TRACK			
CEC1W1	RC Classroom 304	World of Medical Physics • Introduction to Monte Carlo Simulations, *Pedro Andreo* • Introduction to Radiochromic Film Dosimetry, *Slobodan Devic* • Introduction to 3D Gel Dosimetry • Introduction to QA devices	Dr. Waleed Al-Najjar
CEC1W2	RC Classroom 304	Monte Carlo • Available Monte Carlo Codes in Radiotherapy • Overview of Electron and Photon Transport • Monte Carlo Applications in Nuclear Medicine • What is "GATE" MC Code? • PRIMO - New MC Application	Mr. Ahmad Nobah
CEC1W3	RC Classroom 304 and Linear Accelerator Treatment Room 4 (T4)	QA & Mechanical Dosimetry Devices • QA in Radiation Therapy • AAPM TG 142 • Patient specific QA • Practical Sessions	Dr. Zeinab Hassan
CEC1W4	RC Classroom 304 and 3D Gel Lab	3D Gel Dosimetry • Preparation of 3D gel • Optical CT scanning of the gel • Calibration and patient specific QA • Practical Sessions	Mr. Abdullah Al-Kafi/ Eng. Akram Al-Moussa
CEC1W5	RC Classroom 304 and Tomotherapy/CyberKnife Treatment Planning Room and Linear Accelerator Treatment Room 4 (T4)	Radiochromic Film Dosimetry • Absolute, reference and relative dosimetry. • Applications of radiochromic films in dosimetry. • Essentials of radiochromic film dosimetry system. • New trends in radiochromic film dosimetry • Practical Sessions	Mr. Saad Aldelaijan
CEC2W1	Oncology Lecture Hall	Breast Cancer • Review of clinical cases with emphasis on indications, target volumes, organs at risk, and dose constraints	Dr. Mohammad Alshabanah
CEC3W1	Radiation Physics Conference Room	RapidArc • Physics Perspective on Rapid Arc, *Martin Sabel* • Physician Perspective on Rapid Arc, *Abdullah Al Suhaibani* • Dosimetrist Perspective on Rapid Arc, *Christine Higby* • Practical Sessions	Ms. Christine Higby
CEC3W2	Oncology Conference Room	CyberKnife • CKS SRS – Radiobiology (& tissue tolerances), *Adnan AlHebshi* • CKS overview/Physics, *Abrar Hussain* • Practical Sessions	Dr. Abrar Hussain
CEC3W3	TomoTherapy Planning Room	TomoTherapy • Physics of Using a Helical Treatment System, *Maamoun Shehadah* • Tomotherapy Process, *Wedyan Safar* • Clinical Experience Using Tomotherapy at KFSH&RC, *Amin Al Omair* • Practical Sessions	Mrs. Wedyan Safar

CEC3W4	RC Executive Board Room, CT Simulator Room	IGRT for Radiation Therapists • Introduction To IGRT, *Julie Pickford* • Image Guided Radiation Therapy: Clinical Issues, *Arno Mundt* • Image Guided Radiation Therapy: Practical Issues, *Tomas Kron* • Impact of IGRT on Dose and Fractionation, *Ahmad Nobah* • Technology and Immobilization Overview, *Mona Al Turaiki* • Practical Sessionsf	Mrs. Sameha J Pickford
CEC3W5	A2 Conference Room / OR20	Intra-Operative Radiotherapy • Clinical and surgical aspect of IORT, *Tarek Amin* • Radiation oncology aspect of IORT, *Rana Mahmood* • IOERT for recurrent rectal cancer and for retroperitoneal sarcoma, *Benjamin Calvo* • IOERT Protocol Studies: Challenges in Implementation, *Donald Goer* • Physics aspects of IORT, *Abrar Hussain* • Practical Sessions	Mrs. Hind Alselham
CEC3W6	ORA Meeting Room	Brachytherapy • Brachytherapy for Gynecology: Clinical Aspects, *Rana Mahmood* • Adapting HDR brachytherapy for unusual anatomy of gynecological malignancies, *Majid Mohiuddin* • Image guided brachytherapy, *Slobodan Devic* • Comparison between the miniature HDR Brachytherapy sources Co-60 and Ir-192 used in the MultiSource HDR Brachytherapy Afterloader, *Joop Bokhorst*	Mr. Umar Mwidu
DIAGNOSTIC IMAGING TRACK			
CEC5W1	PGC Foyer	Ultrasound Pelvic Imaging • Basic trans-abdominal/ transvaginal pelvic ultrasound examination • Measurement of the endometrial thickness • US imaging in early pregnancy • Practical Sessions	Dr. Rafat Mohtasib
CEC5W3	Radiology Conference Room, Radiology Meeting Room, MR Suite	MRI Guided Breast Biopsy • MR guided breast biopsy • Practical Sessions	Mr. Ibrahim Alabdulaaly
CEC5W4	US Room 8/3	Ultrasound Guided Breast Biopsy • Ultrasound guided Breast biopsy and cyst aspiration • Practical Sessions	Dr. Rita Pant
CEC5W7	PGC Meeting Room 1	Contrast Enhanced Spectral Mammography / Digital Breast Tomosynthesis: • Basic concept of Contrast enhanced spectral Mammography • Practical Sessions	Dr. Nuha Khoumais
CEC5W8	US Room 8	Automated Whole Breast Ultrasound • Automated Whole Breast Ultrasound • Practical Sessions	Mrs. Manal Mustafa

CEC6W1	**PGC Classroom 7**	**Basic Cardiac CT** • **Didactic lectures about cardiac CT anatomy, techniques and common pathologies.** • **Hands-on real time reading of cardiac CT cases.** • **Practical Sessions**	**Dr. Amr Ajlan**
CEC6W2	**PGC Classroom 4**	**Read with the Expert in Body Imaging** • **Miscellaneous chest / thoracic cases,** *Mohamed Tan-Lucien* • **Crohn's disease - radiological pathological correlation,** *Francis Scholtz* • **MR enterography technique and appearances,** *Salahudin Elnaas* • **Inflammatory diseases of small bowel + Miscellaneous SB diseases,** *Francis Scoltz*	**Dr. Salahudin El Naas**
CEC6W3	**PGC Classroom 1**	**Read with the Expert in Neuroradiology** • **Interesting Cases in Neuroradiology,** *Mohammad Dogar* • **Unusual cases in Neuroradiology,** *Irfan Mamoun* • **TBA,** *Bradley Erickson* • **TBA,** *Ibrahim Alorainy*	**Dr. Irfan Mamoun**
CEC6W4	**PGC Classroom 8**	**Low Dose and Dual Energy CT Imaging** • **Making CT protocols: Recipe of the "just right" scanning ingredients,** • **Dual energy CT: Approaches, Radiation and Applications,** • **Iterative Reconstruction: The new standard for CT.** • **Practical Sessions**	**Dr. Mohamed Ziyad Abubacker**
CEC7W1	**RC BPD Conference Room**	**Radionuclide Dosimetry** • **Patient specific vs model-based dosimetry,** *Manuel Bardies* • **Personalized treatment planning for Molecular Radiotherapy,** *Glenn Flux* • **Presentation on Monte Carlo techniques for imaging and dosimetry** • **Introduction to practical session** • **Practical Sessions**	**Dr. Salem Sassi**
CEC7W2	**RC BMR Conference Room**	**Cyclotrons & Radiopharmaceuticals** • **Introduction to Cyclotrons: Principles and Recent Developments,** • **Introduction to FDG** • **Quality Aspects of Radiopharmaceuticals with Focus on FDG** • **Radiopharmaceuticals for targeted therapy: Basics and Clinical aspects** • **^{68}Ge-^{68}Ga Generator** • **Cell's Labelling** • **Research and development of ^{99m}Tc labeled peptide radiopharmaceuticals for targeting of cancer** • **Practical Sessions**	**Dr. Faisal Al Rumayan / Mr. Mohammed Alrowaily**
CEC7W3	**RC BESC Conference Room**	**PET/CT QC/QA** • **Daily PET and CT QC procedures.** • **Quarterly calibration.** • **Simulation of the SUV verification scans using a water phantom.** • **Practical Sessions**	**Dr. Omer Demirkaya**
CEC7W4	**Treatment Planning Room**	**PET/CT in Treatment Planning** • **Applications of PET-CT in treatment planning** • **Practical Sessions**	**Dr. Mohei Eldin Abouzied**
CEC8W1	**PGC Classroom 3**	**A panoramic overview of OB/GYN and emergency US for technologists** • **Practical Sessions**	**Mr. Ahnaf Arafah**
CEC8W2	**PGC Classroom 3**	**SPECT/CT for Technologist** • **SPECT/CT Imaging,** *Richard States* • **PET/CT Imaging,** *Elwin Tilson* • **Practical Sessions**	**Mr. Mohammed Alrowaily**

RADIOBIOLOGY, RADIATION PROTECTION & OTHER TOPICS			
CEC12W1	PGC Classroom 3, tour of medical physics, radiotherapy, cyclotron & radiopharmaceutical and radiology facilities	Introduction to Radiation Medicine • Modalities of Radiation Therapy and Radiology and Their Capabilities. • Role of Personnel for Different Radiotherapy and Radiology Modality. • Choice of Different Modalities. • Practical Sessions	Mr. Refa'at AlMazrou
CEC13W1	PGC MR2	Radiobiology and Biodosimetry • Radiobiological dose-effect • Cell survival curves • Molecular biology techniques • Principles of biological dosimeters • Accidental radiation dosimetry • Practical Sessions	Dr. Ghazi AlSbeih
CEC13W2	Prince Salman Auditorium, tour of radiation protection facilities and devices	Radiation Protection & Safety • Thermo-Luminescence Dosimeter (TLD) • Bioassay: thyroid uptake measurement • Radiation leak test • Management, storage and disposal of radioactive waste • Gamma Source Shielding Design • Practical Sessions	Mr. Fareed Mahyoub

8:00 AM-12:00 NN	**Session 18: Continuing Education Courses & Workshops (Part IX)**	**Session 19: WORKSHOPS (Part II) (See Below)**
Code	**CEC10W1**	
Workshop Title	**Joint WHO/ IAEA/KFSH&RC Workshop: Basic Safety Standards (BSS) Implementation in Health Care**	
Venue	**KFSH&RC, Treatment Planning Room**	
Coordinator	**Maria Pérez, MD / Jehad AlWatban, MD**	
Chairperson	**Nizar Al-Nakshabandi, MD**	
8:00-8:05 AM	**L1: Welcome Remarks and Introduction of Speakers,** Belal Moftah	
8:05-8:20 AM	**L2: Medical Uses of Ionizing Radiation, Trends, Doses and Risks** Jerrold Bushberg	
8:20-8:35 AM	**L3: Improving Radiation Protection in Medicine- the Bonn Conference and its Call for Action** Maria Pérez	
8:35-8:50 AM	**L4: Overview of the BSS Revision Process, New General Safety Requirements** Maria Pérez	
8:50-9:00 AM	**L5: Specific Safety Requirements for Medical Imaging & Therapeutic Procedures** Maria Pérez	
9:00-9:10 AM	**L6: The new International Basic Safety Standards: How Will it Affect The Medical Physics Practice?** Ahmed Meghzifene	
9:10-9:30 AM	**L7: Discussion**	
9:30-10:00 AM	**Coffee Break**	
10:00-10:10 AM	**L8: Patient Protection in Radiotherapy: Perspective of a Radiation Oncologist** Mohammad Al-Shabanah	
10:10-10:20 AM	**L9: Patient Protection in Interventional Radiology: Perspective of an Interventional Radiologist** Jehad Al-Watban	
10:20-10:30 AM	**L10: Patient Protection in Nuclear Medicine: Perspective of a Nuclear Medicine Specialist** Mahmoud Tuli	
10:30-10:40 AM	**L11: Practical Aspects of Radiation Protection in PET/CT Imaging** Ahmad Alenezi	
10:40-10:50 AM	**L12: Patient Dose Reduction in Interventional Radiology** Sjirk Boon	
10:50-11:00 AM	**L13: Towards Low Dose CT for Pediatrics and Adults** Mannudeep Kalra	
11:00-11:15 AM	**L14: Role of Professional Societies** Panel Discussion	
11:15-11:30 AM	**L15: Education and Training** Panel Discussion	
11:30-11:45 AM	**L16: Communication with Patients and Media** Panel Discussion	
11:45-12:00 PM	**L17: Role and Impact of Regulation - Fostering a dialogue between health authorities and regulatory bodies** Panel Discussion	
12:00 AM-12:45 PM	**Closing Ceremony/Distribution of Certificates** **Venue: Prince Salman Auditorium**	
12:45-1:30 PM	**Prayer and Lunch, Venue:** ***RC 1st Floor***	
1:30-8:00 PM	**Bus Pick-up from KFSH&RC North Tower Entrance to Al-Thumama Desert Camp, Falcon and Camel Show, and Dinner**	

Session 19: Workshops (Part II): 8:00 AM – 12:30 PM

Code	Venue	Workshop Title	Coordinator
RADIATION ONCOLOGY TRACK			
CEC1W1	Join One of the CEC1 or CEC3 Workshops	World of Medical Physics	Dr. Waleed Al-Najjar
CEC1W2	Biomedical Physics Department Conference Room	Monte Carlo	Mr. Ahmad Nobah
CEC1W3	Linear Accelerator T4	QA & Mechanical Dosimetry Devices	Dr. Zeinab Hassan
CEC1W4	3D Gel Lab +	3D Gel Dosimetry	Mr. Abdullah Al-Kafi/ Eng. Akram Al-Moussa
CEC1W5	10000XL Scanner Room, Linear Accelerator T4	Radiochromic Film Dosimetry	Mr. Saad Aldelaijan
CEC3W1	Linear Accelerator T2	RapidArc	Ms. Christine Higby
CEC3W2	Cyberknife Suite	CyberKnife	Dr. Abrar Hussain
CEC3W3	Tomotherapy Suite	TomoTherapy	Mrs. Wedyan Safar
CEC3W4	Linear Accelerator T3	IGRT for Radiation Therapists	Mrs. Julie Pickford
CEC3W5	OR Room 20	Intra-Operative Radiotherapy	Mrs. Hind Alselham
CEC3W6	HDR Brachytherapy Suite	Brachytherapy	Mr. Umar Mwidu
DIAGNOSTIC IMAGING TRACK			
CEC5W1	PGC Foyer	Ultrasound Pelvic Imaging	Dr. Rafat Mohtasib
CEC5W2	US Interventional Room 4	Stereotactic Guided Breast Biopsy Using Prone Table Approach	Ms. Manal Abudhais
CEC5W4	US Room 8	US Guided Breast Biopsy	Ms. Rania Abuaish
CEC5W5	Classroom 6, Post Graduate Center, KFSH&RC	Digital Breast Tomosynthesis: A Case-Based Approach	Dr. Kadria Elhaddad
CEC5W6	US Room 3	Breast Elastography	Ms. Rania Abuaish
CEC5W9	US Interventional Room 5	Tomosynthesis Guided Breast Biopsy	Dr. Kadria Elhaddad
CEC6W1	PGC Classroom 7	Basic Cardiac CT	Dr. Amr Ajlan
CEC6W4	PGC Classroom 1	Low Dose and Dual Energy CT Imaging	Dr. Mohamed Ziyad Abubacker
CEC7W3	RC PET/CT Center	PET/CT QC/QA	Dr. Omer Demirkaya
RADIOBIOLOGY, RADIATION PROTECTION & OTHER TOPICS			
CEC12W1	PGC Classroom 3, tour of medical physics, radiotherapy, cyclotron & radiopharmaceutical and radiology facilities	Introduction to Radiation Medicine	Mr. Refa'at AlMazrou
CEC13W1	PGC MR2	Radiobiology and Biodosimetry	Dr. Ghazi AlSbeih
CEC13W2	Prince Salman Auditorium, tour of radiation protection facilities and devices	Radiation Protection & Safety	Mr. Fareed Mahyoub

Venue: Intercontinental Hotel – Exhibition Area

12:30-1:30 PM	Session 19: Poster Viewing Sessions
	Poster Session 19A: Radiation Oncology Track
Poster 1	**Treatment Planning Optimization for High Dose Rate Vaginal Brachytherapy Using a Multichannel Applicator** Y. Bahadur, C. Constantinescu, A. Hassouna, M. Eltaher, N. Ghassal
Poster 2	**Uterine Perforation and Dosimetric Implications in HDR Brachytherapy for Carcinoma of the Cervix** Y. Bahadur, C. Constantinescu, A. Hassouna, M. Eltaher
Poster 3	**Predictive Significance of DNA Double Strand Break Repair on Radiotherapy Induced Acute Skin Reactions in Breast Cancer Patients** S. Sadashiva, K. Dattaram, D. Jerard, G. Hassan, K. Sharan, V. Manjunath, S. Kapaettu
Poster 4	**Elevated Preoperative Serum CA 15.3 Levels are Associated with Reduced Disease Free Survival: A Single Institutional Experience** E. AlSaeed, A. Mutahir
Poster 5	**Sequence Variants in DSB Repair Genes and Radiotherapy Induced Acute Normal Tissue Toxicity in Breast Cancer Patients** K. Dattaram, D. Jerard, G. Venkatesh, K. Sharan, V. Manjunath, S. Sadashiva
Poster 6	**Treatment Planning Comparative Study of Constant Dose Rate IMAT Versus Static IMRT in Cervical and Upper Thoracic Esophageal Carcinoma** R. Zhang, W. Bai, Z. Chi, X. Fan, Y. Cao, R. Li
Poster 7	**Image Guided Radiotherapy Using Daily (DCBCT) Vs Weekly Cone Beam CT (WCBCT) for Intensity Modulated Radiotherapy (IMRT) of Head and Neck Cancer (HNC) Patients** Z. Mulla, M. El Sayed, T. Boubakra, V. Arputharaj
Poster 8	**131 I-MIBG Therapy for Malignant Pheochromocytoma** H. Hammami, A. Sellem, L. Zaabar, W. Elajmi, Y. Mahjoub
Poster 9	**Implementation of IMRT/VMAT in Radiotherapy Department** E. Senan, M. El Sayed, Z. Mulla, A. Naga, N. Ghassal
Poster 10	**Image-Guided Radiotherapy (IGRT) for Daily Localization of Prostate Cancer With Fiducial Markers: The Variation Between Kilovoltage (KV) and Cone-Beam Computed Tomography (CBCT) Match** H. Al Asfor, A. Al Somali, A. Willis, F. Hall, R. Mahmood
Poster 11	**Reproducibility of Conformal Radiotherapy in Prostate and Nasopharyngeal Carcinoma Using Electronic Portal Imaging** F. Leila, S. Tarek, F. Khawla, F. Zouhir, D. Jamel
Poster 12	**Volumetric-Modulated Arc Therapy With a Simultaneous Integrated Boost for Rectal Cancer vs. 3D Conformal Radiation Therapy; A Dosimetric Comparison** A. Alsuhaibani, C. Higby, M. ElSebaie, R. Mahmood
Poster 13	**Evaluation of Patient Positioning With On-Board Imaging (OBI) KV-KV and CBCT in 3D-Conformal Radiotherapy in Prostate Cancer** M. Elghribi, N. Mechiki, S. Oukrif
Poster 14	**Clinical Implementation of IntraOperative Electron Radiation Therapy (IOeRT) at KFSHRC** T. Amin, A. Azzam, R. Mahmood, Z. Hassan, H. Alselham, M. Hussain, B. Moftah
Poster 15	**Estimation of Thyroid Gland Dose and Radiation Risks to Patient Undergoing Computed Tomography Examinations** R. Elbushra
Poster 16	**Thyroid Carcinoma Associated to Hashimoto Thyroiditis** A. Mhiri, I. Elbez, F. Slimène
Poster 17	**Success of Radioablation of Thyroid Remnanta After Total Thyroidectomy for Differential Thyroid Carcinoma** S. Munayer
Poster 18	**Waiting Times from Registration in Clinic and from CT SIM to Start of Treatment as a Quality Indicator for IMRT Cases in the Radiotherapy Department.** Z. Mulla, M. El Syed, A. AlHebshi, A. Khasim, C. Gatch
Poster 19	**Implementation of Cyberknife into Clinical Practice** M.Ibrahim, S. Khalil, D. King, C. Rahill
Poster 20	**Quality of Life of Gynaecological Cancer Patients Receiving Radiotherapy Treatment at the Oncology Department of the Komfo Anokye Teaching Hospital** V. Atuwo-Ampoh, E. Fiagbedzi
Poster 21	**To Compare Combi-Fix Immobilization Versus Personalized Vaclock Immobilization and it's Accuracy in Pelvic Radiotherapy at King Faisal Specialist Hospital and Research Centre, Using Orthogonal KV Images** M. Al-Turaiki, S. Boumouglbay
Poster 22	**Use of MIP in 4D-CT Derived Composite CT Images in the Planning of Stereotactic Body Radiotherapy (SBRT) in Liver cancer** G. Wadhawan, R. Thiyagarajan
Poster 23	**A Marker-less Patient Positioning System with Six Degree of Freedom for Patient Positioning in External Beam Radiotherapy** M. Tayeb, M. Nowaimi
Poster 24	**Simultaneous Bilateral Chest Wall Irradiation in Bilateral Breast Cancer: Can Tomotherapy Improve Dose Distribution?** A. El-Ashwah, W. Safar, A. Mousa, M. Al-Shabanah
Poster 25	**Cyberknife Stereotactic Radiosurgery (CK-SRS) with Fiducial Tracking for Prostate cancer - KFSHRC experience** R. Mahmood, M A Hussain, Hegazy, M ElSebaie

	Poster Session 19B: Medical Physics Track
Poster 26	**Calibration of Treatment Time Intensity Modulated EPID Images for Anatomical Imaging** M. Al Roumi, A. Fielding, D. Warne, K. Biggerstaff
Poster 27	**Evaluation of a 2D Diode Array (MapCheck2) for IMRT Quality Assurance Experience at SKMCH@RC** M. Rafaye, K. Iqbal, S. Buzdar
Poster 28	**Calibration of Lanthanum Bromide Gamma-ray Scintillation Detectors** M. Abbas
Poster 29	**The Effect of Intravenous Contrast Agent on Dose Calculation in Computed Tomography Based Radiotherapy Planning** C. Constantinescu, Y. Bahadur, N. Ghassal, A. Hassouna, M. Naseem, A. Abunar
Poster 30	**Audit of TPS Photon Beam Dataset for Small Field Output Factors Using OSLDs against RPC Standard Dataset** A. Yousuf, A. Jangda, A. Hussain, S. Mushkin, S.Hussain, M. Naqvi
Poster 31	**Assessment of Field Size on Radiotherapy Machines Using Texture Analysis** Y. Abdallah, M. Boshara
Poster 32	**Energy and SSD Dependence of Electron Beam Depth Dose Parameters; A Single LINAC Observation** M. Rahman, S. Banu
Poster 33	**The Implementation of In-House Algorithm for IMRT Dose Verification** A. Setiadi, R. Taurisia, S. Pawiro
Poster 34	**Characterization of the Optically Stimulated Luminescence nanoDot for CT Dosimetry** M. Yusuf, H. Natto, F. Nadwi, N. Mail, A. Saoudi, A. Yahya, M. Tayeb, N. Alothmany, D. Alothmany, A. Kinsara
Poster 35	**Characterization of Optically Stimulated Luminescence nanoDots for Assessment of Breast Doses During Mammography Screening** M. Yusuf, H. Natto, F. Nadwi, N. Molla, A. Yahya, M. Tayeb, N. Alothmany, D. Alothmany, A. Kinsara, N. Mail, A. Saoudi
Poster 36	**Assessment of Radiochromic Film for Dosimetry of Low Energy Protons** S. Devic, S. Aldelaijan, F. Alrumayan, M. Shehadeh, F. Alzorkani, J. Seuntjens, A. Almousa, B. Moftah
Poster 37	**Respiratory Induced-Organs Motion and Dosimetric Effect in External Beam Radiotherapy** S. Al-Batati, M. Alnowami
Poster 38	**Image Adapted High Dose Rate Brachytherapy (HDR) at KFSHRC Based on GEC-ESTRO Guidelines** U. Mwidu, R. Mahmood, M. Hegazy, Z. Hassan, B. Moftah, M. Neimatallah
Poster 39	**Comparison Between Proton Beam Characteristics of a Radiopharmaceutical Cyclotron Using Havar and Kapton as a Beamline Window** F. Alzorkani, S. AlDelaijan, F. AlRumayan, M. Shehadeh, S. Devic, M. Alfatish, N. Maalej, B. Moftah
Poster 40	**A Method to Evaluate the Clinical Impact Resulting from the Change of Dose Calculation Algorithms and Irradiation Techniques in Radiation Therapy** A. Chaikh, J. Giraud, J. Balosso
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Poster 91	**Comparison of Different Modalities in Diagnosis of Coronary Artery Disease, ECG, EIT, Angiography, REST and Stress ECHO and 99m TC MIBI** Y. Mohamed
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Poster 107	**Performance Assessment of a Digital X-ray Mammography Imaging System** M. Alnafea, O. Kadri, K. Shamma
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Poster 111	**Estimation of Mean Glandular Dose from Digital Mammography Exams at Hamad Medical Corporation HMC (Qatar) and Compared with International Guidance Levels** O. Taha, A. Al-Attar
Poster 112	**Accidental Radiation Burn: Clinical Evaluation** A. El Bedewi
Poster 113	**Radiation Exposure to Thumb of Nuclear Medicine Physician During Injections in Conventional Nuclear Medicine Procedures** V. Agarwal

CONTINUING EDUCATION COURSE (CEC) & WORKSHOP DESCRIPTIONS

CONTINUING EDUCATION COURSES IN RADIATION ONCOLOGY

CEC1: Intensive Course: The World of Medical Physics (Pre-ICRM Course

CEC2: Radiotherapy for Breast Cancer

CEC3: Advanced Radiotherapy Techniques

Continuing Education Courses in Diagnostic Imaging

CEC4: MRI in Practice (Pre-ICRM Course/Workshop)

CEC5: Women Breast Imaging

CEC6: Advanced Diagnostic Imaging Techniques

CEC7: Advanced Nuclear Medicine Techniques

CEC8: SPECT, PET & CT for Technologists

CEC9: Health Informatics

CONTINUING EDUCATION COURSES IN RADIOBIOLOGY, RADIATION PROTECTION & OTHERS

CEC10: Joint WHO/IAEA/KFSH&RC Workshop: "International Radiation Basic Safety Standards (BSS) Implementation in Health Care"

CEC11: Workshop on Comprehensive Audits in Radiation Oncology, Diagnostic and Interventional Radiology (Pre-ICRM Course/Workshop)

CEC12: Introduction to Radiation Medicine

CEC13: Radiobiology & Radiation Safety

CEC14: Scientific Writing & Publishing

Workshops in Radiation Oncology Track

CEC1W1: Intensive Course and Workshop: The World of Medical Physics

CEC1W2: Monte Carlo Simulation

CEC1W3: QA and Mechanical Dosimetry Device

CEC1W4: 3D Gel Dosimetry

CEC1W5: Radiochromic Film Dosimetry

CEC2W1: Radiotherapy for Breast Cancer

CEC3W1: RapidArc Workshop

CEC3W2: Stereotactic Radiotherapy: Cyberknife

CEC3W3: IMRT/IGRT TomoTherapy

CEC3W4: IGRT- Practical Implementation for Clinical Use for Radiation Therapists

CEC3W5: Intraoperative Radiation Therapy (IORT) Workshop

CEC3W6: Brachytherapy Workshop

WORKSHOPS IN DIAGNOSTIC IMAGING TRACK

CEC4W1: MRI in Practice Course and Workshop

CEC5W1: Ultrasound Pelvic Imaging29

CEC5W2: Stereotactic Guided Breast Biopsy Using Prone Table Approach

CEC5W3: MRI Guided Breast Biopsy

CEC5W4: Ultrasound Guided Breast Biopsy

CEC5W5: Digital Breast Tomosynthesis: A Case-Based Approach

CEC5W6: Breast Elastography

CEC5W7: Contrast Enhanced Spectral Mammography

CEC5W8: Automated Whole Breast Ultrasound

CEC5W9: Tomosynthesis Guided Breast Biopsy

CEC6W1: Basic Cardiac CT

CEC6W2: Read with the Expert in Body Imaging

CEC6W3: Read with the Expert in Neuroradiology

CEC6W4: Low Dose and Dual Energy CT Imaging: New perspectives

CEC7W1: Radionuclide Dosimetry

CEC7W2: Cyclotron & Radiopharmaceuticals

CEC7W3: PET/CT Quality Control

CEC7W4: Use of PET/CT in Treatment Planning

CEC8W1: A Panoramic Overview of OB/GYN and Emergency Ultrasound for Technologists

CEC8W2: SPECT/CT and PET/CT for Technologists

WORKSHOPS IN RADIOBIOLOGY, RADIATION PROTECTION TRACK

CEC11W1: Workshop on Comprehensive Audits in Radiation Oncology, Diagnostic and Interventional Radiology

CEC12W1: Introduction to Radiation Medicine Workshop

CEC13W1: Radiobiology and Biodosimetry Workshop

CEC13W2: Radiation Safety/Protection

CEC1: INTENSIVE COURSE: THE WORLD OF MEDICAL PHYSICS (PRE-ICRM COURSE)

Date: February 16–20
Venue: See the course schedule below
Course Code: CEC1
Coordinator: Slobodan Devic, PhD, Department of Medical Physics, McGill University Health Centre, Montréal, Canada
Course Faculty: Ervin Podgorsak, Mohammed Saiful Huq, Slobodan Devic, Waleed Al-Najjar, William Parker, Nada Tomic , Ghazi Alsbeih, Mohammed Al-Shabanah, Shan Yau, Belal Moftah, and Pedro Andreo

Course Aim: This intensive course will provide comprehensive lectures to offer a broad understanding of the fundamentals of Medical Physics and help participants to prepare for board certification exams. In addition, workshops emerging from this course will cover topics ranging from basic radiation therapy planning procedures to advanced radiation therapy techniques as well as Monte Carlo simulations, 3D gel dosimetry and radiochromic film dosimetry.

An anonymous practice board exam will be given during the first and the last day of the course to provide participants with medical physics certification exam practice. The practice exam will consist of typical board exam questions on basic radiation physics. Students will complete the exam and hand it in under their chosen code name and the exam results will be posted under the code names.

Handouts related to specific lectures will be distributed before lectures.

COURSE SCHEDULE

LECTURE SESSIONS: Sunday, February 16
Venue: Research Centre Room # 304, KFSH&RC

1. Medical Physics in Saudi Arabia: Past, Present, and Future, Belal Moftah
2. Evolving Trends in Academic and Clinical Education of Medical Physicists, Ervin Podgorsak
3. Tutorial on Advanced Radiotherapy Techniques, Waleed Al-Najjar
4. Tutorial on Radiation Therapy Process, Mohammed Al Shabanah
5. Practical Aspects of Medical Physics Certification Examinations, Ervin Podgorsak
6. First Anonymous Practical Examination, Ervin Podgorsak
7. Tutorial on X-ray Imaging for Radiotherapy, Nada Tomic
8. Tutorial on MRI and PET for Radiotherapy, Slobodan Devic
9. Tutorial on Radiation Biology, Ghazi Alsbeih
10. Tutorial on Brachytherapy, Slobodan Devic
11. Tutorial on Energy Transfer and Energy Absorption in Photon Interactions with Matter, Ervin Podgorsak
12. Tutorial on Interaction of Charged Particles with Matter, Ervin Podgorsak

LECTURE SESSIONS: Sunday, February 17
Venue: AlFardousa, Intercontinental Hotel

1. Tutorial on Target and Flattening Filter in Production of Megavoltage X-ray Beams: Theoretical and Practical Aspects, Ervin Podgorsak
2. Tutorial on Medical Linear Accelerator Operation, Shan Yau
3. Tutorial on Calibration of Photon Beams following TRS398 recommendations, Mohammed Saiful Huq
4. Tutorial on Calibration of Electron Beams following TRS398 recommendations, Mohammed Saiful Huq

LECTURE SESSIONS: Tuesday, February 18
Venue: AlFardousa, Intercontinental Hotel

1. IMRT – an overview, M. Saiful-Huq
2. Tutorial on Implementation of Image Guided Radio Therapy, Nada Tomic
3. Tutorial on Small Field Dosimetry, Perdo Andreo

LECTURE SESSIONS: Wednesday, February 19
Venue: AlFardousa, Intercontinental Hotel

1. Tutorial on Health Physics, W. Parker
2. Tutorial on Clinical Electron Beam Therapy, W. Parker
3. Second Anonymous Practical Examination, Ervin Podgorsak

WORKSHOP SESSIONS: Wednesday, February 19
Venue: Research Centre Classroom 304, KFSH&RC

1. Results of Second Practical Examination, E. Podgorsak

WORKSHOP SESSIONS: Wednesday, February 19

CEC2: RADIOTHERAPY FOR BREAST CANCER

Date and Time: February 17–19
Venue: AlLazurd, Intercontinental Hotel
Course Code: CEC2
Coordinator: Yasser Khafaga, MD, KFSH&RC, Riyadh
Course Faculty: Alphonse Taghian, Rita Pant, Yasser Khafaga, Dahish Ajarem, Ruud Pijnappel, E. Turgut Tali, Yassir Bahadur, Pedro Lara, Sergio Maluta, Dimitri Hristov

Target Audience: This course is aimed at radiation oncologists, physicists, dosimetrists as well as other interested parties, who need updated overview of state of the art radiotherapy in breast cancer.

Course Aim: Review of issues related to radiotherapy for breast cancer. It will cover epidemiology, clinical evaluation, radiotherapy indications, contraindications and complications. It will also cover the various radiotherapy parameters including target volume delineation (breast/boost region/chest wall/nodes/organs at risk).

Lectures:

1. Review of All Female Breast Cancer Cases from the Saudi Cancer Registry, Dahish Ajarim
2. Imaging of Brachial Plexus, E. Turgut Tali
3. Imaging of the Axilla, Ruud Pijnappel
4. Breast Anatomy for Radiation Treatment, Rita Pant
5. Breast Boosts Techniques, Yassir Bahadur
6. Improving Breast Radiotherapy: from Imaging to Delivery, Dimitri Hristov
7. The Use of Proton Beam in The Treatment of Breast Cancer, Alphonse Taghian
8. Radiation Associated Second Breast Cancer, Yasser Khafaga
9. Intraoperative Radiotherapy in Breast Cancer: The TARGIT Evidence, Pedro Lara
10. Intraoperative Radiotherapy (IORT) in Breast Cancer Using Electrons, Sergio Maluta
11. Regional Lymph Nodes Radiation: Indications and Complications, Alphonse Taghian
12. CT-based Treatment Planning: Defining the Target for Breast Radiation, Alphonse Taghian

CEC3: ADVANCED RADIOTHERAPY TECHNIQUES

Date and Time: February 17–19
Venue: Hall C, Intercontinental Hotel
Course Code: CEC3

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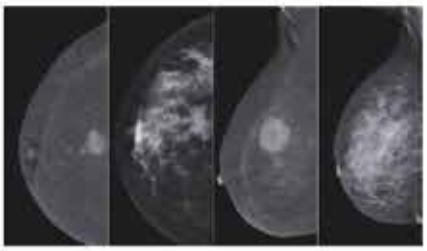

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20:00

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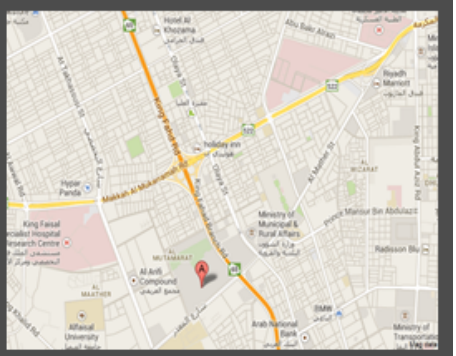

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GE imagination at work

Seats are limited... Please book your seat at GEHC Booth

Coordinator: Rana Mahmood, MD, Radiation Oncology, KFSH&RC, Riyadh
Course Faculty: Arno Mundt, Slobodan Devic, Giovanna Pepe, Benjamin Calvo, William Parker, Brian O'Sullivan, Shan Yau, Tomas Kron, Donald Goer, Martin Sabel, Theodore DeWeese, Kevin Brown

Target Audience: The course is aimed at radiation oncologists, radiation physicists and radiation therapists involved in the implementation of advanced techniques in their department. Basic knowledge of radiation oncology and radiation physics are a prerequisite.

Course Aim: This course offers highlights related to the rapidly evolving technologies of radiotherapy and their major applications in modern cancer treatment. These include IMRT, IGRT, SRS, IORT and Image adapted Brachytherapy. The course is intended to be an explanatory review of issues related to the implementation of these techniques in the radiation clinic. The presentations will be given by noted experts from major national and international centers that have broad experience with these advanced treatment approaches.

Lectures:

1. PET-CT applications in RT planning, Giovanna Pepe
2. Intensity Modulated Radiation Therapy for Gynecologic Cancers: Past, Present and Future, Arno Mundt
3. MRI simulation for radiotherapy treatment planning, Slobodan Devic
4. MR Integrated with Radiotherapy, Kevin Brown
5. Patient selection criteria for IOERT, Benjamin Calvo
6. The Principles of H&N Cancer Management in the Era of IMRT and IGRT, Brian O'Sullivan
7. RapidArc and RapidPlan, Martin Sabel
8. Advances in Cranial-Spinal Radiation Therapy, William Parker
9. Total skin electron therapy (TSET) and total body irradiation, Shan Yau
10. Motion management in radiotherapy, Tomas Kron
11. IOERT Protocol Studies: Challenges in Implementation, Donald GoerAndrogen
12. Suppression and Radiation in the Treatment of Prostate Cancer: Why Do We Sequence Them the Way We Do? Theodore DeWeese

CONTINUING EDUCATION COURSES IN DIAGNOSTIC IMAGING

CEC4: MRI IN PRACTICE (PRE-ICRM COURSE/WORKSHOP)

Date and Time: February, 16–20
Venue: Post Graduate Center Auditorium, KFSH&RC, AlZumurrud, Intercontinental Hotel and Post Graduate Center, Auditorium, KFSH&RC
Course and Workshop Code: CEC4 & CEC4W1
Coordinator: Mr. Nabeel Mishah, King Abdulaziz University Hospital, Jeddah, Saudi Arabia
Course Faculty: Cathy Westbrook, MSc, John Talbot, MSc

Target Audience: Radiographers and anyone with an interest in the underpinning principles of MRI

Learning Objectives: By the end of the course, delegates will understand the underpinning principles behind the safe operation of a modern MRI scanner, and the acquisition of optimized MRI images.

Course Description: This is a pre-ICRM five-day course consisting of didactic lectures. Based on the World's best-selling MRI book, MRI in Practice - The Course is the largest course of its kind and has been the market leader in MRI education since 1992. Currently presented in 16 countries across 5 continents, the program seeks to engage and educate in equal measure and has been presented to over 800 delegates in the past 12 months. The course content uses state of the art presentation and computer generated imagery to bring some difficult concepts to life in a way that has never been matched. Importantly, the content is not presented by physicists, it is presented by radiography lecturers (and authors) Cathy Westbrook and John Talbot. This means that all of the important learning points are applied directly to the operation of the MRI scanner console, and the acquisition of optimum quality MRI images. Please note that the use of any electronic devices such as cameras, recording equipment and mobile computing devices such as laptops

and tablets is strictly prohibited in the lecture hall for the duration of this course.

The complete program is available on the webpage as a pdf file.

CEC5: WOMEN BREAST IMAGING

Date and Time: February 17–19, 8:10–9:30 am
Venue: AlMasmak, Intercontinental Hotel
Course Code: CEC5
Coordinator: Dr. Nuha Khoumais, KFSH&RC, Riyadh, Saudi Arabia
Course Faculty: Nathalie Duchesne, H. Schultze-Haakh, Elizabeth Sutton, Ruud Pijnappel

Target Audience: Residents, Fellows, Radiologists, Radiology Technologists, Surgeons, Oncologist and Family Physicians.

Course Objectives: At the end of the course, participants should be able to

1. Identify the indications of mammography, Ultrasound and Magnetic resonance imaging of the Breast.
2. Detect various imaging abnormalities using conventional imaging modalities
3. Learn about the emerging tools in diagnostic and minimally invasive breast imaging
4. Select and use the most appropriate image guidance for adequate sampling
5. Describe the steps required for image guided sampling
6. Utilize the histopathological result of sampling to asses for concordance and select the next step in patient management

Lectures:

1. Breast MRI in 2014, N. Duchesne
2. Breast MRI – Scanning Protocol, H. Schultze-Haakh
3. MR-Update on the upcoming version of the BIRADS lexicon, E. Sutton
4. DCIS Imaging Update, R. Pijnappel
5. Mammogram and Ultrasound- update on the upcoming Version of the BIRADS lexicon, E. Sutton
6. Mammographic presentation of high risk lesions, R. Pijnappel
7. The Use of Breast US in 2014, N. Duchesne
8. Radiology pathology correlation following breast biopsy, N. Duchesne
9. Digital Breast Tomosynthesis, R. Pijnappel

CEC6: ADVANCED DIAGNOSTIC IMAGING TECHNIQUES

Date and Time: February 17–19, 8:10–9:30 am
Venue: Buraidah Hall, Intercontinental Hotel
Course Code: CEC6
Coordinator: Lamia Jamjoom, MD, King Abdulaziz University Hospital, Jeddah, Saudi Arabia
Course Faculty: Manzoor Ahmed, Peter Morris, Khalil Kurdi, E. Turgut Tali, Michael Bolen, Keith Faulkner, Francis Scholz, Mannudeep Kalra and Raphael Blanc

Target Audience: Radiologists, Radiology Fellows and Radiology Residents

Course Description: Twelve lectures in different radiological specialties, discussing the advantages of different imaging modalities and protocols, helping the audience determine what is best for their patients.

Lectures:

1. Multi-Parametric Advanced MR Imaging of Brain Tumors: Practical Approach, Manzoor Ahmed
2. A Multimodal Imaging Approach to the Study of Schizophrenia, Peter Morris
3. Flow Diverters in the Treatment of Complex Brain Aneurysms, Khalil Kurdi
4. Systemic Diseases and Spine, E. Turgut Tali
5. CT and MRI of the Aorta, Michael Bolen
6. Esdophagial Trauma, Francis Scholz
7. CT Guided Biopsy and Ablation in the Chest, Michael Bolen
8. QA in Mammography, Keith Faulkner
9. CT of Pelvic Hernias, Indirect Inguinal Hernia, Direct Inguinal Hernia, Obturator Hernia, Spigelian Hernia, Francis Scholz
10. Advanced Imaging in Cerebral AVM from Diagnostic to Endovascular Treatment, Raphael Blanc
11. Closed Loop and Internal Hernia Obstructions, Francis Scholz
12. Making CT Protocols: Recipe of the "Just Right" Scanning Ingredients and the New Standard for CT: Iterative Reconstruction, Mannudeep Kalra

CEC7: ADVANCED NUCLEAR MEDICINE TECHNIQUES

Date and Time: February 17–19, 8:10–9:30 am
Venue: AlYaqoot, Intercontinental Hotel
Course Code: CEC7
Coordinator: Mahmoud M. Tuli, MD, KFSH&RC, Riyadh
Course Faculty: Glenn D Flux, Manuel Bardies, Marco Chinol, Mathew L. Thakur, Giovanna Pepe, Ahmed Fatalah, Scott Flamm, Mirvat Alasnag, Mouaz Al-Mallah, Medhat Osman and M. F. Ben Slimene

Target Audience: Nuclear Medicine Technologist, physicists, Radiopharmacists, Radiochemists, Oncologists, Endocrinologists, Radiologists and Nuclear Medicine physicians

Lectures:

1. PET Radiopharmaceuticals: Valuable Tools in Tumor Therapy, Marco Chinol
2. Determining efficacy of Breast cancer therapy by PET imaging of HER2 mRNA, Matthew Thakur
3. PET-CT applications in RT planning, Giovanna Pepe
4. Neuroendo-crine Tumors Dia-gnosis (Octe-reoScan to 68Ga-DOTA Peptide PET-CT), Giovanna Pepe
5. Cardiac SPECT: Myocardial perfusion and viability, Ahmed Fahala
6. Cardiac PET: myocardial perfusion and viability, Mouaz Al-Mallah
7. Cardiac CT: Combined assessment of coronary artery and perfusion, Mirvat Alasnag
8. Cardiac MRI: In assessment of myocardial perfusion and viability, Scott Flamm
9. Monte Carlo Methods for imaging and dosimetry, Manuel Bardies
10. Toward personalized treatment planning, Glenn D Flux
11. Digital PET/CT- clinical application, Medhat Osman
12. Impact of 131I SPECT-CT on Nodal Staging of Differentiated Thyroid Ca-rcinoma, M. F. Ben Slimene

CEC8: SPECT, PET & CT FOR TECHNOLOGISTS

Date and Time: February 17 - 19, 8:10–9:30 am
Venue: Oasis, Intercontinental Hotel
Course Code: CEC8
Coordinator: Gary Sayed, PhD
Course Faculty: Elwin Tilson, Richard States, Gary Sayed, Essam Mattar, Lina Hammad, Sarab Al-Olayan and Habis Alhalaika

This Continuing Education Course (CEC) is specifically designed for radiologic technologists interested in advancing their knowledge in current and innovative professional practice and clinical applications. The CEC will also provide the requisite foundational background in the principles and practice of each modality covered in the salient Workshop.

Lectures:

1. Overview of CT Technology and Current Practices, Elwin Tilson
2. Overview of SPECT/CT Technology and Current Practices, Richard States
3. Overview of PET/CT Technology and Current Practices, Gary Sayed
4. Overview of Image Fusion/Processing Technology and Current Practices, Gary Sayed
5. Overview of Intracranial Ultrasound Technology and Current Practices, Lina Hammad
6. Professional Motivational Session, Saleh Alalaiyan
7. Image Critique, Habis Alhalaika
8. Our Profession and Professionalism, Elwin Tilson
9. National and Regional Professional Resources for Technologists, Essam Mattar
10. 1International Professional Resources for Technologists, Elwin Tilson, Richard States
11. 1Graduate Education Opportunities for Technologists, Gary Sayed

CEC9: HEALTH INFORMATICS

Date and Time: February 17–19, 8:10–9:30
Venue: Qasr Khozam, Intercontinental Hotel
Course Code: CEC9
Coordinator: Metab Alkubeyyer, MD, King Khalid University Hospital, Riyadh
Course Faculty: Bradley Erickson, Metab Alkubeyyer, Harry Solomon, Nabeel Mishah, Kostas Chantziantoniou, Ammar Al-Badarneh and Moneif Eid

Target Audience: Radiologist, IT Managers, Medical Physicists, and PACS Administrators.

Course Description: This course offers highlights related to imaging and health informatics. The rapidly evolving image sharing technologies and standards will be reviewed. The course is intended to be an explanatory review of issues related to PACS, image sharing and workflow from the level of imaging department up to enterprise and national level.

The presentations will be given by noted experts from major national and international centers that have broad experience with image management and technology.

Lectures:

1. 20 years of PACS: 10 Lessons Learned, Bradley Erickson
2. Introduction to IHE – Integrating the Healthcare Enterprise, Harry Solomon
3. Status of Healthcare IT, Nabeel Mishah
4. Status of DICOM standards for radiology, radiation oncology, and radiation protection, all of which are in active development, Harry Solomon
5. Clinical Image Sharing Technologies for Medical Imaging Enterprises, Bradley Erickson
6. E-Learning Management System in Imaging Department, Metab Alkubeyyer
7. Electronic Medical Record (EMR) and Electronic Health Record (EHR), Nabeel Mishah
8. Making the Most of DICOM – Keys to improved workflow, Harry Solomon
9. Workflow Engines and Content Management Systems: The Next Step for Imaging Departments, Bradley Erickson
10. PACS Implementation Strategy, Kostas Chantziantoniou
11. Saudi e-health Exchange and the Interoperable Electronic Health Record (iEHR), Ammar Al-Badarneh
12. Saudi National Digital Image Sharing and Tele-Radiology Platform, Moneif Eid

CEC10: JOINT WHO/IAEA/KFSH&RC COURSE & WORKSHOP: "INTERNATIONAL RADIATION BASIC SAFETY STANDARDS (BSS) IMPLEMENTATION IN HEALTH CARE"

Date: Thursday, February 20, 8:00–9:45 AM & 10:00–12:00
Venue: Treatment Planning, KFSH&RC
Coordinator: Maria del Rosario Pérez, MD, WHO and Jehad Al-Watban, MD, KFSH&RC, Riyadh
Course Faculty:

1. Dr. Sjirk Boom, Clinical Scientist iXR, BIU Interventional X-ray, Philips Healthcare, North Brabant, The Netherlands
2. Dr. Jerrold Bushberg, Radiology & Radiation Oncology Director, Health Physics Programs, University of California, Davis School of Medicine, Sacramento, California, National Council of Radiation Protection & Measurements (NCRP), USA
3. Dr. Ahmad Alenezi, Senior Consultant Medical Physicist (Nuclear Medicine), Director, Medical Physics Department, Prince Sultan Military Medical City, Riyadh, Saudi Arabia
4. Dr. Ahmed Megzifene, Head, Dosimetry & Medical Radiation Physics Section, Division of Human Health, International Atomic Energy Agency (IAEA) Vienna, Austria
5. Dr. Mannudeep Kalra, Assistant Radiologist, Thoracic and Cardiac Imaging, Massachusetts General Hospital, Boston, USA
6. Dr. Belal Moftah, Chairman, Biomedical Physics Department , King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia, Adjunct Professor, McGill University, Montreal, Canada
7. Dr. Maria del Rosario Pérez, Scientist, Radiation Programme, Department of Public Health and Environment, World Health organization (WHO), Geneva, Switzerland
8. Dr. Nizar Al-Nakshabandi, Department of Radiology & Medical Imaging, Faculty of Medicine, King Saud University, Pan-Arabic Society of Radiology, Saudi Arabia)
9. Dr. Mohammad Al-Shabanah, Section Head, Radiation Oncology, Oncology Centre, King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia
10. Dr. Jehad Al-Watban, Consultant Interventional Radiologist, King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia

	COURSE PROGRAM	
TIME	ACTIVITY	FACULTY
8:00-9:30 AM	L1: Welcome Remarks and Introduction to Speakers	
	L2: Medical Uses of Ionizing Radiation, Trends, Doses and Risks	Jerrold Bushberg
	L3: Improving Radiation Protection in Medicine- the Bonn Conference and its Call for Action	Maria Pérez
	L4: Overview of the BSS Revision Process, New General Safety Requirements	Maria Pérez
	L5: Specific Safety Requirements for Medical Imaging & Therapeutic Procedures	Maria Pérez
	L6: The new International Basic Safety Standards: How Will it Affect The Medical Physics Practice?	Ahmed Meghzifene
	L7: Discussion	
9:30-9:45	COFFEE BREAK	
9:45-11:15	L8: Patient Protection in Radiotherapy: Perspective of a Radiation Oncologist	Mohammad Al-Shabanah
	L9: Patient Protection in Interventional Radiology: Perspective of an Interventional Radiologist	Jehad Al-Watban
	L10: Patient Protection in Nuclear Medicine: Perspective of a Nuclear Medicine Specialist	Mahmoud Tuli
	L11: Patient Protection in Radiation Medicine & PET/CT: Perspective of a Nuclear Medicine Physicist	Ahmad Alenezi
	L12: Patient Dose Reduction in Interventional Radiology	Sjirk Boon
	L13: Towards Low Dose CT for Pediatrics and Adults	Mannudeep Kalra
	L14: Role of Professional Societies	Panel Discussion
	L15: Education and Training	Panel Discussion
11:15-11:45	L16: Communication with Patients and Media	Panel Discussion
11:45-12:15	L17: Role and Impact of Regulation	Panel Discussion

CEC11: WORKSHOP ON COMPREHENSIVE AUDITS IN RADIATION ONCOLOGY, DIAGNOSTIC AND INTERVENTIONAL RADIOLOGY (PRE-ICRM COURSE/WORKSHOP)

Date: Sunday, February 16
Venue: Post Graduate Classroom #3, KFSH&RC
Coordinator: Ahmed Meghzifene, PhD, IAEA, Vienna
Course Faculty: Stefaan Vynckier, Tomas Kron, Keith Faulkner, Ahmed Meghzifene, Mohammad Alshabanah and Gurmeet Singh

Target Audience: Radiation Oncologists, Medical Radiation Physicists, Dosimetrists & Radiation Therapists; Radiologists, Diagnostic Physicists, Medical Technologists, hospital administrators and health authorities

Course/Workshop Aim: To inform the participants on comprehensive audit methodologies for radiation oncology and diagnostic and interventional radiology and promote the concept of audits among health professionals and health administrators.

Course/Workshop Description:

- The auditing process as a tool for quality improvement
- Presentations on IAEA guidelines, Quality Assurance Team for Radiation Oncology (QUATRO) and Quality Assurance Audit for Diagnostic Radiology Improvement and Learning (QUAADRIL)
- Feedback from auditors and audited staff
- Lessons learned

COURSE PROGRAM		
TIME	**ACTIVITY**	**FACULTY**
08:15-09:45	Opening and Workshop Objective	Ahmed Meghzifene
	• Comprehensive Audits of Radiotherapy Practices: A Tool for Quality Improvement: Quality Assurance Team for Radiation Oncology (QUATRO)Risk management in radiotherapy • Overview of IAEA Guidelines on Comprehensive Audits • The need for comprehensive audits in radiation oncology: radiation oncologist's perspective • The need for comprehensive audits in radiation oncology: medical physicist's perspective • The Need for Comprehensive Audits in Radiation Oncology: Therapy Radiographer's Perspective	Stefaan Vynckier, Tomas Kron, Mohammad Alshabanah, Gurmeet Singh
09:45-10:00	**COFFEE BREAK**	
10:00-12:15	• IAEA Support to National Dosimetry Audits • Auditing Advanced Technology • Discussions on Clinical Audits of Radiotherapy Practice	Keith Faulkner, Radiologist and Others
12:15-13:15	**PRAYER & LUNCH BREAK**	
13:15-15:30	• Comprehensive Clinical Audits of Diagnostic Radiology Practices: A Tool for Quality Improvement: Quality Assurance Audit for Diagnostic Radiology Improvement and Learning (QUAADRIL • Introduction to Clinical Audits in Diagnostic Radiology • The Need for Comprehensive Audits: A Radiologist's Perspective • The Need for Comprehensive Audits: A Medical Physicist's Perspective • Incidents and Their Investigation: An Interactive Session • Experience of Undertaking QUADRIL Audits • Discussions on Clinical Audits of Diagnostic Radiology Practices	All faculty and participants
15:30-16:00	**ASR PRAYER AND COFFEE BREAK**	
16:00-17:00	• What are the Challenges for Setting up Compressive Audits at the National Level? • How Can the Concept of Audits be Promoted? Do we Need Regulations? • How do we Deal/Follow-up with Serious Shortcomings? • Other Discussion Items from the Audience? • Conclusions/Recommendations	All Faculty and Participants

CEC12: INTRODUCTION TO RADIATION MEDICINE

Dates: February, 16–20
Coordinator: Belal Moftah, PhD, Chairman, Biomedical Physics Department, KFSH&RC, Riyadh
Course Faculty: See the program below

Target Audience: Fresh University Graduates, University Students and Junior Professionals in the field

Learning Objectives: Upon completion of this course, attendees will have:

1. Understanding of the various applications of radiation in patient care.
2. Understanding of the extent of the field of radiation medicine sciences.
3. Recognition of career paths and professional development opportunities.
4. Opportunity to recognize the various professionals who work in the various radiation medicine fields and their academic/professional backgrounds.

Course Description: This fundamental course will provide students and new graduates with general outline of the applications of radiation in medicine. In this course, lectures will cover basics of radiation medicine applications which may include medical imaging, radiation therapy and other related sciences like medical physics and radiobiology. Also, lectures on different aspects of radiation protection will be covered. These may include radiation doses and limits, design of radiation facilities, protection of workers, patients and public. These lectures will enable attendees to understand the role of the different radiation medicine workers and the capabilities and limitations of each modality. They will be inspiring for them to continue in radiation medicine field and will attract others to this field.

Day 1: Sunday, February 16
Venue: Post Graduate Classroom #4, KFSH&RC

08:15–08:35 — International Atomic Energy Agency, Daud Mohamad
08:35–08:55 — Arabic Atomic Energy Agency, Ahmed Rashad
08:55–09:15 — King Abdullah City for Atomic and Renewable Energy, Mohammed Qarwan
09:15-09:45 — Radiation in Medicine: Introduction, Belal Moftah
09:45-10:00 — Break
10:00–10:30 — Radiopharmaceuticals and Tracers, Ibrahim AlJammaz
10:30–11:00 — Nuclear Medicine: Physics Aspect, Refaat AlMazrou
11:00–11:30 — Nuclear Medicine: Clinical Aspect, M. F. Ben Slimene
11:30–12:15 — Nuclear Cardiology, Hani AlSergani
12:15-13:15 — Lunch Break
13:15-14:00 — Radiography, Ahnaf Arafah
14:00-14:30 — Diagnostic Imaging: Physics Aspect, Adnan Alwatban
14:30-15:00 — Diagnostic Imaging: Clinical Aspect, Salahudin El Naas
15:00-15:30 — Applications of Non-ionizing Radiation, Dimitri Hristov
15:30-16:00 — Break
16:00-16:30 — Radiation Oncology: Clinical Aspects, Mohammed AlShabanah
16:30-17:00 — Radiation Oncology: Physics Aspects, Belal Moftah

Day 2: Monday, February 17
Venue: AlHareeq, Intercontinental Hotel

08:10-08:30 — Radiation Protection I, Ibraheem AlAnazi
08:30-08:50 — Radiation Protection II, Ibraheem AlAnazi
08:50-09:10 — Basic Safety Standards, Maria Periez
09:10-09:30 — Responsibilities of a Radiation Safety Officer Workers (RSO), Abdulrahman Alarfaj

Day 3: Tuesday, February 18
Venue: AlHareeq, Intercontinental Hotel

08:10-08:40 — Education and Training Requirements, Sitti Ariffin

08:40-09:10 — Health Physics, William Parker

09:10-09:30 — Radiobiology, Ghazi AlSbeih

Day 4: Wednesday, February 19
Venue: AlHareeq, Intercontinental Hotel

08:10-08:40 — Education and Training Requirements Radiation Emergencies and Incidents, David Lloyd

08:40-09:10 — Future Needs of Medical Physics Services in the Kingdom, Refaat AlMazrou

09:10-09:30 — Future Opportunities in Radiation Medicine, Abdelhamid Saoudi

Day 4: Wednesday, February 19
Venue: King Faisal Specialist Hospital and Research Centre

01:30–5:00 — Practical Session

Day 4: Thursday, February 20
Venue: King Faisal Specialist Hospital and Research Centre

08:00–12:00 — Practical Session

CEC13: RADIOBIOLOGY & RADIATION SAFETY

Date: February 17–19
Venue: Hall A, Intercontinental Hotel
Coordinator: Dr. Ghazi Alsbeih, KFSH&RC
Course Faculty: David Lloyd, Mohamed Ahmad, Ibrahim Al-Anazi, Ibrahim Al-Gain, Saad Aldelaijan, Ghazi Alsbeih, Nigel Pashely, Mark Akselrod and Abdelilah Aboussekhra

Target Audience: Residents and trainees in radiology, radiotherapy, nuclear medicine, physicists, dosimetrists, scientists, researchers, teachers, radiographers, radiotherapists, students and radiation workers who need know-how in radiobiology and radiation safety or want to familiarize or update their knowledge (i.e. for CME) in this field.

Course Description: Provide attendees with a broad overview on radiation biology, biodosimetry and radiation safety and means of protection. It will describe the current knowledge on the effects of ionizing and non-ionizing radiations on biological systems; summarizing the mechanisms of actions, chromosomal aberrations, health consequences, the foundations of the current permissible exposure dose limits, radiation protection and safety.

Lectures:

1. Biological effects of ionizing radiation, Ghazi. Alsbeih
2. Biological effects of non-ionizing radiation, Abdelilah Aboussekhra
3. Introduction to radiation protection, Belal Moftah
4. Radiation Emitting Medical Device Regulation, Ali Aldalaan
5. Variation of radiosensitivity between individuals, Ghazi Alsbeih
6. Patient Dose and Deleterious Effects, Ibrahim Al-Anazi
7. VOMIT: Victim of Medical Imaging Technology, Nigel Pashely
8. OSL detectors for radiation dosimetry, Mark Akselrod
9. Optimization of Protection in Mammography, Ibrahim Al-Anazi
10. Radiation protection at Hadron therapy facilities, Ibrahim Al-Gain
11. Biological Dosimetry: Two Case Studies, David Lloyd
12. National Biodosimetry Laboratory in Saudi Arabia, Ghazi Alsbeih

CEC14: SCIENTIFIC WRITING & PUBLISHING

Date: February 17–19
Venue: AlLazurd, Intercontinental Hotel
Coordinator: Peter Hall, MD, PhD

Course Faculty:

Hilary Russell PhD MResEth is an experienced teacher and researcher and author of nearly 100 peer reviewed papers and other works including books. She is Adjunct Principal Scientist in the Research Centre KFSHRC and Chair of the Northern Ireland Research Ethics Committee. She was formerly Reader (Professorial grade) in Molecular Oncology at Queen's University Belfast.

Peter Hall MD PhD is an internationally recognized clinical scientist and pathologist and has been for 6 years Editor of the prestigious Journal of Pathology (IF 7.3) and author of 220 peer reviewed papers & articles, as well as books and monographs. He was until recently Chairman of Department of Molecular Oncology as well as Senior Consultant, Office of the CEO, KFSHRC.

Target Audience: Anyone with an interest in using and contributing to the scientific literature and in particular doctors such as residents, fellows and junior consultants, nurses, pharmacists, PhD students, post-doctoral fellows and other scientists as well as senior medical students and those in professions allied to medicine.

Course Description: A practical approach to scientific writing from leading researchers and experienced authors and teachers who will guide you through the process of drafting your papers and getting them published. The workshop will cover.

- Publishing in biomedical sciences: a changing landscape
- Understanding the process of peer review and journal production
- The principles of effective writing
- Titles and abstracts, concise writing
- Dealing with references
- Getting your work published: what to do & what not to do
- The importance of following Instructions to Authors
- Ethical issues in publishing, including authorship, plagiarism and fraud

Lectures:

Day 1: Understanding the publishing process

1. The Changing World of Scientific Publishing, P. Hall
2. What Makes Good Writing?, H. Russell
3. Understanding the Peer Review Process & Journal Production, P. Hall
4. The Structure of a Paper and The Art of Concise Writing, H. Russell

Day 2: Getting it right first time

1. Getting it Right First Time: Instruction to Authors, Titles and Abstracts, P. Hall
2. Getting it Right First Time: Dealing with References, Language, Structure, Phrasing and Writing Style, H. Russell
3. Getting it Right First Time: Figures, Table and Graphs, P. Hall
4. Getting it Right First Time: Other Things Journals Ask for and the Problem of The Cover Letter Metadata, P. Hall

Day 3: Problems that can happen and how to avoid them

1. Submitting your Manuscript, P. Hall
2. Dealing with Rejection, P. Hall
3. Publication Ethics, H. Russell
4. Overview and Discussion, P. Hall, H. Russell

CEC1W1: INTENSIVE COURSE AND WORKSHOP: THE WORLD OF MEDICAL PHYSICS

Date and Time: Wednesday, February 19, 1:30 PM–5:30 PM
and Thursday, February 20 8:00 AM–12:15 PM

Venue: Classroom 304, Research Centre and afterwards Join One of the CEC1 or CEC3 Workshops
Workshop Code: CEC1W1
Coordinator: Waleed Al-Najjar, PhD, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Pedro Andreo, Slobodan Devic, Zeinab Hassan and Waleed Al-Najjar

Workshop Description: This intensive course and workshop will provide comprehensive lectures to offer a broad understanding of the fundamentals of Medical Physics and help participants to prepare for board certification exams. In addition, workshops emerging from this course will cover topics ranging from basic radiation therapy planning procedures to advanced radiation therapy techniques as well as Monte Carlo simulations, 3D gel dosimetry and radiochromic film dosimetry.

An anonymous practice board exam will be given during the first and the last day of the course to provide participants with medical physics certification exam practice. The practice exam will consist of typical board exam questions on basic radiation physics. Students will complete the exam and hand it in under their chosen code name and the exam results will be posted under the code names.

Prerequisite CE Course: World of Medical Physics (CEC1)

CEC1W2: MONTE CARLO SIMULATION

Date and Time: Wednesday, February 19, 2014, 1:30 PM–5:30 PM
and Thursday, February 20, 8:00 AM–12:15 PM
Venue: Classroom 304, Research Centre and Biomedical Physics Conference Room, Biomedical Physics Department, Research Centre
Workshop Code: CEC1W2
Coordinator: Ahmad Nobah, MSc, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Pedro Andreo, Manuel Bardies, Dimitri Hristov and Ahmad Nobah

Target Audience: This workshop is aimed mostly at radiation medical physicists, interested in learning how to implement a clinical Monte Carlo radiation dosimetry system, which can be used for performing accurate dose calculation for cancer patients undergoing radiation therapy treatments. Basic knowledge of radiation physics is a prerequisite. Experience in IT and Monte Carlo simulation will be an added advantage.

Learning Objectives:

5. This workshop intends to introduce the implementation of Monte Carlo simulation in clinical settings.
6. In this workshop, participants will have the basic background required to initiate clinical Monte Carlo Dose calculation engine for clinical patients. This will include both information about different available Monte Carlo codes used in radiotherapy, and also basic information about the computational power required to perform such sophisticated and time consuming accurate dose calculation.
7. Participant will be gradually shown how to build the linear accelerator, and will understand the different parameters required balance/optimize the outcomes; the outcomes are simply the high dose calculation accuracy with the optimal processing time.
8. Participant will then start the result analysis and dose evaluation compared dose calculated from the treatment planning system (TPS) with that calculated by MC engine.

Workshop Description: It is a Show and Tell workshop where participants will be walked-though step-by-step demonstrations for aspects of Monte Carlo of process. It will cover:

- Introduction to Monte Carlo
- Physics Aspects
- What is Monte Carlo
- Monte Carlo Available Codes
- Penelope
- BEAMnrc-EGS
- MCNP
- GEANT
- Computational Requirements:
- Computational power
- Parallel processing
- KFSH&RC MC Experience
- Monte Carlo Clinical Hands-On Example

Prerequisite CE Course: World of Medical Physics (CEC1)

CEC1W3: QA AND MECHANICAL DOSIMETRY DEVICES

Date and Time: Wednesday, 19 February 2014, 1:30–5:30 PM
Venue: Classroom 304, Research Centre and Linear Accelerator Treatment Room 4 (T4), Radiation Oncology Department
Workshop Code: CEC1W3
Coordinator: Zeinab Hassan, PhD, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Naji Alamah, Zeinab Hassan, Haitham Kanaan, Zakiya Al-Rahbi and Nada Tomic

Target Audience: Radiation Medical Physicists

Learning Objectives:

1. Understand and perform QA procedures on linear accelerators based on AAPM TG 142.
2. Learn and perform patient specific QA procedures.
3. Increased knowledge for dosimetry devices used in radiation therapy.

Workshop Description:

- Introduction to the QA and mechanical dosimetry devices commonly used in Radiotherapy.
- Demonstrations will be performed to explain the use of appropriate devices for:
- Daily QA
- Monthly QA
- Patient specific QA

Prerequisite CE Course: World of Medical Physics (CEC1)

CEC1W4: 3D GEL DOSIMETRY

Date and Time: Wednesday, February 19, 1:30–5:30 PM
Venue: TBA Classroom 304, Research Centre and 3D Gel Lab, Biomedical Physics Department
Workshop Code: CEC1W4
Coordinator: Mr. M. Abdullah Al Kafi, and Engr. Akram Al Moussa, KFSH&RC
Workshop Instructors: William Parker, Belal Moftah, Akram Al Moussa, M Abdullah Al Kafi, William Parker and Belal Moftah

Target Audience: Radiation Medical Physicists

Learning Objectives:

1. Have a general understanding of the quality assurance principles associated with 3D gel dosimetry
2. Understand the clinical indications to perform radiotherapy patient specific QA using 3D gel.

Workshop Description: The aim of this workshop is to provide overview of 3D polymer gel manufacture, calibration and application to radiotherapy patient specific QA verification.

Advanced radiation therapy techniques such as Rapid Arc, Tomotherapy and Stereotactic Radiosurgery require comprehensive pre irradiation patient specific QA verification. Comprehensive dose verification for these techniques requires dosimeters that are able to measure complex three-dimensional dose distributions accurately and with good spatial resolution. Existing dose verification QA techniques depend on ion chambers, 2-D arrays of diodes or ion chambers, MOSFETs, diodes in water phantom or films. The main difficulties associated with these devices are that they cannot provide 3D dose verification, most of them are not tissue equivalent which may perturb the radiation field and some have relatively large volume to limit achievable spatial resolution. A potential solution for all of these problems has emerged in the form of water equivalent three dimensional gel.

This workshop will cover:

- An overview of the preparation and manufacture of 3D gel
- An overview of optical CT scanning of the gel
- Calibration and patient specific QA procedure for Rapid Arc, Tomotherapy and CyberKnife patients using 3D gel

Prerequisite CE Course: World of Medical Physics (CEC1)

CEC1W5: RADIOCHROMIC FILM DOSIMETRY

Date and Time: Wednesday, February 19, 1:30–5:30 PM
Venue: Classroom 304, Research Centre and 10000XL Scanner Room, Tomotherapy/CyberKnife Treatment Planning Room and Linear Accelerator Treatment Room 4 (T4), Radiation Oncology Department
Workshop Code: CEC1W5
Coordinator: Saad Aldelaijan, MSc, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Slobodan Devic, Nada Tomic, Saad Aldelaijan, Faisal Al-Zorkany, Mohammed Naseem, Mamoun Shehadeh and Faisal Al-Zorka

Target Audience: This workshop is aimed for radiation medical physicists, medical physics researchers and students interested in learning radiochromic film dosimetry. Basic knowledge of radiation physics is a prerequisite. Some experience in QA using radiochromic film would be a good advantage.

Learning Objectives:

Upon completion of this course, attendees are expected to:

1. Understand different applications of radiochromic film models including some QA procedures.
2. Apply standard calibration steps as well as measurements using radiochromic film.
3. Have a general knowledge on new techniques in radiochromic film dosimetry.
4. Differentiate between dosimetry based on commercial software and in-house customized codes.

Workshop Description: This workshop is intended to provide a hands-on experience in radiochromic film dosimetry where attendees will observe calibration process of radiochromic film as well as measurements and some QA procedures.

The high spatial resolution, energy independence of dose response and near tissue-equivalence of radiochromic film makes it suitable for dose distribution measurements in radiation fields with high dose gradients in a variety of dosimetry applications. They range from daily QA and commissioning, over patients specific QA and in vitro measurements, all the way to dose verification of radiobiological experiments and animal irradiations.

ASCO

المشرق الطبية ALMASHRIQ MEDICALS

BARD/TAMER

This workshop will cover the following topics:

1. Basics in dosimetry: Absolute, reference and relative dosimetry.
2. Advantages of using radiochromic films in dosimetry.
3. Applications of radiochromic films in dosimetry of photon and particulate beams.
4. Essentials of radichromic film dosimetry system.
5. New trends in radiochromic film dosimetry: multichannel versus single channel techniques.
6. Practical session where attendees will experience how to establish their calibration curve and how could it be used for dose measurements.

Prerequisite CE Course: World of Medical Physics (CEC1)

CEC2W1: RADIOTHERAPY FOR BREAST CANCER

Date and Time: Wednesday, February 19, 1:30–5:30 PM
Venue: Oncology Lecture Hall
Workshop Code: CEC2W1
Coordinator: Mohammad Al-Shabanah, MD, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Alphonse Taghian, Mohammad Al Shabanah, Yasser Khafaga, Manal Awidh and Ahmad El-Ashwah

Target Audience: This workshop is targeted at radiation oncologists, physicists, dosimetrists as well as other interested parties, who need updated overview of state of the art radiotherapy in breast cancer.

Workshop Description: This is a Show-and-Tell workshop where participants will walk through step-by-step demonstration of various aspects of breast radiotherapy. Radiation therapy planning for difference cases (intact breast, boost, chest wall, nodes) will be chosen to demonstrate clinically relevant issues. The workshop will include:

- Contouring RTOG vs. ESTRO (target, heart, lung, etc.)
- Planning and conforming to target volume and avoidance of OAR
- Various techniques (3D, IMRT, Photon-electron)
- Active interaction between faculty and audience related to standardization and treatment planning will be encouraged.

Prerequisite CE Course: Radiotherapy for Breast Cancer (CEC2).

CEC3W1: RAPIDARC WORKSHOP

Date and Time: Wednesday, February 19, 1:30–5:30 PM
Venue: Radiation Physics Conference Room and Linear Accelerator Treatment Room 2 (T2)
Workshop Code: CEC3W1
Coordinator: Christine Higby, CMD, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Christine Higby, Lorcel Ericka Venturina, Abdullah Al-Suhaibani, Zakiya Al-Rahbi, Haifa Al Asfor, Sarah Woodroofe, and Martin Sabel

Target Audience: This workshop is aimed at physicists, dosimetrists, radiation oncologists, and radiation therapists interested in Rapid Arc technique on Varian Linacs. Basic knowledge of radiation oncology and radiation physics is a prerequisite. Experience in IMRT is an advantage.

Learning Objectives:

Upon completion of this course, attendees should be able to:

1. Demonstrate an understanding of the uses of Rapid Arc for treatment planning.
2. Differentiate between IMRT and Rapid Arc.
3. Understand the process from CT to planning to QA for Rapid Arc.

Workshop Description: The workshop will include three parts: CT scanning, Treatment Planning and QA. Participants will be walked through a step-by-step demonstration of most aspects of the Rapid Arc process. This year the practical session will be divided into two groups: those with rapid arc experience and those who have not utilized it but are interested in the concepts.

The group with experience in Rapid Arc planning will have an opportunity to see complex planning with less conventional Rapid Arc fields. Attendees will also have the opportunity to share planning tips with others. The group without experience will see the most common uses seen in Rapid Arc planning and a discussion of IMRT versus Rapid Arc.

Planning will be demonstrated on the Varian Eclipse workstations.

Prerequisite CE Course: Advanced Radiotherapy Techniques (CEC3)

CEC3W2: STEREOTACTIC RADIOTHERAPY: CYBERKNIFE

Date and Time: Wednesday, February 19, 1:30–5:30 PM and Thursday, February 20, 8:00 AM–12:15 PM
Venue: Cyberknife Suite and Oncology Conference Room
Workshop Code: CEC3W2
Coordinator: M. Abrar Hussain, PhD, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Adnan Al-Hebshi, M. Abrar Hussain, Amr Mousa Taha and Mona Al-Traiki

Target Audience: Radiation oncologists, neurosurgeons, medical physicists, radiation therapists/radiographers interested in CK hypofrationated radiotherapy and radiosurgery

Workshop Description:

This workshop will provide:

- An overview of the technical and clinical aspects of CK system stereotactic radiosurgery (SRS).
- The technical portion of the workshop focused on description of the CK robotic machine.
- Outline of work-flow in the clinic.
- Selective components of physics QA program including End-2-End tests, patient specific QA, periodical physics QA.
- The clinical portion, CT/MRI/3D-Angio fixation processes, image fusion, contouring & auto-segmentation, treatment planning, plan information transfer and treatment delivery procedures.
- Selective clinical cases for review.

Prerequisite CE Course: Advanced Radiotherapy Techniques (CEC3)

CEC3W3: IMRT/IGRT TOMOTHERAPY

Data and Time: Wednesday, February 19, 1:30 PM–5:30 PM
Venue: TomoTherapy Planning Room, Radiation Oncology Department and Tomotherapy Suite, Radiation Oncology Department
Workshop Code: CEC3W3
Coordinator: Wedyan Safar, CMD, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Amin Alomair, Mamoun Shehada and Wedyan Safar

Target Audience: This workshop is aimed at radiation physicists, dosimetrists, radiation oncologists, and radiation therapists interested in the TomoTherapy modality. Basic knowledge of radiation oncology and radiation physics is a pre-requisite. Experience in IMRT planning and/or treatment will be an asset particularly for those interested in TomoTherapy IGRT.

Workshop Description: The attendees should use the knowledge gained to evaluate the practicalities of TomoTherapy IGRT and the processes involved with a multi-disciplinary approach.

The topics and hands-on training will cover the following topics:

1. Introduction to the TomoTherapy modality.
2. Case study nasopharyngeal case.
3. Step-By-Step TomoTherapy Radiotherapy process:
    - CT Simulation.
    - Contouring.
    - Planning & Optimization.
    - Dose evaluation and Plan specific DQA process.
    - Treatment delivery using the image matching process.

Prerequisite CE Course: Advanced Radiotherapy Techniques (CEC3)

CEC3W4: IGRT- PRACTICAL IMPLEMENTATION FOR CLINICAL USE FOR RADIATION THERAPISTS

Data and Time: Wednesday, February 19, 1:30–5:30 PM
Venue: Executive Board Room, Research Centre and CT Simulator Room and Linear Accelerator Treatment Room 3 (T3)
Workshop Code: CEC3W4
Coordinator: Sameha J Pickford, RT, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Julie Pickford, Arno Mundt, Tomas Kron and Mona Al Turaiki

Target Audience: Radiation Therapists interested in Image Guided Radiation Therapy (IGRT)

Learning Objectives:

1. To provide an overview of IGRT Clinical Rationale and Equipment availability including set-up correction strategies and dose considerations.
2. To review techniques that can be applied in the workplace from treatment preparation & planning, to patient set-up & verification.
3. To identify potential sources of errors in image.
4. To understand the imaging pre-requisites" at each particular step in the treatment chain from DRRs to imaging for "adaptive planning".
5. To compare available technologies At KFSH&RC, and identify advantages and disadvantages of a particular method.
6. To understand the importance of teamwork, training and auditing in the image-guided workflow.

Workshop Description: This is a one and a half day workshop to cover various aspects of IGRT and the practicalities in the clinical setting. The course will provide lectures and demonstrations on IGRT and its use through the various stages.

We will be emphasizing the integration of IGRT techniques and practical implementation using site specific examples.

A good understanding of issues related to patient set-up and imaging both On-line and Off-line is a prerequisite as well as clinical experience in the field.

"Image guided radiotherapy is any imaging at pre-treatment and delivery, the result of which is acted upon, that improves or verifies the accuracy of radiotherapy. IGRT encompasses the whole range from simple visual field alignment checks, through to more complex volumetric imaging that allows direct visualization of the target volume and surrounding anatomy".

Prerequisite Course: Advanced Radiotherapy Techniques (CEC3)

CEC3W5: INTRAOPERATIVE RADIATION THERAPY (IORT) WORKSHOP

Data and Time: Wednesday, February 19, 1:30 PM–5:30 PM and Thursday, February 20, 8:00 AM–12:15 PM
Venue: ICU Conference Room, OR Room 20
Workshop Code: CEC3W5
Coordinator: Ms. Hind Al-Selham, MSc, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Tarek Amin, Rana Mahmood, M. Abrar Hussain, Hind Al-Selham, Donald Goer, Benjamin Calvo and Afrah Al-Somali

Target Audience: Medical physicists, Radiation Oncologists, Oncology surgeons, Radiation therapists, Medical Dosimetrists, Researchers, teachers, and Students who need practical knowledge to work in IORT

Workshop Description: To provide clinical and technical knowledge and hands-on short training course to the participants who are working in or looking to start intra-operative radiation therapy program in their centers.

This workshop will familiarize the attendees with hands-on demonstrations of techniques of IORT, clinical work-flow, patient selection, clinical data collection & quality assurance measurements, patient preparation, tumor removal surgery, cone size & energy selection, MU calculation, machine docking, dose delivery and radiation protection. The practical show-and-tell part consists of 3 sub-workshops:

1. Clinical Aspect of IORT:
    - Oncology and surgical aspect of IORT
    - Radiation oncology aspect of IORT
    - Demonstration of surgical operation
    - Surgical tools
    - Patient closing after treatment
    - Questions and answers in surgical procedure
2. Technical Aspects of IORT:
    - Acceptance and commissioning of Mobetron – IORT machine
    - Demonstration of periodical quality assurance measurements
    - Radiological parameters and their measurements
    - Demonstration of clinical procedures and technique
    - Radiation safety
3. Dose Delivery:
    - Prescription (based on tx depth, cone selected)
    - Docking of machine
    - Parameters input to machine
    - Radiation safety and signage
    - Beam on
    - Final check - everything went as per plan

Prerequisite Course: Advanced Radiotherapy Techniques (CEC3)

CEC3W6: BRACHYTHERAPY WORKSHOP

Data and Time: Wednesday, February 19, 1:30 PM–5:30 PM and Thursday, February 20, 8:00 AM–12:15 PM
Venue: Biomedical Physics Conference Room, Biomedical Physics Department and HDR Brachytherapy Suite, Radiation Oncology Department
Workshop Code: CEC3W6
Coordinator: Umar Mwidu, MSc, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Slobodan Devic, Rana Mahmoud, Majid Mohiuddin and Umar Mwidu

Target Audience: This workshop is aimed at physicists, radiation oncologists with interest in Brachytherapy. Basic knowledge of radiation oncology and radiation physics is a prerequisite.

Learning Objectives: Upon completion of this course, attendees should be able to:

1. Demonstrate an understanding of the clinical indications for HDR Brachytherapy.
2. To apply and implement the principles of image guidance into brachytherapy practice.
3. Have a general understanding of the quality assurance principles associated with HDR Brachytherapy.

Workshop Description: In the last decade the world has witnessed an exponential growth in the advancement of medical imaging technology and radiation therapy as a whole. With its clinical and dosimetric advantages, this growth has facilitated the migration from 2D Brachytherapy to 3D image guided Brachytherapy. During this workshop we shall review the Clinical and Physics aspects in the implementation of a 3D image guided HDR Setup.

The workshop will include two lectures, two planning sessions for gynecologic brachytherapy and a quality assurance session.

Treatment simulation and QA will be on our Nucletron microselectron v3(18) Afterloader while Planning will be demonstrated on our Oncentra 4.3 that's equipped with applicator libraries.

Prerequisite Course: Advanced Radiotherapy Techniques (CEC3)

WORKSHOPS IN DIAGNOSTIC IMAGING TRACK

CEC4W1: MRI IN PRACTICE COURSE AND WORKSHOP

Date and Time: February 16 - 20
Venue: Intercontinental Hotel and KFSH&RC
Course and Workshop Code: CEC4 & CEC4W1
Coordinator: Nabeel Mishah, King Abdulaziz University Hospital, Jeddah, Saudi Arabia
Workshop Instructors: Cathy Westbrook, MSc and John Talbot, MSc

Target Audience: Radiographers and anyone with an interest in the underpinning principles of MRI

Learning Objectives: By the end of the course, delegates will understand the underpinning principles behind the safe operation of a modern MRI scanner, and the acquisition of optimized MRI images.

Course Description: This is a pre-ICRM five-day course consisting of didactic lectures. Based on the World's best-selling MRI book, MRI in Practice - The Course is the largest course of its kind and has been the market leader in MRI education since 1992. Currently presented in 16 countries across 5 continents, the program seeks to engage and educate in equal measure and has been presented to over 800 delegates in the past 12 months. The course content uses state of the art presentation and computer generated imagery to bring some difficult concepts to life in a way that has never been matched. Importantly, the content is not presented by physicists, it is presented by radiography lecturers (and authors) Cathy Westbrook and John Talbot. This means that all of the important learning points are applied directly to the operation of the MRI scanner console, and the acquisition of optimum quality MRI images. Please note that the use of any electronic devices such as cameras, recording equipment and mobile computing devices such as laptops and tablets is strictly prohibited in the lecture hall for the duration of this course.

Note that this is the continuation of the continuing education course CEC4.

CEC5W1: ULTRASOUND PELVIC IMAGING

Date and Time: Wednesday, February 19, 1:00-4:00 PM and Thursday, February 20, 8-12 am
Venue: Post Graduate Center Foyer, KFSH&RC
Workshop Code: CEC5W1
Coordinator: Rafat Mohtasib, PhD, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: US Tech.Team

Target Audience: Ultrasound Technologists, Residents and Fellows, Staff Radiologists and Family Physicians

Learning Objectives: By the end of this workshop, participants should be able to

1. Perform a basic trans-abdominal/ transvaginal pelvic ultrasound examination
2. Accurately measure the endometrial thickness, uterine and ovarian sizes
3. Recognize the most common pathological findings in pelvic ultrasound imaging.
4. Recognize the common imaging finding in early pregnancy

Workshop Flow: Participants will practice how to perform good quality ultrasound examination using one of the latest computer simulation systems with trained personnel

Recommended CE Course: Women Breast Imaging (CEC5)

CEC5W2: STEREOTACTIC GUIDED BREAST BIOPSY USING PRONE TABLE APPROACH

Date and Time: Thursday, February 20, 8-10 am
Venue: US Interventional Room# 4, Department of Radiology, KFSH&RC
Workshop Code: CEC5W2
Coordinator: Manal Abudhais, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Rita Pant

Target Audience: Breast Imaging Radiologists, Radiology Fellows and residents, Surgical and Medical residents, Mammography Technologists

Learning Objectives:

By the end of this workshop, Participants should be able to:

1. Select the most appropriate approach to sample the targeted abnormality
2. List the required steps to effective sampling under stereotactic guidance
3. Master the required steps to post biopsy marker placement
4. Evaluate appropriateness of sampling techniques

Workshop Description: Participants will practice hands on targeting breast abnormalities using the prone table approach with expert radiologists.

Recommended CE Course: Women Breast Imaging (CEC5)

CEC5W3: MRI GUIDED BREAST BIOPSY

Date and Time: Wednesday, February 19, 4:00–7:00
Venue: MR Suite, Department of Radiology, KFSH&RC
Workshop Code: CEC5W3
Coordinator: Hassan Aqeeli, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Helmuth-Shultz Haakh, Elizabeth Sutton and Nathalie Duchesne

Target Audience: Breast Imaging Radiologists

Learning Objectives: By the end of this workshop, participants should be able to learn the required steps to perform MR guided breast biopsy

Workshop Description: The workshop is conducted in two parts; first part as didactic instruction for 30 minutes followed by 50 minutes of practice on MRI scanner using breast phantoms.

Recommended CE Course: Women Breast Imaging (CEC5)

CEC5W4: ULTRASOUND GUIDED BREAST BIOPSY

Date and Time: Wednesday, February 19, 1:00 - 3:30
Venue: Ultrasound Room #8/#3, Department of Radiology, KFSH&RC
Workshop Code: CEC5W4
Coordinator: Rita Pant, MD, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Ruud Pijnappel, Elizabeth Sutton and Nathalie Duchesne

Target Audience: Breast Imaging Radiologists

Learning Objectives:

By the end of this workshop, participants should be able to:

1. Learn the appropriate technique for ultrasound guided Breast biopsy and cyst aspiration
2. Sample solid masses, aspirate a cyst

Workshop Description: Participants will practice targeting different breast (cysts, solid) lesions using tru-cut needle and the latest available vacuum assisted techniques.

Recommended CE Course: Women Breast Imaging (CEC5)

CEC5W5: DIGITAL BREAST TOMOSYNTHESIS: A CASE-BASED APPROACH

Date and Time: Thursday, February 20, 8:00 - 11:00
Venue: Classroom 6, Post Graduate Center, KFSH&RC
Workshop Code: CEC5W5
Coordinator: Kadria Elhaddad, MD, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Ruud Pijnappel, Elizabeth Sutton and Nathalie Duchesne

Target Audience: Breast Imaging Radiologists, Fellows and Residents

Learning Objectives:

By the end of this workshop, participants should be able to detect different breast imaging abnormalities (masses, asymmetries, architectural distortion & micro calcifications) using digital breast tomosynthesis.

Workshop Description: Participants will practice targeting breast microcalcifications using digital breast tomosynthesis with trained personnel

Recommended CE Course: Women Breast Imaging (CEC5)

CEC5W6: BREAST ELASTOGRAPHY

Date and Time: Thursday, February 20, 10:00 - 12:00
Venue: Ultrasound Room #3, Department of Radiology, KFSH&RC
Workshop Code: CEC5W6
Coordinator: Rania Abuaish, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Nathalie Duchesne

Target Audience: Residents, Radiologists, Radiology technologists, Physicians

Learning Objectives:

By the end of this workshop, participants should be able to

1. Differentiate from typically benign and malignant masses
2. Learn the proper technique to assess lesion's elasticity

Workshop Description: Participants will have hands-on training on breast phantoms how to use breast elastography to evaluate breast lesions using the latest Shearwave and mechanical elastography techniques.

Recommended CE Course: Women Breast Imaging (CEC5)

CEC5W7: CONTRAST ENHANCED SPECTRAL MAMMOGRAPHY

Date and Time: Wednesday, February 19, 1:00-3:30 PM and 4:00-6:00 PM
Venue: Meeting Room #1, Postgraduate Center, KFSH&RC
Workshop Code: CEC5W7
Coordinator: Nuha Khoumais, MD, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Application Specialist

Target Audience: Breast Imaging Radiologists, Radiology Fellows and residents, Surgical and Medical residents, Mammography Technologists

Learning Objectives: By the end of this workshop, Participants should be able to:

1. Learn the basic concept of Contrast enhanced spectral Mammography
2. Detect different patterns of breast imaging abnormalities using Contrast enhanced Spectral mammography

Workshop Description: Participants will read with trained personnel how to detect and analyze contrast enhanced spectral mammography.

Recommended CE Course: Women Breast Imaging (CEC5)

CEC5W8: AUTOMATED WHOLE BREAST ULTRASOUND

Date and Time: Wednesday, February 19, 4:00-6:00 PM
Venue: Ultrasound Room #8, Department of Radiology, KFSH&RC
Workshop Code: CEC5W8
Coordinator: Manal Mustafa, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Application Specialist

Target Audience: Ultrasound Technologists, Breast radiologists, Residents and Fellows, Staff Radiologists

Learning Objectives: By the end of this workshop, participants should be able to:

1. Perform a basic breast scan
2. Interpret the screening breast ultrasound images including the coronal reformatted images

Workshop Description: Participants will attend live automated whole breast scan with trained personnel followed by small group discussion about image analysis and reconstruction.

Recommended CE Course: Women Breast Imaging (CEC5)

CEC5W9: TOMOSYNTHESIS GUIDED BREAST BIOPSY

Date and Time: Thursday, February 20, 10:00-12:00
Venue: US Interventional Room #5, Department of Radiology, KFSH&RC
Workshop Code: CEC5W9
Coordinator: Kadria El-haddad, MD, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Nathalie Duchesne

Target Audience: Breast Radiologists, Mammography Technologists, Residents and Fellows

Learning Objectives: To learn the basic steps required to perform Tomosynthesis guided breast biopsy

Recommended CE Course: Women Breast Imaging (CEC5)

CEC6W1: BASIC CARDIAC CT

Date and Time: Wednesday, February 19, 1:30-5:30 PM and Thursday, February 20, 8:00-12:00
Venue: Classroom 7, Post Graduate Center, KFSH&RC
Workshop Code: CEC6W1
Coordinator: Amr M. Ajlan, MD and Lamia Jamjoom, MD, King Abdulaziz University Hospital, Jeddah, Saudi Arabia Jeddah
Workshop Instructors: Scott Flamm, Michael Bolen, Amr Ajlan, Lamia Jamjoom, Ather Radwi and Mouaz Al Mallah

Target Audience: Medical Interns, Radiology Residents, General Radiologists and Cardiologists with interest in exploring Cardiac CT

Learning Objectives: To understand the basics of acquiring cardiac CT, know the major cardiac coronary and non-coronary anatomy and exposure to various common and important pathologies encountered in every-day cardiac CT practice

Workshop Description: The workshop will be given over 2 days. Day 1: 3-4 hours of didactic lectures about cardiac CT anatomy, techniques and common pathologies. Day 2: dedicated to hands-on real time reading of cardiac CT cases with experts in field over 3-4 hours.

Recommended CE Course: Advanced Diagnostic Imaging Techniques (CEC6)

CEC6W2: READ WITH THE EXPERT IN BODY IMAGING

Date and Time: Wednesday February 19, 1:30-5:30 PM and Thursday February 20, 9:30-12:00 am
Venue: Post Graduate Center, Classroom 4
Workshop Code: CEC6W6
Coordinator: Salahudin El Naas, MD, KFSH&RC, Riyadh
Workshop Instructors: Francis Scoltz, Mohamed Tan-Lucien and Salahudin T Elnaas

Target Audience: Radiologists and Residents

Workshop Description: Didactic and Interactive sessions aimed at highlighting current imaging techniques and image interpretation in chest and small bowel pathologies. Participants will have a chance to review interesting and unusual cases with experienced readers.

Part I Wednesday 19th Feb - Chest Theme

01:30–03:30 — HRCT Interpretation of interstitial lung disease and pneumonias
04:00–04:30 — Break
04:00–05:30 — Miscellaneous chest / thoracic cases, Mohamed Tan-Lucien

Part II Thursday 20th Feb – Small Bowel Theme

08:00–09:30 — Crohn's disease - radiological pathological correlation, Francis Scholtz
09:30–10:00 — MR enterography technique and appearances, Salahudin Elnaas
10:00–10:30 — Break
10:30–12:00 — Inflammatory diseases of small bowel, Francis Scoltz
Miscellaneous SB diseases

Recommended CE Course: Advanced Diagnostic Imaging Techniques (CEC6)

CEC6W3: READ WITH THE EXPERT IN NEURORADIOLOGY

Date and Time: Wednesday February 19, 1:30-5:00
Venue: Post Graduate Center, Classroom 1, KFSH&RC, Riyadh
Workshop Code: CEC6W3

Coordinator: Irfan Mamoun, MD, KFSH&RC, Jeddah, Saudi Arabia
Workshop Instructors: Bradley Erickson, Mohammad Dogar, Ibrahim Alorainy and Irfan Mamoun

Target Audience: Radiologists, Medical Physicists and Radiographers

Workshop Description: Interactive sessions where participants will review interesting and unusual cases in Neuroradiology.

Session I: Unusual cases in Neuroradiology, Irfan Mamoun

Session II: Interesting Cases in Neuroradiology, Mohammad Dogar

Session III: Bradley Erickson

Recommended CE Course: Advanced Diagnostic Imaging Techniques (CEC6)

CEC6W4: LOW DOSE AND DUAL ENERGY CT IMAGING: NEW PERSPECTIVES

Date and Time: Wednesday, February 19, 1:30-5:30 PM and Thursday, February 20, 8:00-12:00
Venue: Post Graduate Center, Classroom 8 (Wed.) and Classroom 1 (Thurs.), KFSH&RC
Workshop Code: CEC6W4
Coordinator: Mohamed Ziyad Abubacker, MD, KFSH&RC, Riyadh
Workshop Instructors: Manudeep Kalra

Target Audience: Physicians, Technologists and Medical Physicists

Learning Objectives:

1. This workshop will explain how Low dose CT works and how to protocol CT studies correctly whilst maintaining optimal image quality whilst reducing patient dose.
2. Attendee will also get a chance to understand new approaches in CT such as Dual Energy CT and where it can be applied in clinical practice.

Workshop Description: The topics will include:

- Making CT protocols: Recipe of the "just right" scanning ingredients,
- Dual energy CT: Approaches, Radiation and Applications, and
- Iterative Reconstruction: The new standard for CT.

Recommended CE Course: Advanced Diagnostic Imaging Techniques (CEC6)

CEC7W1: RADIONUCLIDE DOSIMETRY

Date and Time: Wednesday, 1:30 - 5:00 PM
Venue: Office of Research Affairs (ORA) Conference Room, Research Centre, KFSH&RC
Workshop Code: CEC7W1
Coordinator: Salem Sassi, PhD, Prince Sultan Military Medical City, Riyadh
Workshop Instructors: Glenn Flux, Manuel Bardies, Salem Sassi and Mahmoud Tuli

Target Audience: Nuclear Medicine Technologists, Medical Physicists, Radiopharmacists, Nuclear Medicine Physicians and Radiologists.

Workshop Description: The workshop will take the form of allowing participants to calculate doses on real patient data and exploring the impact of the different parameters involved. It will also demonstrate that routine clinical dosimetry can be performed well without the need for extensive resources.

Lectures before the hands-on workshop:

- Introduction to Internal Dosimetry, Manuel Bardies
- Applications of Internal Dosimetry to Molecular Radiotherapy, Glenn Flux

- Monte Carlo Methods for Imaging and Dosimetry, Manuel Bardies
- Towards Personalized Treatment Planning, Glenn Flux

Important Note: Each participant should bring a personal computer (laptop); however two people can share one.

Recommended CE Course: Advanced Nuclear Medicine Techniques (CEC7)

CEC7W2: CYCLOTRON & RADIOPHARMACEUTICALS

Date and Time: Wednesday February 19, 1:00-5:00 PM
Venue: BMR Conference Room, Research Centre, KFSH&RC
Workshop Code: CEC7W2
Coordinator: Faisal Al Rumayan, PhD, Mohammed Alrowaily, MSc, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Marco Chinol, Ahmed Alghaith, Shoaib Shawoo, Faisal AlRumayan, Subhani Okarvi, Barakat Alkenani and Mohammed Alrowaily

Target Audience: Cyclotron and Radiochemist Technicians, Radiopharmacists, Nuclear Medicine Technologists and Nuclear Medicine Physicians and Medical Physicists

Workshop Description:

The participants will have an opportunity to observe the Cyclotron and Radiopharmaceuticals Department facility, integration of various facility components, production and quality control labs. Moreover, Production of FDG radiopharmaceutical will be demonstrated in context with the Good Manufacturing Practices (GMP) and Quality Management to ensure FDG radiopharmaceutical of high quality. Participants will also have the opportunity to observe WBC & RBC labeling which will be followed by the visit to the Cyclotron.

The following lectures will be given at the beginning of the workshop:

1. Introduction to Cyclotrons: Principles and Recent Developments
2. Introduction to FDG
3. Quality Aspects of Radiopharmaceuticals with Focus on FDG
4. Radiopharmaceuticals for targeted therapy: Basics and Clinical aspects
5. 68Ge-Ga68 Generator
6. Cell's labelling
7. Research and Development of Tc-99m labeled peptide radiopharmaceuticals for targeting of cancer

Recommended CE Course: Advanced Nuclear Medicine Techniques (CEC7)

CEC7W3: PET/CT QUALITY CONTROL

Date and Time: Wednesday, February 19, 1-5 PM and Thursday February 20, 8-12 am
Venue: BESC Conference Room, Day Care Procedure Center Building 3rd Floor and PET/CT Center, Research Centre 1st Floor, KFSH&RC
Workshop Code: CEC7W3
Coordinator: Omer Demirkaya, PhD, KFSH&RC, Riyadh
Workshop Instructors: Omer Demirkaya and Salih Shaleya

Target Audience: Medical Physicists, Nuclear Medicine Technologists, PET and CT Specialists, Nuclear Medicine Physician

Learning Objectives:

Upon completion of this course, attendees should be able to:

1. Demonstrate an understanding for the breadth of PET/CT's overall role in diagnostics.
2. Differentiate between the various PET/CT QC tests and their objectives.

Workshop Description: A short lecture discussing the basics of QC/QA tests for PET/CT scanners will be given before the hands-on practical. In this show and tell workshop the participants will be walked through step-by-step demonstration of most aspects of the QC in PET/CT. The hands-on practical session may include the following tests/scans:

- Daily PET and CT QC procedures will be conducted on the PET/CT scanner.
- Steps of quarterly calibration will be shown and explained on the site.
- Simulation of the SUV verification scans using a water phantom.

A didactic lecture, entitled "Quality Control Procedures in PET/CT", will be given in the first venue above before the show-and-tell part of the workshop. Practical sessions will be in the PET center (the second venue above).

Recommended CE Course: None

CEC7W4: USE OF PET/CT IN TREATMENT PLANNING

Date and Time: Wednesday, February 19 1:30-5:00 PM
Venue: PET/CT Center in the Research Centre, Small Planning Room (Dosimetry Unit), Radiation Oncology Section
Workshop Code: CEC7W4
Coordinator: Mohei Eldin Abouzied, MD, Department of Radiology, KFSH&RC
Workshop Instructors: Giovanna Pepe, Nasser Al-Rajhi, Osama Hassad, Salih Shaleya and Moheieldin Abouzied

Target Audience: Medical Physicists, Nuclear Medicine Technologists, Radiotherapists and Nuclear Medicine Physician

Learning Objectives: The objective is for the attendees to understand the principles of applications of PET-CT in treatment planning and to be able to practically perform treatment planning using PET-CT.

Workshop Description: The attendees will be given hands on, practical experience on applications of PET-CT in treatment planning. Experienced physicists will assist the attendees through the steps of using PET-CT in planning of treatment. Expected difficulties and possible problems will be explained. The workshop will be reinforcing the principles of applications of PET-CT in treatment planning as given in the lectures.

Recommended CE Course: Advanced Nuclear Medicine Techniques (CEC7)

CEC8W1: A PANORAMIC OVERVIEW OF OB/GYN AND EMERGENCY ULTRASOUND FOR TECHNOLOGISTS

Date and Time: Wednesday, February 19 1:30-5:30 pm
Venue: Post Graduate Center, Classroom 3
Workshop Code: CEC8W1
Coordinator: Ahnaf Arafah, MBA, KFSH&RC, Riyadh
Workshop Instructors: Saleh Abdulaly, MD

Target Audience: Medical Sonographers and Radiologic Technologists

Learning Objectives:

Upon completion of this activity, the participant will be able to:

1. Outline the principles and practice of ultrasound
2. Describe the current and potential uses of this modality
3. Describe ultrasound's technical and operational challenges, including artifacts
4. Outline clinical image acquisition setup processes

Workshop Description: This ultrasound workshop is specifically designed for sonographers and other medical imaging technologists interested in learning about this modality and its current clinical applications. The

workshop will provide practical and "show and tell" type exposure to instrumentation and image acquisition protocol setups.

Recommended CE Course: SPECT, PET & CT for Technologists (CEC8)

CEC8W2: SPECT/CT AND PET/CT FOR TECHNOLOGISTS

Date and Time: Wednesday, February 19 1:30-5:30 pm
Venue: Post Graduate Center, Classroom 3
Workshop Code: CEC8W2
Coordinator: Mohammed AlRowailey, MSc, Radiology Department, KFSHRC, Riyadh
Workshop Instructors: Elwin Tilson and Richard States

Target Audience: Radiologic Technologists

Learning Objectives:

Upon completion of this activity, the participant will be able to:

1. Outline the principles and practice of the three modalities covered in this CEC8 and Workshop
2. Describe the current and potential uses of these systems
3. Describe SPECT/CT and PET/CT technical and operational challenges, including artifacts
4. Outline clinical image acquisition setup process

Workshop Description: This workshop on SPECT/CT and PET/CT is specifically designed for technologists interested in learning about these hybrid imaging modalities and their current clinical applications. The workshop will provide practical and "show and tell" type exposure to each modality's instrumentation and image acquisition protocol setups.

Recommended CE Course: SPECT, PET & CT for Technologist (CEC8)

WORKSHOPS IN RADIOBIOLOGY, RADIATION PROTECTION & OTHER TOPICS

CEC10W1: JOINT WHO/IAEA/KFSH&RC WORKSHOP: "INTERNATIONAL RADIATION BASIC SAFETY STANDARDS (BSS) IMPLEMENTATION IN HEALTH CARE"

Date and Time: Thursday, February 20, 8:00–9:45 AM & 10:00–12:00
Venue: Treatment Planning, KFSH&RC
Coordinator: Maria del Rosario Pérez, MD, WHO and Jehad Al-Watban, MD, KFSH&RC, Riyadh
Workshop Instructors: Refer to the CEC10 course.

This is a combination of a course and a workshop. For details refer to the course CEC10.

CEC12W1: INTRODUCTION TO RADIATION MEDICINE WORKSHOP

Date and Time: February 19–20
Venue: Post Graduate Center Classroom 3, Tour of the department of Biomedical Physics, Radiotherapy, Cyclotron & Radiopharmaceutical and Radiology facilities
Workshop Code: CEC12W1
Coordinator: Refaat Al Mazrou, MSc, KFSH&RC, Riyadh
Workshop Instructors: Refer to the CEC12 course.

Target Audience: Students, Fresh Graduates and New Professional joined the field of Radiation Medicine recently

Workshop Description: This workshop is the continuation of the course CEC12 and involves practical observations in various related departments.

Recommended CE Course: Introduction to Radiation Medicine (CEC12)

CEC13W1: RADIOBIOLOGY AND BIODOSIMETRY WORKSHOP

Date and Time: Part I: Wednesday, 19 February 2014, 1:30 PM–5:30 PM
Part II: Thursday, 20 February 2014, 8:00 AM–12:30 PM
Venue: Post Graduate Center Classroom 2, KFSH&RC
Workshop Code: CEC13W1
Coordinator: Ghazi Alsbeih, MD, PhD, KFSH&RC, Riyadh
Workshop Instructors: David Lloyd, Ghazi Alsbeih, Najla Al-Harbi, Khaled Al-Hadyan, Muneera Al-Buhairi, Sara Al-Qahtani, Sara Elewisy, Nikki Venturina.

Target Audience: Professionals, Students, Trainees and Technologists in Radiology, Oncology, Radiotherapy, Dosimetrists, Scientists, Researchers, Radiotherapists and radiation workers who need practical knowledge in radiobiology, biodosimetry

Learning Objectives:

Familiarize attendees with biological and health effect of radiation with hands-on demonstrations of techniques of radiobiology and biodosimetry. It will also bring attendees up-to-date with the developments in this field.

Workshop Description:

- Demonstration of Radiobiological dose-effect relations and factors capable of modifying their shape
- Cell survival curves, chromosomal aberrations, determination of radiosensitivity and bio-mathematical models
- Molecular biology techniques to study genetic predisposition to radiation damage
- Questions and answers in radiobiology and health effects of ionizing radiation.
- Explain the principle of biological dosimeters and their beneficial application in accidental radiation over-exposure
- Demonstration of technical procedures and techniques
- Construction of the dose-response calibration curve
- Estimating accidental radiation doses received

Recommended CE Course: Radiobiology & Radiation Safety (CEC13)

CEC13W2: RADIATION SAFETY/PROTECTION

Date and Time: Part I: Wednesday, 19 February 2014, 1:30 PM–5:30 PM
Part II: Thursday, 20 February 2014, 8:00 AM–12:30 PM
Venue: Prince Salman Auditorium, Tour of radiation protection facilities and devices
Workshop Code: CEC13W2
Coordinator: Fareed Mahyoub, MSc, Biomedical Physics Department, KFSH&RC, Riyadh, Saudi Arabia
Workshop Instructors: Fareed Mahyoub, Mohamed Ahmad, Ibrahim Al-Gain, Celestino Lagarde, Arwa Helmi, Huda Mosally, Huda Alghamdi

Target Audience: Professionals, Students, Trainees and Technologists in Radiology, Oncology, Radiotherapy, Nuclear Medicine, Physicists, Dosimetrists, Scientists, Teachers, Radiographers, Radiotherapists and radiation workers who need practical knowledge in radiation protection

Learning Objectives:

Familiarize attendees with biological and health effect of radiation with hands-on demonstrations of techniques of Radiation Safety/Protection. It will also bring attendees up-to-date with the developments in this field.

Workshop Description:

- Thermo-Luminescence Dosimeter (TLD) Laboratory and monitoring of radiation workers

- Bioassay: thyroid uptake measurement
- Survey of radiation-producing equipment and efficiency of shielding
- Radiation leak test: gamma and beta radiations counting
- Management, storage and disposal of radioactive waste
- Gamma Source Shielding Design

Recommended CE Course: Radiobiology & Radiation Safety (CEC13)

ACKNOWLEDGMENTS

ACRONYMS USED IN THE SCIENTIFIC PROGRAM

AAPM	American Association of Physicist in Medicine
ASTRO	American Society for Radiation Oncology
CEC	Continuing Education Course
DI	Diagnostic Imaging
DIRS	Diagnostic Imaging Radiobiology and Radiation Safety
ESTRO	European Society for Therapeutic Radiology and Oncology
IAE	International Atomic Energy Agency
KFSH&RC	King Faisal Specialist Hospital and Research Centre
MoH	Ministry of Health
NIRS	National Institute of Radiological Sciences
PGC	Post Graduate Center
PGC CR1	Post Graduate Center Classroom #1
PGC CR3	Post Graduate Center Classroom #3
PGC CR7	Post Graduate Center Classroom #7
PGC CR8	Post Graduate Center Classroom #8
PGC Auditorium	Post Graduate Center Auditorium
PSA	Prince Salman Auditorium
RBS	Radiation Biology and Safety
RC 304	Research Centre 304
RO	Radiation Oncology
ROP	Radiation Oncology Physics
RPRO	Radiobiology Protection & Radiobiology
RT	Radiation Therapy
SCS	Saudi Cancer Society
SFDA	Saudi Food and Drug Authority
SoA	State-of-the-art
SOS	Saudi Oncology Society
SSMRT	Saudi Society of Medical Radiologic Technology
T2	Treatment Unit 2
WHO	World Health Organization

ACKNOWLEDGEMENTS

CO-ORGANIZERS

- Our special appreciation to
- International Atomic Energy Agency (IAEA)
- World Health Organization (WHO)
- King Abdullah City for Atomic and Renewable Energy (KACARE)
- Saudi Food and Drug Authority (SFDA)
- Radiological Society of Saudi Arabia (RSSA)
- Saudi Society of Medical Radiological Technologists (SSMRT)

for their support of this international conference as the co-organizers.

PARTNERS

We would like to thank the following international and national organizations for supporting this conference.

- Saudi Cancer Society (SCS)
- Saudi Oncology Society (SOS)
- American Association of Physicist in Medicine (AAPM)
- American Society for Radiation Oncology (ASTRO)
- European Society for Therapeutic Radiology and Oncology (ESTRO)
- European Association of Nuclear Medicine (EANM)
- World Federation of Nuclear Medicine and Biology (WFNMB)

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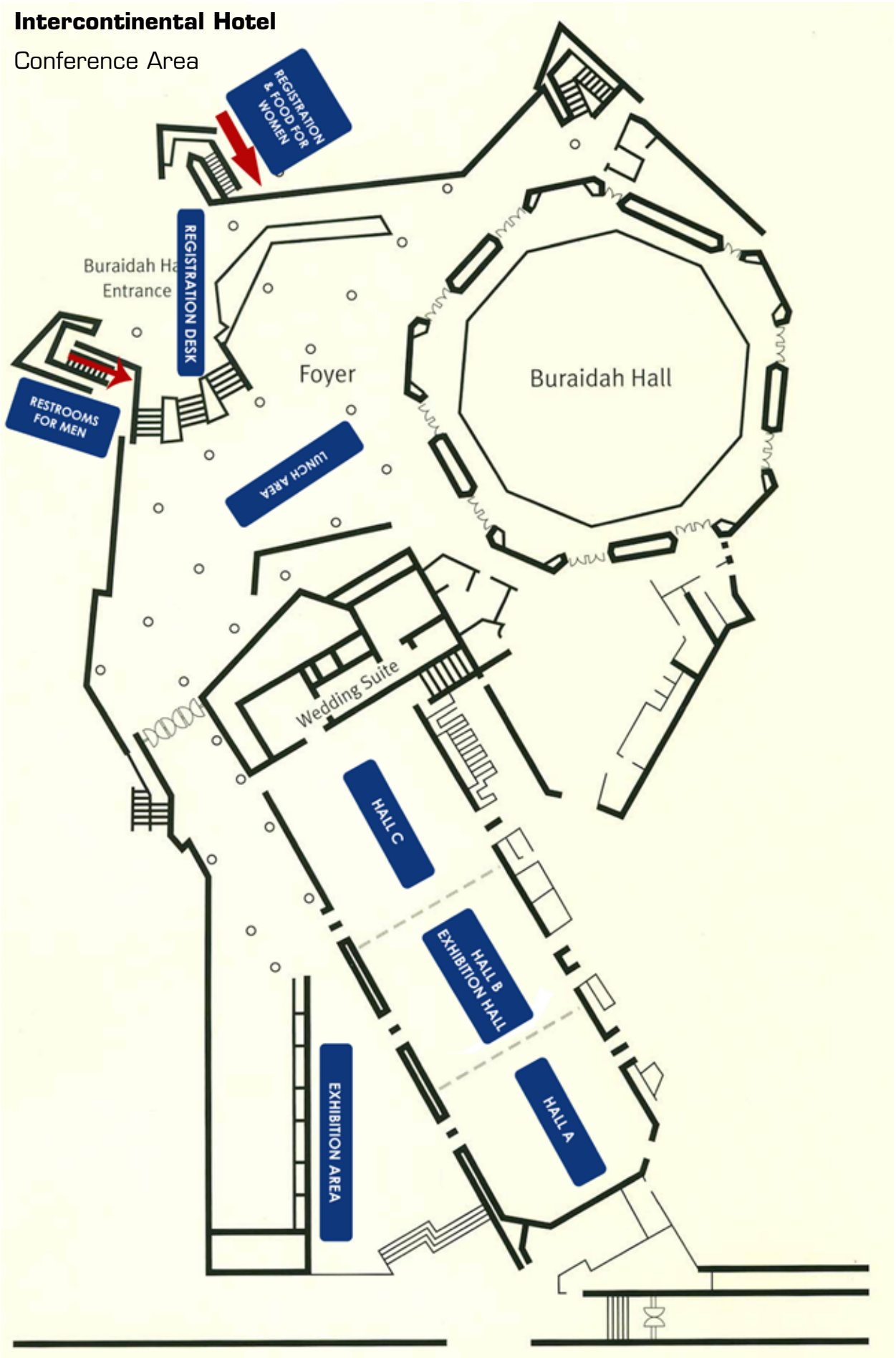
MAPS

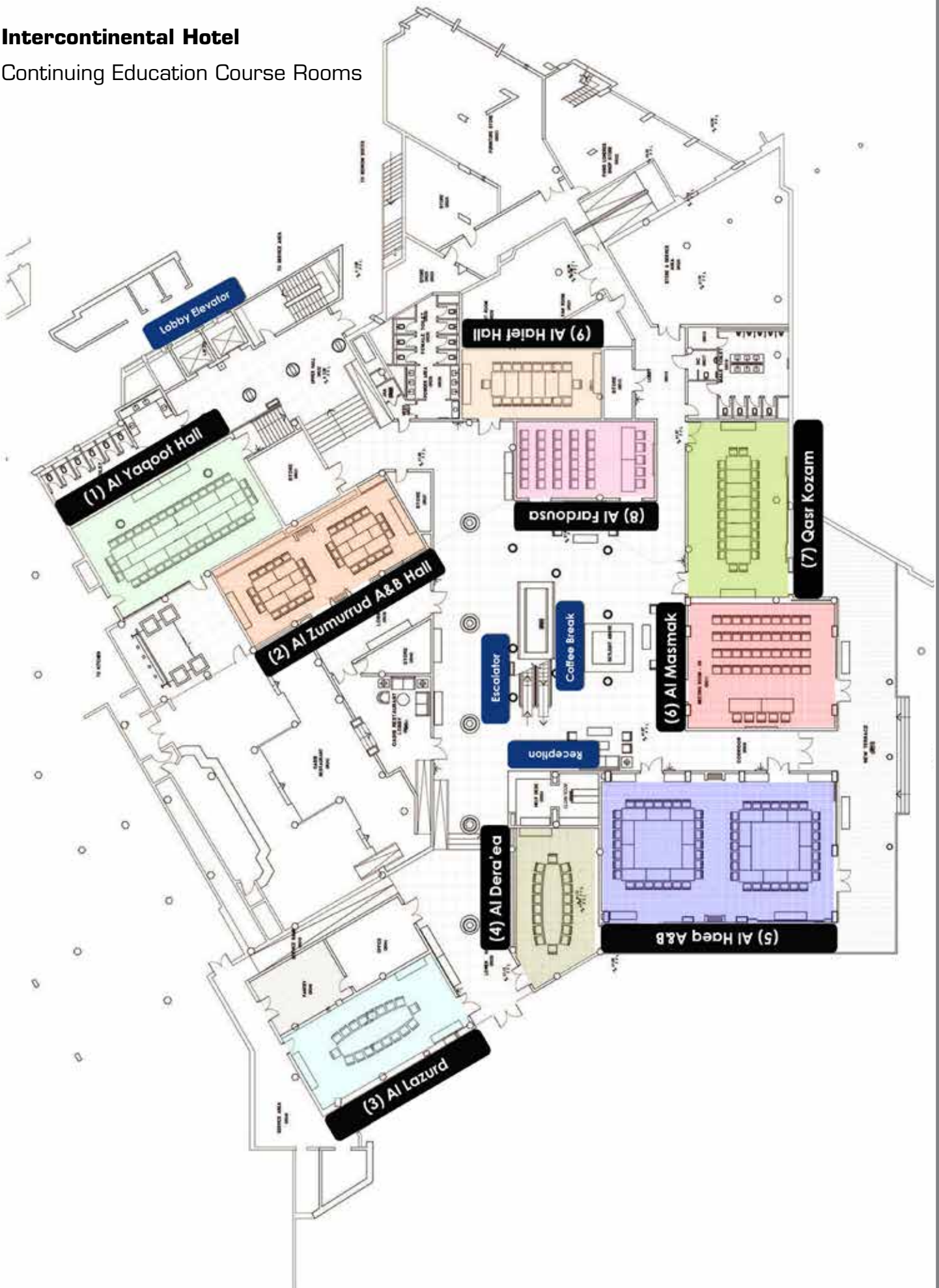
Intercontinental Hotel

Conference Area



Intercontinental Hotel

Continuing Education Course Rooms




MAKKAH ROAD
PRINCE TURKI BIN ABDULAZIZ AL-AWAL
PRINCE TURKI BIN ABDULAZIZ AL AWAL ROAD
ZAHRAWI STREET
ZAHRAWI STREET
WEST COMPOUND
CLUBHOUSE
BODY PAINT BUILDING
INCINERATOR BUILDING
AUCTION YARD
GREEN HOUSE
NEW CENTRALIZED FACILITY WORKSHOP
NEW INCINERATOR BUILDING
NEW SUBSTATION
NEW WAREHOUSE 4
NEW PHARMACY WAREHOUSE
WAREHOUSE #2
WAREHOUSE 7
WAREHOUSE 8
WAREHOUSE 1
LOGISTIC
W.H.
W.H.
W.H.
SOLICO
G-COMPLEX
F-COMPLEX
KING ABDULLAH CANCER CENTER & LIVER DISEASES
"E" COMPLEX
CED VILLA
ADMIN BLDG
NORTH TOWER
RESEARCH CENTER
ONCOLOGY BUILDING
OLD MCO TRAINING DEVELOPMENT CENTER
ITA
WAREHOUSE 9
W.H.
POWERHOUSE
SHOPS
SQUASH COURT
SOCIAL CLUB
CSSD/ MEDICAL STORE
SWIMMING POOL
MULTI STORY PARKING
SEWAGE TREATMENT PLANT 2,300m³ / day
13 WAREHOUSE 12 MEDICAL RECORDS
SUBSTATION
LARGE ANIMAL HOLDING AREA
LABORATORY ANIMAL FACILITY
TRANSPORTATION SERVICES BUILDING
CENTRAL PLANT
CENTRAL PLANT
PROPOSED SEWAGE TREATMENT PLANT
PROPOSED ELECTRICAL SUB-STATION
WATER TREATMENT PLANT
SUBSTATION
"C" COMPLEX
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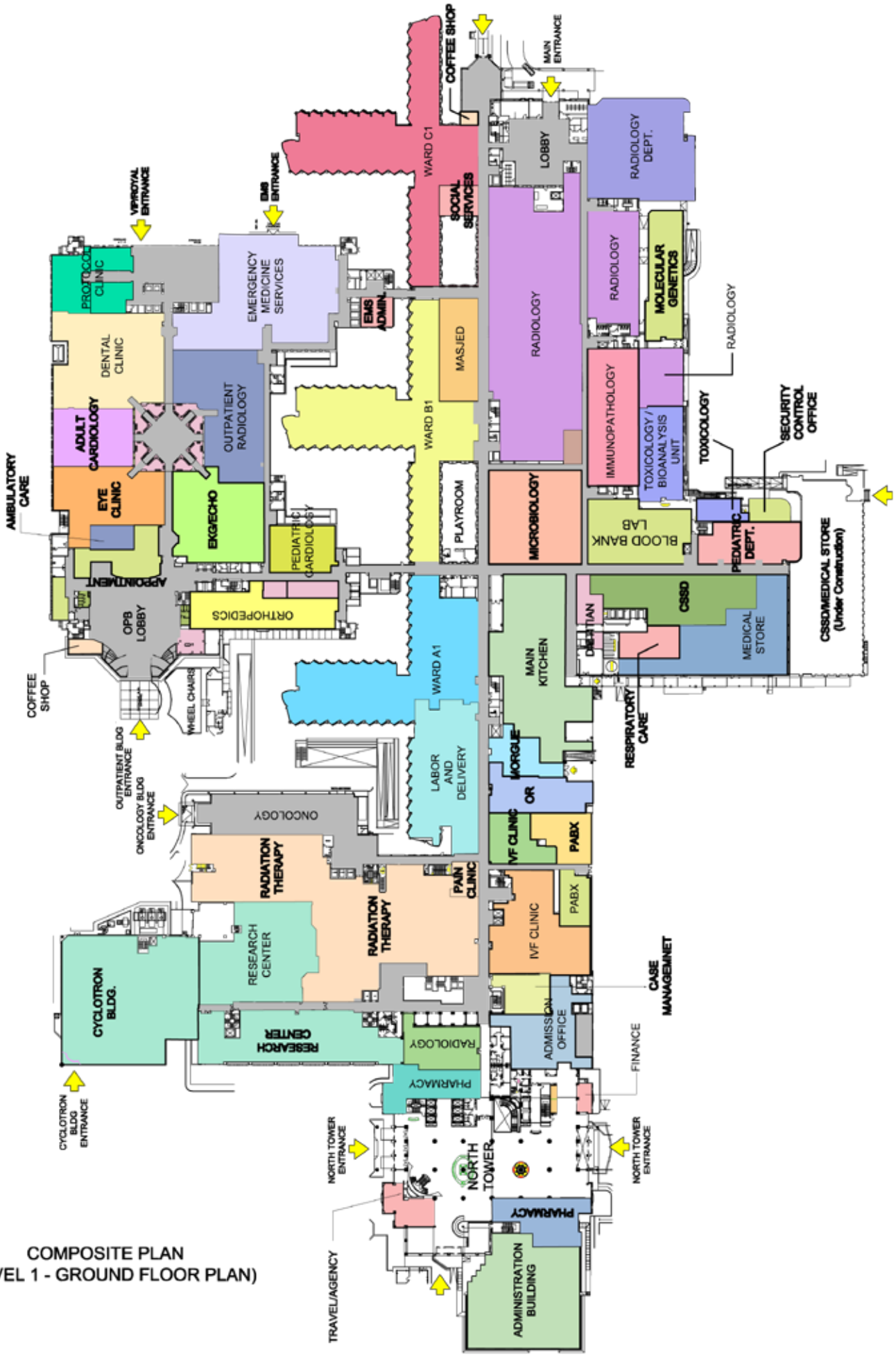
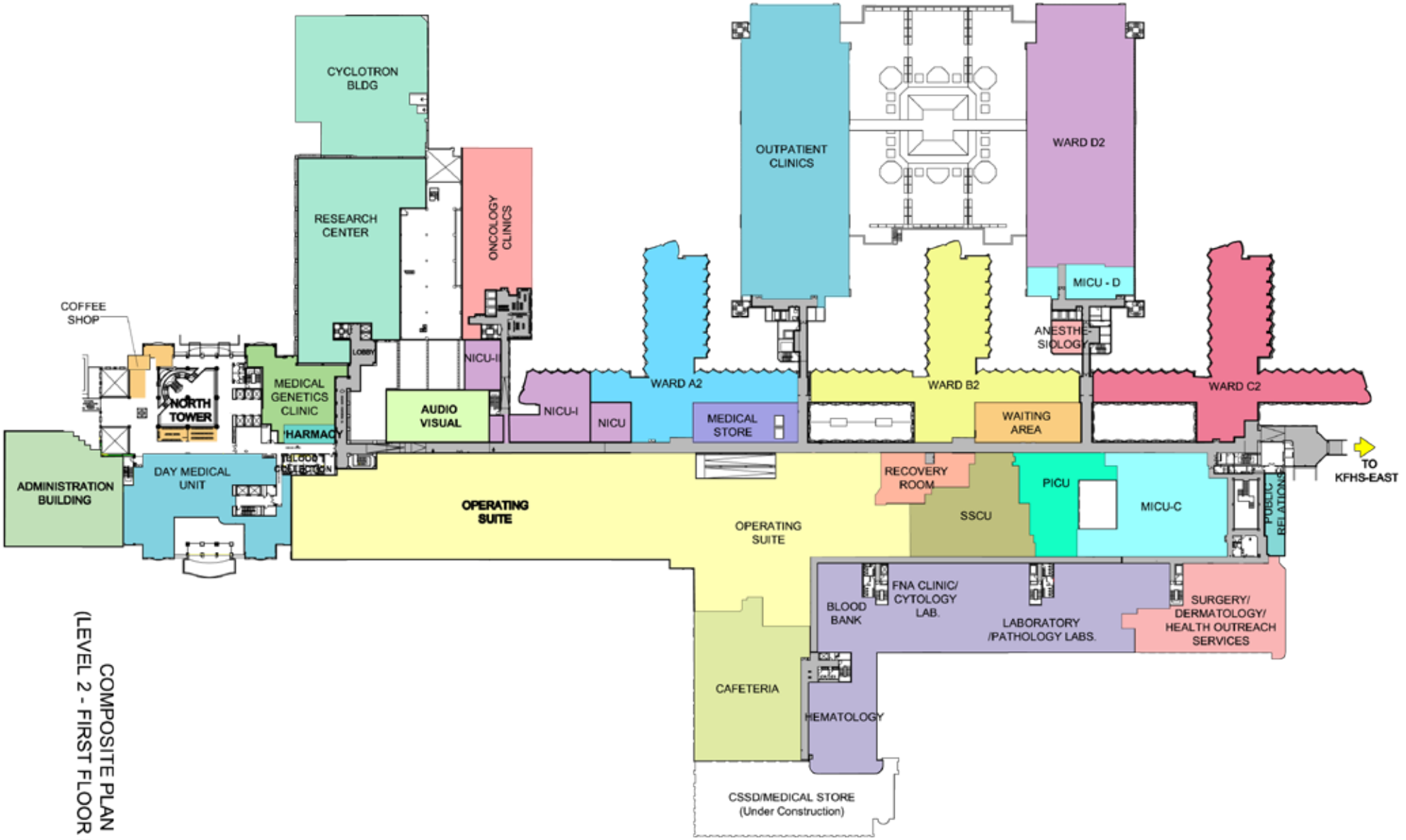
MASJID
PALM VILLA-II

KFSH & RC EXISTING SITE PLAN

0 50 100 150 200 250 METERS

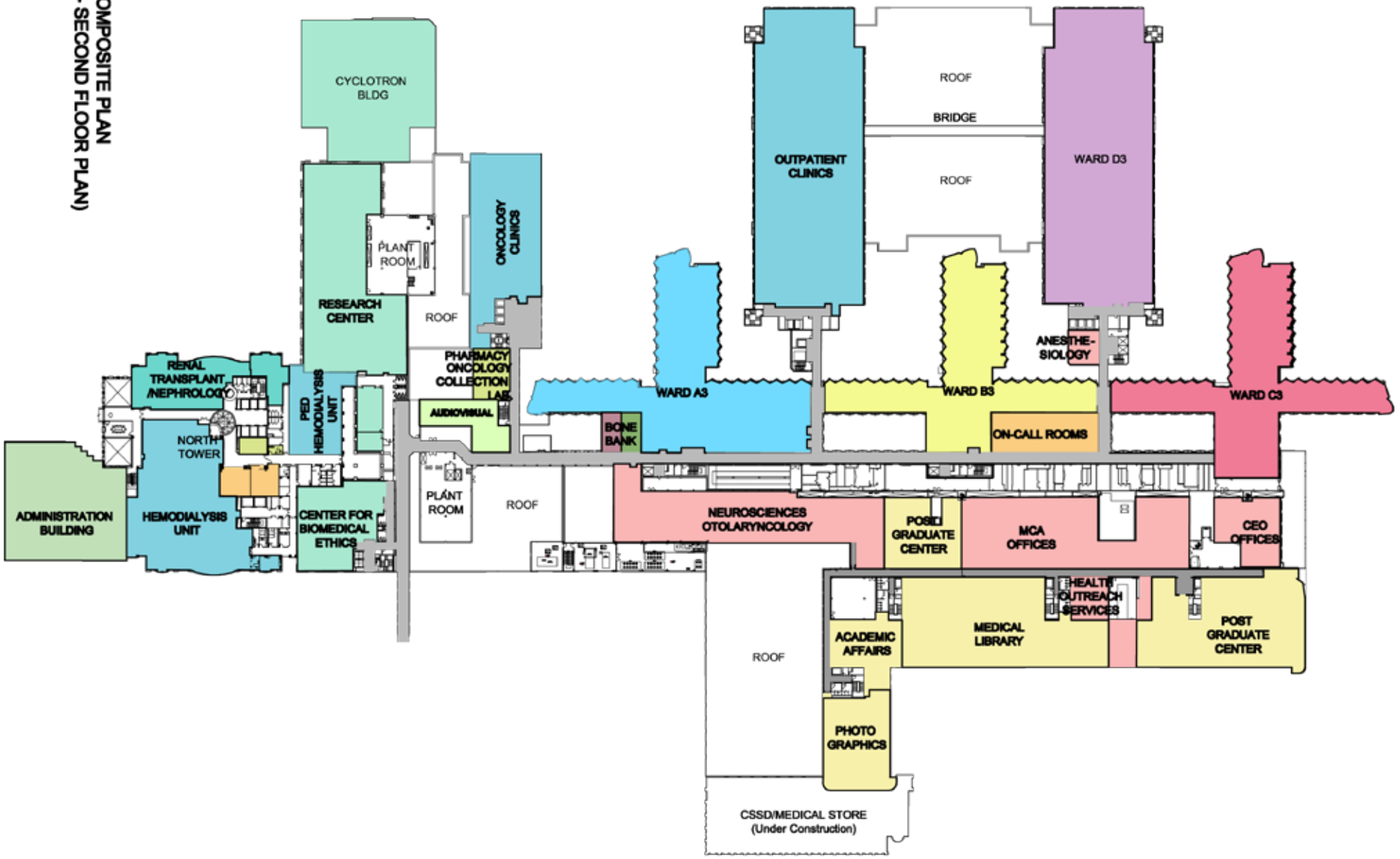


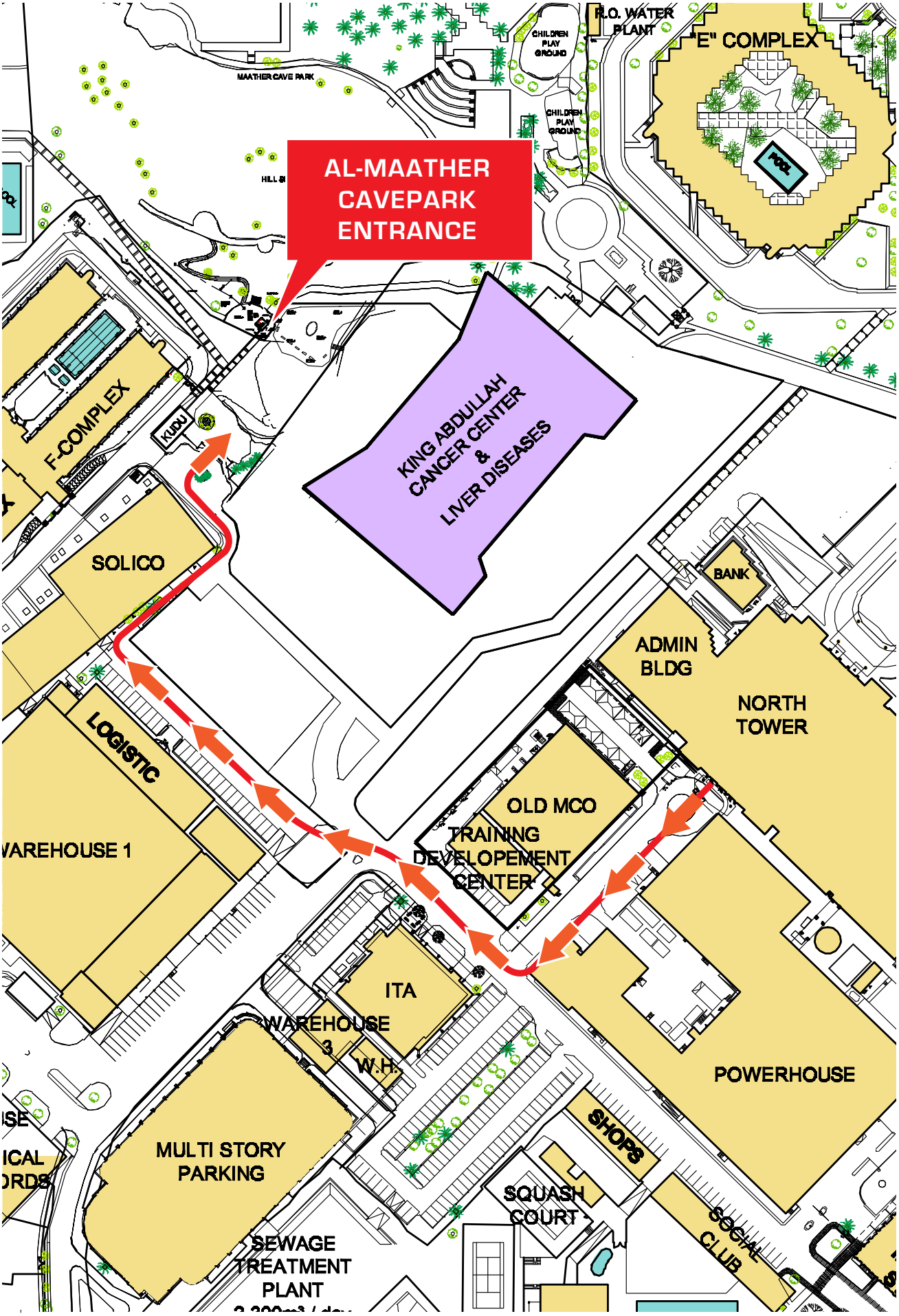
COMPOSITE PLAN
(LEVEL 1 - GROUND FLOOR PLAN)



COMPOSITE PLAN
(LEVEL 2 - FIRST FLOOR PLAN)

COMPOSITE PLAN
(LEVEL 3 - SECOND FLOOR PLAN)

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PLAY
GROUND
CHILDREN
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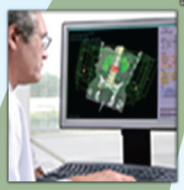

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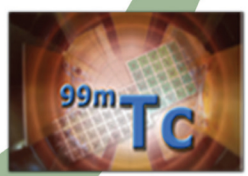

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