Onsite Program
World Congress on Medical Physics and Biomedical Engineering
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Dear Colleagues,

As Co-chairs of the 2015 World Congress on Medical Physics and Biomedical Engineering, it is our great pleasure to welcome you to Toronto.

The World Congress is co-hosted by IUPESM (International Union for Physical and Engineering Sciences in Medicine), IOMP (International Organization for Medical Physics), IFMBE (International Federation for Medical and Biological Engineering), and here in Canada by COMP (Canadian Organization of Medical Physicists) and CMBES (Canadian Medical and Biological Engineering Society). These five organizations have collaborated to ensure that this Congress features exciting scientific sessions on a wide range of topics in medical physics and biomedical engineering, presented by scientists and engineers from around the world.

The Congress Organizing Committee and its sub-committees have worked hard to develop a rich and stimulating scientific program, with time set aside for mingling with colleagues and celebrating our successes. We are also proud of the range of plenary sessions, ancillary meetings and continuing education events being offered, along with an excellent range of exhibits. We encourage you to explore and participate in the various offerings of the congress. We also thank our congress planning partners, International Congress Services Ltd., whose people have worked tirelessly to ensure that this Congress is a rewarding and pleasurable experience for all.

We encourage you to reconnect with colleagues you may not have seen for a while, and to take the opportunity to meet new colleagues and form new connections around the world. Also, do take some time to explore our city. Here in Toronto, we are proud to be one of the most multicultural cities in the world, and of our rating as the safest large metropolitan area in North America. There are many exciting cultural sites nearby and a wonderful variety of restaurants serving many different cuisines, so don’t hesitate to explore our city and enjoy its warmth and diversity.

Thank you for attending the 2015 World Congress, and welcome to Toronto!

David Jaffray, PhD

Tony Easty, PhD, PEng, CCE
Welcome to the 2015 World Congress on Medical Physics and Biomedical Engineering

We have created a World Congress—Why? What possesses us to work for three years to create this triennial event? Are we crazy? What has compelled David and Tony to take a chunk of their lives and of those many, many other people who contributed on the Congress Organizing Committee and all of the other WC 2015 committees and donate it to a World Congress on Medical Physics and Biomedical Engineering? This is among the greatest non-deductible, charitable contributions of which I am aware! It must be pretty important to them and to us. Thank you David Jaffrey and thank you Tony Easty—I don’t know how many times you will hear this during the coming week, but I can assure you that it will not be enough times!

Anticipation for this World Congress has been building slowly since our last gathering in Beijing, but recently that anticipation has been crescendoing. We have collected an international snapshot of advances in medical physics and biomedical engineering. This is an excellent opportunity to share best practices and theories, strengthen and create new global relationships, mentor young engineers and physicists and begin new projects at home and abroad. Thank you all present for your support and assistance in making WC 2015 a success! We could not have done it without you.

The five themes of the World Congress are:

1) Global Health Challenges,  
2) Evidence and Health Informatics,  
3) Women in Biomedical Engineering and Medical Physics,  
4) Urban Health and Future Earth, and  
5) Next Generation Medicine.

These are broad themes that capture some of the most important issues we face today.

We have the privilege of celebrating the lives and work of several IUPESM, IFMBE and IOMP Award winners, who will be introduced at the Opening Ceremony and will each give us a “kort verslag” or precis of their work. We will have the additional pleasure of recognizing the achievements of early-career medical and biological engineers and medical physicists who have won one of several young investigator awards here in Toronto.

You, the people here, will have the opportunity to discuss the future of clinical engineering, medical physics and biomedical engineering. You have the chance to attend many special sessions within the 5 themes and 19 tracks of the World Congress. You can help shape policies for both developed and developing nations.

The delegates to the IUPESM General Assembly and the IOMP and IFMBE General Assemblies will be able to select their leaders for the immediate future; they will also select the location of the 2021 World Congress. Please delegates - vote intelligently and secure a good realization of our future.

Since I first read these words of T.S. Eliot in LITTLE GIDDING (No. 4 of ‘Four Quartets’) I have been strangely calmed by them; I thought I would share them with you as I wish you a successful WC 2015:

We shall not cease from exploration  
And the end of all our exploring  
Will be to arrive where we started  
And know the place for the first time.

Best wishes,

Herbert F. Voigt, PhD  
IUPESM President
Welcome to World Congress on Medical Physics & Biomedical Engineering 2015, Toronto, Canada

Kin-Yin Cheung, President of IOMP

On behalf of the International Organization for Medical Physics (IOMP), it is my great pleasure and honour extending my warmest welcome to all participants in this 13th World Congress on Medical Physics & Biomedical Engineering being held in the wonderful city of Toronto, Canada during June 6-12, 2015.

I wish to convey my gratitude to the Canadian Organization of Medical Physicists (COMP) and Canadian Medical and Biological Engineering Society (CMBES) for hosting this great event and to congratulate them for the huge success in this special occasion. The event provides a unique opportunity and a multi-disciplinary scientific platform for medical physicists, biomedical engineers, and other professionals from related fields from all over the world to exchange ideas and share their knowledge, experience, and research findings for the purpose of promoting human health through advances in science and technology in healthcare.

I would also like to congratulate the Congress Co-Chairs, Professor David Jaffray and Dr. Tony Easty, and their team members for putting up an outstanding congress with such an excellent scientific program. May I convey my appreciation to them for all their efforts and contributions in making this congress a most memorable one.

Last but not least, I wish all participants a very fruitful congress and an enjoyable stay in the beautiful city of Toronto.

Kin-Yin Cheung, PhD
President
Welcome to the World Congress on Medical Physics and Biomedical Engineering 2015!

Each and every World Congress on Medical Physics and Biomedical Engineering is a chance for delegates from numerous countries from all over the world to review their own achievements and to have a closer look into the future of medical physics and biomedical engineering: which are the hottest topics in research, what can be expected from research results and from development, which are the new emerging technologies and what impact may be expected from them in medicine and health care, what are the highest needs for current care givers, how to make the education in medical physics and biomedical engineering better and more efficient. The World Congress is a platform for medical physicists and biomedical engineers to build a common policy for further improvement of health care and for planning common action under the umbrella of the International Union for Physical and Engineering Sciences in Medicine (IUPESM).

International Federation of Medical and Biological Engineering (IFMBE) is proud to be a sponsor of the World Congress this June, in Toronto, Canada. Biomedical engineers from most of more than 60 IFMBE affiliated Biomedical Engineering Societies will gather to exchange their knowledge and experience between themselves and also with colleagues who have their primary interest in medical physics, medicine and other professions linked with biomedical engineering. Contacts made at previous World Congresses enabled building of international research team which were successful gaining project in the field and where collaboration lasted for a long time. The Federation makes the most of the World Congress to reward distinguished scientists in biomedical engineering who have devoted their research for many years to biomedical engineering but at the same line, rewards early stage scientists and young investigators. There is more that 50 years since the Federation was founded (in 1959) and from the first World Congress in 1982, so that a whole crossection of careers in biomedical engineering can be identified and appropriately evaluated.

I sincerely hope that all delegates of the Congress will gain from the scientific sessions and also that you all will enjoy the social activities of and around the Congress and of the appealing city of Toronto!

Ratko Magiarević, PhD
President, IFMBE
June 7–12, 2015

A PERSONAL MESSAGE FROM THE PREMIER

On behalf of the Government of Ontario, I am delighted to extend warm greetings to everyone attending the IUPESM World Congress on Medical Physics and Biomedical Engineering in Toronto.

I would like to take this opportunity to commend the IUPESM for its commitment to supporting biomedical engineers and physicists in the ongoing advancement of these vital fields.

As Premier, I am proud that Ontario has the opportunity to host an event that facilitates fruitful discourse between clinicians, researchers, educators and practitioners with the noble aim to improve global health outcomes. With an impressive array of lectures, educational sessions and workshops, this conference is sure to both enlighten and inform.

I would also like to thank IUPESM for choosing our province to host this wonderful event. I am confident that all the delegates and guests will enjoy their time in Toronto, our vibrant and diverse capital city.

Please accept my best wishes for an informative and memorable congress.

Kathleen Wynne
Premier
Welcome / Bienvenue

On behalf of the Canadian Medical and Biological Engineering Society, I would like to welcome each of you to Toronto for the World Congress on Medical Physics and Biomedical Engineering.

The committee organizers and countless volunteers have worked hard to put forward a great program including an impressive line-up of educational courses.

I would like to extend my appreciation for the support of the Sponsors and Exhibitors who will be on hand Sunday evening through Thursday to market their latest products and services. Please spend some time at the Exhibit Hall to see what’s new and improved.

Note that CMBES is celebrating its 50th anniversary this year. We have an amazing and rich history founded by innovators, scientists, and biomedical/clinical engineers, who uniquely served patients, the medical community, and Canadian Healthcare.

Please enjoy the learning and sharing with colleagues from the international community over the next few days and don’t forget to join us for the Gala dinner on Wednesday night and the AGM on Thursday evening. I also hope you have a little bit of spare time to enjoy some of the sights around Toronto.

Au nom de la Société Canadienne de Génie Biomédical, j’aimerais souhaiter la bienvenue à chacun de vous à Toronto pour le Congrès Mondial sur la physique médicale et le génie biomédical.

Les organisateurs du comité et les innombrables bénévoles ont travaillé très fort pour mettre de l’avant un excellent programme qui inclut également un nombre impressionnant de cours de formation continue.

Je tiens à exprimer ma gratitude pour le soutien des commanditaires et des exposants qui seront sur place du dimanche soir au jeudi pour présenter leurs plus récents produits et services. N’oubliez pas, s’il vous plaît d’en profiter pour prendre quelques minutes pour aller au salon des exposants afin de découvrir les dernières nouveautés et améliorations.

Notez que le CMBES célèbre son 50e anniversaire cette année. Nous avons une histoire étonnante et riche fondée par les innovateurs, les scientifiques et les ingénieurs cliniques et biomédicaux, qui ont concentré leurs efforts pour apporter des bénéfices pour la santé les patients, la communauté médicale et le système de santé canadien.

Je vous souhaite une bonne conférence et j’espère que vous profiterez de cette occasion d’apprendre et de partager avec les collègues de la communauté internationale au cours des prochains jours. N’oubliez pas de nous rejoindre pour le dîner de gala du mercredi soir et l’Assemblée Générale du jeudi soir. Enfin, j’espère aussi que vous trouverez un peu de temps libre pour profiter de certains des attraits touristiques de Toronto et sa région.

Sincerely,

Martin Poulin, M.Eng., P.Eng.
President, CMBES/SCGB
Dear Delegates of the 2015 World Congress on Medical Physics and Biomedical Engineering,

On behalf of the Canadian Organisation of Medical Physicists and the Medical Physics community in Canada, Welcome to Toronto!

The theme for this year’s World Congress is “Health * Technology * Humanity”. I believe this captures the spirit of this meeting, and explains why it is so important that Medical Physicists and Biomedical Engineers meet together, and on a world scale. Medical technology is increasingly central in patient care; we as Physicists and Engineers are uniquely trained and able to improve human health through technology. The World Congress is the most comprehensive medical technology meeting in the world; this year we are welcoming delegates from 89 countries from all corners of the world to come to Toronto and share our knowledge and ideas to help improve human health for everyone.

COMP is very pleased to be able to contribute to improving global health through our contributions to this meeting. The planning for this meeting has been underway in earnest for about 20 months now, and we are grateful for the many volunteers who have committed much time and effort to plan this meeting for you. COMP is also grateful to our partner organisation in this event, the Canadian Medical and Biological Engineering Society, for co-organising the event with us. I believe that both societies are benefited tremendously through the interactions and planning with our partners. We are also grateful to the World Organisations, the IUPESM, IOMP and IFMBE, for giving us the opportunity to plan the premier Medical Physics and Biological Engineering conference in the world. It has been a privilege to host this event, and we are proud to be able to bring it to you.

I would like to reserve my greatest thanks to you, the delegates attending this meeting. This meeting will offer a world class program of talks and education sessions, covering 19 different tracks that could not be possible without your contributions. Without your hard work, commitment and enthusiasm for medical technology, this meeting would not be possible.

Thank you for making the trip to Toronto, and enjoy the meeting!

Marco Carlone, PhD
President, COMP
HOSTS
& COMMITTEES

HOSTS

International Union for Physical and Engineering Sciences in Medicine (IUPESM)

The IUPESM represents the combined efforts of more than 40,000 medical physicists and biomedical engineers working on the physical and engineering science of medicine. The principal objectives of IUPESM are: (a) to contribute to the advancement of physical and engineering science in medicine for the benefit and wellbeing of humanity; (b) to organize international cooperation and promote communication among those engaged in health-care science and technology; (c) to coordinate activities of mutual interest to engineering and physical science within the health care field, including international and regional scientific congresses, seminars, working groups, regional support programs and scientific and technical publications; (d) to represent the professional interests and views of engineers and physical scientists in the health-care community.

International Organization for Medical Physics (IOMP)

The IOMP represents over 18,000 medical physicists worldwide, 80 adhering national member organizations and 6 regional organizations. The mission of IOMP is to advance medical physics practice worldwide by disseminating scientific and technical information, fostering the educational and professional development of medical physicists, and promoting the highest quality medical services for patients.

International Federation of Medical and Biological Engineering (IFMBE)

IFMBE is primarily a federation of national and transnational organizations. These organizations represent national interests in medical and biological engineering. The objectives of the IFMBE are scientific, technological, literary, and educational. Within the field of medical, biological and clinical engineering IFMBE’s aims are to encourage research and the application of knowledge, and to disseminate information and promote collaboration.

Canadian Organization of Medical Physicists (COMP)

COMP is the main professional body for medical physicists practicing in Canada. The membership is composed of graduate students, professional physicists, scientists, and academics located at universities, hospitals, cancer centers, and government research facilities. Every member has an educational or professional background in physics or engineering as it applies to medicine. COMP’s vision is to be the recognized leader and primary resource for medical physics in Canada. COMP’s mission is to champion medical physicists’ efforts for patient care excellence through education, knowledge transfer, advocacy and partnerships.

Canadian Medical and Biological Engineering Society (CMBES)

CMBES is Canada’s principal society for engineering in medicine and biology. The Society’s aims are twofold: scientific and educational: directed toward the advancement of the theory and practice of medical device technology; and professional: directed toward the advancement of all individuals in Canada who are engaged in interdisciplinary work involving engineering, the life sciences and medicine.
COMMITTEES

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Ratko Magjarevic, Croatia
James Goh, Singapore
Madan M. Rehani, Austria
Shankar M. Krishnan, USA

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Gnahoua Zoabli, Canada
Antonio Hernandez, USA
The IUPESM World Congress 2015 will take place in the South Building of the Metro Toronto Convention Centre. The Convention Centre is located in the heart of downtown Toronto. The South Building is accessible via Bremner Boulevard as well as from the North Building via Front Street.

Metro Toronto Convention Centre
South Building
222 Bremner Boulevard,
Toronto, Ontario, Canada M5V 3L9

Toronto, Ontario, Canada

One of Canada’s best kept secrets, Toronto is on par with New York City, San Francisco and Chicago when it comes to cultural attractions and urban sophistication.

The landmark CN Tower is the tallest freestanding structure in the world. Take the elevator to the top for a breathtaking view of the city, Lake Ontario and more. Stroll next door and experience Ripley’s Aquarium as you explore the wonders of the sea or a catch a Blue Jays Baseball game at Rogers Centre or just walk around the massive engineering marvel. Check out the Royal Ontario Museum, the largest in Canada with its fascinating archaeology and natural history exhibits, and the Art Gallery of Ontario, with a fine collection of European and Canadian works. You won’t want to miss the electric shops and restaurants on Queen Street West or the elegant boutiques and fine restaurants in Yorkville.

And there’s more: harbour front is a complex of unique shops and restaurants right on beautiful Lake Ontario. From harbour front you can hop on a ferry to the Toronto Islands for a picnic and outdoor recreation such as beach volleyball.

Explore the area and take a day trip to another wonder of the world and experience Niagara Falls or take a break right next door and experience Ontario’s wine country. Toronto and the surrounding areas are a great family destination and most attractions are child-friendly. The city itself is clean, safe and easy to explore either on foot or by public transportation.
ADOPT A DELEGATE

The IUPESM 2015 World Congress is proud to support the ‘Adopt a Delegate/Student’ initiative, giving prospective delegates from a developed world setting the opportunity to adopt or part finance the registration and accommodation costs of a peer from an emerging economy.

We would like to thank the following people for their consideration and support:

Herbert F. Voigt
David Rogers
David Jaffray
Modus Medical Devices Inc.
Murray Rice
Grace Zeng
William Gentles
Raymond Wu
Ichiro Sakuma
David Spencer
Vincent Lam
Joyce Shen
Tony Easty

SCIENCE FAIR

YOUTH OUTREACH

Winners of a local science fair have been invited to participate in the IUPESM 2015 Youth Outreach Program. 26 youths between the ages of 15–18 will present their 18 Science Fair projects on Wednesday, June 10.

They will start their day by listening to the Key Note Session by Gordon McBean and Mary Gospodarowicz, followed by attending the session on “What is a medical physicist? What is a biomedical engineer?” After, they are taken on a guided tour of selected posters and the exhibit floor by a Professor. After lunch, their day concludes by presenting their Science Fair projects in the Exhibit Hall, interacting with congress delegates.

FOLLOW US ON SOCIAL MEDIA:

Twitter @IUPESMWC2015
www.twitter.com/IUPESMWC2015

Facebook
www.facebook.com/groups/WCon2015/

DOWNLOAD THE MOBILE APP:

Abstracts Online/ Personal Itinerary Builder

Attendees are invited to utilize the World Congress 2015 App, which is available for download on the Congress Website at WC2015.org

This app allows you to view abstracts, presenters, the program schedule and sessions, selecting abstracts and sessions of interest to build your own personal itinerary builder.
Flat Albert is a flat version of very well known Albert Einstein.

We encouraged you to take a picture of Flat Albert in an interesting place and post it to our Facebook and Twitter pages #wc2015yyz.

Here are some of our favourites:
# REGISTRATION INFORMATION

## Registration Counter Hours

Registration is located on Level 600, South Building of Metro Toronto Convention Centre.

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The Toronto Information Desk is located in the Registration area on Level 600, South Building of Metro Toronto Convention Centre. Staff will provide local information and assist with:

- Ground Transportation
- Airport Transfers
- Sightseeing Tours
- Pre- and Post Tours
- Restaurant recommendations and booking
- Local PA and Personal Concierge Services

## Delegate Help Desk

Delegate Help Desk is located on Level 600, South Building of Metro Toronto Convention Centre.

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Delegate Bags include:

- Invitation Flyers for Industry Supported Symposia
- Additional Promotional Flyers from Sponsors and Exhibitors

## Badge Color Identification

- **Delegate – Blue**
  - Access to all Scientific Program & Continuing Education Sessions (except any specially ticketed sessions)
  - Access to Exhibit Hall
  - Congress Bag
  - Onsite Program and Congress Handouts
  - Welcome Reception
  - Networking Breaks
  - Discounted Gala Dinner Ticket

- **Single Day – Red**
  - Access to all Scientific Program & Continuing Education Sessions (except any specially ticketed sessions) on day of attendance
  - Access to Exhibit Hall on day of attendance
  - Congress Bag
  - Onsite Program and Congress Handouts
  - Networking Breaks on day of attendance

- **Exhibitor – Green**
  - Access to Exhibit Hall
  - Onsite Program and Congress Handouts
  - Welcome Reception
  - Networking Breaks
  - Option to Purchase Gala Dinner Tickets

- **Accompanying Person - Yellow**
  - Access to Exhibit Hall
  - Welcome Reception
  - Networking Breaks
  - Discounted Gala Dinner Ticket Rate

## Registration Materials

Registration Materials include:

- Name Badge
- Delegate Bag Voucher (not included in Accompanying Person Registration)
- Onsite Program Book Voucher

## Delegate Bag Booth

Delegate Help Desk is located on level 600, South Building of Metro Toronto Convention Centre.

<table>
<thead>
<tr>
<th>Day</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Sunday, June 7</td>
<td>11:00 – 20:00</td>
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<tr>
<td>Monday, June 8</td>
<td>07:00 – 17:30</td>
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<tr>
<td>Tuesday, June 9</td>
<td>07:00 – 17:30</td>
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## Lost Badge/Name Changes:

A 50 CAD fee applies for any reprints due to onsite name changes or lost badges.

## Name Badges

Delegates and guests are requested to wear their name badge at all times in order to participate in the Scientific Sessions, Social Events and Exhibition.

LEAD RETRIEVAL

By allowing to have your badge scanned, you are indicating your consent to receive e-mail marketing.

If you require assistance or any information regarding the Congress, please see the staff at the Delegate Information
**INFORMATION FOR SPEAKERS & PRESENTERS**

**Speaker Ready Room**

SUPPORTED BY

All invited speakers as well as oral abstract presenters are required to report to the Speaker Ready Room at least 24 hours prior to their scheduled presentation in order to upload their presentation slides or to check their previously uploaded slides. Computers are available to preview and upload presentations. Presenters should make sure all fonts appear as expected. No file submissions will be accepted in the session rooms.

The Speaker Ready Room is located in Room 705 on Level 700.

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**Invited Speakers and Oral / Abstract Presenters**

All speakers are asked to be in the session room at least 10 minutes prior to the start of their session.

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**Poster Presenters**

All Poster Presentations/Boards are located in Hall E on Level 800, South Building of Metro Toronto Convention Centre.

Each Poster Board will be shared by two posters on each side. The Poster Boards are identified with Poster Numbers that correspond with the pre-assigned Poster Numbers for each poster presentation. The Poster Numbers are also published in this program book and in the Online Abstract Book.

<table>
<thead>
<tr>
<th>Poster set up time:</th>
<th>Sunday, June 7</th>
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<tr>
<td>Poster take down:</td>
<td>Thursday, June 11</td>
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<td>(any posters not removed by 19:00 will be discarded by management)</td>
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**Poster Sessions**

Posters will be displayed at all times during the Exhibit Opening Hours each day starting Sunday June 7. Presenters are asked to stand by their poster during the following times to informally answer questions from Congress delegates:

- **Morning & afternoon Networking Breaks:**
  10:00 – 10:30 AND 16:30 – 17:00 Monday, June 8 to Thursday, June 11.

- **During the Welcome Reception:**
  18:00 – 20:00 on Sunday, June 7.
Abstracts
All accepted and confirmed abstracts are published in the IUPESM World Congress Onsite Program and Abstract Book. This will be available on the Congress website.

All Full Papers accepted by the World Congress will be published by Springer in the IFMBE Proceedings 2015.

Delegate Lounges
The delegate lounges are located in the Exhibit Hall, see floorplan page 35.

Internet Café
The internet café is located in the Exhibit Hall.

Wireless Internet
Wireless internet is available in the public areas of the venue but not the meeting rooms or the Exhibit Hall.

Charging Station & Lounge
The charging station & lounge is located in the Exhibit Hall.

Congress Signage
SUPPORTED BY
RaySearch Laboratories

Water Stations
SUPPORTED BY
ELEKTA

Welcome Reception
SUPPORTED BY
ELEKTA

Networking Breaks
Networking Breaks (hot beverages and snacks) are served on Level 700 at the following times:

- Monday, June 8 10:00 – 10:30
- Tuesday, June 9 10:00 – 10:30
- Wednesday, June 10 10:00 – 10:30
- Thursday, June 11 10:00 – 10:30
- Friday, June 12 10:00 – 10:30

Lost and Found
Lost and found items should be returned/claimed at the registration desk.

Lunch
Lunch will not be provided by the Congress. However, there are plenty of restaurant choices in the area. A café, a convenience store and vending machines are all located within the Centre and there are also numerous restaurant options within a few minutes walk of the Convention Centre:

- SOCO Kitchen + Bar
  Located within the Delta Hotel offers laid back style of eating, with the opportunity to look over Bremner Street on their patio.
- Pita & Grill
  For a lighter meal head to Pita & Grill for a grab and go option.
- 360 Restaurant
  Upmarket Dining with sky high view in the world famous CN Tower.

CAMPEP Accrediation
For Medical Physicists:
The IUPESM 2015 World Congress Continuing Education Program is CAMPEP Accredited for up to 82 MPCEC credits. If you will be applying to CAMPEP for your MPCEC credits following the Congress and have not already paid the $11(CAD) CAMPEP fee then you will be able to pay this fee at the registration desk during registration hours. After the Congress you will be contacted by CAMPEP regarding Accreditation.

For Biomedical Engineers:
The IUPESM 2015 World Congress Continuing Education Program can be used for points towards Clinical Engineering Certification Renewal.
SOCIAL EVENTS

Be sure to join us for these events during the week:

► Welcome Reception
SUPPORTED BY
ELEKTA

Sunday, June 7, 2015 18:00 – 20:00 Exhibit Hall E

Enjoy some light hors d’oeuvres and a beverage, along with a subdued jazz trio, as you connect with exhibitors. This is your opportunity to network and connect with industry colleagues.

► Opening Ceremony & President’s Welcome Address
Monday, June 8, 2015 10:30 – 12:00 Plenary Hall F/G

Your opening ceremony and president’s welcome address will be greeted by Canadian inspired entertainment, followed by the formalities of any President’s Welcome Address. You will hear all about what you can expect to experience throughout the congress and Toronto as your host city!

► Gala Dinner
Wednesday, June 10, 2015 19:00 – 23:00 Plenary Hall F/G

After a busy week at the congress, tonight you will enjoy a delicious meal with fellow colleagues and new friends. Roaming entertainment will emerge throughout the evening and an upbeat band will perform top hits after dinner so you can show off your dancing moves.

► Closing Ceremony & Awards Presentation
Friday, June 12, 2015 12:00 – 13:30 Plenary Hall F/G

Final remarks from the President, the organizing committees and your incoming officers will be announced here! Be sure to attend to hear where the next congress location will take place!
Explore the area and take a day trip to experience one of the world wonders Niagara Falls or take the half day, fun and informative Toronto City Tour.

**Niagara Falls Tour**

The premium full-day tour of the Falls starts with your hotel pickup in the morning. On our first stop we’ll have time to explore Niagara-on-the-Lake.

www.niagarafallstourism.com/about/niagara-on-the-lake/

“NOTL” Niagara-on-the-Lake is a picturesque town just a few minutes drive outside of Niagara Falls. You’ll enjoy 40 minutes taking pictures and exploring some of the unique shops. Before you actually reach the Falls, we’ll also see the Floral Clock, Niagara River and whirlpool, Sir Adam Beck Power Station, Queenston Heights, and the Spanish Aero Car. During the day, we will make a stop at one of Niagara Falls’ famous wineries. There you will have an opportunity to sample wine before continuing our Niagara Falls adventure. The tour is structured to give you 2-3 hours of free time at the Falls. This gives you plenty of time to add in additional activities you want to do, plus stop for lunch, which is on your own time and budget. Recant the day’s memories on the bus ride back until you’re dropped back at your hotel doorstep.

**Toronto City Tour**

The half day, fun and informative Toronto City Tour will transport you to some of the city’s most popular sights as you relax aboard our new air-conditioned bus. We will show you over 17 attractions. Our stops include the St. Lawrence Market where you can buy lunch and a stroll through the pedestrian friendly Distillery District.

**Shopping Tour**

www.premiumoutlets.com/outlets/outlet.asp?id=109

Toronto Premium Outlets features a high end collection of the finest brands for you, your family and your home. Our Tour bus will pick you up from your hotel lobby between and take you the Outlets just 45 minutes outside of Toronto. Once we arrive you will receive a VIP Coupon book plus a special gift just for you from Toronto Premium Outlets management team.

Please go to our website for more details or to book a tour:
wc2015.org/events-tours/pre-post-tours/
EXHIBIT INFORMATION

Location
Hall E on Level 800, South Building of Metro Toronto Convention Centre.

Exhibit Hours

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Exhibit Features

- Exhibit Information Booth
- Show Service Provider Desk
- Internet Café
- Food & Beverage Stations
- Delegate Lounges
- Charging Station & Lounge

SUPPORTED BY

RaySearch Laboratories

Canadian Nuclear Safety Commission

VARIAN medical systems

EXHIBIT INFORMATION
## EXHIBITORS

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Accuray | Booth # 3104

Accuray Incorporated is a radiation oncology company that develops, manufactures and sells precise, innovative tumor treatment solutions that set the standard of care with the aim of helping patients live longer, better lives. The company’s leading-edge technologies deliver the full range of radiation therapy and radiosurgery treatments.

American Association of Physicists in Medicine (AAPM) | Booth # 1212

The mission of AAPM, a professional organization of 8,400+ members, is to advance the science, education and professional practice of medical physics. Visit booth #1212 for information on AAPM programs, to see a demonstration of the Virtual Library and to pick up complimentary copies of the Medical Physics journal.

ANDA Medical | Booth # 3604

ANDA Medical provides new and refurbished medical equipment to the global community. By locating medical products from the finest health facilities around the world, we maintain strong relationships with hospitals, medical suppliers, and OEMs. With consistent access to high-quality medical equipment we provide our customers with products at a fraction of the cost. This is our top priority.

ArjoHuntleigh Canada Inc. | Booth # 3213

A medical device company offering innovative solutions in Patient Handling, Therapeutic Surfaces, Medical Beds, Hygiene and Disinfection. ArjoHuntleigh offers programs to ensure facilities meet their needs while providing safe and efficient care.

Australasian College of Physical Scientists & Engineers in Medicine (ACPSEM) | Booth # 2509TT

The ACPSEM is a not-for-profit member-based organization and has a mission to advance services and professional standards in medical physics and biomedical engineering for the benefit and protection of the community. Membership is available at different levels with a broad range of benefits.

Bayer Healthcare | Booth # 3503

Bayer’s Radimetrics™ Enterprise Platform is an integrated radiation dose and contrast dose* management solution. Platform tools can help customers drive compliance, efficiency and reproducible quality. Customizable dashboards facilitate enterprise-wide analytics and protocol management. With industry-leading repair capabilities, quality, and customer care, Multi Vendor Service provides the best value in third-party service.

*Requires Medrad® Stellant® CT Injection System/Certegra® Workstation

Best Theratronics | Booth # 3303

Best Theratronics Ltd. is a Canadian component of TeamBest™. We manufacture external beam therapy units (Equinox®, GammaBeam® 100-80, and the new GammaBeam® 500 Total Body Irradiator), blood and research irradiators (Gammacell® 1000 & 3000, Raycell® Mk2, Gammacell® 40E, GammaBeam® X200), and variable energy cyclotrons for radioisotope production and research.

Biomedical Engineering Society (BMES) | Booth # 2709TT

The Mission of the BMES is to build and support the biomedical engineering community, locally, nationally and internationally, with activities designed to communicate recent advances, discoveries, and inventions; promote education and professional development; and integrate the perspectives of the academic, medical, governmental, and business sectors.
BRACCO® IMAGING Canada | Booth # 2301

BRACCO® IMAGING Canada, world leader in medical imaging presents the latest contrast injection technologies in Radiology and Cardiac CathLab with ACISTCV™, CTExpress3D™ syringeless injector, and EmpowerCTA+™, with Nexo™ Contrast management and NexoDose™ Radiation Dose softwares. BIC distributes Invivo Corporation technologies (MR compatible patient monitoring, DynaCAD Breast and Prostate, UroNav fusion biopsy system, etc).

Brainlab Technology | Booth # 1102

Brainlab Technology powers treatments in radiosurgery as well as numerous surgical fields including neurosurgery, orthopedic, ENT, CMF, spine and trauma. Founded in Munich in 1989, Brainlab has over 8,900 systems installed in about 100 countries.

Canadian Medical and Biological Engineering Society | Booth # 2305

The Canadian Medical and Biological Engineering Society is Canada’s principal society for engineering in medicine and biology. The Society’s mission is to advance and promote the theory and practice of engineering sciences and technology to medicine and biology, serving as a forum for information exchange between healthcare professionals, scientists, and the general public.

Canadian Nuclear Safety Commission | Booth # 1228

The Canadian Nuclear Safety Commission, Canada’s independent nuclear regulator, regulates the use of nuclear energy and materials to protect health, safety, security and the environment and to implement Canada’s international commitments on the peaceful use of nuclear energy; and to disseminate objective scientific, technical and regulatory information to the public.

Canadian Organization of Medical Physicists | Booth # 1115

The Canadian Organization of Medical Physicists is the professional body for medical physicists in Canada. The membership is composed of physicists, scientists and academics located at universities, hospitals, cancer centres and government research facilities as well as graduate students and post-doctoral fellows. Members have an educational or professional background in physics or engineering as it applies to medicine.

CareFusion | Booth # 2202

At CareFusion, we serve the healthcare industry with products and services that support infection prevention, medication management, operating room efficiency, respiratory care and healthcare analytics products and services. As of March 2015, CareFusion has joined BD to become one of the largest global leaders in the medical technology industry.

Carleton University | Booth # 3406

Carleton University, located in Canada’s beautiful capital city Ottawa, offers an MASc in biomedical engineering, and MSc and PhD Physics with specialization in medical physics (the PhD is CAMPEP accredited). Our programs are networked with world-class clinical facilities and national laboratories making Carleton a stimulating academic and research environment. carleton.ca

CDR Systems | Booth # 1127

A global company CDR Systems offers proven next generation Frameless SRS, SRT, IMRT, IGRT, SBRT, Breast, Pelvis and H&N precision patient positioning and Immobilization products used by leading organizations worldwide. See why at our booth or email to arrange a demo. You can also keep in touch with the latest advancements in patient immobilization at: twitter.com/CDRSys and online www.cdrrsys.ca
Centre for Imaging Technology Commercialization (CIMTEC) | Booth # 2211

CIMTEC builds and tests clinical prototypes in the broad areas of 3D visualization, image analysis and mechatronics design with specific expertise in image-guided interventions and digital pathology. Through technology development, business advice, and clinical testing, CIMTEC helps researchers, startups and small to medium-sized companies commercialize their medical imaging innovations.

CIRS | Booth # 1224

CIRS is recognized world wide for tissue simulation technology and is the leader in the manufacture of phantoms and simulators for radiation therapy QA and dosimetry, diagnostic imaging and quality assurance as well as training and demonstration phantoms for CT, mammography, ultrasound, MRI, radiation therapy, fluoroscopy, radiography and emerging modalities.

Covidien | Booth # 2203

Covidien is a leading global healthcare products company that creates innovative medical solutions for better patient outcomes and delivers value through clinical leadership and excellence. Please visit www.covidien.com to learn more about our business.

CRC Press | Booth # 1107

CRC Press/Taylor and Francis is a leading international publisher of references, textbooks and professional handbooks in medical physics and biomedical engineering. Visit our booth to browse and enter to receive special prizes and discounts on new and bestselling titles. Editors Francesca McGowan (francesca.mcgowan@tandf.co.uk) and Michael Slaughter (Michael.Slaughter@taylorandfrancis.com) will be available to discuss new project ideas.

Department of Radiation Oncology, University of Toronto | Booth # 1114

The Accelerated Education Program is putting innovation to work through education dedicated to promoting essential aspects of clinical care. Learning environments are engaging, creative and interactive, putting the focus on interprofessional activities that enhance team work. The goal of AEP is to deliver relevant, excellent programming for all radiation medicine professionals.

Dräger | Booth # 2110

As an international leader in medical and safety technology, Dräger develops innovative equipment and solutions that people the world over trust. No matter where Dräger products are used, it’s always about life. Whether for use in the OR, ICU or Neonatal Care, Dräger products protect, support and save lives.

Dunlee | Booth # 2204

For over 65 years, Dunlee has remained at the forefront of medical imaging as an international leader in research, design, and manufacturing of high-performance replacement tubes for CT and general radiography. We also offer Technical Webinars and the Dunlee App, which features the Dunlee Academy, a virtual tube installation guide.

ECRI Institute | Booth # 2711TT

ECRI Institute is an independent nonprofit with more than 40 years of experience researching the best approaches to improving patient care. Our unbiased, evidence-based research, information, and advice help you address patient safety, quality and risk management challenges, procure cost-effective technology, and align capital investments with strategic technology needs.
Elekta | Booth # 1202

Elekta is a human care company pioneering significant innovations and clinical solutions for treating cancer and brain disorders. The company develops sophisticated, state-of-the-art tools and treatment planning systems for radiation therapy, radiosurgery and brachytherapy, as well as workflow enhancing software systems across the spectrum of cancer care.

Engineering World Health | Booth # 2713TT

Engineering World Health works with students and the BME community to improve healthcare delivery in developing world hospitals. We build local capacity to maintain medical equipment, make repairs, and develop low-cost technologies. Visit us to learn about our summer institute and making a lasting impact on developing world health care!

Fibertech | Booth # 2503

Since 1994, Fibertech continues to be the number #1 hospital equipment service facility in Canada. Specializing in repair of flexible and rigid endoscopes, rigid instrumentation, power tools and phaco hand pieces. Training and education programs provide a complete experience for our customer.

Fluke Biomedical / Unfors RaySafe | Booth # 3112

Together Fluke Biomedical and Unfors RaySafe strive to improve the quality of global health, one measurement at a time. We provide most reliable quality assurance solutions to make medical equipment safer to use. We serve biomedical engineers, quality-assurance technicians, medical physicists, oncologists, and radiation-safety professionals. For more information, visit www.flukebiomedical.com.

Getinge Group | Booth # 3114

Getinge is a leading global medical technology company with operations in the areas of surgery, intensive care, infection control, care ergonomics and wound care. Getinge provides equipment, systems and solutions that aims to contribute to quality enhancements and cost efficiency within healthcare and the life sciences.

Harpell Associates | Booth # 3305

Harpell Associates is a company dedicated to selling high quality healthcare care products, and services to Radiation Oncology, Nuclear and Radiological imaging centers throughout Canada. With over 35 years of experience in the Canadian health care industry we have developed a reputation of providing outstanding customer service throughout the industry.

Heidelberg University | Booth # 1111

Heidelberg University, founded in 1386, is the oldest University in Germany with a strong international orientation. In 2010 the first postgraduate distance learning Master program the “Master Online Advanced Physical Methods in Radiotherapy (APMR)” was launched. Since then additional distance learning programs in the field of Medical Physics have topped off the offer.

IBA | Booth # 1331

IBA is a global medical technology company focused on bringing integrated and innovative solutions for the diagnosis and treatment of cancer. The Company is the worldwide technology leader in the field of proton therapy. IBA also has a radiation dosimetry business and develops particle accelerators for the medical world and industry.
IEEE Engineering in Medicine and Biology Society | Booth # 2104

IEEE Engineering in Medicine and Biology Society is the world’s largest society of biomedical engineers. We provide access to people, practices, information, ideas and opinions shaping one of the fastest growing, technical fields. EMBS focuses on development and application of engineering concepts/methods to provide solutions to medical and healthcare problems.

Institution of Engineering and Technology | Booth # 2715TT

The IET journals portfolio offers high quality research in a number of topic areas including medical and biomedical research. Healthcare Technology Letters, IET Image Processing, IET Nanobiotechnology and IET Systems Biology are all key journals in this fast-paced field and considered an invaluable source for researchers and practitioners. Find out more at www.ietdl.org/journals.

International Federation for Medical and Biological Engineering (IFMBE) | Booth # 2309

The International Federation for Medical and Biological Engineering (IFMBE) is primarily a federation of national and transnational societies. These professional organizations represent interests in medical and biological engineering. The IFMBE is also a Non-Governmental Organization (NGO) for the United Nations and the World Health Organization (WHO), where we are uniquely positioned to influence the delivery of health care to the world through Biomedical and Clinical Engineering.

International Organization for Medical Physics (IOMP) | Booth # 1119

International Organization for Medical Physics (IOMP) represents over 18,000 medical physicists worldwide and 80 national member organisations.

The mission of IOMP is to advance medical physics practice worldwide by disseminating scientific and technical information, fostering the educational and professional development of medical physicists, and promoting the highest quality medical services for patients.

International Union for Physical and Engineering Sciences in Medicine (IUPESM) | Booth # 3214

IUPESM is a non-profit scientific NGO. The founding constituent organizations are IFMBE and IOMP. The objective is to contribute to the advancement of physical and engineering science in medicine for the well-being of humanity. IUPESM is the custodian of the triennial World Congress for Medical Physics and Biomedical Engineering.

IOP Publishing | Booth # 1103

IOP Publishing (ioppublishing.org) provides a range of journals, books, websites, magazines, congress proceedings and services through which leading-edge scientific research is distributed worldwide. Visit our stand to find out more about IOP Biosciences - our journals publishing in a number of fields, including medical physics, biomedical engineering and biophysics.

IPEM | Booth # 3606

The Institute of Physics and Engineering in Medicine (IPEM) is dedicated to bringing together physical science, engineering and clinical professionals in academia, and healthcare to share knowledge, advance science/technology and inform/educate the public with the purpose of improving the understanding, and treatment of disease and management of patients.

iRT Systems | Booth # 1124

iRT is a new company founded in 2013 to introduce innovative new products into the radiation therapy market with the goal to improve patient safety and the overall quality of treatment.

Our first project is the development and certification of the Integral Quality Monitor (IQM) System, a revolutionary new device for real-time quality assurance.

LAP Laser | Booth # 1214

LAP of America Laser Applications, L.L.C has been delivering state of the art patient alignment laser systems for radiation therapy, nuclear medicine, and diagnostic radiology since 1997. Building on a strong tradition of excellence in the medical industry LAP has become the world leader in patient alignment laser systems.
Maquet-Dynamed | Booth # 3211

MAQUET-DYNAMED

Swedish Group of companies GETINGE AB. The MAQUET brand represents the Medical Systems Business area and together with two other Business Areas ARJO Extended Care and GETINGE Infection Control, the entire GETINGE group of companies focuses on forward-looking medical technology.

Institute of Biomedical Engineering | Booth # 3203, 3206

IBME

UCL Institute of Biomedical Engineering

The Institute of Biomedical Engineering is a leading university-based deliverer of medtech R&D and innovation. The IBME brings together businesses, clinicians and academics to establish the technical feasibility, clinical desirability and commercial viability of cutting edge medical technology. We’re pioneering this engagement through both our MedTech Accelerator Programme and our PhD training scheme.

MedTech INSTITUTES MedTech Hub | Booth # 3203, 3206

A Center for Minimally Invasive Surgery

ACMIT | Booth # 3203, 3206

ACMIT is a translational research center focused on technology for minimally invasive surgery that combines multidisciplinary know-how with that of international experts. The organizational structure of ACMIT reflects the quest for scientific excellence and successful technology development. ACMIT’s goal is to bring developments to their real use in clinical context within reasonable time.

CTMH | Booth # 3203, 3206

CTMH is collaboration between Karolinska Institutet, Royal Institute of Technology and Stockholm County Council to help develop the region as a world-class medical technology center. CTMH creates venues and activities that stimulate and develop exchanges between industry, academia and health care in the boundaries between technology, health, research and application.

Morgridge Institute for Research | Booth # 3203, 3206

The Morgridge Institute for Research is a private, nonprofit biomedical research institute in Madison, Wis., affiliated with the University of Wisconsin–Madison. The institute works to improve human health by conducting, enabling and translating interdisciplinary biomedical research. Current research includes regenerative biology, virology, medical engineering and core computational technology.

Ontario Brain Institute | Booth # 3203, 3206

The Ontario Brain Institute is a provincially-funded, not-for-profit research centre seeking to maximize the impact of neuroscience and establish Ontario as a world leader in brain research, commercialization and care. We create partnerships between researchers, clinicians, industry, patients, and their advocates to foster discovery and deliver innovative products and service.

Hong Kong Science & Technology Parks Corporation (HKSTP) | Booth # 3203, 3206

HKSTP

(HKSTP) is a statutory body dedicated to building a vibrant innovation and technology ecosystem to connect stakeholders, nurture technology talents, facilitate collaboration, and catalyse innovations to deliver social and economic benefits to Hong Kong and the region.

Ontario Brain Institute INSTITUT ONTARIEN DU CERVEAU
Sunnybrook Research Institute | Booth # 3203, 3206

Sunnybrook Research Institute (SRI) is the research enterprise of Sunnybrook Health Sciences Centre and is affiliated with the University of Toronto. Scientists at SRI strive to understand and prevent disease, and to develop treatments that enhance and extend life. They are renowned for excellence in the biological, physical and evaluative clinical sciences.

Techna | Booth # 3203, 3206

Techna is an institute of University Health Network, in collaboration with the University of Toronto, focused on the accelerated development and exploitation of technology for improved health. Techna is designed to shorten the time interval from technology discovery to application through a continuum of clinically driven innovation, technology & process development.

Thunder Bay Regional Research Institute (TBRRI) | Booth # 3203, 3206

Established in 2007 as Canada’s newest molecular imaging and advanced diagnostics research institute, TBRRI is now the research arm of the Thunder Bay Regional Health Sciences Centre. Currently Scientists, Physician Researchers and Clinicians are engaged in research which contributes to innovative treatments and improved diagnostic tools.

MedView Technologies | Booth # 2213

MedView was founded in 2013 to commercialize a highly innovative & proprietary technology based on Spatially Resolved Diffusive Reflectance Spectroscopy, with potential applications in the medical diagnostics, pharmaceutical manufacturing, and food/material inspection fields. We are currently developing a vein detection medical device, with potential market size of up to $4B.

MIM Software Inc. | Booth # 2205

MIM Software Inc. provides practical imaging solutions in the fields of radiation oncology, radiology, nuclear medicine, urology, neuroimaging, and cardiac imaging. MIM offers solutions for computer workstations, as well as mobile and cloud-based platforms. MIM products are sold globally to imaging centers, hospitals, specialty clinics, research organizations, and pharmaceutical companies.

Mobius Medical Systems | Booth # 1323

Mobius Medical Systems provides the radiation oncology community with innovative software to streamline quality assurance. Mobius3D and MobiusFX are the first solutions for full 3D verification of both patient plan and delivery. Reclaim your nights and weekends! MobiusFX provides comprehensive patient specific QA in as little as one minute.

Modus Medical Devices Inc. | Booth # 1309

For 15 years, QUASAR™ has inspired physicists worldwide to seek the highest quality assurance standards in the field of medical imaging and radiotherapy. With 3,000 phantoms in over 1,800 treatment centres, Modus products are built to provide you with confidence that every patient is receiving the best possible treatment.

NELCO | Booth # 1205

NELCO is the worldwide leader in the design, manufacturing and construction of radiation shielding products and facilities for radiation therapy and diagnostic imaging. NELCO’s 80 year dedication to customer service, quality, and innovative products has resulted in over 4000 radiation therapy doors installed worldwide and over 5000 customers.

Olympus Canada Inc. | Booth # 2112

Olympus develops leading edge technology for healthcare professionals that help improve outcomes and enhance quality of life for patients. Visit us at Booth #2112 in the exhibit hall or on-line at www.olympuscanada.com
ImSimQA software is a complete toolkit for performing QA on Deformable Image Registration algorithms. OnQ RTS is an automated clinical system for performing Adaptive Planning functions including Deformable Image Registration. Add function without adding process to your department. Canadian distributors of MacroMedics immobilization and patient positioning devices.

Orfit supplies High Precision Immobilization Systems including Adult/Pediatric Head/Neck systems using Frameless full and open face masks. MammoRx Breast Boards, SBRT Systems, Prone Breast Solutions, Extremities, Pelvis/Abdomen, Proton and MR Compatible systems are available.

Precision, reproducibility, ease of use, high patient comfort are hallmarks of the systems

Pacific Medical LLC specializes with providing PARTS and REPAIR SERVICES for Patient Monitors, Modules, Telemetry, Infusion Pumps, Suction Regulators, Fetal Transducers, SpO2/ECG/TEMP/NIBP Cables, O2 Blenders, Endoscopes and Gas Analyzers. Pacific Medical carries the largest patient monitoring inventory in our industry and is recognized for its customer service response team.

For more information visit: www.pacificmedicalsupply.com.

PartsSource is a leading provider of supply chain solutions for medical replacement parts for providers, Independent Services Organizations and OEMs in the healthcare industry who need to innovate their procurement process to reduce their overall sourcing costs.

Physio-Control continues to lead the industry through innovation and advanced technology. For more information, visit our website at www.physio-control.com.

Precision X-Ray is the leading provider of safe, high output X-Ray irradiator used in modern translational cancer research. It’s our mission to continually develop X-ray systems that help researchers globally to better understand radiation induced effects in the sciences of molecular biology and cancer research.

PTW has been a dosimetry pioneer, growing into a global market leader for high-tech dosimetry solutions, well-known for their product excellence and innovative strength. Today, PTW dosimetry products are the first choice by healthcare professionals in radiotherapy, diagnostic radiology, nuclear medicine and health physics. For more information, visit www.ptwny.com.

Qfix provides state-of-the-art patient positioning and immobilization devices to optimize patient outcomes.

Radcal is synonymous with quality non-invasive diagnostic x-ray meters and ion chambers. The Accu-Gold Family of meters utilizes Radcal ion chambers and solid-state Multisensors for all your parameter measurements in all modalities. The newest addition to the Family is the Accu-Dose+ and WiFi data transmission.

Radiological Imaging Technology Inc. | Booth # 1213

RIT manufactures RIT113 Radiation Therapy Dosimetry software, and RADIA software for automated QC phantom analysis. RIT software packages are designed to enable QA on all aspects of modern radiation therapy and diagnostic imaging, including TG-142 for linear accelerators, TG-148 for helical tomotherapy, and ACR CT and MRI testing.

Raysearch Laboratories | Booth # 1219

RaySearch is a medical technology company that develops advanced software solutions for improved radiation therapy of cancer. RaySearch markets the RayStation® treatment planning system to clinics all over the world. In addition, RaySearch’s products are distributed through licensing agreements with leading medical technology companies. RaySearch’s software is used by over 2,500 clinics in more than 65 countries.

RTI (From Radiation to Information) | Booth # 1125

RTI provides complete quality assurance solutions for all X-ray modalities and facilities. We have “click & go” solutions for X-ray quality assurance of X-ray modalities and facilities. Everything between basic service to specialists. Our X-ray multimeter scan “do it all in one shot” – kV, time, dose, dose rate, HVL, pulsed fluoroscopy and total filtration.

Shimifrez | Booth # 2214

Shimifrez is the world’s most trusted name in micro, thin metal manufacturing, utilizing precision photo chemical machining (PCM). PCM produces highly accurate and identical thin metal components for small & large batches. PCM eliminates the cost of hard tooling, improves design flexibility and shortens lead times (72 hours) while eliminating burring and stress problems.

Southwest Medical Resources | Booth # 2210

SouthWest MEDICAL RESOURCES

Southwest Medical Resources is a world class independent service organization offering complete sales, service and rental solutions for Diagnostic Imaging Equipment. Our leadership in the industry is driven by a team of experts and unmatched resources. We exist to bring quality and value to our customers.

Spacelabs Healthcare | Booth # 2114

Spacelabs Healthcare’s philosophy is to develop innovative medical devices to provide the best care experience for not only the patient and the clinician, but also the patients’ families. Providing devices that help reduce stress can help enhance the experience for both patient and visitor alike.

Spectrum Technologies, Inc. | Booth # 2412

Spectrum Technologies, Inc. provides test instrument calibration and repair for the biomedical, commercial, and industrial markets. On-site services are available regionally and depot services are available worldwide. Our main office is in Pennsylvania with branch offices strategically located across the USA and two in Canada. Our website: www.goSTI.cc Email: info@goSTI.cc

Springer | Booth # 2311

Looking to publish your research? Discover Springer’s print and electronic publication services, including Open Access! Get high-quality review, maximum readership and rapid distribution. Visit our booth or springer.com/authors. You can also browse key titles in your field and buy (e)books at discount prices. With Springer you are in good company.

Standard Imaging | Booth # 1110

Dedication to customer service, forging partnerships and fostering innovation helps Standard Imaging pave an intuitive path to superior QA. Beginning with the HDR 1000 Well Chamber to the W1 Scintillator and PIPSpro Software today, Standard Imaging provides its customers with practical, precise products for their QA needs.
Sun Nuclear Corporation (SNC) | Booth # 1329

Sun Nuclear Corporation (SNC) is the worldwide market share leader in QA and Dosimetry solutions for Radiation Oncology. While others speak of innovation, we live it. Our mission is to provide you with better outcomes that save time. SNC supports FFF Beams, VMAT, IMRT, SRS, TomoTherapy, CyberKnife, and Conventional external beam treatments.

Synaptive Medical | Booth # 3404

Synaptive Medical has dedicated more than 50 engineers and scientists specifically to the development of neurosurgical technologies. The result? Our BrightMatter™ Neurosurgery Products provide advanced tools and information for surgeons and hospitals to focus on patient outcomes.

Technical Prospects | Booth # 2102

Technical Prospects has been in business over 18 years, providing quality Siemens parts and service to nearly 500 customers worldwide. As a well-known medical imaging parts reseller, our main objective is to provide quality parts and service, technical support, maintenance services and training to medical facilities and health care providers.

The Phantom Lab/Image Owl | Booth # 1209

The Phantom Laboratory (www.phantomlab.com) manufactures medical imaging and radiation therapy phantoms. In addition to our standard products we offer custom and OEM phantoms. We also work with Image Owl (www.imageowl.com) to provide fully automated, cloud-based, CT, MR and DBT image quality measurement and database services.

Tropical Health & Education Trust (THET) | Booth # 2511

THET is a specialist global health organisation that educates, trains and supports health workers through partnerships; enabling people in low and middle-income countries to access essential healthcare. THET helped develop the first Biomedical Engineering training course in Zambia and are working with Government to improve medical equipment management and maintenance.

University of Waterloo, Engineering | Booth # 2414

Waterloo Engineering is home to 60+ researchers focused in biomedical engineering and biotechnology, who produce advancements in pharmaceutical delivery systems, affordable imaging systems, software solutions for healthcare and more. With strong partnerships in industry, healthcare and government, our researchers create next-generation technology to tackle the world’s toughest biomedical problems.

USOC Medical | Booth # 2201

USOC Medical provides biomedical equipment repair solutions to healthcare facilities, clinics and medical companies of all types and sizes. We are committed to providing high-quality, cost-effective equipment and services to all of our clients. Each member of our organization is dedicated to excellence and continual organization and professional improvement.

Varian Medical Systems | Booth # 1234

Varian Medical Systems is a leading manufacturer of medical devices for treating cancer and other conditions with radiotherapy, radiosurgery, proton therapy, and brachytherapy. The company also produces informatics software for managing comprehensive cancer clinics. Varian is a premier supplier of tubes, digital detectors, and image processing workstations for X-ray imaging. www.varian.com
Welcome to Canada’s first Biophysics Department – home to 90 researchers and 100 graduate students. Working closely with research institutes and hospitals, we offer unique training opportunities in biomedical imaging, cardiovascular studies (microcirculation & hemodynamics), biomechanics, and cancer diagnosis & therapy, using a wide range of experimental and computational techniques.

The IUPESM World Congress 2018 will be held in Prague, Czech Republic on June 3 - 8, 2018. For constant updates please visit www.iupesm2018.org. We invite you to visit our booth No. 3311 to try to win a FREE REGISTRATION for IUPESM 2018.

The Mexican Society of Biomedical Engineering (SOMIB) serves as the lead society and professional home for biomedical engineering. Our main mission is to promote and enhance knowledge and education in biomedical engineering nationwide and its utilization for human health and well-being. www.somib.org.mx

The IUPESM 2021 World Congress (WC-2021) has proposed to be hosted in Taipei, an international city with convenient and well-equipped facilities, by the Chinese Society of Medical Physics, Taipei and Taiwanese Society of Biomedical Engineering together. Many supports from local hospitals and related industrial companies will be offered for this important meeting. We believe that Taipei will be the optimum choice for this worldwide event in 2021.

Choose Singapore for 2021 World Congress - Singapore is excited to put forth a bid to host the IUPESM World Congress in 2021, the first time it will be held in South East Asia. We are ready to welcome the global community of medical physicists and biomedical engineers to our multi-cultural city.
**Xoft, a subsidiary of iCAD, Inc. | Booth # 1129**

iCAD delivers innovative cancer detection and radiation therapy solutions and services that enable clinicians to find and treat cancers earlier and while enhancing patient care. iCAD’s Xoft® Axxent® Electronic Brachytherapy (eBx®) System® delivers high dose rate, low energy radiation, which targets cancer while minimizing exposure to surrounding healthy tissue. For more information, visit www.icadmed.com.

**Zimmer Canada | Booth # 2303**

Zimmer is a world leader in developing and delivering orthopaedic reconstructive, spinal, trauma and dental implants, plus related surgical products. Zimmer has operations in over 25 countries and sells products in more than 100 countries. The Company is supported by more than 8,500 employees worldwide.
Visit Elekta at the World Congress of Medical Physics and Biomedical Engineering 2015 in Toronto Canada and discover how we are bringing information-guided cancer™ care to you.

Stop by our booth # 1202 to learn more about the latest innovations in:

- Monaco® - Complete treatment planning system
- MOSAIQ® - Oncology information system
- AQUA - Machine quality management
- Oncentra® brachy planning (v4.5) - Comprehensive treatment planning for brachytherapy
- Flexitron® treatment delivery - Afterloading platform

Also, please join us for lunch where Stanley Benedict of University California Davis will discuss:

“New Technology Developments to Improve Patient Safety in Radiation Therapy”.

Learn how a better focus on safety in technology can deliver better precision, better reliability and better outcomes. This is an important guidance for Elekta and consistent with the stated goals of ASTRO, ACR and more.

Presenter:
Stanley H. Benedict, Ph.D., DABR, FAAPM
Professor & Vice Chair of Clinical Physics
Department of Radiation Oncology
University of California at Davis Comprehensive Cancer Center

June 9th, 2015
12:15 - 1:15 pm EST
Metro Toronto Convention
Center Room 718A

Please register at: http://www.elekta.com/wc2015symposium
## INDUSTRY SUPPORTED SYMPOSIA

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<td>Room 718A</td>
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<td>Delegates are welcome to attend RaySearch’s Lunch Symposium. It will show how software will be the driving force of innovation in radiation therapy and notably in adaptive therapy.</td>
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<tr>
<td>**Tuesday, June 9, 2015</td>
<td>12:15 – 13:15</td>
<td>Room 718A</td>
<td>ELEKTA</td>
<td>New Technology Developments to Improve Patient Safety in Radiation Therapy</td>
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<td>Learn how a better focus on safety in technology can deliver better precision, better reliability and better outcomes. This is an important guidance for Elekta and consistent with the stated goals of ASTRO, ACR and more.</td>
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<td>Interoperability between infusion systems and a hospital EMR presents new opportunities for improving IV infusion safety, patient care and clinical workflow. At this event, attendees will have the opportunity to learn about experiences with system integration and the benefits it brings to patients, clinicians, IT, BioMed and Informatics.</td>
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<td>Through close collaboration with our customers, we have developed premier oncology tools that meet the needs of clinicians and the demands of any oncology department. Our portfolio of products allows clinicians to treat tumors of all sizes, regardless of their location in the body. Please join us to learn more about Accuray’s offerings in the radiation therapy field.</td>
</tr>
</tbody>
</table>
Monday, June 8 2015

SESSION DATE: MONDAY, JUNE 8 2015
SESSION TIME: 13:30 - 15:00
SESSION ROOM: PLENARY HALL (HALLS F&G)
SESSION TITLE: PL01 - WOMEN IN BIOMEDICAL ENGINEERING AND MEDICAL PHYSICS
SPEAKER(S): MONIQUE FRIZE & LONDA SCHIEBINGER

PL01.1 Engaging Women and Men for a Better Future Worldwide
Speaker(s): Monique Frize
Systems and Computer Engineering, Carleton University, Ottawa/ON/CANADA

From the three approaches suggested by Londa Schiebinger to harness the power of gender analysis, this part of the presentation deals with the first two: “Fix the number of women” and “fixing the institutions”. Women and men can generate and participate in activities that lead to an increased participation of women in biomedical engineering and medical physics. Evidence also exists, demonstrating that there are economic benefits and more complete solutions created by gender balanced design teams and an increased number of women in decision-making bodies such as corporate boards, management teams in industry, government, and universities. It is critical to collect sex disaggregated data on undergraduate post-secondary enrolments and graduations in science and engineering, as well as to understand the gender participation in the workplace in these fields. Examining the issues that limit women’s participation at all levels is a first step, which can then be followed by the development and implementation of strategies that help eliminate gender bias and provide the necessary support for women to have a successful career in these fields.

PL01.2 Gendered Innovations in Health & Technology
Speaker(s): Londa Schiebinger
Stanford University, Stanford, United States of America

How can we harness the power of gender analysis to discover new things? Schiebinger identified three major approaches to gender in science research, policy, and practice: 1) “Fix the Numbers of Women” focuses on increasing women’s participation; 2) “Fix the Institutions” promotes gender equality in careers through structural change in research organizations; and 3) “Fix the Knowledge” or “gendered innovations” stimulates excellence in science and technology by integrating sex and gender analysis into research. This talk focuses on the third approach. Gendered Innovations: 1) develops state-of-the-art methods of sex and gender analysis for scientists and engineers; and 2) provides 24 case studies as concrete illustrations of how sex and gender analysis leads to new ideas and excellence in research. Several case studies will be discussed, including stem cells, assistive technologies for the elderly, and osteoporosis in men. All case studies can be found at: http://genderedinnovations.stanford.edu/. To match the global reach of science and technology, this project was developed through a collaboration of over sixty experts from across the United States, Europe, and Canada (and has now extended to Asia). Gendered Innovations was funded by the National Science Foundation, the European Commission, and Stanford University.
**Tuesday, June 9 2015**

<table>
<thead>
<tr>
<th>SESSION DATE:</th>
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<tr>
<td>SESSION TIME:</td>
<td>13:30 - 14:30</td>
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<tr>
<td>SESSION ROOM:</td>
<td>PLENARY HALL (HALLS F&amp;G)</td>
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<tr>
<td>SESSION TITLE:</td>
<td>PL02 - NEXT GENERATION MEDICINE</td>
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<tr>
<td>SPEAKER(S):</td>
<td>JEFF IMMELT</td>
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</table>

**PL02.1 Innovation, Healthcare and the Future**

**Speaker(s): Jeff Immelt**

Chairman and CEO of GE, Fairfield/CT/UNITED STATES OF AMERICA

Jeff Immelt, Chairman & CEO of GE, will talk about healthcare innovation and how GE has been repositioning its business to succeed in a market that is demanding more technology, more flexibility and more tailored solutions.

**Wednesday, June 10 2015**

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<thead>
<tr>
<th>SESSION DATE:</th>
<th>WEDNESDAY, JUNE 10 2015</th>
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<tbody>
<tr>
<td>SESSION TIME:</td>
<td>8:00 - 10:00</td>
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<tr>
<td>SESSION ROOM:</td>
<td>PLENARY HALL (HALLS F&amp;G)</td>
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<tr>
<td>SESSION TITLE:</td>
<td>PL03 - URBAN HEALTH AND FUTURE EARTH / GLOBAL HEALTH CHALLENGES</td>
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<tr>
<td>SPEAKER(S):</td>
<td>GORDON MCBEAN &amp; MARY GOSPODAROWICZ</td>
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</table>

**PL03.1 The Changing Urban Environment and Health in a Future Earth**

**Speaker(s): Gordon McBean**

Western University, London/ON/CANADA

Around our planet there have been increasing numbers of disasters due to floods, storms, earthquakes and other natural hazards. Although earthquakes are most horrific when they happen, climate-related events cause about three-quarters of all disasters and as the climate warms, these hazards are increasing. There is also the migration to people to major cities, often on coasts of the oceans or major rivers. The result is the intersection of the effects of the major issues of climate change, disaster risk reduction and sustainable development. In all cases we need to look to the future and takes actions now to reduce losses in the future.

In 2015, nations will negotiate a revised framework on action on disaster risk reduction, a possible Paris-protocol on climate change and Sustainable Development Goals to be attained by all countries by 2030. The draft list of SDGs includes: end poverty and hunger; attain healthy life for all at all ages; secure water and sanitation; and build inclusive, safe and sustainable cities and human settlements. For the global science community, the challenge is providing the scientific basis for definitions and approaches, including how to achieve these goals and the criteria for measurement of progress.

This presentation will bring together these issues in the context of the new international research programs Future Earth: Research for Global Sustainability; Integrated Research on Disaster Risk; and Health and Wellbeing in the Changing Urban Environment: a Systems Analysis Approach; with a Canadian-funded project, Coastal Cities at Risk: Building Adaptive Capacity for Managing Climate Change in Coastal Megacities. The Future Earth program is adopting an approach to involve the stakeholder community in the research program from the beginning to co-design and co-produce the research based on the logic that this will make the research most directly relevant to societies needs to address these issues. The Coastal Cities research project is integrating across social-natural-economic-engineering and health sciences to develop a systems approach to quantifying urban resilience and then undertake “what if” experiments to identify the most effective approaches to improving resilience and reducing impacts, recognizing the complex interactions across these elements of society.
The International Council for Science is leading the Science and Technology Major Groups to input to these UN processes and will endeavour to bring these scientific principles to the negotiations. Working with UN agencies such as UNESCO, UNU and WMO, and non-governmental partners such as the Inter-Academy Medical Panel, the Council will continue in the coming decades to assert the importance of scientific bases for these international agreements and national actions. We need to have the full support of medical physicists and biomedical engineers engaged in supporting health care in diverse environments in order to achieve these societal objectives, consistent with the Council’s Mission to strengthen international science for the benefit of society - all societies and all people.

PL03.2 Cancer: The Global Health Challenge

Speaker(s): Mary Gospodarowicz

Professor of Radiation Oncology, University of Toronto, Canada. Medical Director, Princess Margaret Cancer Centre, and Regional Vice President, Cancer Care Ontario

Thursday, June 11 2015

SESSION DATE: THURSDAY, JUNE 11 2015
SESSION TIME: 13:30 - 15:00
SESSION ROOM: PLENARY HALL (HALLS F&G)
SESSION TITLE: PL04 - EVIDENCE AND HEALTH INFORMATICS
SPEAKER(S): EDWARD SHORTLIFFE & VIMLA PATEL

PL04.1 Academic Biomedical Informatics: Synergies and Challenges at the Interface with Industry

Speaker(s): Edward Shortliffe

College of Health Solutions, Arizona State University, Phoenix/UNITED STATES OF AMERICA

Academic biomedical informatics has achieved great successes through research contributions and education of professional informaticians over several decades, now reflected in a thriving commercial marketplace for electronic health records and other informatics tools. That very success, coupled with changes in the ability of governments to support research at past levels, is forcing a reconsideration of the directions and emphases for faculty members in informatics academic units. In this presentation Dr. Shortliffe will discuss those forces and propose areas of emphasis that will strengthen the academic discipline as it continues to evolve. He will distinguish the roles of academic informaticians as practitioners of informatics, as researchers, and as educators. He will also stress the necessary synergies between academic informatics and the health information technology industry, arguing that both will be strengthened by more fertile relationships and joint efforts.
PL04.2 Cognitive Challenges for Safe Human Computer Interaction

Speaker(s): Vimla Patel
The New York Academy of Medicine and Columbia University, New York/UNITED STATES OF AMERICA

Given the complexities of modern medicine, delivery of safe and timely care is an ongoing and recognized challenge. Errors, misunderstandings, and inaccuracies—large and small—are routine occurrences in healthcare delivery. Health information technology (IT) has undoubtedly reduced the risk of serious injury for patients. However, its true potential for preventing medical errors remains only partially realized. Unfortunately, such systems may even give rise to hazards of their own. There is a growing recognition that many errors are attributable neither solely to lapses in human performance nor to flawed technology. Rather, they develop as a product of the interaction between human beings and technology. In our view, errors are the product of cognitive activity in human adaptation to complex physical, social, and cultural environments. How well the design of health IT complements its intended setting and purpose is critically important for safe and effective performance. In this presentation, I will discuss the cognitive challenges we face in understanding human-computer interaction (HCI) that make the integration of computing and clinical practice a difficult task that, improperly addressed, can lead to threats to patient safety.
Sunday, June 7 2015

SESSION DATE:  SUNDAY, JUNE 7 2015
SESSION TIME:  08:00 - 17:15
SESSION ROOM:  716
SESSION TITLE:  SS01 - USE OF AAPM TASK GROUP 100 RECOMMENDED RISK ASSESSMENT APPROACH TO DEVELOP A RISK BASED QUALITY MANAGEMENT PROGRAM IN RADIATION THERAPY
SESSION ORGANIZER(S):  SAIFUL HUQ

AGENDA:

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>08:00</td>
<td>TG-100 overview and introduction</td>
<td>Saiful Huq</td>
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<tr>
<td>08:15</td>
<td>Safety Guidance for Radiotherapy</td>
<td>Peter Dunscombe</td>
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<tr>
<td>08:30</td>
<td>Incident learning systems: Structure, terminology and taxonomies</td>
<td>Peter Dunscombe</td>
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<tr>
<td>10:00</td>
<td>Exercise 1: Event Classification</td>
<td>Saiful Huq</td>
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<tr>
<td>10:15</td>
<td>Process mapping</td>
<td>Saiful Huq</td>
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<tr>
<td>11:00</td>
<td>Exercise 2: Process Mapping</td>
<td>Jean-Pierre Bissonnette</td>
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<tr>
<td>12:00</td>
<td>Systems and Culture</td>
<td>Jean-Pierre Bissonnette</td>
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<tr>
<td>12:30</td>
<td>LUNCH</td>
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<tr>
<td>13:30</td>
<td>Fault Trees</td>
<td>Peter Dusncombe</td>
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<tr>
<td>13:45</td>
<td>Exercise 3: Fault Tree Analysis</td>
<td>Ellen Yorke</td>
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<tr>
<td>14:15</td>
<td>Design of QM from the Risk Assessment</td>
<td>Ellen Yorke</td>
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<tr>
<td>15:00</td>
<td>Exercise 4: QM Layout</td>
<td>Jean-Pierre Bissonnette</td>
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<tr>
<td>15:15</td>
<td>Change Management</td>
<td>Jean-Pierre Bissonnette</td>
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<tr>
<td>15:30</td>
<td>Wrap and final questions</td>
<td>Saiful Huq</td>
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Introduction to Session:
This program will focus on automated methods for medical image segmentation. Topics will include: clinical applications, algorithms, and computational implementation.

Medical physicists, biomedical engineers, imaging scientists, computer scientists and healthcare professionals who use autosegmentation methods will enhance their knowledge and skills by attending this one-day event.

Ten leaders in autosegmentation will be presenting their latest methods and results.

After this event, attendees will be able to describe several autosegmentation algorithms; compare and evaluate different autosegmentation techniques; and select amongst different algorithms for varied imaging modalities and tasks.
### Monday, June 8 2015

**SESSION DATE:** MONDAY, JUNE 8 2015  
**SESSION TIME:** 15:00 - 16:30  
**SESSION ROOM:** 714B  
**SESSION TITLE:** SS05 - EUROPEAN INITIATIVES IN MEDICAL RADIATION PROTECTION  
**SESSION ORGANIZER(S):** EUGENE LIEF AND JOHN DAMILAKIS  

<table>
<thead>
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<th>AGENDA:</th>
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<tr>
<td>PIDRL: A European Commission project on Paediatric DRLs</td>
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<tr>
<td>Professor John Damilakis, EFOMP President.</td>
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<tr>
<td>Overview of EFOMP projects on Radiation Protection</td>
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<td>Professor Virginia Tsapaki, EFOMP</td>
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<tr>
<td>Collaboration of AAPM and EFOMP on Radiation Protection Projects</td>
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<tr>
<td>Dr. Eugene Lief, AAPM</td>
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<td>Question and Answer time</td>
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**SESSION DATE:** MONDAY, JUNE 8 2015  
**SESSION TIME:** 15:00 - 16:00  
**SESSION ROOM:** PLENARY HALL (HALLS F&G)  
**SESSION TITLE:** SS06 - IOFM Awardees Presentations  

**The Awardees will include:**  
- Marie Sklodowska-Curie Award: Colin Orton  
- Harold Johns Medal: William Hendee

**SESSION DATE:** MONDAY, JUNE 8 2015  
**SESSION TIME:** 16:00 - 18:00  
**SESSION ROOM:** PLENARY HALL (HALLS F&G)  
**SESSION TITLE:** SS07.1 - Presentation of 2021 BIDS  

**SESSION DATE:** TUESDAY, JUNE 8 2015  
**SESSION TIME:** 16:00 - 18:00  
**SESSION ROOM:** PLENARY HALL (HALLS F&G)  
**SESSION TITLE:** SS07.2 - IUPESM Awardees Presentations  

**The Awardees will include:**  
- IUPESM Award of Merit - IFMBE recipient: Fumihiko Kajiya  
- IUPESM Award of Merit - Medical Physics: Peter Smith
Introduction to Session:

For years, in-house clinical engineering (CE) departments and independent service organizations have faced several challenges. These relate to obtaining the supports required to service and maintain medical equipment in the field. To the CE community, providing safe, cost-effective, and expedient service depends on ability to obtain spare parts, service manuals, technical training, software, and access pass codes. It is becoming increasingly difficult to obtain these items. Manufacturers are placing conditions on servicing their products. Either no supports are provided or they charge very high prices to acquire them. Some companies will not allow servicing in the field unless expensive training is acquired. They create proprietary manuals and information separately for OEM eyes only and may charge even more to acquire this. Manufacturers contribute to the issue citing risks to the reliable support of their product. Purchasing agents are easily swayed by vendor claims of complexity that they and only they can service it (not field serviceable) and various other unfounded risks like ‘FDA won’t allow it.’ Manufacturers and CE need to develop an understanding and common ground that will serve both sides so only the patient benefits.

Objectives

To discuss with Biomedical and Clinical Engineers, Physicists, Scientists, Academics, Healthcare Technology Managers, Healthcare Institutions, Manufacturers, Vendors, Independent Service, Organizations, Regulatory Agencies, Independent Research Organizations the issue of serviceability of Medical Devices.

The summit focus will be on questions below:

1. Is there a problem?
2. If so, how do we articulate it?
3. Define ‘Supportability’
4. Provide perspective from both sides
5. Listen to comments, questions, and answers
6. List proposals, measures, and recommendations
7. Summarize
8. Publish summit outcome

Impact on the Medical Device Industry

Medical equipment manufacturers may find a competitive edge when they fully support service of equipment in the field. When customers compare a vendor’s product, field supportability can be grounds for decision-making. Today’s devices and systems are becoming more and more similar from both hardware and software perspectives. The level of distinction among competing products and vendors is shrinking. Correspondingly, characteristics around the purchasing aspect have become increasingly apparent. From an in-house clinical engineering perspective, the vendor’s support for field supportability could make acquisition more efficient for in-house CE departments (less haggling). In-house service is known to reduce equipment cost of ownership in hospitals. This apply to all patient related technologies.

Supportability Defined

The level of ease to which a specific medical device or system is serviced by entities other than representatives or direct agents of the original equipment manufacturer (OEM).
SESSION DATE: WEDNESDAY, JUNE 10 2015
SESSION TIME: 12:00 - 13:30
SESSION ROOM: 713A
SESSION TITLE: SS13 - HTA OF MEDICAL DEVICES: PREMARKET CHALLENGES (ROUNDTABLE ON HEALTH TECHNOLOGY ASSESSMENT)
SESSION ORGANIZER(S): NICOLAS PALLIKARAKIS AND LEANDRO PECCHIA

AGENDA:

- Regulation of MDs, the EU prospective
  Nicolas PalliKarakis, University of Patras, Greece, and Chair HTA Division of IFMBE

- Pre-market HTA of Medical Devices: an overview
  Leandro Pecchia, University of Warwick, UK, and Treasurer of HTA Division of the IFMBE

- From Monitoring the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA) to early technology assessment
  Christian Boehler, Joint Research Centre, European Commission, Seville, Spain

- Multi-criteria decision analysis as a tool for medical devices assessment: a case study on R&D portfolio decision for new robotics in healthcare
  Marjan Hummel, University of Twenty, The Nederlands

SESSION DATE: WEDNESDAY, JUNE 10 2015
SESSION TIME: 13:30 - 16:30
SESSION ROOM: 714
SESSION TITLE: SS14 - MEDICAL PHYSICS & BIOMEDICAL ENGINEERING RESPONSE TO CANCER CONTROL: A GLOBAL HEALTH CHALLENGE (A SYMPOSIUM SPONSORED BY IUPESM-HTTG & UICC-GTFRCC)
SESSION ORGANIZER(S): JAKE VAN DYK AND CARI BORRAS

AGENDA:

13:30-13:35 Introduction
Cari Borrás, Chair, IUPESM-Health Technology Task Group (HTTG), Washington DC, United States

13:35-14:00 The Global Cancer Burden and WHO’s Response
Adriana Velazquez, World Health Organization (WHO), Geneva, Switzerland

14:00-14:25 Biomedical Engineering Research for Cancer Diagnostics and Therapeutics
Ratko Magjarević, University of Zagreb, Zagreb, Croatia

14:25-14:50 Appropriate Technologies for Cancer Diagnostics and Therapeutics
Cari Borrás, HTTG, Washington DC, United States

14:50-15:15 IAEA Activities in Support of Radiation Therapy Services
Joanna Izewska, International Atomic Energy Agency (IAEA), Vienna, Austria

15:15-15:40 Initiatives of Expertise Mobilization
Jacob Van Dyk, Western University, London, Ontario, Canada

15:40-16:05 Equal Access to Radiation Therapy by 2035
David Jaffray, Global Task Force on Radiotherapy for Cancer Control (GTFRCC), Ontario Cancer Institute, Toronto, Canada

16:05-16:30 Discussion and Summary
Jacob Van Dyk, Western University, London, Ontario, Canada
**Thursday, June 11 2015**

**SESSION DATE:** THURSDAY, JUNE 11 2015  
**SESSION TIME:** 12:00 - 13:30  
**SESSION ROOM:** 715B  
**SESSION TITLE:** SS17 - SPREADING AND INTEGRATING HUMAN FACTORS EXPERTISE IN HEALTHCARE AN INTERNATIONAL PANEL DISCUSSION  
**SESSION ORGANIZER(S):** SONIA PINKNEY AND TONY EASTY

**Introduction to Session:**

Over the past decade, improving patient safety has been a priority for many healthcare organizations, but progress in the reduction of preventable patient harm has been slow. Human factors (HF) is recognized as an important scientific approach to improve health technology safety when applied to both pre-market (e.g., improved technology design), and post-market (e.g., improved practices, training and technology configuration/implementation) activities. HF is a discipline focused on improving safety by recognizing that humans are fallible, despite good intentions and hard work. It aims to build system resilience by focusing on the conditions under which people work and building defenses to minimize errors and their impacts.

While the potential for HF to improve healthcare safety is well established, it is not integrated and embedded in most safety initiatives. A possible explanation for this unfulfilled potential is that there are limited HF experts working in healthcare. Most HF-related work to date is done at a few organizations in a few countries (i.e., organizational silos). In addition, there has been a lack of formal professional collaboration between...
HF experts, patient safety leaders, regulators, clinicians, and health technology managers and designers, resulting in disparate expertise (i.e., professional/expertise silos). As such, there is a need to spread HF expertise internationally and across healthcare-related professions (e.g., clinical engineers, biomedical technicians, designers) so they can be empowered to take more active roles in initiating and leading safety projects that incorporate HF.

HumanEra, an HF team based at the University Health Network in Toronto, Canada, has been teaching HF to various healthcare sectors and stakeholders for almost 10 years. Teaching tactics have included:

- Introductory HF workshops
- HF method courses
- Partnering with healthcare organizations to build in-house HF teams/expertise (multi-year contracts focused on project-based collaborations)
- An introductory HF book (expected publication late 2015)

This session will consist of a panel of HumanEra teachers and past international students to share our combined experiences in teaching, learning, and applying HF for the first time to a safety initiative. The panel will include representatives from different sectors (e.g., academics, clinical engineers, regulators, designers/vendors) and countries (e.g., Canada, Brazil, Spain).

By attending this session you will:

- Discover how HF can improve healthcare safety
- Learn from the panel’s experience about applying HF in their different roles/professions, organizations, and/or jurisdictions
- Contribute to meaningful discussions about how you can become an HF champion and help to accelerate the adoption of HF in your organization
- Meet international professionals interested in HF collaboration to contribute to the cross-fertilization of this important field

AGENDA:

Overview: A brief introduction to HF will be provided (e.g., define HF for the healthcare context)

Presentations: Each panel member will present a short summary of their experience in promoting and applying HF to healthcare, focusing on their successes and barriers.

Interactive discussion: The presentations will serve as a springboard for an interactive discussion between panel members and the audience.

Moderated by Dr. Patricia Trbovich
SESSION DATE: THURSDAY, JUNE 11 2015
SESSION TIME: 12:00 - 13:30
SESSION ROOM: 716B
SESSION TITLE: SS20 - EMBEDDED SENSOR SYSTEMS FOR HEALTH WORKSHOP
SESSION ORGANIZER(S): MARIA LINDEN

AGENDA:

12:00-12:05 Introduction
   Maria Lindén, Mälardalen University

12:05-12:20 Embedded Sensor Systems with the Prospect of Monitoring, Promoting and Rehabilitating Health
   Maria Lindén, Mälardalen University

12:20-12:35 A Four-Wheeled Rollator with Automated Walking Aid
   Olof Lindahl, Umeå University Hospital

12:35-12:50 Towards Implementing More Intelligent Healthcare
   Hamid Gholamhosseini, Auckland University, New Zealand

12:50-13:05 Early Stroke Detection by Microwaves
   Magnus Otterskog, Mälardalen University

13:00-13:15 Current Developments and the Future of ECG Devices
   Ivan Tomasic, Mälardalen University

13:20-13:30 Discussion

SESSION DATE: THURSDAY, JUNE 11 2015
SESSION TIME: 15:00 - 17:00
SESSION ROOM: PLENARY HALL (HALLS F&G)
SESSION TITLE: SS21 - LEADERS SUMMIT
SESSION ORGANIZER(S): DR. HERB VOIGT, DR. TONY EASTY AND DR. DAVID JAFFRAY

Introduction to Session:
The World Biomedical Engineering and Medical Physics Leaders’ Summit is the inaugural tri-annual high-level policy meeting dedicated exclusively to furthering the role of biomedical engineering and medical physics in medicine. This unique event brings together key decision makers, academics, and practicing engineers and physicists from around the globe and encourages timely debate on emerging issues related to the development and sustainability of the role and impact of medical physicists and biomedical engineers in medicine and healthcare. The Summit provides a unique and important forum to secure a coordinated, multileveled global response to the need, demand, and importance of creating and supporting strong academic and clinical teams of biomedical engineers and medical physicists for the benefit of human health.

Key Objectives of the Leaders’ Summit:

► Raising awareness among leading decision makers to ensure the role of biomedical engineering and medical physics is recognized as a local, regional, and global health priority.

► Providing a forum to exchange information and innovative ideas on how to create and sustain academic and clinical programs in medical physics and biomedical engineering.

► Creating a force that galvanizes the leadership and decision-makers in academia, industry, and medicine to assure the role of these two translational and impactful disciplines expand their impact on human health.

► Defining compelling messages to support the critical role that biomedical engineers and medical physics play in supporting and advancing human health.

AGENDA:

15:00 Introduction

15:05 Setting the Stage

15:15 Panelist Commentary

15:45 Panel Discussion

16:15 Last Word

16:25 Closing Comments
**SESSION DATE:** THURSDAY, JUNE 11 2015  
**SESSION TIME:** 15:00 - 19:00  
**SESSION ROOM:** 714A  
**SESSION TITLE:** SS22 - IUPESM-HTTG WORKSHOP ON INNOVATIONS IN THE USE OF MOBILE DEVICES IN HEALTHCARE  
**SESSION ORGANIZER(S):** CARI BORRAS  

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<th>AGENDA</th>
<th>Cari Borrás, IUPESM-HTTG Chair, Washington DC, USA</th>
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<tr>
<td>15:00-15:15 Welcome Remarks; Objectives of the Workshop</td>
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<tr>
<td>15:15-16:00 General Overview (The state of TeleHealth, TeleMedicine, and mHealth)</td>
<td>Kwan-Hoong Ng, Department of Biomedical Imaging, University of Malaya, Kuala Lumpur, Malaysia</td>
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<tr>
<td>Implementation, Barriers and Policy Issues:</td>
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<tr>
<td>16:00-16:25 Industrialized Areas</td>
<td>Yadin David, Biomedical Engineering Consultants, LLC., Houston, USA</td>
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<tr>
<td>16:25-16:50 Resource-limited Regions</td>
<td>K. Siddique-e Rabbani, Department of Biomedical Physics &amp; Technology, University of Dhaka, Bangladesh</td>
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<tr>
<td>16:50-17:05 Development of Healthcare Applications using Facilities and Functions available in Modern Mobile Devices</td>
<td>Marlen Perez-Diaz, Center for Studies on Electronic and Information Technologies, Central University of Las Villas, Santa Clara, Villa Clara, Cuba</td>
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<td>17:05-17:20 Quality of Service Assessment, Maintenance and Sustainability Issues</td>
<td>J. Tobey Clark, Instrumentation and Technical Services, University of Vermont, Burlington, Vermont, USA</td>
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<td>Point of Care Solutions:</td>
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<tr>
<td>17:20-17:55 Demonstration</td>
<td>K. Siddique-e Rabbani, Department of Biomedical Physics &amp; Technology, University of Dhaka, Bangladesh</td>
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<tr>
<td>17:55-18:30 Demonstration</td>
<td>Kwan Hoong Ng, Department of Biomedical Imaging, University of Malaya, Kuala Lumpur, Malaysia</td>
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<tr>
<td>18:30-18:50 Discussion</td>
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<tr>
<td>18:50-19:00 Summary and Recommendations</td>
<td>Colin Orton, Wayne University, Detroit, Michigan, USA</td>
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**SESSION DATE:** THURSDAY, JUNE 11 2015  
**SESSION TIME:** 17:00 - 19:00  
**SESSION ROOM:** 802B  
**SESSION TITLE:** SS23 - QC IN RADIOTHERAPY: DEFINING THE NEXT STEPS  
**SESSION ORGANIZER(S):** JEAN-PIERRE BISONNETTE
CONTINUING EDUCATION
SESSIONS

Monday, June 8 2015

SESSION TIME: 08:00 – 10:00
SESSION ROOM: 802A
SESSION NAME: BMEE01 - GENERAL BME EDUCATION

08:00 BMEE01.1 Biomaterials - Cell-Material Interactions: Biochemistry & Physics
Dennis Discher, United States

09:00 BMEE01.2: Radiology 101: Intro to X-Ray tubes / BME Technical/Service Courses (manufacture & maintenance)
Phillip Bogolub, United States

SESSION TIME: 08:00 – 10:00
SESSION ROOM: 801A + 801B
SESSION NAME: JT01 - IMAGING

08:00 JT01.1: SPECT and Gamma Camera State-Of-The-Art Technology and Current Research
R Glenn Wells

09:00 JT01.2: Magnetic Resonance Imaging State-Of-The-Art Technology and Current Research
Richard Frayne, Canada

SESSION TIME: 08:00 – 10:00
SESSION ROOM: 802B
SESSION NAME: MPS01 - RADIATION THERAPY

08:00 MPS01.1: Radiobiology applications for clinicians - Isoeffective dose calculations, Hypofractionation, TCP/NTCP
Beatriz Sánchez, Chile

SESSION TIME: 08:00 – 10:00
SESSION ROOM: 803A
SESSION NAME: MPF01 - IMAGERIE

08:00 MPF01.1: Tomodensitométrie: les nouveaux développements et avenues de recherché
Philippe Després, Canada

09:00 MPF01.2: Résonnance magnétique: les nouveaux développements et avenues de recherché
Martin Lepage, Canada

SESSION TIME: 08:00 – 10:00
SESSION ROOM: 802B
SESSION NAME: MPS01 - RADIATION THERAPY

08:00 MPS01.1: Radiobiology applications for clinicians - Isoeffective dose calculations, Hypofractionation, TCP/NTCP
Beatriz Sánchez, Chile

SESSION TIME: 08:00 – 10:00
SESSION ROOM: 803B
SESSION NAME: BMEF01 - GENERAL BME EDUCATION/BME TECHNICAL/SERVICE COURSES

08:00 BMEF01.1: Exemples de Donnes Pratiques en Génie Clinique et Indicateurs
Mochine El Garch, Canada

SESSION TIME: 15:00 – 16:00
SESSION ROOM: 801A
SESSION NAME: BMEE02 - MEDICAL DEVICE DEVELOPMENT AND COMMERCIALIZATION

15:00 BMEE02.1: Med-Tech Commercialization – A Research Hospital’s Perspective
Mark Taylor, Canada
15:00 MPE01.1: Workforce Models for Medical Physicists
*Julian Malicki, Poland*

15:30 MPE01.2: International Educational Standards: Can We Define a Common Medical Physics Curriculum?
*Colin Orton, United States*
*Raymond Wu, United States*
*Tomas Kron, Australia*

15:00 MPF02.1: Éléments de base: réseaux informatiques, serveurs, et standards de communication
*Stefan Michalowski, Canada*

15:00 MPE02.1: Adaptive Radiotherapy
*Jan-Jakob Sonke, The Netherlands*

15:00 MPS02.1: Radiation Treatment Planning Systems and Dose Computation Algorithms (including Monte Carlo)
*Antonio Leal Plaza, Spain*

17:00 MPE03.1: Image-Guided Radiotherapy, Including Commissioning, QC, and Imaging Dose
*Douglas Moseley, Canada*

18:00 MPE03.2: In Vivo Dosimetry
*Ben Mijnheer, The Netherlands*

17:00 MPF03.1: Appareils spécialisés: Tomotherapy, CyberKnife, Brainlab, Gamma Knife
*Veronique Vallet*

18:00 MPF03.2: Curiethérapie guidée par l’image
*Luc Beaulieu, Canada*

17:00 MPS02.1: Impacts de la Technologie Médicale sur la Santé de la Mère et de l’Enfant
*Gnahoua Zoabli, Canada*

17:00 BMEF02.1: Clinical Engineering Standards of Practice – Normes de pratique en génie clinique- Nouvelle edition canadienne en français
*Mochine El Garch, Canada*
*Bill Gentles, Canada*

18:00 BMEF03.1: Impacts de la Technologie Médicale sur la Santé de la Mère et de l’Enfant
*Gnahoua Zoabli, Canada*

18:00 BMEE03.1: DICOM & PACS: Managing Digital Imaging Networks Information Systems
*Marvin Mitchell, Canada*
**Tuesday, June 9 2015**

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<tr>
<td>SESSION ROOM:</td>
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<tr>
<td>SESSION NAME:</td>
<td>JT02 - PROCUREMENT &amp; EQUIPMENT SELECTION</td>
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**08:00**  JT02.1: UNICEF’s Approach to Medical Device Selection and Procurement for Low-Resource Setting  
Shauna Mullally, Denmark

**09:00**  JT02.2: Equipment Donation and Disposal - Goodwill vs. Risk  
Mario Ramirez, Canada

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<tr>
<td>SESSION ROOM:</td>
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<tr>
<td>SESSION NAME:</td>
<td>MPF04 - LA FORMATION ET LE CHEMINEMENT DE CARRIÈRE DES PHYSICIENS MÉDICAUX</td>
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**08:00**  MPF04.1: Les Standards Professionnels et la Certification des Physiciens Médicaux  
Clément Arsenault, Canada

**08:00**  MPS03.1: Protontherapy  
Alejandro Mazal

**09:00**  MPS03.2: Nanoparticles and Radiotherapy  
Yolanda Prezado, France

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<td>SESSION ROOM:</td>
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<tr>
<td>SESSION NAME:</td>
<td>MPF05 - QUALITÉ ET SÉCURITÉ</td>
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**08:00**  MPF05.1: Le Partenariat Canadien pour la Qualité en Radiothérapie  
Normand Frenière, Canada

**09:00**  MPF05.2: L’ingénierie des facteurs humains  
Jean-Yves Fiset, Canada

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<td>JT03 - IMAGING</td>
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**10:30**  JT03.1: CT State-Of-The-Art Technology and Current Research Topics  
Ting Lee, Canada

**11:30**  JT03.2: Review of PET State-Of-The-Art Technology and Current Research Topics, Including PET/CT and PET/MR  
Roger Lecomte, Canada

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<tr>
<td>SESSION ROOM:</td>
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<tr>
<td>SESSION NAME:</td>
<td>BMES01 - INTEROPERABILITY IN HEALTH TECHNOLOGY</td>
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**10:30**  BMES01.1: Healthcare Continuum  
Vladimir Quintero, Columbia

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<td>SESSION NAME:</td>
<td>MPS04 - IMAGING</td>
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**10:30**  MPS04.1: CT Basics  
Caridad Borràs, United States

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<tr>
<td>SESSION NAME:</td>
<td>MPF03 - RADIOTHÉRAPIE</td>
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**10:30**  MPF06.1: La Boîte à Outils du Physicien Moderne: Instruments de Contrôle de Qualité  
Alain Gauvin, Canada

**10:30**  MPF06.2: La Radiologie Interventionnelle, Incluant un Survol des Nouvelles Technologies et Approches  
Cécile Salvat, France
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<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Speaker(s)</th>
<th>Room(s)</th>
<th>Name(s)</th>
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<tbody>
<tr>
<td>15:00</td>
<td>MPE04.1: Quality Framework: The Canadian Partnership for Quality Radiotherapy</td>
<td>Michael Milosevic, Canada</td>
<td>802A</td>
<td>BMES02 - INTEROPERABILITY IN HEALTH TECHNOLOGY</td>
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<td>15:00</td>
<td>BMES02.1: Business Opportunities</td>
<td>Mario Castañeda, United States</td>
<td>802B</td>
<td>MPS05 - COMPUTERIZED SYSTEM</td>
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<tr>
<td>15:00</td>
<td>MPS05.1: Managing Respiratory Motion, Including 4D and Gating Techniques; QC</td>
<td>Miguel A. de la Casa, Spain</td>
<td>801A</td>
<td>BMEE04 - GENERAL BME EDUCATION</td>
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<tr>
<td>16:00</td>
<td>MPS05.2: Computerized Systems Basics: Servers, Data Standards (DICOM, HL7),</td>
<td>Armando Alaminos Bouza, Brazil</td>
<td>802A</td>
<td>MPS06 - COMPUTERIZED SYSTEM</td>
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<tr>
<td>17:00</td>
<td>BMEE04.1: Biomaterials - Polymer/Organic Coatings</td>
<td>Min Wang, People’s Republic of China</td>
<td>803B</td>
<td>MPS07 - RADIATION THERAPY</td>
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<tr>
<td>15:00</td>
<td>BMEF05.1: Implantation du Guide des Bonnes Pratiques de l’ingénierie Biomédicale en Etablissement de Santé</td>
<td>Fabienne Debiais, Canada; Kevin Ducharme, Canada</td>
<td>801B</td>
<td>MPE05 - COMPUTERIZED SYSTEMS</td>
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<tr>
<td>17:00</td>
<td>MPE05.2: Modern Radiotherapy Treatment Planning: Capabilities, Commissioning,</td>
<td>Benedick Fraass, United States</td>
<td>801B</td>
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<td>MPE05.3: Database Rudiments and Clinical Use</td>
<td>John Kildea, Canada</td>
<td>802A</td>
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<td>17:00</td>
<td>MPF07.1: Nouvelles Technologies et Approches en Curiethérapie</td>
<td>Luc Beaulieu, Canada</td>
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<tr>
<td>17:00</td>
<td>MPF07.2: Protontherapy</td>
<td>Alejandro Mazal, France</td>
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<td>17:00</td>
<td>MPF07.3: Modern Radiotherapy Treatment Planning: Capabilities, Commissioning,</td>
<td>Antonio Leal Plaza, Spain</td>
<td>801B</td>
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<td>MPF07.4: Image-Guided Radiotherapy, Including QC and Imaging Dose; Adaptive</td>
<td>Daniel Venencia, Argentina</td>
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### Wednesday, June 10 2015

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<th>Time</th>
<th>Session Name</th>
<th>Session Room</th>
<th>Speaker(s)</th>
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<tr>
<td>10:30</td>
<td>JT04.1: Ethics for Biomedical Engineers and Medical Physicists Workshop</td>
<td>801A + 801B</td>
<td>Jean-Pierre Bissonnette, Monique Frize, Canada</td>
</tr>
<tr>
<td>10:30</td>
<td>MPS09.1: Peripheral Neutron and Photon Doses</td>
<td>802B</td>
<td>Beatriz Sanchez Nieto, Chile</td>
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<tr>
<td>10:30</td>
<td>MPS08.1: Curriculum Design: How to Train the Next Generation of Physicists?</td>
<td>802A</td>
<td>Maria Ester Brandan, Mexico</td>
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<tr>
<td>10:30</td>
<td>BMEE06.1: Regulatory Issues in Biocompatibility</td>
<td>803B</td>
<td>Paul Santerre, Canada</td>
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<td>10:30</td>
<td>MPS08.2: Utilisation de la Maîtrise Statistique des Processus en Milieu Hospitalier</td>
<td>803B</td>
<td>Karine Herlevin (Gérard), France</td>
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<tr>
<td>10:30</td>
<td>MPF08.1: Algorithmes de Calcul de Dose, Incluant Monte Carlo</td>
<td>803A</td>
<td>Raphael Moekli, Switzerland</td>
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<td>11:30</td>
<td>MPF08.2: Utilisation de la Maîtrise Statistique des Processus en Milieu Hospitalier</td>
<td>803A</td>
<td>Karine Herlevin (Gérard), France</td>
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<tr>
<td>10:30</td>
<td>MPF09.1: TEP: Les Nouveaux Développements et Avenues de Recherche</td>
<td>803A</td>
<td>Roger Lecomte, Canada</td>
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<td>13:30</td>
<td>BMEE08.1: Biomechanics - Implant design</td>
<td>803B</td>
<td>Cheng-Kung (Richard) Cheng, Chinese Taipei</td>
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<td>10:30</td>
<td>MPF07.1: What can IAEA do for the Clinical Medical Physicist?</td>
<td>802A</td>
<td>Joanna Izewska, Austria</td>
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<td>14:20</td>
<td>MPE07.2: Safety Learning and Safety Management to Prevent Radiotherapy Incidents</td>
<td>802A</td>
<td>Ola Holmberg, Austria</td>
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<td>15:10</td>
<td>MPE07.3: Equipment Standards and Performance Measurements for Radiotherapy</td>
<td>802A</td>
<td>Jean Moran, United States</td>
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| 15:00        | 801A         | BMEE09.1     | Medical Device Network Connectivity  
Ryan Forde, United States |
| 15:00        | 801B         | MPE08.1      | Quality Systems in Radiotherapy  
Mary Coffey, Ireland |
| 16:00        | 801B         | MPE08.2      | Cost and Resource Management of Radiotherapy  
Peter Dunscombe, Canada |
| 15:00        | 802B         | MPS11.1      | Dosimetry Under Non-Reference Conditions  
Faustino Gómez, Spain |
| 15:00        | 803A         | MPF10.1      | La Radiothérapie Guidée par L'image, Incluant Doses et CQ  
Myriam Ayadi-Zahra, France |
| 15:00        | 803B         | BMEE10.1     | Multiscale Biomechanics in Deep Tissue Injuries  
Arthur Mak, Hong Kong |
| 18:00        | 801A         | BMEE11.1     | Trends in Medical Device Certification and improving Patient Safety through Evolving Standards  
Dale Morgan, Canada |
| 17:00        | 802B         | MPS12.1      | PET State-of-the Art and Current Research Topics (Including CT-PET and CT-MRI)  
Josep Martí-Climent, Spain |
| 18:00        | 802A         | MPS12.2      | 4D Imaging  
Manuel Llorente Manso, Spain |
| 15:00        | 803A         | MPF11.1      | Stéréotaxie Extra-Crânienne: Techniques et CQ  
Myriam Ayadi-Zahra, France |
| 17:00        | 803B         | MPF11.2      | La Radiothérapie Adaptive  
Bernard Lachance, Canada |
| 17:00        | 802B         | MPS12.1      | PET State-of-the Art and Current Research Topics (Including CT-PET and CT-MRI)  
Josep Martí-Climent, Spain |
| 17:30        | 802A         | MPS12.2      | 4D Imaging  
Manuel Llorente Manso, Spain |
| 15:00        | 803B         | BMEE12.1     | Clinical Engineers & Biomedical Engineering Technologists Certification - International Perspective  
Larry Boyce, Canada  
Petr Kresta, Canada |
| 17:00        | 801B         | MPE09.1      | The Modern Physicist Tool Box: How to Choose Between Current Dosimeters  
Jan Seuntjens, Canada |
| 17:30        | 802A         | MPE09.2      | Radiobiology Applications for Clinical Physicists: Isoeffective dose calculations; Hypofractionation; TCP/NTCP; Peripheral doses and secondary cancers  
Michael Joiner, United States |
| 16:00        | 802A         | BMES03.1     | Trends on IT and Health Technology  
Antono Hernandez, United States |
| 17:30        | 801B         | BMES03.2     | Interoperability - Profiles - IHE  
Vladimir Quintero, Columbia |
Thursday, June 11 2015

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<tr>
<td>SESSION NAME:</td>
<td>JT05 - LEADERSHIP</td>
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08:00  JT05.1: What is Leadership?  
A Roundtable from Recognized Leaders  
Kin-Yin Cheung, Hong Kong  
Tony Easty, Canada  
David Jaffray, Canada  
Ratko Magjarevic, Croatia  
Herbert F. Voigt, United States

09:30  JT05.2: Meet the Leaders  
Kin-Yin Cheung, Hong Kong  
Tony Easty, Canada  
David Jaffray, Canada  
Ratko Magjarevic, Croatia  
Herbert F. Voigt, United States

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<td>SESSION NAME:</td>
<td>BMEE13 - CLINICAL ENGINEERING</td>
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08:00  BMEE13.1: Patient safety and Optimal Performance:  
A Holistic Framework for Medical Devices  
Saleh Altayyar, Saudi Arabia  
Michael Cheng, Canada  
Hal Hifi, Canada  
Julie Polisena, Canada

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<td>SESSION NAME:</td>
<td>MPE10 - COMPUTERIZED SYSTEMS</td>
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08:00  MPE10.1: Dose Computation Algorithms, Including Monte Carlo  
Tommy Knoos, Sweden

09:00  MPE10.2: Treatment Planning Optimization:  
IMRT and VMAT  
Jan Unkelbach, United States

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<td>SESSION NAME:</td>
<td>MPE11 - RADIATION THERAPY</td>
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08:00  MPE11.1: Linear Accelerator Technology  
Malcolm McEwen, Canada

09:00  MPE11.2: Reference Dosimetry and its Uncertainties  
Malcolm McEwen, Canada  
David Rogers, Canada

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<td>SESSION NAME:</td>
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10:30  MPE12.1: Image Registration  
Mike Velec, Canada

11:30  MPE12.2: Automated Segmentation of Images for Treatment Planning Purposes  
Greg Sharp, United States

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<td>SESSION NAME:</td>
<td>BMEE14 - NEURAL &amp; REHABILITATION ENGINEERING</td>
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10:30  BMEE14.1: Neuro-robotics – Neurally Interfaced and Inspired Prosthesis  
Nitish Thakor, Singapore

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<tr>
<td>SESSION NAME:</td>
<td>MPE13 - MEDICAL PHYSICS EDUCATION AND PROFESSIONAL ISSUES</td>
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10:30  MPE13.1: Advocacy for Physicists and How to Deal with Government, Unions, Regulators, and Employers  
Jerry Battista, Canada  
Wayne Beckham, Canada

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<td>JT06 - LEADERSHIP</td>
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10:30  JT06.1: Hosting and Organizing an International Meeting  
Mathias Posch, Canada

11:15  JT06.2: Social Media in Science and Medicine  
Parminder Basran, Canada

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<td>SESSION NAME:</td>
<td>BMEE15 - CLINICAL ENGINEERING/TECHNOLOGY MANAGEMENT/ GENERAL BME EDUCATION</td>
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10:30  BMEE15.1: Introduction to Root Cause Analysis (RCA) and Failure Modes and Effects Analysis (FMEA) to Support Medication Safety Initiatives  
Julie Greenall, Canada

11:30  BMEE15.2: Biomechanics - Computational Modeling and Analysis  
Yubo Fan, People’s Republic of China
# IUPESM 2015 World Congress on Medical Physics & Biomedical Engineering

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<tr>
<td>15:00 MPE14.1: Radiotherapy Units: Cobalt-60 Units and Gamma Knife Units</td>
<td>Steve Goetsch, United States</td>
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<tr>
<td>15:30 MPE14.2: Brachytherapy: Overview of State-Of-The-Art and New Developments</td>
<td>Nicole Nesvacil, Austria</td>
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<tr>
<th>Session Time: 15:00 – 16:30</th>
<th>Session Room: 803B</th>
<th>Session Name: MPE15 - Computerized Systems</th>
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<tbody>
<tr>
<td>15:00 MPE15.1: Managing Respiratory Motion in Radiation Oncology</td>
<td>Paul Keall, Australia</td>
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<tr>
<td>16:00 MPE15.2: RadOnc Treatment Management Systems and the Paperless Treatment Process</td>
<td>Benedick Fraass, United States</td>
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<th>Session Time: 15:00 – 16:30</th>
<th>Session Room: 801A</th>
<th>Session Name: BMEE16 - BME Technical/Service Courses</th>
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<tbody>
<tr>
<td>15:00 BMEE16.1: Surgical Laser: Technology and Safety Issues</td>
<td>Murray Greenwood, Canada</td>
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<tr>
<th>Session Time: 15:00 – 16:00</th>
<th>Session Room: 802A</th>
<th>Session Name: BMEE17 - Medical Device Development &amp; Commercialization</th>
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</thead>
<tbody>
<tr>
<td>15:00 BMEE17.1: Technology Commercialization - Road Map and Precautions</td>
<td>Thomas Rock Mackie, United States</td>
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<tr>
<th>Session Time: 15:00 – 16:00</th>
<th>Session Room: 803A</th>
<th>Session Name: BMEE18 - General BME Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:00 BMEE18.1: BioMEMS - Microsensors; Microactuators; Microfluidics; Micro-Total Analysis Systems (e.g., Genomics and Proteomics)</td>
<td>David Weitz, Canada</td>
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<tr>
<th>Session Time: 17:00 – 19:00</th>
<th>Session Room: 801A</th>
<th>Session Name: BMEE19 - BME Technical/Service Courses</th>
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<tr>
<td>17:00 BMEE19.1: Rechargeable Batteries: Characteristics, Performance, and Maintenance</td>
<td>Isidor Buchmann, Canada</td>
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<tr>
<th>Session Time: 17:00 – 19:00</th>
<th>Session Room: 803B</th>
<th>Session Name: MPE16 - Radiation Therapy</th>
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<tbody>
<tr>
<td>17:00 MPE16.1: Specialized Units: Tomotherapy and CyberKnife Systems</td>
<td>Martina Descovich, United States; Robert Staton, United States</td>
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<tr>
<td>18:00 MPE16.2: Heavy Particle / Light Ion Therapy</td>
<td>Oliver Jäkel, Germany</td>
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<th>Session Time: 17:00 – 19:00</th>
<th>Session Room: 803A</th>
<th>Session Name: BMEE21 - General BME Education</th>
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<tr>
<td>17:00 BMEE21.1: Biomaterials - Cell-surface Interaction</td>
<td>Caroline Loy, Canada</td>
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<tr>
<td>18:00 BMEE21.2: Biomaterials - Plasma Medicine</td>
<td>Michael Keidar, United States</td>
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<th>Session Time: 17:00 – 18:00</th>
<th>Session Room: 802A</th>
<th>Session Name: BMEE20 - Human Factors &amp; Medical Device Safety</th>
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<tbody>
<tr>
<td>17:00 BMEE20.1: Clinical Alarms Management (incl. IHE Alarm Communication Mgt)</td>
<td>Tobey Clark, United States; Yadin David, United States; Marjorie Funk, Germany</td>
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Friday, June 12 2015

| SESSION TIME: | 08:00 – 10:00 |
| SESSION ROOM: | 801A + 801B |
| SESSION NAME: | JT07 - HUMAN FACTORS & MEDICAL DEVICE SAFETY |

08:00  
JT07.1: FMEA and Root Cause Analysis  
*Eric Ford, United States*

09:00  
JT07.2: Human Factors and United Statesbility Assessment  
*Patricia Trbovich, Canada*

| SESSION TIME: | 08:00 – 10:00 |
| SESSION ROOM: | 802A |
| SESSION NAME: | BMEE22 - GENERAL BME EDUCATION |

08:00  
BMEE22.1: Biosensors and Signal Processing - Signal Analysis and Processing  
*Sri Krishnan, Canada*

09:00  
BMEE22.2: Cellular and Biomolecular Engineering - Nanoparticles in Diagnostic Therapy  
*Mukesh Harisinghani, United States*

| SESSION TIME: | 08:00 – 10:00 |
| SESSION ROOM: | 802B |
| SESSION NAME: | MPE18 - MEDICAL PHYSICS EDUCATION AND PROFESSIONAL ISSUES |

08:00  
MPE18.1: Curriculum Design: How to Train the Next Generation of Physicists?  
*John Damilakis, Greece*

09:00  
MPE18.2: Professional Standards and Certification of Qualified Individuals  
*Geoff Ibbott, United States*  
*Matthew Schmid, Canada*

| SESSION TIME: | 08:00 – 10:00 |
| SESSION ROOM: | 803A |
| SESSION NAME: | BMEE25 - CLINICAL ENGINEERING/THEORY MANAGEMENT |

08:00  
BMEE25.1: Clinical Engineering Standards of Practice - Canadian New Edition and Other Countries  
*Anthony Chan, Canada*  
*Bill Gentles, Canada*

09:00  
BMEE25.2: Emerging Medical Technologies - What to Expect, How to Prepare for it  
*Jim Keller, United States*
Monday, June 8, 2015
At 12:15 to 13:15
Metro Toronto Convention Centre, South Building
Room 718A
Lunch will be provided

**Considerations for implementing adaptive therapy using RayStation**

Bon Mzenda, Chief Physicist
* Auckland Radiation Oncology, Auckland, New Zealand

**Deformable Image Registration and Dose Accumulation**

Jean-Pierre Bissonnette & Vicky Kong
* Radiation Medicine Program
  * Princess Margaret Cancer Center, Toronto Canada

**Advancing radiation therapy through software innovation**

Johan Löf, CEO
* RaySearch Laboratories AB, Stockholm, Sweden

**Moderator:** Marc Mlyn, CEO, RaySearch Americas Inc.
## TRACK 01: IMAGING

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<tbody>
<tr>
<td>MONDAY, JUNE 8, 2015</td>
<td>08:00 – 09:30</td>
<td>718A</td>
<td>Image Processing and Visualization: Part 1</td>
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<tr>
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<td>15:00 – 16:00</td>
<td>718A</td>
<td>MRI: Methods</td>
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<td>17:00 – 18:00</td>
<td>718A</td>
<td>Quantitative Imaging: Part 1</td>
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<tr>
<td></td>
<td>17:00 – 18:45</td>
<td>701A</td>
<td>Breast CAD and New Breast Imaging Techniques</td>
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<tr>
<td>TUESDAY, JUNE 9, 2015</td>
<td>08:00 – 10:00</td>
<td>718A</td>
<td>CT: New Techniques</td>
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<td>08:00 – 09:30</td>
<td>701B</td>
<td>Imaging Detector Technology</td>
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<td>10:30 – 12:00</td>
<td>701B</td>
<td>Bio-Impedance and Imaging (Other)</td>
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<td>17:00 – 18:45</td>
<td>718A</td>
<td>Conebeam CT</td>
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<td>17:00 – 18:45</td>
<td>701B</td>
<td>Molecular Imaging PET/SPECT: Part 2</td>
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<td>WEDNESDAY, JUNE 10, 2015</td>
<td>13:30 – 14:45</td>
<td>718A</td>
<td>Computer Aided Diagnosis</td>
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<td>718A</td>
<td>Optical Imaging: Applications</td>
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<td>15:00 – 17:00</td>
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<td>Quantitative Imaging: Part 2</td>
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<td>17:00 – 18:00</td>
<td>701B</td>
<td>Phantoms</td>
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<td>17:00 – 19:00</td>
<td>718A</td>
<td>MRI: Novel Approaches and Molecular Imaging &amp; Applications</td>
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<td>THURSDAY, JUNE 11, 2015</td>
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<td>718A</td>
<td>Multimodality Imaging</td>
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<td>CT Image Quality and Dose Optimization</td>
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<td>Image Processing and Visualization: Part 2</td>
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<td>701B</td>
<td>Image Quality Assessment (Mammography and Other)</td>
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<td>15:00 – 16:30</td>
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<td>Optical Imaging: Methods</td>
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<td>17:00 – 18:45</td>
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<td>Iterative Reconstruction</td>
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<td>17:00 – 18:45</td>
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<td>X-Ray Phase Contrast &amp; Scatter Imaging</td>
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<td>08:00 – 09:45</td>
<td>718A</td>
<td>Angiography / X-ray Imaging</td>
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<td>701B</td>
<td>Ultrasound and OCT: Applications</td>
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<td>10:30 – 12:00</td>
<td>718A</td>
<td>Mammography and Tomosynthesis</td>
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<td>10:30 – 11:45</td>
<td>701B</td>
<td>Ultrasound and OCT: Methods</td>
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### TRACK 02: BIOMATERIALS AND REGENERATIVE MEDICINE

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<tr>
<td>MONDAY, JUNE 8, 2015</td>
<td>08:00 – 09:45</td>
<td>717B</td>
<td>Stem Cells in Tissue Engineering and Regeneration</td>
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<td>TUESDAY, JUNE 9, 2015</td>
<td>17:00 – 18:45</td>
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<td>Scaffolds in Tissue Engineering</td>
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<td>WEDNESDAY, JUNE 10, 2015</td>
<td>15:00 – 16:45</td>
<td>717B</td>
<td>Biomaterials and Regenerative Medicine</td>
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### TRACK 03: BIOMECHANICS AND ARTIFICIAL ORGANS

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<td>MONDAY, JUNE 8, 2015</td>
<td>15:00 – 16:15</td>
<td>701B</td>
<td>Bone Mechanics</td>
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<td>TUESDAY, JUNE 9, 2015</td>
<td>15:00 – 16:30</td>
<td>715A</td>
<td>Cellular &amp; Molecular Mechanics</td>
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<td>17:00 – 18:15</td>
<td>714B</td>
<td>Human Movement</td>
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<td>WEDNESDAY, JUNE 10, 2015</td>
<td>13:30 – 14:45</td>
<td>701B</td>
<td>Tissue Modelling</td>
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<td>THURSDAY, JUNE 11, 2015</td>
<td>17:00 – 19:00</td>
<td>714B</td>
<td>Cardio Mechanics &amp; Organs</td>
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### TRACK 04: RADIATION ONCOLOGY

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<td>MONDAY, JUNE 8, 2015</td>
<td>08:00 – 09:45</td>
<td>701A</td>
<td>Brachy Therapy: Part 1</td>
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<td>Quality Assurance: Part 1</td>
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<td>15:00 – 16:15</td>
<td>701A</td>
<td>Other Radiation Oncology: Part 1</td>
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<td>15:00 – 16:30</td>
<td>718B</td>
<td>Image Guided RT: Part 1</td>
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<td>17:00 – 19:00</td>
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<td>Dose Calculation: Part 1</td>
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<td>TUESDAY, JUNE 9, 2015</td>
<td>08:00 – 10:00</td>
<td>718B</td>
<td>Treatment Planning – Motion and Robustness</td>
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<td>Assessment of Radiotherapy Response</td>
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<td>PR: Proton Therapy</td>
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<td>Beam Delivery</td>
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<td>Motion Management: Part 1</td>
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<td>718B</td>
<td>Treatment Planning – Knowledge Based</td>
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<td>Special Treatment Techniques: Part 1</td>
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<td>718B</td>
<td>Treatment Planning – Biology &amp; Fractionation</td>
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<td>TRACK 06: NEW TECHNOLOGIES IN CANCER RESEARCH AND TREATMENT</td>
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<td><strong>SESSION TITLE</strong></td>
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<td>SP018 Small Animal Research Technologies</td>
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<td>717A</td>
<td>SP028 HIFU Therapy, Microwave Ablation, Radiofrequency Ablation, Cryotherapy</td>
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<td>SP049 Nanotechnology in Radiation Therapy and Imaging: Part 1</td>
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<td>SP069 Novel Detectors, Phantoms and Software, Diagnostic Techniques</td>
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<td>SP091 Nanotechnology in Radiation Therapy and Imaging: Part 2</td>
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<td>THURSDAY, JUNE 11, 2015</td>
<td>15:00 – 16:15</td>
<td>701B</td>
<td>SP142 Light Ion Radiotherapy</td>
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<td>FRIDAY, JUNE 12, 2015</td>
<td>08:00 – 09:45</td>
<td>718B</td>
<td>SP164 Adaptive Radiation Therapy (ART)</td>
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<tr>
<th>TRACK 07: SURGERY, COMPUTER AIDED SURGERY, MINIMAL INVASIVE INTERVENTIONS, ENDOSCOPY AND IMAGE-GUIDED THERAPY, MODELLING AND SIMULATION</th>
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<td><strong>SESSION DATE</strong></td>
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<tr>
<th>TRACK 08: BIOSENSOR, NANOTECHNOLOGY, BIOMEMS AND BIOPHOTONICS</th>
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### TRACK 09: BIOSIGNAL PROCESSING

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<td>Biomedical Signal Quality Analysis</td>
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<td>15:00 – 16:15</td>
<td>716B</td>
<td>Biomedical Modeling</td>
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<td>17:00 – 18:15</td>
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<td>Pattern Classification</td>
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<td>TUESDAY, JUNE 9, 2015</td>
<td>08:00 – 09:45</td>
<td>716B</td>
<td>ECG</td>
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<td>716B</td>
<td>Time-Frequency Analysis</td>
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<td>17:00 – 19:00</td>
<td>716B</td>
<td>Biomedical Monitoring &amp; Bioelectromagnetism</td>
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<td>WEDNESDAY, JUNE 10, 2015</td>
<td>10:30 – 11:45</td>
<td>716B</td>
<td>Nonlinear Dynamic Analysis</td>
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<td>THURSDAY, JUNE 11, 2015</td>
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<td>716B</td>
<td>Biomedical Diagnosis &amp; Prediction</td>
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<td>EMG/MMG</td>
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### TRACK 10: REHABILITATION MEDICINE, SPORTS MEDICINE, REHABILITATION ENGINEERING AND PROSTHETICS

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<tr>
<td>MONDAY, JUNE 8, 2015</td>
<td>08:00 – 10:00</td>
<td>715A</td>
<td>Spinal Cord / Brain Injury &amp; Upper Limb Measurement and Treatments</td>
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<td>TUESDAY, JUNE 9, 2015</td>
<td>08:00 – 09:30</td>
<td>715A</td>
<td>Ergonomics, Wearable Sensors and Virtual Reality</td>
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<td>715A</td>
<td>Rehabilitation Robotics</td>
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<td>WEDNESDAY, JUNE 10, 2015</td>
<td>10:30 – 11:30</td>
<td>715B</td>
<td>Lower Limb Injury Assessment and Treatment &amp; Prosthetics and Assistive Devices</td>
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<tr>
<td>THURSDAY, JUNE 11, 2015</td>
<td>15:00 – 17:00</td>
<td>715A</td>
<td>Developing Tools for Successful Aging: Independent Mobility &amp; Visual Impairment</td>
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### TRACK 11: NEUROENGINEERING, NEURAL SYSTEMS

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<td>17:00 – 18:30</td>
<td>701B</td>
<td>Neural Interfaces and Regeneration</td>
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<td>TUESDAY, JUNE 9, 2015</td>
<td>08:00 – 09:45</td>
<td>714A</td>
<td>Brain Computer/Machine Interfaces</td>
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<td>10:30 – 11:45</td>
<td>714A</td>
<td>Functional Neuroimaging and Neuronavigation</td>
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<td>WEDNESDAY, JUNE 10, 2015</td>
<td>13:30 – 14:45</td>
<td>717A</td>
<td>Neural Signal Processing: Part 1</td>
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<td>15:00 – 16:45</td>
<td>717A</td>
<td>Stimulation and Monitoring</td>
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<tr>
<td>THURSDAY, JUNE 11, 2015</td>
<td>08:00 – 09:45</td>
<td>714B</td>
<td>Deep Brain Stimulation</td>
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<td>10:30 – 12:00</td>
<td>714B</td>
<td>Neural Signal Processing: Part 2</td>
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<tr>
<td>FRIDAY, JUNE 12, 2015</td>
<td>08:00 – 09:45</td>
<td>714B</td>
<td>NeuroProstheses</td>
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<td>10:30 – 12:00</td>
<td>715B</td>
<td>Neuroimaging, Neuronavigation and Neurological Disorders</td>
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## TRACK 12: MEDICAL DEVICES

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<tr>
<td>TUESDAY, JUNE 9, 2015</td>
<td>10:30 – 11:45</td>
<td>715B</td>
<td>SP053 Cardiovascular Instrumentation</td>
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<td>15:00 – 16:30</td>
<td>714B</td>
<td>SP060 Special Session: UNESCO International Year of Light</td>
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<td>15:00 – 16:45</td>
<td>715B</td>
<td>SP061 Improvement of Diagnosis and Therapies</td>
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<td>WEDNESDAY, JUNE 10, 2015</td>
<td>10:30 – 12:00</td>
<td>717B</td>
<td>SP084 New Designing Ideas</td>
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<td>17:00 – 18:45</td>
<td>716B</td>
<td>SP111 Cardiovascular</td>
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<td>17:00 – 18:45</td>
<td>717B</td>
<td>SP112 Instrumentation</td>
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<td>10:30 – 11:30</td>
<td>716B</td>
<td>SP136 Brain, Head/Neck, Spine: Part 1</td>
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<td>SP146 MSK</td>
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<td>SP167 GI and GU</td>
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<td>SP168 Health Challenges in Resource-Poor Nations</td>
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<td>10:30 – 11:30</td>
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<td>SP179 Medical Devices: Miscellaneous</td>
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## TRACK 13: INFORMATICS IN HEALTH CARE AND PUBLIC HEALTH

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<tr>
<td>MONDAY, JUNE 8, 2015</td>
<td>15:00 - 16:45</td>
<td>714B</td>
<td>SP021 Public Health, Active and Healthy Aging</td>
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<tr>
<td>WEDNESDAY, JUNE 10, 2015</td>
<td>15:00 - 17:00</td>
<td>715A</td>
<td>SP102 Clinical Information Systems and Decision Support</td>
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<tr>
<td>FRIDAY, JUNE 12, 2015</td>
<td>08:00 - 09:45</td>
<td>701A</td>
<td>SP169 Self Engagement, Patient Empowerment and mHealth</td>
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## TRACK 14: INFORMATION TECHNOLOGIES IN HEALTHCARE DELIVERY AND MANAGEMENT

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<td>WEDNESDAY, JUNE 10, 2015</td>
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<td>SP113 Information Technologies in Healthcare Delivery and Management: Part 1</td>
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<td>SP147 Information Technologies in Healthcare Delivery and Management: Part 2</td>
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<td>SP170 Information Technologies in Healthcare Delivery and Management: Part 3</td>
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<td>SP180 Information Technologies in Healthcare Delivery and Management: Part 4</td>
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## TRACK 15: BIOINFORMATICS

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<td>08:00 – 10:00</td>
<td>717B</td>
<td>SP122 Bioinformatics</td>
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## TRACK 16: CLINICAL ENGINEERING, CLINICAL PHYSICS, AND PATIENT SAFETY

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<td>701B</td>
<td>SP009 Patient Safety, Medical Errors and Adverse Events Prevention Related to Health Technologies and Incident Analysis and Management</td>
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<tr>
<td>TUESDAY, JUNE 9, 2015</td>
<td>08:00 – 09:45</td>
<td>701A</td>
<td>SP042 Technology Management Programmes and Equipment Management Systems</td>
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<td>15:00 – 16:45</td>
<td>701B</td>
<td>SP062 Clinical Process Analysis, Optimization, Productivity and Benchmarking</td>
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<td>WEDNESDAY, JUNE 10, 2015</td>
<td>13:30 – 14:45</td>
<td>701A</td>
<td>SP093 Health Technology Assessment and Cost Effective Technologies for Developing Countries and Usability and Human Factors Engineering for Medical Devices and System Design: Part 1</td>
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<td>15:00 – 16:15</td>
<td>701A</td>
<td>SP103 Health Technology Assessment and Cost Effective Technologies for Developing Countries and Usability and Human Factors Engineering for Medical Devices and System Design: Part 2</td>
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<td>701A</td>
<td>SP123 Patient Safety, Medical Errors and Adverse Events Prevention Related to Health Technologies</td>
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## TRACK 17: EDUCATIONAL AND PROFESSIONAL ACTIVITIES

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<tr>
<td>MONDAY, JUNE 8, 2015</td>
<td>08:00 – 09:45</td>
<td>714B</td>
<td>SP010 Education and Training in Biomedical Engineering</td>
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<td>TUESDAY, JUNE 9, 2015</td>
<td>15:00-17:00</td>
<td>717A</td>
<td>SP063 Accreditation, Certification and Licensure Issues</td>
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<td>17:00 – 19:00</td>
<td>713A</td>
<td>SP075 Special Session: Appropriate Technology in Imaging and Radiotherapy – Functionality and Safety Aspects</td>
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<td>THURSDAY, JUNE 11, 2015</td>
<td>17:00 – 19:00</td>
<td>717A</td>
<td>SP158 Educational Activities and Training in Medical Physics</td>
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<td>08:00 – 09:30</td>
<td>717A</td>
<td>SP124 Medical Physics in Developing Countries</td>
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<td>08:00 – 10:00</td>
<td>713A</td>
<td>SP125 Technology Enhanced Education</td>
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<td>SP137 Special Session: Building Medical Physics Capacity in Developing Countries</td>
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## TRACK 18: GENDER, SCIENCE AND TECHNOLOGY

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<td>SP011 Overview of Gender Roles in Medical Physics in North America</td>
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<td>SP043 Women in BioMedical Engineering</td>
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<td>SP054 Women in Medical Physics: Current Status</td>
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<td>10:30 – 12:00</td>
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<td>SP085 Women in Medical Physics: Current Status</td>
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## TRACK 19: BIOPHYSICS AND MODELLING

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<td>717A</td>
<td>Radiobiological Modelling</td>
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<td>WEDNESDAY, JUNE 10, 2015</td>
<td>10:30 – 11:45</td>
<td>715A</td>
<td>Biological Effects of Ionizing Radiation</td>
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<td>13:30 – 14:15</td>
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<td>Biological Modelling</td>
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<tr>
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<td>08:00 – 09:45</td>
<td>715A</td>
<td>Computational Biology &amp; Hemodynamics</td>
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<td>17:00 – 18:15</td>
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<td>Transport and Physiological Modelling</td>
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## PRESIDENT’S CALL

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<td>713B</td>
<td>Educational and Professional Activities: Part 1</td>
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<td>17:00 – 18:15</td>
<td>713B</td>
<td>Imaging: Part 1</td>
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<td>TUESDAY, JUNE 9, 2015</td>
<td>15:00 – 16:15</td>
<td>713B</td>
<td>Biomechanics and Artificial Organs</td>
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<td>Radiation Oncology</td>
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<td>Educational and Professional Activities: Part 2</td>
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<td>713B</td>
<td>Biosignal Processing &amp; Pulmonary &amp; Respiratory</td>
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<td>17:00 – 18:00</td>
<td>713B</td>
<td>Dosimetry and Radiation Protection</td>
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<td>THURSDAY, JUNE 11, 2015</td>
<td>08:00 – 09:30</td>
<td>713B</td>
<td>Informatics In Health Care And Public Health / Biosensor, Nanotechnology, Biomecs And Biophotonics</td>
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<td>10:30 – 11:45</td>
<td>713B</td>
<td>Biosensor, Nanotechnology, Biomecs And Biophotonics / New Technologies In Cancer Research And Treatment</td>
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<tr>
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<td>15:00 – 16:30</td>
<td>713B</td>
<td>Medical Devices / Surgery, Computer Aided Surgery, Minimal Invasive Interventions, Endoscopy And Image-Guided Therapy, Modeling And Simulation</td>
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<td></td>
<td>17:00 – 18:15</td>
<td>713B</td>
<td>Neuroengineering, Neural Systems / Biophysics And Modelling</td>
</tr>
<tr>
<td>FRIDAY, JUNE 12, 2015</td>
<td>08:00 – 10:00</td>
<td>714A</td>
<td>Clinical Engineering / Physics, Patient Safety &amp; Imaging</td>
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## Monday, June 8 2015

### Session Time: 08:00 - 09:30

**Session Room:** 718A  
**Session Track:** TRACK 01: IMAGING  
**Session Name:** SP001 - IMAGE PROCESSING AND VISUALIZATION: PART 1  
**Session Chair(s):** Marlen Perez-Diaz, Cuba

08:00 - **SP001.1** - The Use of Wavelet Filters for Reducing Noise in Posterior Fossa Computed Tomography Images  
*Marlen Perez-Diaz, Cuba*

08:15 - **SP001.2** - Automatic Liver Localization based on Classification Random Forest with KNN for Prediction 
*Fucang Jia, People’s Republic of China*

08:30 - **SP001.3** - Brain Tumor Target Volume Segmentation: Local Region Based Approach  
*hossein Aslian, Italy*

08:45 - **SP001.4** - A Novel Automatic White Balance Algorithm for the 3D Image of Stereoscopic Endoscopy  
*Ling Li, People’s Republic of China*

09:00 - **SP001.5** - A new log-compression rule for B-mode ultrasound imaging adjusted to the human visual system  
*Ramon Fernandes, Brazil*

09:15 - **SP001.6** - Comparison of Independent Component Analysis (ICA) Algorithm for Heart Rate Measurement Based on Facial Imaging  
*Lina Septiana, Indonesia*

### Session Time: 08:00 - 09:45

**Session Room:** 717B  
**Session Track:** TRACK 02: BIOMATERIALS AND REGENERATIVE MEDICINE  
**Session Name:** SP002 - STEM CELLS IN TISSUE ENGINEERING AND REGENERATION  
**Session Chair(s):** Gilda Barabino, United States, Alicia El Haj, United Kingdom

08:00 - **SP002.1** - KEYNOTE: Biomaterials and Regenerative Medicine: Micro-environmental Modulation for Controlled Cell Differentiation and Tissue Development  
*Gilda Barabino, United States*

08:30 - **SP002.2** - KEYNOTE: Defining the regulatory metrics for regenerative medicine using novel biomaterial tagging strategies  
*Alicia El Haj, United Kingdom*

09:00 - **SP002.3** - The role of electric fields in promoting precursor cell migration to enhance wound repair  
*Stephanie Iwasa, Canada*

09:15 - **SP002.4** - The role of niche architecture on muscle stem cell division orientation  
*Richard Cheng, Canada*

09:30 - **SP002.5** - Mapping the Stem Cell’s Mechanome using Paired Live Cell Multiplexed Imaging and Modeling  
*Melissa Knothe Tate, Australia*

### Session Time: 08:00 – 09:45

**Session Room:** 701A  
**Session Track:** TRACK 04: RADIATION ONCOLOGY  
**Session Name:** SP003 - BRACHY THERAPY: PART 1  
**Session Chair(s):** Siji Paul, India, Sook Kien Ng, United States

08:00 - **SP003.1** - The impact of in-homogeneity corrected dose calculations for various clinical HDR brachytherapy sites.  
*Siji Paul, India*

08:15 - **SP003.2** - A novel QA device for brachytherapy applicator QA  
*Sook Kien Ng, United States*

08:30 - **SP003.3** - Electromagnetic tracking for catheter reconstruction in ultrasound-guided high-dose-rate brachytherapy of the prostate  
*Alexandru Nicolae, Canada*

08:45 - **SP003.4** - Dosimetric and radiobiological comparison of volumetric modulated arc therapy, high-dose-rate brachytherapy and low-dose-rate permanent seeds implant for localized prostate cancer  
*Ruijie Yang, People's Republic of China*

09:00 - **SP003.5** - A novel system for real-time planning and guidance of breast HDR brachytherapy  
*Eric Poulin, Canada*
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenter</th>
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<tbody>
<tr>
<td>09:15</td>
<td>SP003.6 - Investigation of electromagnetic catheter tracking approach for spatial reconstruction of implant geometry in high dose rate brachytherapy of prostate cancer</td>
<td>Gabor Fichtinger, Canada</td>
</tr>
<tr>
<td>09:30</td>
<td>SP003.7 - Endoscopic Tracking for improved Applicator Insertion in Esophagus and Lung HDR Brachytherapy</td>
<td>Robert Weersink, Canada</td>
</tr>
<tr>
<td>09:00</td>
<td>SP004.1 - In Vivo EPID Dosimetry Detects Interfraction Errors in 3D-CRT of Rectal Cancer</td>
<td>Stefano Peca, Canada</td>
</tr>
<tr>
<td>09:15</td>
<td>SP004.2 - Establishing action thresholds for patient anatomy changes and machine errors during complex treatment using EPID and gamma analysis</td>
<td>Ophélie Piron, Canada</td>
</tr>
<tr>
<td>09:30</td>
<td>SP004.3 - Dosimetrical characteristics of amorphous silicon electronic portal imager for flattening filter free (FFF) photon beam of upgraded C-series Linear accelerator</td>
<td>Vellaiyan Subramani, India</td>
</tr>
<tr>
<td>09:45</td>
<td>SP004.4 - Radiation field size, junction and MLC QA using amorphous silicon electronic portal imaging device, an efficient approach to improve routine accuracy</td>
<td>Dany Simard, Canada</td>
</tr>
<tr>
<td>09:00</td>
<td>SP004.6 - Real-time detection of deviations in radiotherapy beam delivery using a head-mounted detector</td>
<td>Richard Canters, Netherlands</td>
</tr>
<tr>
<td>08:15</td>
<td>SP005.2 - Influence of Jaw Tracking in Intensity Modulated and Volumetric Modulated Arc Radiotherapy for Head and Neck Cancers? A Dosimetric Study</td>
<td>Kh Anamul Haque, Bangladesh</td>
</tr>
<tr>
<td>08:30</td>
<td>SP005.3 - Evaluation of the eye lens dose according to patient setup errors in pediatric head CT examination</td>
<td>Rumi Gotanda, Japan</td>
</tr>
<tr>
<td>08:45</td>
<td>SP005.4 - Multi-Point Sources on Skin to Assess the Annual Effective Dose by Usage of TENORM added Pillow</td>
<td>Do hyeon Yoo, Republic of Korea</td>
</tr>
<tr>
<td>09:00</td>
<td>SP005.5 - Patient-Specific Quality Assurance of Respiratory-Gated VMAT Using a Programmable Cylindrical Respiratory Motion Insert for the ArcCHECK™ Phantom</td>
<td>Heather Young, Canada</td>
</tr>
</tbody>
</table>
08:00 SP007.1 - KEYNOTE: Biosignal Processing
Adrian Chan, Canada

08:30 SP007.2 - Adaptive filter for eliminating baseline wander of pulse wave signals
Anna Akulova, Russian Federation

08:45 SP007.3 - Efficacy of DWT denoising in the removal of power line interference and the effect on morphological distortion of underlying atrial fibrillatory waves in AF-ECG
Omar Escalona, United Kingdom

09:00 SP007.4 - Quantifying Blood-Oxygen Saturation Measurement Error in Motion Contaminated Pulse Oximetry Signals
Geoffrey Clarke, Canada

09:15 SP007.5 - Signal Quality Indices for Ambulatory Electrocardiograms used in Myocardial Ischemia Monitoring
Mohamed Abdelazez, Canada

09:30 SP007.6 - A simple algorithm for identifying artifact beats in long ECG recordings
Nini Rao, People’s Republic of China

09:45 SP007.7 - Automatic Detection of Low-Quality Seismocardiogram Cycles Using the Outlier Approach
Vahid Zakeri, Canada

08:00 SP008.1 - A Validation Test of a Simple Method of Stride Length Measurement Only with Inertial Sensors and a Preliminary Test in FES-assisted Hemiplegic Gait
Takashi Watanabe, Japan

08:15 SP008.2 - A novel Treadmill Body Weight Support system using Pneumatic Artificial Muscle actuators: a comparison between active Body Weight Support system and counter weight system
Thuc Tran, Japan

08:30 SP008.3 - A Serious Game for Training and Evaluating the Balance of Hemiparetic Stroke Patients
Pedro Bertemes-Filho, Brazil

08:45 SP008.4 - fNIRS-based analysis of brain activation with knee extension induced by functional electrical stimulation
Misato Ohdaira, Japan

09:00 SP008.5 - Muscle fatigability of isometric and isokinetic knee-extension generated by single-electrode- and spatially-distributed-sequential-stimulation
Austin Bergquist, Canada

09:15 SP008.6 - External modulation of electrical stimulated spinal reflexes - a control modality for human lumbosacral networks in injury induced disconnection from brain control
Winfried Mayr, Austria

09:30 SP008.7 - Motor Control Assessment using Leap Motion: Filtering Methods and Performance in Indoor and Outdoor Environments
Jone Kim, Canada

09:45 SP008.8 - Biceps brachii EMG signals: estimation of dipole sources
Peyman Aghajamaliaval, Canada

10:00 SP008.9 - Validating a Solid-Static Single-Armed Male Prototype Tasked to Produce Dynamic Movement from the Shoulder Through the Preparation Phase
Alicia Gal, Canada

08:00 SP009.1 - Technological Surveillance and Integrity Monitoring of Infusion Systems
David Grosse-Wentrup, Germany

Melissa Griffin, Canada

08:30 SP009.3 - Alarm Management Study in Pediatric Special Care Unit
Christopher Bzovey, Canada

08:45 SP009.4 - Failure Modes and Effect Analysis for Stereotactic Radiosurgery: a comparison among three radiotherapy centers in Brazil.
Flavia Cristina Teixeira, Brazil
| SESSION TIME: 08:00 – 09:45 | 09:15 | SP011.4 - My strategies for living (and enjoying) academic research  
*Rebecca Fahrig, United States* |
| SESSION ROOM: 715A | 09:30 | SP011.5 - Early exposure to science leads to fulfilling career in medical physics  
*Renee Larouche, Canada* |
| SESSION TRACK: TRACK 17: EDUCATIONAL AND PROFESSIONAL ACTIVITIES | 15:00 – 16:00 | |
| SESSION NAME: SP010 – EDUCATION AND TRAINING IN BIOMEDICAL ENGINEERING | SESSION ROOM: 718A | |
| SESSION CHAIR(S): SHANKAR KRISHNAN, UNITED STATES  
MLADEN POLUTA, SOUTH AFRICA | SESSION TRACK: TRACK 01: IMAGING | 15:00 – 16:15 |
| 08:00 | SP013.1 - Numerical Simpson’s Rule for Real Time and Accurate T2* maps generation Using 3D Quantitative GRE  
*Chemseddine Fatnassi, Switzerland* | 15:00 | SP014.1 - KEYNOTE: Biomechanics and Artificial Organs  
*Yubo Fan, People’s Republic of China* |
| 08:15 | SP010.2 - Biomedical Engineering Education in Peru in 2015: A Unique and Innovative Collaboration in Latin America  
*Rossana Rivas, Peru* | 15:30 | SP014.2 - Improved Semi-automated 3D Kinematic Measurement of Total Knee Arthroplasty Using X-ray Fluoroscopic Images  
*Takaharu Yamazaki, Japan* |
| 08:30 | SP010.3 - Improving Biomedical Engineering in Uganda through education, benchmarking and mentorship  
*Robert Ssekitooleko, Uganda* | 15:45 | SP014.3 - The influence of screw length and stiffness on the tibial mechanical environment in ACL reconstruction  
*Jie Yao, People’s Republic of China* |
| 08:45 | SP010.4 - Designing Biomedical Engineering Programs to Prepare for Medtech Industry  
*Shankar Krishnan, United States* | 16:00 | SP014.4 - A new method for determining the effect of follower load on the range of motions in the lumbar spine  
*Cheng-fei Du, People’s Republic of China* |
| 09:00 | SP010.5 - BME vs CE vs HTM vs HbHTA vs EAM. What’s in a Name and does it matter?  
*Mladen Poluta, South Africa* | | |
| 09:15 | SP010.6 - Clinical Engineering Certification Program in the Americas  
*Frank Painter, United States* | | |
| 09:30 | SP010.7 - Biomedical Technology Online Courses for the Americas  
*Tobey Clark, United States* | | |
| **SESSION TIME:** 08:00 – 10:00 | **SESSION TIME:** 15:00 – 16:00 | **SESSION TIME:** 15:00 – 16:15 |
| **SESSION ROOM:** 717A | **SESSION ROOM:** 718A | **SESSION ROOM:** 701B |
| **SESSION TRACK:** TRACK 18: GENDER, SCIENCE AND TECHNOLOGY | **SESSION TRACK:** TRACK 03: BIOMECHANICS AND ARTIFICIAL ORGANS | **SESSION TRACK:** TRACK 03: BIOMECHANICS AND ARTIFICIAL ORGANS |
| **SESSION NAME:** SP011 – OVERVIEW OF GENDER ROLES IN MEDICAL PHYSICS IN NORTH AMERICA | **SESSION NAME:** SP013 – MRI: METHODS | **SESSION NAME:** SP014 – BONE MECHANICS |
| **SESSION CHAIR(S):** PATRICIA TRBOVICH, CANADA  
KRISTY BROCK, UNITED STATES | **SESSION CHAIR(S):** ZOFIA DRZAZGA, POLAND  
CHEMSEDDINE FATNASSI, SWITZERLAND | **SESSION CHAIR(S):** JIE YAO, PEOPLE’S REPUBLIC OF CHINA |
| 08:00 | SP011.1 - KEYNOTE: Gender, Science and Technology: The Role of Women in Medical Physics  
*Kristy Brock, United States* | 15:00 | SP014.1 - KEYNOTE: Biomechanics and Artificial Organs  
*Yubo Fan, People’s Republic of China* |
| 08:30 | SP011.2 - Biography of Women in Medical Physics: Maryellen Giger, Ph.D.  
*Maryellen Giger, United States* | 15:30 | SP014.2 - Improved Semi-automated 3D Kinematic Measurement of Total Knee Arthroplasty Using X-ray Fluoroscopic Images  
*Takaharu Yamazaki, Japan* |
| 09:00 | SP011.3 - My STEM story: from Martinique in the Caribbean to Quebec City, through France and Vietnam  
*Nadia Octave, Canada* | 15:45 | SP014.3 - The influence of screw length and stiffness on the tibial mechanical environment in ACL reconstruction  
*Jie Yao, People’s Republic of China* |
| 09:15 | SP011.4 - My strategies for living (and enjoying) academic research  
*Rebecca Fahrig, United States* | 16:00 | SP014.4 - A new method for determining the effect of follower load on the range of motions in the lumbar spine  
*Cheng-fei Du, People’s Republic of China* |
15:00  SP015.1 - Beta Enhancers: towards a local dose enhancer device for Boron Neutron Capture Therapy (BNCT) on superficial tumors
Esteban Boggio, Argentina

15:15  SP015.2 - Nanoparticle Enhanced Radiation Therapies: Is There a Synergy with Chemotherapies?
Linda Rogers, Australia

15:30  SP015.3 - Change in Hounsfield Units due to lung expansion as a predictor of LAD and heart displacement in patients undergoing deep inspiration breath hold for left sided breast cancer
Peta Lonski, Australia

15:45  SP015.4 - Samarium-153 Labelled Microparticles for Targeted Radionuclide Therapy of Liver Tumor
Chai Hong Yeong, Malaysia

16:00  SP015.5 - Anatomical Modelling of the Pregnant Radiotherapy Patient
Tanya Kairn, Australia

15:00  SP016.1 - 18F-NaF PET/CT-directed dose escalation in stereotactic body radiotherapy for spine oligometastases from prostate cancer
Lili Wu, People's Republic of China

15:15  SP016.2 - Evaluation of a lung tumor autocontouring algorithm for intrafractional tumor tracking using 0.5T linac-MR: phantom and in-vivo study
Jihyun Yun, Canada

15:30  SP016.3 - Multi-modal image registration for MR-guided radiotherapy workflow based on detection of features in a customized stereotactic body frame
Paul Mercea, Germany

15:45  SP016.4 - A phantom study of impact of probe metal artifact in planning dose for ultrasound-guided radiotherapy
Kai Ding, United States

16:00  SP016.5 - Software development for image guidance on the magnetic resonance-guided radiation therapy (MRgRTTM) system
Wenyao Xia, Canada

15:00  SP016.6 - Ultrasound guided radiotherapy with rotational correction for patient setup: a feasibility study
Sook Kien Ng, United States

15:00  SP017.1 - Dosimetric Effect of Beam Angle on the Unflattened and Flattened Photon Beams: A Monte Carlo study
James Chow, Canada

15:15  SP017.2 - Monte Carlo calculations and measurements of the TG-43U1 recommended dosimetric parameters for the 125I (Model IR-Seed2) brachytherapy source
Hassan Ali Nedaie, Iran

15:30  SP017.3 - Assessment of RayStation treatment planning algorithm to calculate dose in the presence of lung tissue
Manuel Rodriguez, Canada

15:45  SP017.4 - Improving the efficiency of charged particle transport in magnetic fields in EGSnrc
Victor Malkov, Canada

16:00  SP017.5 - Accurate Monte Carlo dose calculations for permanent implant prostate brachytherapy: first results from a large scale retrospective study
Nelson Miksys, Canada

16:15  SP017.6 - Analytic modelling of in-field and out-of-field bremsstrahlung contamination dose in high energy electron beams used in external radiotherapy
Mohamad Mohamad Alabdoaburas, France

15:00  SP018.1 - KEYNOTE: New Technologies in Cancer Research and Treatment
Frank Verhaegen, Netherlands

15:30  SP018.2 - Longitudinal MRI evaluation of whole brain radiotherapy on brain metastasis development and dormancy in a mouse model
Donna Murrell, Canada
15:45 SP018.3 - Dual energy micro-CT determination of effective atomic number and electron density
*Michael Jensen, Canada*

16:00 SP018.4 - Tissue characterization using dual energy cone beam CT imaging with a dedicated small animal radiotherapy platform
*Patrick Granton, Canada*

16:15 SP018.5 - Low-dose prostate cancer brachytherapy by injections of radioactive gold nanoparticles (103Pd:Pd@Au NPs)
*Myriam Laprise-Pelletier, Canada*

**SESSION TIME:** 15:00 – 16:30

**SESSION ROOM:** 717B

**SESSION TRACK:** TRACK 08: BIOSENSOR, NANOTECHNOLOGY, BIOMEMS AND BIOPHOTONICS

**SESSION NAME:** SP019 – NANOBIOSENSORS AND NANTHERANOSTICS

**SESSION CHAIR(S):** KIWANG OH, UNITED STATES

**SESSION TIME:** 15:00

**SESSION ROOM:** 717B

**SESSION TRACK:** TRACK 08: BIOSENSOR, NANOTECHNOLOGY, BIOMEMS AND BIOPHOTONICS

**SESSION NAME:** SP019 – NANOBIOSENSORS AND NANTHERANOSTICS

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**SESSION TRACK:** TRACK 08: BIOSENSOR, NANOTECHNOLOGY, BIOMEMS AND BIOPHOTONICS

**SESSION NAME:** SP019 – NANOBIOSENSORS AND NANTHERANOSTICS

**SESSION CHAIR(S):** KIWANG OH, UNITED STATES
15:00 SP022.1 - Biomedical Engineering in Nigeria: A Developmental Overview
Kenneth Nkuma-Udah, Nigeria

15:15 SP022.2 - Modernising Scientific Careers? A new scheme for the education and training of physicists, engineers and other scientific staff in the UK National Health Service
Keith Ison, United Kingdom

15:30 SP022.3 - Medical Physics Residency Program in Developing Countries: Lessons, Challenges and Solutions Learned from a Regional Pilot Training Program
Belal Moftah, Saudi Arabia

15:45 SP022.4 - International Union of Biological Sciences
Nil Chr. Stenseth, France

16:00 SP022.5 - Promoting the public image of Medical Physicists and Biomedical Engineers
Michael Cheng, Canada

16:15 SP022.6 - The Utilization and Design of Doorless Mazes for Medical Linear Accelerator Rooms In Ontario, Canada
Joseph Szabo, Canada

17:00 SP023.1 - Improving quantitative functional imaging with dynamic contrast enhanced studies using a linearized Johnson-Wilson model approach
Fiona Li, Canada

17:15 SP023.2 - Early tumor Response assessment using volumetric DCE-CT and DCE-MRI in Metastatic Brain Cancer Patients
Catherine Coolens, Canada

17:30 SP023.3 - Diffusion tensor imaging is correlated with quantitative histology in surgically-resected hippocampi of epilepsy patients
Terry Peters, Canada

17:45 SP023.4 - Evaluation of fully automatic volumetric GBM segmentation in the TCGA-GBM dataset: Prognosis and correlation with VASARI features
Emmanuel Rios Velazquez, United States

17:00 SP024.1 - Modelling Breast Cancer Tissue via Analysis of WAXS Signatures
Robert Leclair, Canada

17:15 SP024.2 - Analysis of 80 kV WAXS Measurements with a CdTe Breast Biopsy Diffractometer
Nancy McDonald, Canada

17:45 SP024.3 - AM-FM features for the classification of Regions of Interest towards the Development of a Breast Cancer Density Specific Computer Aided Detection System
Constantinos Pattichis, Cyprus

18:00 SP024.4 - Single Scatter Signals during Dual Detector Volume-of-Interest Breast Cone-Beam Computed Tomography: A New Source of Diagnostic Information?
Curtis Laamanen, Canada

18:15 SP024.5 - Investigating automatic techniques in segmentation accuracy of masses in digital mammography images
Karem Marcomini, Brazil

18:30 SP024.6 - The Automated Marker-Free Longitudinal IR Breast Image Registration Algorithm
Chi-En Lee, Chinese Taipei

17:00 SP025.1 - Theoretical ground for testing Monte Carlo transport algorithms coupled to magnetic fields
Hugo Bouchard, United Kingdom

17:15 SP025.2 - Primary X-ray source spot size modeling for FFF photon beam in VMAT based Stereotactic Radiosurgery? A comparative clinical study using Acuros-XB and AAA dose calculation algorithm
Vellian Subramani, India
17:30 SP025.3 - A Geant4 Helical Tomotherapy model as a tool for 3D dose distribution evaluation
Alessandro Esposito, Portugal

17:45 SP025.4 - Development of 4D actual delivered dose calculation system for dynamic tumor-tracking irradiation with a gimbaled linac
Yoshitomo Ishihara, Japan

18:00 SP025.5 - Organ Doses from Hepatic Radioembolization with Y-90, Sm-153, Ho-166 and Lu-177: A GEANT4 Monte Carlo Simulation Study
Chai Hong Yeong, Malaysia

18:15 SP025.6 - Stereotactic Ablative Radiotherapy (SABR) for lung cancer using Volumetric Modulated Arc Therapy (VMAT) with a 10x Flattening Filter Free (FFF) beam: validation of the calculated dose distribution using Monte Carlo
Tony Mestrovic, Canada

18:30 SP025.7 - Ray Tracing Algorithm for Virtual Source Modelling based on Evaluation of Rounded Leaf End Effect of Multileaf Collimator
Dong Zhou, People's Republic of China

17:00 SP026.1 - The Development of a Device for the Fricke Dosimetry for HDR Brachytherapy
Camila Salata, Brazil

17:15 SP026.2 - A New Methodology for the Determination of the G-value for Fricke Dosimetry
Camila Salata, Brazil

17:30 SP026.3 - The Use of Fricke Dosimetry as a Primary Standard for the Absorbed Dose to Water for 192Ir HDR-BT Sources: Determination of the G-value
Camila Salata, Brazil

17:45 SP026.4 - IAEA Dosimetry Laboratory support to the IAEA/WHO SSDL Network
Joanna Izewska, Austria

18:00 SP026.5 - Measurement of Wair in high energy electron beams
Claudiu Cojocaru, Canada

18:15 SP026.6 - Monte Carlo corrections for a Fricke-based standard of absorbed dose to water for Ir-192 HDR brachytherapy.
Ernesto Mainegra-Hing, Canada

18:30 SP026.7 - Changes in absorbed dose to water caused by dose standard shift for ionization chamber calibration in Japan
Hidetoshi Saitoh, Japan

18:45 SP026.8 - A calibration system of therapy-level dosimeter in Japan organized by ANTM
Suoh Sakata, Japan

17:00 SP027.1 - Fabrication of radiotherapy phantoms using 3D printing
Paul Liu, Australia

17:15 SP027.2 - The effect of bismuth shielding during pediatric neck multi-detector computed tomography on thyroid dose and image quality
Stephen Inkoom, Greece

17:30 SP027.3 - Use of 3D Printed Materials as Tissue-Equivalent Phantoms
Tanya Kairn, Australia

17:45 SP027.4 - Development of water-equivalent materials using the Least Squares Method
Leandro Mariano, Brazil

18:00 SP027.5 - Development of deformable moving lung phantom to simulate respiratory motion for lung SBRT
Young Nam Kang, Republic of Korea

18:15 SP027.6 - Characterization of a MOSFET-based system for skin dose evaluation with bolus material
Anabela Dias, Portugal

18:30 SP027.7 - Calibration procedure optimization through PSDesigner, a multipurpose simulation platform for plastic scintillation dosimeters
Cedric Laliberte-Houdeville, Canada
### SESSION TRACK: TRACK 06: NEW TECHNOLOGIES IN CANCER RESEARCH AND TREATMENT

#### SESSION NAME: SP028 – HIFU THERAPY, MICROWAVE ABLATION, RADIOFREQUENCY ABLATION, CRYOTHERAPY

#### SESSION CHAIR(S): TIMOTHY E. DOYLE, UNITED STATES

<table>
<thead>
<tr>
<th>Time</th>
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| 17:00  | SP028.1 - On Understanding of the Limiting Factors in Radiofrequency Ablation on Target Tissue Necrosis Volume  
Bing Zhang, People’s Republic of China |
| 17:15  | SP028.2 - Thermal Dose Based Monitoring of Thermal Therapy for Prostate Cancer  
Joseph Kumaradas, Canada |
| 17:30  | SP028.3 - Nanodrug Delivery and Anti-tumor Efficacy for Brain Metastasis of Breast Cancer Enhanced by Short-time Low-dose Ultrasound Hyperthermia  
Sheng-Kai Wu, Chinese Taipei |
| 17:45  | SP028.4 - Evaluating breast cancer surgical margins using high-frequency ultrasound: Statistical analysis of a 17-patient pilot study  
Robyn Omer, United States |
| 18:00  | SP028.5 - The Intraoperative Detection of Breast Cancer in Surgical Margins Using High-Frequency Ultrasound: Studies Using Histology Mimicking Phantoms  
Zachary Coffman, United States |
| 18:15  | SP028.6 - Rapid Molecular Subtyping of Breast Cancer Using High-Frequency Ultrasound (10-120 MHz) and Principal Component Analysis  
Caitlin Carter, United States |
| 18:30  | SP028.7 - Inverse treatment planning using radiofrequency ablation in cancer therapy  
Shefali Kulkarni-Thaker, Canada |

### SESSION TRACK: TRACK 07: SURGERY, COMPUTER AIDED SURGERY, MINIMAL INVASIVE INTERVENTIONS, ENDOSCOPY AND IMAGE-GUIDED THERAPY, MODELLING AND SIMULATION

#### SESSION NAME: SP029 – SURGICAL NAVIGATION: PART 1

#### SESSION CHAIR(S): CHRISTIAN LINTE, PETER MARTIN, CANADA

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| 17:00  | SP029.1 - KEYNOTE: Drop-based microfluidics for diagnostic applications  
David Weitz, United States |
| 17:30  | SP029.2 - Enhanced multielectrode configurations in miniaturized 3D electrical impedance spectroscopy and tomography? Monitoring the overall process of tissue engineering with spatial sensing for future challenges in microfluidics  
Chiara Canali, Denmark |
| 17:45  | SP029.3 - On-line monitoring of 2D and 3D cell cultures: electrode configurations for impedance based sensors  
Chiara Canali, Denmark |
| 18:00  | SP029.4 - Development of Microfluidic Paper-Based Electrochemical Immunoassays for the Detection of Prostate Cancer  
Sean Rawlinson, United Kingdom |
| 18:15  | SP029.5 - Investigating chip design for a Raman microfluidic system with clinical radiobiological applications.  
Samantha Harder, Canada |

### SESSION TRACK: TRACK 08: BIOSENSOR, NANOTECHNOLOGY, BIOMEMS AND BIOPHOTONICS

#### SESSION NAME: SP030 – LAB-ON-CHIP, BIOMEMS AND MICROFLUIDICS

#### SESSION CHAIR(S): DONG HA KIM, REPUBLIC OF KOREA, KWANG OH, UNITED STATES

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| 17:00  | SP030.1 - SP030.2 - Seymour Shield? An Operative Adjunct Device for Maintaining Visualization during Laparoscopic Surgery  
Karthik Kannan, Singapore |
| 17:30  | SP030.3 - Optimizing MRI-targeted fusion prostate biopsy: the effect of systematic error and anisotropy on tumour sampling  
Peter Martin, Canada |
| 17:45  | SP030.4 - Is hemolysis influenced by the dynamic calibration method of CPB roller pumps?  
Eduardo Costa, Brazil |
| 18:00  | SP030.5 - A Fiducial Apparatus for 6DOF Pose Estimation of an External Echo Probe from a Single X-ray Projection: Initial Simulation Studies on Design Requirements  
Charles Hatt, United States |
| 18:15  | SP030.6 - Mechanism design a flexible endoscope with USB adaptation to training.  
Francisco Perez Reynoso, Mexico |
| 18:30  | SP030.7 - 3D Quantitative Evaluation System for Integral Photography based 3D Autostereoscopic Medical Display  
Zhencheng Fan, People’s Republic of China |

### SCIENTIFIC PROGRAM

**MONDAY JUNE 8 2015**

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Caitlin Carter, United States |
| 18:30  | SP028.7 - Inverse treatment planning using radiofrequency ablation in cancer therapy  
Shefali Kulkarni-Thaker, Canada |

**SESSION TIME:** 17:00 – 18:45

**SESSION ROOM:** 717A

**SESSION TRACK:** TRACK 06: NEW TECHNOLOGIES IN CANCER RESEARCH AND TREATMENT

**SESSION NAME:** SP028 – HIFU THERAPY, MICROWAVE ABLATION, RADIOFREQUENCY ABLATION, CRYOTHERAPY

**SESSION CHAIR(S): TIMOTHY E. DOYLE, UNITED STATES**
18:30 SP030.6 - A lab-on-a-chip system for hypoxic investigations on single biological cells
Ahmed Alrifaiy, Sweden

18:45 SP030.7 - Gas Sensors with ZnO Quantum Dots Synthetized by Sol-Gel Methods
Lourdes Brasil, Brazil

SESSION TIME: 17:00 – 18:15
SESSION ROOM: 716B
SESSION TRACK: TRACK 09: BIOSIGNAL PROCESSING
SESSION NAME: SP031 – PATTERN CLASSIFICATION
SESSION CHAIR(S): JAMES GREEN, CANADA

17:00 SP031.1 - The Recognition of Pinch-to-Zoom Gesture Based on Surface EMG
Jongin Kim, Republic of Korea

17:15 SP031.2 - Feature extraction trends for biomedical signals
Yashodhan Athavale, Canada

17:30 SP031.3 - A Hybrid Model for Diagnosing Sever Aortic Stenosis in Asymptomatic Patients using Phonocardiogram
Maria Lindén, Sweden

17:45 SP031.4 - Classification of Load in Hands Based on Upper Limb SEMG
Illya Seagal, Canada

18:00 SP031.5 - An Intelligent Method for Discrimination between Aortic and Pulmonary Stenosis using Phonocardiogram
Amir Sepehri, Belgium

SESSION TIME: 17:00 – 18:30
SESSION ROOM: 701B
SESSION TRACK: TRACK 11: NEUROENGINEERING, NEURAL SYSTEMS
SESSION NAME: SP032 – NEURAL INTERFACES AND REGENERATION
SESSION CHAIR(S): JOSE ZARIFFA, CANADA
MILOS POPOVIC, CANADA

17:00 SP032.1 - KEYNOTE: Neuroprosthetic Systems for Enhancement of Neuroplasticity Following Stroke and Spinal Cord Injury
Milos Popovic, Canada

17:30 SP032.2 - Demonstration of Graphene Microelectrodes as a Bioelectronic Interface
Michael Horn, United States

17:45 SP032.3 - Development of a planar microelectrode array offering long-term, high-resolution neuronal recordings
Pierre Wijdenes, Canada

18:00 SP032.4 - Morphological changes in photoreceptors due to DC electric field
Juliana Guerra, Brazil

18:15 SP032.5 - Accelerating Neurite Outgrowth Through Electric Field Manipulation
Michael Purdy, Canada
Tuesday, June 9 2015

SESSION TIME: 08:00 – 10:00
SESSION ROOM: 718A
SESSION TRACK: TRACK 01: IMAGING
SESSION NAME: SP034 – CT: NEW TECHNIQUES
SESSION CHAIR(S): MOHAMMAD REZA AY, IRAN

08:00  SP034.1 - Design, modeling and performance evaluation of a small animal Micro-CT scanner: A Monte Carlo study
        Mohammad Reza Ay, Iran

08:15  SP034.2 - An imaging method by using electron mode of linear accelerator for soft tissue emphasis
        Atsushi Myojoyama, Japan

08:30  SP034.3 - Anatomical noise model for CT head images: preliminary results
        Marlen Perez-Diaz, Cuba

08:45  SP034.4 - The potential of spectral-CT for material decomposition with gold-nanoparticle and iodine contrast
        Byungdu Jo, Republic of Korea

09:00  SP034.5 - Spatial Resolution Studies for a Prototype Proton CT Scanner
        Tia Plautz, United States

09:15  SP034.6 - Influences of object size and tube potential pairing on the accuracy of iodine quantification using dual energy CT
        Josh Grimes, United States

09:30  SP034.7 - Characterization of Vulnerable Plaque with Dual-Energy during CT Coronary Angiography: A Phantom Study
        Ali Ursani, Canada

09:45  SP034.8 - The combination of a custom vascular perfusion contrast agent and dual-energy micro-CT to characterize bone-related vasculature
        Justin Tse, Canada

08:00  SP035.1 - Detectability in SPECT Myocardial Perfusion Imaging: Comparison between a Conventional and a Semiconductor Detector System
        Ana Marques Da Silva, Brazil

08:15  SP035.2 - The performance of the CMOS APS detector for dual energy contrast enhanced digital mammography
        Ilias Billas, United Kingdom

08:30  SP035.3 - Apodized-Aperture Pixel Design of an X-Ray Detector with Enhanced High-Frequency DE and Reduced Noise Aliasing
        Elina Ismailova, Canada

08:45  SP035.4 - Geant4 Simulations of Scintillation Light Collection and Extraction in PET/CT Detectors
        Francis Loignon-Houle, Canada

09:00  SP035.5 - LabPETII.5: APD-based Detector Characterization for Pre-clinical PET Imaging
        Emilie Gaudin, Canada

09:15  SP035.6 - An alternate mathematical modeling of image formation, and framework for performance analysis of positioning algorithms in the scintillation camera
        Mohammad Reza Ay, Iran

09:30  SP035.7 - LabPETII.5: APD-based Detector Characterization for Pre-clinical PET Imaging
        Emilie Gaudin, Canada

09:45  SP035.8 - Geant4 Simulations of Scintillation Light Collection and Extraction in PET/CT Detectors
        Francis Loignon-Houle, Canada
08:15 SP036.2 - Rotational tolerance in lung cancer image-guided radiation therapy
Peter Hoang, Canada

08:30 SP036.3 - Robustness Assessment of a Novel 4D Optimization Approach for Lung Cancer Radiotherapy
Shahad Al-Ward, Canada

08:45 SP036.4 - The role of VMAT interplay effects for liver stereotactic body radiation therapy
Gillian Ecclestone, Canada

09:00 SP036.5 - Interplay of MLC, gantry and respiratory motion during DCAT delivery
Tanya Kairn, Australia

09:15 SP036.6 - Impact of deep inspiration breath hold (DIBH) in lymphoma’s radiation therapy treatment
Daniel Venencia, Argentina

09:30 SP036.7 - Cardiac sparing in left-sided breast IMRT using robust optimization
Houra Mahmoudzadeh, Canada

09:45 SP036.8 - Real Time Tumor Position Control During VMAT Hypofractioned Treatment
Chemseddine Fatnassi, Switzerland

08:00 SP037.1 - Comparative Evaluation of Radiation Dose Rates in Cancer Thyroid Patients Treated with Variable Doses of Radioiodine
Ajai Kumar Shukla, India

08:15 SP037.2 - Estimation of the influence of other organs of the body in the determination of the gamma fraction energy emitted by iodine 131 deposited within the thyroid gland
Abderrahim Betka, DZ

08:30 SP037.3 - Personalized compartmental biokinetic modelling and internal dosimetry of two novel radiopharmaceuticals
Alexandra Zvereva, Germany

08:45 SP037.4 - TLD Measurement of Absorbed Dose of Workers in PET/CT Department
Pardis Ghafarian, Iran

09:00 SP037.5 - Renewing the radiopharmaceutical accuracy check service for Canadian dose calibrators
Malcolm McEwen, Canada

09:15 SP037.6 - Radiation Dose Assessment of 99mTc-labeled Tetrofosmin in Patients Undergoing Rest-Stress Myocardial Perfusion Scintigraphy
Stella Veloza, Colombia

08:00 SP038.1 - Determination of small photon field quality correction factors using EBT3 radiochromic film
Ilias Billas, United Kingdom

08:15 SP038.2 - On the physics of megavoltage small photon field dosimetry
Hugo Bouchard, United Kingdom

08:30 SP038.3 - Comparison of AAPM TG 148 and UK code of practice of Reference dosimetry in Helical Tomotherapy.
Siji Paul, India

08:45 SP038.4 - A new facility to support the adaptation of reference dosimetry in the presence of strong magnetic fields
Simon Duane, United Kingdom

09:00 SP038.5 - The use of ionization chambers and Gafchromic films to determine the reference absorbed dose rate and output factors in a CyberKnife® unit small radiation fields
Guerda Massillon-JI, Mexico

08:00 SP039.1 - Improved T-wave Alternans Detection in ECG Signals
Guangyi Chen, Canada

08:15 SP039.2 - Electrical Left Atrial Conduction Delay with Focused Transesophageal Electrocardiography in Cardiac Resynchronization Therapy
Matthias Heinke, Germany
08:30 SP039.3 - Electrical Interatrial to Interventricular Conduction Delay Ratio with Focused Transesophageal Electrocardiography in Cardiac Resynchronization Therapy
Matthias Heinke, Germany

08:45 SP039.4 - Analytical geometry based parameters for studying repolarization variability in patients with myocardial infarction
Muhammad Hasan, Canada

09:00 SP039.5 - Acute Mental Stress Detection via Ultra-short term HRV Analysis
Rossana Castaldo, United Kingdom

09:15 SP039.6 - Classification of Abdominal Fetal Electrocardiogram Recordings using Karhunen-Loève Decomposition
Philip Warrick, Canada

09:30 SP039.7 - Dictionary Learning Algorithms For The Application Of Ventricular Arrhythmia Classification.
Iman Kalaji, Canada

SESSION TIME: 08:00 – 09:30
SESSION ROOM: 715A
SESSION TRACK: TRACK 10: REHABILITATION MEDICINE, SPORTS MEDICINE, REHABILITATION ENGINEERING AND PROSTHETICS
SESSION NAME: SP040 – ERGONOMICS, WEARABLE SENSORS AND VIRTUAL REALITY
SESSION CHAIR(S): MIGUEL OLIVER, CANADA

08:00 SP040.1 - KEYNOTE: Working to live: The use of field studies and simulations to make workplaces safer
Michele Oliver, Canada

08:30 SP040.2 - Pitch movement acceleration measures during the practice of virtual games in adolescents with Down syndrome
Paulo Lopes, Brazil

08:45 SP040.3 - Movement Training and Assessment with 3D Virtual Reality for Parkinson’s Disease Patient
Chien-An Chen, Chinese Taipei

09:00 SP040.4 - Arm angle detection in egocentric video of upper extremity tasks
Jirapat Likitlersuang, Canada

09:15 SP040.5 - Development of an image-based calibration technique for use with non-ideal postures in the assessment of kinematics using wearable sensors
Monica Gomez, Canada

SESSION TIME: 08:00 – 09:45
SESSION ROOM: 714A
SESSION TRACK: TRACK 11: NEUROENGINEERING, NEURAL SYSTEMS
SESSION NAME: SP041 – BRAIN COMPUTER/MACHINE INTERFACES
SESSION CHAIR(S): BAO-LIANG LU, PEOPLE’S REPUBLIC OF CHINA

08:00 SP041.1 - Cross-subject and Cross-gender Emotion Classification from EEG
Bao-Liang Lu, People’s Republic of China

08:15 SP041.2 - Comparison of Classification Methods for EEG-based Emotion Recognition
Bao-Liang Lu, People’s Republic of China

08:30 SP041.3 - A Brain Computer Interface (BCI) based on intermittent photic-stimulation using multiple coherence to command detection
Antonio Infantosi, Brazil

08:45 SP041.4 - Volitional modulation of neural activity to control a 2 degree-of-freedom brain-machine interface in a rat model
Martha Garcia, Canada

09:00 SP041.5 - Electroencephalography-Based Off-Line Prediction of Specific Grasping Actions Performed with the Same Hand: Towards Integration of Brain-Computer Interfaces and Functional Electrical Stimulation Therapy
Cesar Marquez-Chin, Canada

09:15 SP041.6 - Wireless Distributed Intracortical Neural Interfacing: A New Approach for Brain Machine Interfaces
Alireza Zabihian, Canada

09:30 SP041.7 - Design and construction of a brain-computer interface for applications in neuro?robotics
Alma Méndez Gordillo, Mexico

SESSION TIME: 08:00 – 09:45
SESSION ROOM: 701A
SESSION TRACK: TRACK 16: CLINICAL ENGINEERING, CLINICAL PHYSICS, AND PATIENT SAFETY
SESSION NAME: SP042 – TECHNOLOGY MANAGEMENT PROGRAMMES AND EQUIPMENT MANAGEMENT SYSTEMS
SESSION CHAIR(S): JOHN KILDEA, CANADA

08:00 SP042.1 - KEYNOTE: Medical device systems Health Technology Management (HTM) strategies and best practices
Tom Judd, United States

08:30 SP042.2 - International Collaborative Project to Evaluate the Impact of a Data Management System on Operating Theatre Efficiency
Kathryn Bredin, United Kingdom
08:30 SP042.3 - Development of a scoring system to support medical equipment replacement prioritization using the Analytical Hierarchy Process (AHP) 
Paul Prowse, Canada
08:45 SP042.4 - Multi-criteria decision analysis to redesign an Italian Clinical Engineering Service under specific needs and regulation requirements 
Irene Lasorsa, Italy
09:00 SP042.5 - Developing a system to support equipment repair versus replacement decision making 
Sarah Kelso, Canada
Philip Anyango, Kenya
09:30 SP042.7 - Mathematical Model for Reliable Maintenance of Medical Equipment 
Abdelbaset Khalaf, South Africa

SESSION TIME: 08:00 – 09:30
SESSION ROOM: 717A
SESSION TRACK: TRACK 18: GENDER, SCIENCE AND TECHNOLOGY
SESSION NAME: SP043 – WOMEN IN BIOMEDICAL ENGINEERING
SESSION CHAIR(S): PATRICIA TRBOVICH, CANADA
KRISTY BROCK, UNITED STATES

08:00 SP043.1 - KEYNOTE: One thousand years of women in science 
Monique Frize, Canada
08:30 SP043.2 - Creating the Memories and Celebrating the Legacy of Women in Science and Engineering 
Ruby Heap, Canada
08:45 SP043.3 - Women In Bio-Medical Engineering In Kenya 
Salome Mwaura, Kenya
09:00 SP043.4 - Physics is a waste of your intelligence 
Shada Wadi-Ramahi, Saudi Arabia
09:15 SP043.5 - Medical physics? or how a change in career path becomes a passion 
Loredana Marcu, Ro

SESSION TIME: 10:30 – 12:00
SESSION ROOM: 718A
SESSION TRACK: TRACK 01: IMAGING
SESSION NAME: SP045 – MOLECULAR IMAGING PET/SPECT: PART 1
SESSION CHAIR(S): AMIR POURMOGHADDAS, CANADA
MOHAMMAD REZA AY, IRAN

10:30 SP045.1 - Quantitative accuracy of SPECT imaging with a dedicated cardiac camera: Physical phantom experiments 
Amir Pourmoghaddas, Canada
10:45 SP045.2 - The Impact of time of flight algorithm and PSF modeling on standard uptake value in clinical PET/CT imaging 
Mohammad Reza Ay, Iran
11:00 SP045.3 - Can Pacemaker and ICD degrade CT-Based Attenuation Corrected cardiac SPECT images? 
Mohammad Reza Ay, Iran
11:15 SP045.4 - Impact of Point spread function modeling on tumor quantification in clinical PET/CT imaging 
Mohammad Reza Ay, Iran
11:30 SP045.5 - Incidental Thyroid Cancer Identified on 18FDG- PET/CT for Ovarian Cancer Evaluation-Case Study. 
Shuaa Al-Sadoon, Jo
11:45 SP045.6 - Zinc material filter for scatter correction in Tc-99m myocardial SPECT imaging: Heart thorax phantom study 
Nazifah Abdullah, Malaysia
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<th>Title</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>10:30</td>
<td>SP046.1</td>
<td>Early prediction of lung cancer recurrence after stereotactic radiotherapy using texture analysis of automatic graph cuts segmentations</td>
<td>Sarah Mattonen, Canada</td>
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<tr>
<td>10:45</td>
<td>SP046.2</td>
<td>Can parametric response maps predict voxel-wise treatment response? Implications for locally adaptive radiotherapy.</td>
<td>Anthony Lausch, Canada</td>
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<tr>
<td>11:00</td>
<td>SP046.3</td>
<td>Using Magnetic Resonance Imaging Radiomics to Personalize Brain Metastases Treatment</td>
<td>Sarah Mattonen, Canada</td>
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<tr>
<td>11:15</td>
<td>SP046.4</td>
<td>Raman spectroscopy for assessment of radiation therapy response: Pre-clinical animal study results for lung cancer</td>
<td>Suneetha Devpura, United States</td>
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<tr>
<td>11:45</td>
<td>SP046.6</td>
<td>Evaluation and Visualization of Radiogenic Modeling Frameworks for the Prediction of Normal Tissue Toxicities</td>
<td>Issam El Naqa, Canada</td>
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<tr>
<td>10:30</td>
<td>SP047.1</td>
<td>Non-Standard IOERT Dose Distributions Scenarios by Monte Carlo Studies</td>
<td>Alessandro Esposito, Portugal</td>
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<tr>
<td>10:45</td>
<td>SP047.2</td>
<td>Validation of a Commercial GPU-Based Monte Carlo Dose Calculation Algorithm for use with an Elekta MRI-Linear Accelerator</td>
<td>Moti Paudel, Canada</td>
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<tr>
<td>11:00</td>
<td>SP047.3</td>
<td>A dosimetric evaluation of interface effects using two commercial electron treatment planning algorithms</td>
<td>Mark Yudelev, United States</td>
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<tr>
<td>11:15</td>
<td>SP047.4</td>
<td>4D Monte Carlo simulation for verification of delivered dose to deforming anatomy</td>
<td>Sara Gholampourkashi, Canada</td>
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<tr>
<td>11:30</td>
<td>SP047.5</td>
<td>Clinical implementation of an EPID-based in vivo dose verification system for SBRT-VMAT delivery; catching errors</td>
<td>Peter McCowan, Canada</td>
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<td>11:45</td>
<td>SP047.6</td>
<td>pGPUMCD, a GPU-based Monte Carlo proton transport code</td>
<td>Daniel Maneval, Canada</td>
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<tr>
<td>10:30</td>
<td>SP048.1</td>
<td>An attempt to predict the proton relative biological effectiveness using radical recombination</td>
<td>Kiyofumi Haneda, Japan</td>
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<tr>
<td>10:45</td>
<td>SP048.2</td>
<td>A correction method for absorbed dose estimation using TEP-TLSD/SR1 in therapeutic carbon beam</td>
<td>Weishan Chang, Japan</td>
</tr>
<tr>
<td>11:00</td>
<td>SP048.3</td>
<td>Biologically-weighted dosimetric quantities based on a multiscale approach</td>
<td>Heidi Nettelbeck, Germany</td>
</tr>
<tr>
<td>11:15</td>
<td>SP048.4</td>
<td>Studies of helium and carbon ion fragmentation processes in water and in PMMA, using versatile semiconductor detectors</td>
<td>Giulia Arico, Germany</td>
</tr>
<tr>
<td>11:30</td>
<td>SP048.5</td>
<td>Monte Carlo study of secondary neutron dose for multipurpose nozzle in proton therapy</td>
<td>Sungkoo Cho, Republic of Korea</td>
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<tr>
<td>11:45</td>
<td>SP048.6</td>
<td>Investigation of the uncertainties involved in the low energy proton interaction in different MC-codes for proton therapy application</td>
<td>Lalageh Mirzakhani, Canada</td>
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### TRACK 09: BIOSIGNAL PROCESSING

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<th>Time</th>
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<th>Title</th>
<th>Abstract</th>
<th>Speaker(s)</th>
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<tr>
<td>10:30</td>
<td>SP050.1</td>
<td>Keynote: Frontiers of Neuroengineering</td>
<td>Nitish Thakor, Singapore</td>
<td><strong>Nitish Thakor</strong>, Singapore</td>
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<tr>
<td>11:00</td>
<td>SP050.2</td>
<td>Neural responses to hearing own names comparing with repeated/non-repeated unfamiliar stimuli</td>
<td>Kaori Tamura, Japan</td>
<td><strong>Kaori Tamura</strong>, Japan</td>
</tr>
<tr>
<td>11:15</td>
<td>SP050.3</td>
<td>MRS data deconvolution through KBDM with multiple signal truncation and clustering: circumventing noise effects</td>
<td>Danilo Da Silva, Brazil</td>
<td><strong>Danilo Da Silva</strong>, Brazil</td>
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<tr>
<td>11:30</td>
<td>SP050.4</td>
<td>Quantification of Wavelet Band Metrics for Assessing Heart Rate Variability</td>
<td>Mark Wachowiak, Canada</td>
<td><strong>Mark Wachowiak</strong>, Canada</td>
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<tr>
<td>11:45</td>
<td>SP050.5</td>
<td>Effect of Coffee on EEG Spectral Asymmetry</td>
<td>Maie Bachmann, Estonia</td>
<td><strong>Maie Bachmann</strong>, Estonia</td>
</tr>
<tr>
<td>12:00</td>
<td>SP050.6</td>
<td>Effects of Changing in the Neck Fluid Volume, Neck Circumference and Upper Airway during Sleep on Snoring Sound Characteristics</td>
<td>Zahra Moussavi, Canada</td>
<td><strong>Zahra Moussavi</strong>, Canada</td>
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</table>
SESSION TIME: 10:30 – 11:45
SESSION ROOM: 715B
SESSION TRACK: TRACK 12: MEDICAL DEVICES
SESSION NAME: SP053 – CARDIOVASCULAR INSTRUMENTATION
SESSION CHAIR(S): MARIE KEAYS, IRELAND
JONATHAN WOLFE, SINGAPORE

10:30  SP053.1 - A Microfluidic cell culture Instrument for individual testing of therapeutics.
       Marie Keays, Ireland

10:45  SP053.2 - A Bioinspired Catheter Harnessing Gecko Adhesion and Inchworm?Like Locomotion for Targeted Drug Delivery
       Jonathan Wolfe, Singapore

11:00  SP053.3 - Covered stent with perforated membrane for treatment of peripheral atheroembolic disease
       Foad Kabinejadian, Singapore

11:15  SP053.4 - Nanostructuring Carbon Fibre Probes for Use in Central Venous Catheters
       Jolene McHugh, United Kingdom

11:30  SP053.5 - Denoising RF defibrillator waveforms for intracardiac atrial substrate impedance characterisation using digital filtering techniques
       Omar Escalona, United Kingdom

SESSION TIME: 10:30 – 12:00
SESSION ROOM: 717A
SESSION TRACK: TRACK 18: GENDER, SCIENCE AND TECHNOLOGY
SESSION NAME: SP054 – WOMEN IN MEDICAL PHYSICS: CURRENT STATUS
SESSION CHAIR(S): PATRICIA TRBOVICH, CANADA
MONIQUE FRIZE, CANADA

10:30  SP054.1 - Experiences as a Women in the Biomedical Engineering Field
       Molly Shoichet, Canada

11:00  SP054.2 - The Historical Role of Women in Medical Physics
       Magdalena Stoewa, United Kingdom

11:10  SP054.3 - Women in Medical Physics
       Simone Kodilovitch, Brazil

11:20  SP054.4 - Women in Medical Physics; current status in Australia and New Zealand.
       Eva Bezak, Australia

11:30  SP054.5 - Women in medical physics; Current status
       Nicole Ranger, United States

11:40  SP054.6 - Women in Medical Physics
       Jamila Salem Al Suwaidi, United Arab Emirates
16:00  SP056.5 - Assessment of a 4D-CBCT system for managing respiratory motion in Radiotherapy  
_Yudy Ascencion, Cuba_

15:30  SP058.3 - Dose response evaluation of lung equivalent gel dosimeters by use of a new fitting algorithm  
_Hassan Ali Nedaie, Iran_

15:45  SP058.4 - Photoluminescence response of pure LiF crystals to clinical proton and carbon ions: a preliminary assessment for dose to water evaluations  
_Jose Villarreal-Barajas, Canada_

16:00  SP058.5 - Evaluation of Accuracy and Precision in X-ray Computed Tomography Polymer Gel Dosimetry.  
_Evan Maynard, Canada_

15:00  SP057.1 - Sensitivity of VMAT patient specific QC devices to linac calibration errors  
_Eduard Gershkevitsh, Estonia_

15:15  SP057.2 - Clinical implementation of a novel transmission detector for 3D quality assurance during radiation therapy  
_Greg Sharp, United States_

15:30  SP057.3 - Development of a Radiochromic Film Dosimetry Imaging System  
_Kevin Alexander, Canada_

15:45  SP057.4 - Implementation of MOSFET detectors for in-vivo radiotherapy dosimetry.  
_Yi Wah Eva Cheung, United Kingdom_

16:00  SP057.5 - 3D in vivo dose verification at The Netherlands Cancer Institute  
_Ben Mijnheer, Netherlands_

16:15  SP057.6 - Dosimetric commissioning of high end features in Radiotherapy Treatment Planning Systems: a proposed update of the IAEA TECDOC-1583 guidelines  
_Rodolfo Alfonso, Cuba_

16:30  SP057.7 - Implementation of statistical tolerance for patient specific QA and independent monitor unit calculation  
_Frédéric Girard, Canada_

15:00  SP058.1 - Destructive backscatter-based readout of polymer gel dosimeters: proof of principle  
_Warren Campbell, Canada_

15:15  SP058.2 - New Detector Systems for the Dosimetry in Radiation Therapy  
_Viktor Iakovenko, Ukraine_

15:00  SP059.1 - Nanotechnology applied in drug delivery  
_Lourdes Brasil, Brazil_

15:15  SP059.2 - Controlled electrochemical dissolution of iron alginate for smart drug release in micro devices  
_Ashleigh Anderson, United Kingdom_

15:30  SP059.3 - Next generation transdermal drug delivery? An electrochemical approach to pH manipulation for controlled release within smart patch technologies  
_Ashleigh Anderson, United Kingdom_

15:45  SP059.4 - Protein nanocages for stabilization of bio-inspired emulsions/gel systems and cutaneous drug delivery  
_Sierin Lim, Singapore_

16:00  SP059.5 - Image-Guided Predictions of Nanoparticle Transport in Solid Tumors  
_Shawn Stapleton, United States_

15:00  SP058.5 - Evaluation of Accuracy and Precision in X-ray Computed Tomography Polymer Gel Dosimetry.  
_Evan Maynard, Canada_

15:30  SP060.1 - KEYNOTE: UNESCO International Year of Light  
_Brian Wilson, Canada_

15:30  SP060.2 - Design of Wireless Implantable Optogenetics System for Animal Studies  
_Fu-yu Chen, New Zealand_

15:00  SP060.1 - KEYNOTE: UNESCO International Year of Light  
_Brian Wilson, Canada_

15:30  SP060.2 - Design of Wireless Implantable Optogenetics System for Animal Studies  
_Fu-yu Chen, New Zealand_
15:45  SP060.3 - A method to determine the variation of irradiance in bilirubin lamps as function of the time of use
Graciela Salum, Ecuador

16:00  SP060.4 - Study of the sensibility of induced heat effects in edible oil measured by interferometric techniques
José Espinoso-Barrios, Mexico

16:15  SP060.5 - Design and study of Infrared-Guard
Shanmugam Senthilkumar, India

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SESSION TIME: 15:00 – 16:30
SESSION ROOM: 715B
SESSION TRACK: TRACK 12: MEDICAL DEVICES
SESSION NAME: SP061 – IMPROVEMENT OF DIAGNOSIS AND THERAPIES
SESSION CHAIR(S): FERNANDO INFANTOSI, BRAZIL
ROMAIN ESPAGNET, CANADA

15:00  SP061.1 - Development of heart sparing device for Left Breast Radiotherapy with deep breath-holding
Shanmugam Senthilkumar, India

15:15  SP061.2 - HTA for Medical Devices: Multiple-Criteria Decision Making as an Outcome Evaluation Tool
Ivana Jurickova, Czech Republic

15:45  SP061.3 - Developing Smart Bandage Materials for the Management of Chronic Wounds in Diabetic Patients
Jolene McHugh, United Kingdom

16:00  SP061.4 - A CdZnTe-based automated Blood Counter for Quantitative Molecular Imaging
Romain Espagnet, Canada

16:15  SP061.5 - A Portable Free-Hand 3D SPECT System
Harley Chan, Canada

16:30  SP061.6 - Probing the Biomechanical Properties of Cells using High-Frequency Ultrasound and Acoustic Levitation
Natalie Sullivan, United States

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SESSION TIME: 15:00 – 16:30
SESSION ROOM: 701B
SESSION TRACK: TRACK 16: CLINICAL ENGINEERING, CLINICAL PHYSICS, AND PATIENT SAFETY
SESSION NAME: SP062 – CLINICAL PROCESS ANALYSIS, OPTIMIZATION, PRODUCTIVITY AND BENCHMARKING
SESSION CHAIR(S): BETTYS HERNANDEZ-ZACARIAS, MEXICO
GERARDO ROMO-CARDENAS, MEXICO

15:00  SP062.1 - Guaranteeing the quality of rigid endoscopes with the ScopeControl
Herke Jan Noordmans, Netherlands

15:15  SP062.2 - Low-entry level CT exam times and availability in worldwide markets
Renan Almeida, Brazil

15:30  SP062.3 - The critical evaluation of AV control features in modern pacemakers and cardioverters
Tadeusz Palko, Poland

15:45  SP062.4 - Assisted Reproductive Technology Center Design with Quality Function Deployment Approach
Alessio Luschi, Italy

16:00  SP062.5 - Study of the Sensitivity on the Measurement of the Prevalence of Total Cholesterol in Blood Serum by Interferometric Techniques
Bettsy Hernandez-Zacarias, Mexico

16:15  SP062.6 - Critical role of sustaining technology and utilities in healthcare institutions facing disaster through development of an international center for information and training of health technology managers on disaster preparedness
Yadin David, United States

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SESSION TIME: 15:00 – 17:15
SESSION ROOM: 717A
SESSION TRACK: TRACK 17: EDUCATIONAL AND PROFESSIONAL ACTIVITIES
SESSION NAME: SP063 – ACCREDITATION, CERTIFICATION AND LICENSURE ISSUES
SESSION CHAIR(S): ADRIANA VELAZQUEZ BERUMEN, SWITZERLAND
RAYMUND WU, UNITED STATES

15:00  SP063.1 - KEYNOTE: The Current State of Clinical Engineering Education and Career
Yadin David, United States

15:30  SP063.2 - The Pursuit of Regulated Health Profession Status for Medical Physicists in Alberta
Charles Kirkby, Canada

15:45  SP063.3 - The International Medical Physics Certification Board
Colin Orton, United States

16:00  SP063.4 - Radiation protection continued training program evaluation: return on a 7-year experience
Nadia Octave, Canada

16:15  SP063.5 - Where to find biomedical engineers worldwide? Mapping biomedical engineers around the world
Adriana Velazquez Berumen, Switzerland

16:30  SP063.6 - Oh dear medical physicist and biomedical engineer, why is it difficult to pioneer your specialist career?
Mario Medvedec, Croatia

16:45  SP063.7 - Biomedical Engineering Education and Training and Accreditation of Bachelor-degree Biomedical Engineering Programmes
Min Wang, Hong Kong

17:00  SP063.8 - IOMP initiative for Validation and Accreditation of MSc courses
Slavik Tabakov, United Kingdom
SESSION TIME: 15:00 – 16:15
SESSION ROOM: 713B
SESSION TRACK: PRESIDENT’S CALL
SESSION NAME: SP064 – BIOMECHANICS AND ARTIFICIAL ORGANS
SESSION CHAIR(S): PETER GOSHULAK, CANADA
MINA AZIZ, CANADA

15:00 SP064.1 - Biomechanical Analysis of Optimal Orientation and Stress Shielding for Short and Long Stem Hip Implants
Peter Goshulak, Canada

15:15 SP064.2 - Biomechanical Analysis of Acute Total Hip Replacements after Acetabular Fracture: Plate vs Cable Repair
Mina Aziz, Canada

15:30 SP064.3 - Biomechanical Validation of the Radiographic Union Score for Tibial fractures (RUST) as a Predictor for Fracture Healing
Sandra Fiset, Canada

15:45 SP064.4 - Patient-specific multi-scaling simulation of blood flow and fractional flow reserve in a coronary artery
Kyung Lee, Republic of Korea

16:00 SP064.5 - A Modified PID Algorithm with Fuzzy Control for Closed-loop Artificial Pancreas
Jin Hao Yu, People’s Republic of China

SESSION TIME: 17:00 – 18:45
SESSION ROOM: 718A
SESSION TRACK: TRACK 01: IMAGING
SESSION NAME: SP065 – CONEBEAM CT
SESSION CHAIR(S): REBECCA FAHRIG, UNITED STATES
KERSTIN MUELLER, UNITED STATES

17:00 SP065.1 - KEYNOTE: Towards Functional C-arm CT Imaging in the Interventional Suite: Progress and challenges
Rebecca Fahrig, United States

17:15 SP065.2 - 2D/3D Registration for Motion Compensated Reconstruction in Cone-Beam CT of Knees Under Weight-Bearing Condition
Martin Berger, Germany

17:30 SP065.3 - Direct Scatter Estimation and Separation for Cone-beam CT Images Utilizing Monte Carlo Simulation
Yu Wang, People’s Republic of China

17:45 SP065.4 - Automatic Motion Estimation and Compensation Framework for Weight-bearing C-arm CT scans using Fiducial Markers
Kerstin Mueller, United States

SESSION TIME: 17:00 – 18:15
SESSION ROOM: 714B
SESSION TRACK: TRACK 03: BIOMECHANICS AND ARTIFICIAL ORGANS
SESSION NAME: SP066 – HUMAN MOVEMENT
SESSION CHAIR(S): YUBO FAN, PEOPLE’S REPUBLIC OF CHINA
EMILY SINITSKI, CANADA

17:00 SP066.1 - Fingertip touch adjust postural orientation during perturbed stance
Aizreena Azaman, Japan

17:15 SP066.2 - Design and Evaluation of a Prosthetic Knee Joint based on Automatic Stance-Phase Lock (ASPL) Technology for Children with Transfemoral Amputations
Calvin Ngan, Canada

17:30 SP066.3 - Frontal plane gait during cross-slope walking for able-bodied and transtibial amputees
Emily Sinitski, Canada

17:45 SP066.4 - Impact of gait modifications on hip joint loads during level walking
Masaru Higa, Japan

18:00 SP066.5 - The influence of the aquatic environment on the control of gait initiation
Andresa Marinho Buzelli, Canada

SESSION TIME: 17:00 – 18:30
SESSION ROOM: 716A
SESSION TRACK: TRACK 05: DOSIMETRY AND RADIATION PROTECTION
SESSION NAME: SP067 – CHARACTERIZATION OF DETECTOR SYSTEMS FOR THERAPY DOSIMETRY: PART 2
SESSION CHAIR(S): MAGDALENA STOEVA, BULGARIA
MALCOLM MCEWEN, CANADA

17:00 SP067.1 - Reaction of three UV exposure to gafchromic EBT-2 and EBT-3
Toshizo Katsuda, Japan

17:15 SP067.2 - Characterizing FujiFilm CR Signal Storage Decay Rates
Thorarin Bjarnason, Canada
### SCIENTIFIC PROGRAM

**TUESDAY JUNE 9 2015**

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<td>17:30</td>
<td>SP067.3 - Angular dependence of diode detectors and PinPoint ionization chamber</td>
<td>Hrvoje Hrskak, Croatia</td>
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<td>17:45</td>
<td>SP067.4 - Determination of a correction factor to mitigate long term reader fluctuation of the Optically Stimulated Luminescence dosimetry system at the International Atomic Energy Agency</td>
<td>Joanna Izew ska, Austria</td>
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<tr>
<td>18:00</td>
<td>SP067.5 - Reference and relative dosimetry of standard and small photon fields with new commercially available detectors</td>
<td>Bryan Muir, Canada</td>
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<tr>
<td>18:15</td>
<td>SP067.6 - Evaluation of detectors response for small field output factor measurement using multichannel film dosimetry</td>
<td>Gunther Rucka, France</td>
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**17:00**

- **SP068.1** - A Farmer ion chamber as reference to the calibration of CT chambers  
  **Ricardo Terini, Brazil**

**17:15**

- **SP068.2** - Determination of the Uncertainty in the Cross-calibration of an Ionization Chamber Used in Radiation Therapy  
  **Pedro Cardoso, Brazil**

**17:30**

- **SP068.3** - A study of uncertainties in the half-value layer measurement of a miniature kV x-ray source  
  **Peter Watson, Canada**

**17:45**

- **SP068.4** - Low Energy Therapeutic X-Ray Calibration Methods  
  **Mehran Zaini, United States**

**18:00**

- **SP068.5** - Energy response of a thimble-type ionization chamber for Ir-192 and Co-60 radiation beams  
  **Cecilia Kessler, France**

**18:15**

- **SP068.6** - Kilo-voltage X-Ray tube dosimetry Correction factors for in-water measurement in TG-61  
  **Nima Sherafati, Canada**

**17:00**

- **SP069.1** - Synergistic Action of Ionizing Radiation with Platinum-based Chemotherapeutic Drugs: Soft X-rays and Low-Energy Electrons  
  **Elahe Alizadeh, Canada**

**17:15**

- **SP069.2** - Cherenkov emission dosimetry for electron beam radiotherapy: a Monte Carlo feasibility study of absolute dose prediction  
  **Yana Zlateva, Canada**

**17:30**

- **SP069.3** - Detection of melanoma through image recognition and artificial neural networks  
  **Cristofer Marin, Mexico**

**17:45**

- **SP069.4** - Clinical Implementation of an Intraoperative Radiotherapy Program  
  **Muthana Al-Ghazi, United States**

**18:00**

- **SP069.5** - Performance of a Back-etched Silicon Detector Array Designed to Monitor Each Synchrotron Generated X-ray Beam in Microbeam Radiation Therapy  
  **Michael Lerch, Australia**

**18:15**

- **SP069.6** - Dynamic Mechanical Characterization of a Poly(vinyl alcohol) Breast Palpation Phantom  
  **Gabriel Rodriguez, United States**

**17:00**

- **SP070.1** - Optimal Pixelated Crystal for a Molecular SPECT Scanner: A GATE Monte Carlo Study  
  **Mohammad Reza Ay, Iran**

**17:15**

- **SP070.2** - Spinning Knife-Edge Slit-Hole: a Novel Collimation for High-Sensitivity Molecular SPECT  
  **Mohammad Reza Ay, Iran**

**17:30**

- **SP070.3** - Simultaneous estimation of the radioactivity distribution and electron density map from scattered coincidences in PET: A project overview  
  **Hongyan Sun, Canada**
17:45  SP070.4 - Generating a four-class attenuation map for MR-based attenuation correction of PET data in pelvis region using an automatic segmentation protocol
        Hamidreza Saligheh Rad, Iran

18:00  SP070.5 - Extracting PET activity distribution from scattered coincidences for non-ideal energy resolutions by modeling the probabilities of annihilation positions within a generalized scattering reconstruction algorithm
        Hongyan Sun, Canada

18:15  SP070.6 - Quantitative Functional Imaging with Hybrid PET-CT Via Improved Kinetics Modeling: Application to 18F-Fluorocholine PET Imaging of Prostate Cancer
        Adam Blais, Canada

18:30  SP070.7 - Simultaneous Measurement of Perfusion and Hypoxia in Pancreatic Cancers with Dynamic PET-FAZA Imaging
        Ivan Yeung, Canada

17:00  SP071.1 - Optimization of Crosslinking Parameters for Biosynthetic Poly(vinyl-alcohol)-Tyramine Hydrogels
        Penny Martens, Australia

17:15  SP071.2 - A synchrotron radiation microtomography study of wettability and swelling of nanocomposite Alginate/Hydroxyapatite scaffolds for bone tissue engineering
        Francesco Brun, Italy

17:30  SP071.3 - ECM production and distribution in regenerated cartilage tissue cultured under traction loading.
        Yoshinori Sawae, Japan

17:45  SP071.4 - Alginate encapsulation: a solution for controlled infiltration of cells within artificial fiber constructs
        Birgit Glasmacher, Germany

18:00  SP071.5 - Biominalerization and In vivo-Compatibility of LnPO4 Nanorods with Enhanced MR and Luminescence Imaging
        Zhongbing Huang, People’s Republic of China

18:15  SP071.6 - Additive Manufacturing for Creating Multifunctional Tissue Engineering Scaffolds
        Min Wang, Hong Kong

18:30  SP071.7 - Comparison of different dosage of ion implantation on electrospun collagen fibers to improve aqueous stability
        Nisha Sharma, Canada
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<td>18:00</td>
<td>SP073.4 - High-Dexterity Telemanipulation Robot for Minimally Invasive Surgery</td>
<td>Sebastian Schlegel, Germany</td>
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<td>18:15</td>
<td>SP073.5 - Integrated Sensors for a Single-Incision Laparoscopic Instrument</td>
<td>Simon Albrecht, Germany</td>
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<td>18:30</td>
<td>SP073.6 - Development and Evaluation of an Open-Source 3D Virtual Simulator</td>
<td>Stewart McLachlin, Canada</td>
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<td>18:45</td>
<td>SP073.7 - A Robotic System with Ultrasound Imaging for Patient Setup and</td>
<td>Kai Ding, United States</td>
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<td>Monitoring during Fractionated Radiotherapy</td>
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<td>17:00</td>
<td>SP074.1 - Towards Dual Respiratory and Cardiac Gated Radiotherapy</td>
<td>Kirpal Kohli, Canada</td>
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<td>17:15</td>
<td>SP074.2 - A mobile terminal to follow-up the evolution of chronic diseases</td>
<td>Hector Torres, Cuba</td>
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<td>17:30</td>
<td>SP074.3 - Relationship between the tuning characteristics of stimulus</td>
<td>Qin Gong, People’s Republic of China</td>
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<td>frequency otoacoustic emissions and behavioral tests at moderate levels</td>
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<td>17:45</td>
<td>SP074.4 - An Axon Mimic for Medical Electrode Tests</td>
<td>Malcolm Latorre, Sweden</td>
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<tr>
<td>18:00</td>
<td>SP074.5 - Evaluation the Accuracy of Oscillometric Blood Pressure Measurement</td>
<td>Haiyan Xiang, People’s Republic of China</td>
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<td>According to the AAMI SP10</td>
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<td>18:15</td>
<td>SP074.6 - PEMF effects on chondrocyte cellularity and gene expression of</td>
<td>Fernando Sotelo-Barroso, Mexico</td>
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<td></td>
<td>the rat distal femoral metapysseal articular cartilage.</td>
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<td>18:45</td>
<td>SP074.7 - Classification of responders versus non-responders to TDCS by</td>
<td>伊斯 Nejadgholi, Canada</td>
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<td>analyzing voltage between anode and cathode during treatment session</td>
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<td>17:15</td>
<td>SP075.1 - Kin-Yin Cheung, Hong Kong</td>
<td>J. James Gordon, United States</td>
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<td>SP075.2 - Adriana Valazquez Berumen, Switzerland</td>
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<td>SP075.3 - Joanna Izewska, Austria</td>
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<td>SP075.4 - Simone Kodlulovich, Brazil</td>
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<td>SP075.5 - Ahmed Ibn Seddik, Morocco</td>
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<td>SP075.6 - Yimin Hu, People’s Republic of China</td>
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<td>17:15</td>
<td>SP076.1 - Radiation Pneumonitis and Low Dose Radiation Hypersensitivity</td>
<td>Araceli Gago Arias, Chile</td>
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<td>SP076.2 - Dose distribution optimization methods based on biological</td>
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<td>parameters: Impact of the objective function and reoxygenation and</td>
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<td>17:45</td>
<td>SP076.3 - Healthy Tissues in The Present of Gold Nano Particles against</td>
<td>Somayeh Asadi, Iran</td>
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<td>103Pd and 125I: Monte Carlo study</td>
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<td>18:00</td>
<td>SP076.4 - Monte-Carlo model development for evaluation of current</td>
<td>Leyla Moghaddasi, Australia</td>
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<td>clinical target volume definitions for Glioblastoma using Boron Neutron</td>
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<td>Capture Therapy</td>
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<td>18:15</td>
<td>SP076.5 - Exploring RBE Dependence on Proton Track Angular Incidence</td>
<td>Piotr Pater, Canada</td>
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<td>18:30</td>
<td>SP076.6 - DNA Damage Induced in Glioblastoma Cells by I-131: A Comparison</td>
<td>Fereshteh Koosha, Iran</td>
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<td>between Experimental Data and Monte Carlo Simulation</td>
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**SESSIONS**

- **SESSION TIME:** 17:00 – 19:00
- **SESSION ROOM:** 713A
- **SESSION TRACK:** TRACK 17: EDUCATIONAL AND PROFESSIONAL ACTIVITIES
- **SESSION NAME:** SP075 – SPECIAL SESSION: APPROPRIATE TECHNOLOGY IN IMAGING AND RADIOTHERAPY – FUNCTIONALITY AND SAFETY ASPECTS
- **SESSION CHAIR(S):** Kin-Yin Cheung, Hong Kong, Adriana Velazquez Berumen, Switzerland
18:45 SP076.7 - The stochastic extension of the Linear Quadratic model: Taking into account the uncertainty of radiobiological parameters.  
*Moises Saez-Beltran, Spain*

**SESSION TIME:** 17:00 – 19:00  
**SESSION ROOM:** 713B  
**SESSION TRACK:** PRESIDENT’S CALL  
**SESSION NAME:** SP077 – RADIATION ONCOLOGY  
**SESSION CHAIR(S):** RYAN SMITH, AUSTRALIA  
PAUL KEALL, AUSTRALIA

17:00 SP077.1 - Assessment of CT to CBCT Non-Rigid Image Registration in Prostate Cancer Radiation Therapy  
*Pawel Siciarz, Canada*

17:15 SP077.2 - Use of flattening filter free photon beams for off-axis targets in conformal arc stereotactic body radiation therapy  
*Ashley Smith, United States*

17:30 SP077.3 - Dosimetric evaluation of the interplay effect for non-gated VMAT treatment of moving targets with high dose rate FFF beams  
*Ashley Smith, United States*

17:45 SP077.4 - In vivo Image Guided Brachytherapy Verification (IGBV) in high dose rate prostate brachytherapy. Initial Clinical Experience  
*Ryan Smith, Australia*

18:00 SP077.5 - Electronic Portal Imaging Device Dosimetry for IMRT: a Review on Commercially Available Solutions  
*Omemh Bawazeer, Australia*

18:15 SP077.6 - The Nano-X Radiotherapy Machine: Lean Innovation Transforming Global Access to Cancer Care  
*Paul Keall, Australia*

18:30 SP077.7 - Development of an MR and CT compatible non-invasive temperature based optical fiber respiration sensor for use in radiotherapy  
*Ashley Smith, United States*
Wednesday, June 10 2015

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<td>TRACK 04: RADIATION ONCOLOGY</td>
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<td>SESSION NAME:</td>
<td>SP078 – BRACHY THERAPY: PART 2</td>
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<td>JUSTIN SUTHERLAND, CANADA MICHELLE HILTS, CANADA</td>
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10:30 SP078.1 - The Effect of Bladder Preparation on Motion of Organs at Risk in High Dose Rate Gynecological Brachytherapy
Parisa Sadeghi, Canada

10:45 SP078.2 - Retrospective Monte Carlo dose calculations for permanent implant prostate brachytherapy using 125I
Justin Sutherland, Canada

11:00 SP078.3 - Combining doses for prostate cancer patients receiving external beam radiotherapy and a HDR brachytherapy boost: Dosimetric parameters and dose-surface maps for patients with and without late rectal bleeding
Calyn Moulton, Australia

11:15 SP078.4 - Implementation of Permanent Breast Seed Implants in British Columbia: Innovation and Early Results
Michelle Hills, Canada

11:30 SP078.5 - Estimation of α/β for late rectal bleeding via minimum dosimetric differences for prostate cancer patients treated with external beam radiotherapy versus a HDR brachytherapy boost after external beam radiotherapy
Calyn Moulton, Australia

11:45 SP078.6 - Failure Mode and Effects Analysis (FMEA) for improving quality assurance for Image-Guided High Dose Rate (HDR) brachytherapy
Shada Wadi-Ramahi, Saudi Arabia

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<td>SESSION TRACK:</td>
<td>TRACK 04: RADIATION ONCOLOGY</td>
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<tr>
<td>SESSION NAME:</td>
<td>SP079 – MOTION MANAGEMENT: PART 1</td>
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<td>AMIT SAWANT, UNITED STATES TAE SUK SUH, REPUBLIC OF KOREA</td>
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10:30 SP079.1 - Feasibility of respiratory gated radiotherapy using real-time positron emission tracking
Marc Chamberland, Canada

10:45 SP079.2 - The first kilovoltage intrafraction monitoring trial for gated prostate radiotherapy: Accuracy and dosimetric results
Prabhjot Juneja, Australia

11:00 SP079.3 - The impact of audio-visual biofeedback with a patient-specific guiding waveform on respiratory motion management: Comparison of two different respiratory management systems
Yujiro Nakajima, Japan

11:15 SP079.4 - Tracking Accuracy for Robotic Radiosurgery in the Liver
Jeff Winter, Canada

11:30 SP079.5 - Deep Inspiration breath hold lung SBRT-Can Flattening Filter Free beam based VMAT combined with gated CBCT facilitate precise treatment delivery with sufficient dosimetric accuracy?
Vallinayagam shanmuga subramanian, India

11:45 SP079.6 - Feasibility of markerless tumor tracking by sequential dual-energy fluoroscopy on a clinical tumor tracking system
Jennifer Dhont, Belgium

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<td>SP080 – OTHER RADIATION ONCOLOGY: PART 2</td>
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<td>KEVIN ALEXANDER, CANADA CSABA PINTER, CANADA</td>
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10:30 SP080.1 - Estimation of the second cancer risk from adjuvant radiation therapy for stage I seminoma of the testis
Michalis Mazonakis, Greece
10:45  SP080.2 - 3D Slicer Gel Dosimetry Analysis: Validation of the Calibration Process
       **Kevin Alexander, Canada**

11:00  SP080.3 - Whole body interactive 3D visualisation of both the benefits and risks of radiotherapy for common cancers: a tool to guide decision making
       **David Edmunds, United Kingdom**

11:15  SP080.4 - A Software App for Radiotherapy with In-situ Dose-painting using high Z nanoparticles
       **Mohammed Jermoumi, United States**

11:30  SP080.5 - Performing radiation therapy research using the open-source SlicerRT toolkit
       **Csaba Pinter, Canada**

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<td>SESSION TRACK:</td>
<td>TRACK 05: DOSIMETRY AND RADIATION PROTECTION</td>
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<td>SESSION NAME:</td>
<td>SP081 – VALIDATION AND VERIFICATION OF THERAPY DOSE DELIVERY: PART 1</td>
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<td>SESSION CHAIR(S):</td>
<td>GEOFFREY IBBOTT, UNITED STATES SAADAT ALI, PAKISTAN</td>
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10:30  SP081.1 - Validation of Eclipse Treatment planning system Commissioning using Octavius 4D
       **Paul Ravindran, BN**

10:45  SP081.2 - Evaluation of Electron Beam Algorithm of Prowess Panther Planning System for Customized Electron Cutouts of different Sizes
       **Saadat Ali, Pakistan**

11:00  SP081.3 - Standard Measurements and MU Calibrations for Carbon Beam Therapy of SAGA-HIMAT
       **Manabu Mizota, Japan**

11:15  SP081.4 - 3D 'Bridge' Silicon Micrdosimeter for RBE Studies in 12C Radiation Therapy
       **Michael Lerch, Australia**

11:30  SP081.5 - Characterization of a ZnSe(Te) inorganic scintillator for scintillation dosimetry applications
       **Patricia Duguay-Drouin, Canada**

11:45  SP081.6 - Determination of correction factors for the use of ionization chambers in the presence of magnetic fields
       **Geoffrey Ibbott, United States**

10:30  SP081.1 - Aging Process: Central Pressure Waveform Loss of Complexity
       **Ricardo Armentano, Argentina**

10:45  SP081.2 - Changes in COP scaling behaviour in quiet stance after mTBI
       **Coren Walters-Stewart, Canada**

11:00  SP081.3 - Tracking algorithm of spiral wave core in a cardiac tissue using Hilbert transform and phase variance analysis
       **Naoki Tomii, Japan**

11:15  SP081.4 - Mapping the Fractal Dimension of Arterial Pressure
       **Leandro Cymberknop, Argentina**

11:30  SP081.5 - Moving deterended fluctuation analysis for inspecting time evolution of scale invariant structures in biomedical signals
       **Hamidreza Saghiri, Canada**

10:30  SP083.1 - Design of a braking simulator for the assessment of lower limb fracture recovery
       **Andrew O'Connell, Canada**

10:45  SP083.2 - Quantitative measurement of subtalar joint passive stiffness in children with cerebral palsy
       **Wei Chen, People's Republic of China**

11:00  SP083.3 - Differences in the parameters of impedance between knees with and without meniscal injury in female athletes
       **Marysol Garcia-Pérez, Mexico**

11:15  SP083.4 - Development and evaluation of a mechanical stance controlled orthotic knee joint with stance flexion utilizing a timing based control strategy flexion
       **Hankyu Lee, Canada**
SESSION TIME: 10:30 – 12:00
SESSION ROOM: 717B
SESSION TRACK: TRACK 12: MEDICAL DEVICES
SESSION NAME: SP084 – NEW DESIGNING IDEAS
SESSION CHAIR(S): ZIWEI HUANG, AUSTRALIA
FRED HOSEA, UNITED STATES

10:30 SP084.1 - Soprano - Nasogastric Tube Insertion Guide
Hwa Liang Leo, Singapore

10:45 SP084.2 - High Output Impedance Current-Conveyor Oscillator for Electrical Bioimpedance Applications
Pedro Bertemes-Filho, Brazil

11:00 SP084.3 - Healthcare Device for People Affected by Dementia
Sara Velez, Colombia

11:15 SP084.4 - Wide Field-of-View Fluorescence Imaging with Curved Sample Chamber for Point-of-Care CD4 Test
Kyunghoon Kim, Republic of Korea

11:30 SP084.5 - Moisture effect on antibody longevity on paper substrate and the role of hydroxyl groups in the concept of 'bio-compatible paper'
Ziwei Huang, Australia

11:45 SP084.6 - An Interoperability Maturity Roadmap for Medical Device Design and Alignment with IT Systems
Fred Hosea, United States

SESSION TIME: 10:30 – 12:00
SESSION ROOM: 717A
SESSION TRACK: TRACK 18: GENDER, SCIENCE AND TECHNOLOGY
SESSION NAME: SP085 – WOMEN IN MEDICAL PHYSICS: CURRENT STATUS
SESSION CHAIR(S): KRISTY BROCK, UNITED STATES
PAOLO RUSSO, ITALY

10:30 SP085.1 - Women in medical physics: Current status Results from IOMP survey
Virginia Tsapakis, Greece

10:45 SP085.2 - Is there a ‘Leaky Pipeline’ for Women in Clinical Medical Physics in Canada?
Wendy Smith, Canada

11:00 SP085.3 - Women in Medical field in Brazil: gender equality?
Simone Renha, Brazil

11:15 SP085.4 - Women Biomedical Engineers as Consultants in Clinical Engineering Field in Latin American Countries: Case of Study
Claudia Cárdenas Alanís, Mexico

SESSION TIME: 10:30 – 11:45
SESSION ROOM: 715A
SESSION TRACK: TRACK 19: BIOPHYSICS AND MODELLING
SESSION NAME: SP086 – BIOLOGICAL EFFECTS OF IONIZING RADIATION
SESSION CHAIR(S): SHIRLEY LEHNERT, CANADA
WILFRED NGWA, UNITED STATES

10:30 SP086.1 - Sensitization of DNA to Ionizing Radiation by Platinum Chemotherapeutic Drugs
Mohammad Rezaee, Canada

10:45 SP086.2 - Lymphoma and Choroidal Melanoma cells in the presence of gold nanoparticles: In-Vitro study
Somayeh Asad, Iran

11:00 SP086.3 - Multiple Code Comparisons of Proton Interactions in the Presence of Gold Nanoparticles in the Human Eye
Mohammad Faraz Samavat, Iran

11:15 SP086.4 - An in-vitro method for calibrating the gamma-H2AX DNA double strand break focus assay in blood lymphocytes for radionuclide therapy
Uta Eberlein, Germany

11:30 SP086.5 - Dose enhancement during concomitant chemoradiotherapy using FDA approved concentrations of carboplatin and oxaliplatin nanoparticles
Wilfred Ngwa, United States

SESSION TIME: 10:30 – 12:15
SESSION ROOM: 713B
SESSION TRACK: PRESIDENT’S CALL
SESSION NAME: SP087 – EDUCATIONAL AND PROFESSIONAL ACTIVITIES: PART 2
SESSION CHAIR(S): FRANCO SIMINI, URUGUAY

10:30 SP087.1 - The potential role of IFMBE in improving the state of medical equipment in developing countries
Andrei Linnenbank, Netherlands

10:45 SP087.2 - Biomedical Engineering Education through Outreach Programs in Hospitals
Franco Simini, Uruguay

11:00 SP087.3 - Clinical Engineer: a health professional to recognize
Paolo Lago, Italy

11:15 SP087.4 - “Rehabilitation Engineering: Designing for Ability” - A summer outreach course for attracting talented high school students to the rehabilitation engineering field
Vicki Komisar, Canada

11:30 SP087.5 - A Novel Approach to Train Biomedical Engineers in a Ugandan Setting
Robert Ssekitoleko, Uganda
### Wednesday, June 10, 2015

#### 11:45 AM - 12:00 PM

**SP087.6** - A Health Information Technology Management Course for Brazilian Clinical Engineers  
*Fernando Andrade, Brazil*

**SP087.7** - A Successful High School Science Mentorship Program: Students on the Beamlines at the Canadian Light Source  
*Denise Miller, Canada*

#### 14:15 PM - 14:30 PM

**SP089.4** - 3D numerical investigation of the effects of altered mechanical loading during skeletal growth  
*Kamel Madi, United Kingdom*

**SP089.5** - Effects of changing small airway mechanics and inspiratory flow waveforms on pulmonary ventilation: a modeling study  
*Tianya Liu, People’s Republic of China*

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#### 13:30 PM - 14:45 PM

**SESSION TIME:** 13:30 – 14:45  
**SESSION ROOM:** 718A  
**SESSION TRACK:** TRACK 01: IMAGING  
**SESSION NAME:** SP088 – COMPUTER AIDED DIAGNOSIS  
**SESSION CHAIR(S):** Harini Veeraraghavan, United States  
Luis Vilcahuaman, Peru

- **13:30** SP088.1 - Automatic Analysis of Plantar Foot Thermal Images in at-Risk Type II Diabetes by Using an Infrared Camera  
  *Luis Vilcahuaman, Peru*

- **13:45** SP088.2 - Computer Assisted Diagnosis of Sclerotic Bone Lesions from Dual Energy CT  
  *Harini Veeraraghavan, United States*

- **14:00** SP088.3 - Mutual Information Based Template Matching Method for the Computer Aided Diagnosis of Alzheimer Disease  
  *Albert Guvenis, Turkey*

- **14:15** SP088.4 - Development of an Anatomical Measurement and Data Analysis Tool Based on the Kinect Sensor for Physical Rehabilitation Applications  
  *David Duarte-Dyck, Mexico*

- **14:30** SP088.5 - Quantitative CT Assessment of Vertebral Fracture Severity  
  *Curtis Caldwell, Canada*

---

#### 13:30 PM - 15:00 PM

**SESSION TIME:** 13:30 – 15:00  
**SESSION ROOM:** 716A  
**SESSION TRACK:** TRACK 03: BIOMECHANICS AND ARTIFICIAL ORGANS  
**SESSION NAME:** SP089 – TISSUE MODELLING  
**SESSION CHAIR(S):** Yubo Fan, People’s Republic of China  
Jos Vander Sloten, Belgium

- **13:30** SP089.1 - The protective effect of the eyelid on ocular injuries in blunt trauma  
  *Xiaoyu Liu, People’s Republic of China*

- **13:45** SP089.2 - A Tale of Two Tendons: The Tradeoff between Strength and Fatigue Resistance  
  *Samuel Veres, Canada*

- **14:00** SP089.3 - Dynamic plantar pressure simulation integrated in case specific multibody gait simulations  
  *Jos Vander Sloten, Belgium*

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#### 13:30 PM - 14:30 PM

**SESSION TIME:** 13:30 – 14:30  
**SESSION ROOM:** 717B  
**SESSION TRACK:** TRACK 06: NEW TECHNOLOGIES IN CANCER RESEARCH AND TREATMENT  
**SESSION NAME:** SP091 – NANOTECHNOLOGY IN RADIATION THERAPY AND IMAGING: PART 2  
**SESSION CHAIR(S):** Loredana Marcu, Romania  
MARC ANDRE FORTIN, CANADA

- **13:30** SP091.1 - KEYNOTE: New Technologies in Cancer Research and Treatment  
  *Eva Bezak, Australia*

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#### 13:30 PM - 14:00 PM

**SESSION TIME:** 13:30 – 14:00  
**SESSION ROOM:** 701B  
**SESSION TRACK:** TRACK 05: DOSIMETRY AND RADIATION PROTECTION  
**SESSION NAME:** SP090 – QA MEASUREMENTS FOR THERAPY DOSIMETRY  
**SESSION CHAIR(S):** Eyad Alhakeem, Canada

- **13:30** SP090.1 - Response Characteristics of a Large-Area Ion Chamber with Various Radiotherapy Beams  
  *Makan Farrokhkish, Canada*

- **13:45** SP090.2 - Very small circular fields output factors: Comparison of MC calculations, EBT3 film and micro-diamond measurements  
  *Eyad Alhakeem, Canada*

- **14:00** SP090.3 - Investigation of pass rate variability in ArcCheck measurements  
  *Harald Keller, Canada*

- **14:15** SP090.4 - Characterization and image quality evaluation for a clinical 2.5 MV in-line portal imaging beam  
  *Jose Villarreal-Barajas, Canada*

- **14:30** SP090.5 - Usefulness of the commercialized EPID based dMLC QA tool for Elekta Agility MLC  
  *Samju Cho, Republic of Korea*

- **14:45** SP090.6 - In-vivo and pre-treatment quality assurance software validation and verification  
  *Cinzia Talamonti, Italy*
14:00 SP091.2 - Enhanced uptake of gold nanoparticles coated with polyethylene glycol
Charmainne Cruje, Canada

14:15 SP091.3 - Nuclear targeting of gold nanoparticles for improved therapeutics
Celina Yang, Canada

SESSION TIME: 13:30 – 14:45
SESSION ROOM: 717A
SESSION TRACK: TRACK 11: NEUROENGINEERING, NEURAL SYSTEMS
SESSION NAME: SP092 – NEURAL SIGNAL PROCESSING: PART 1
SESSION CHAIR(S): BERJ BARDAKJIAN, CANADA

13:30 SP092.1 - Delta-Modulated High Frequency Oscillations Linked to Pathological Brain in Female Mecp2-Deficient Mice
Sinisa Colic, Canada

13:45 SP092.2 - Contrast between Spectral and Connectivity Features for Electroencephalography based Authentication
Chungmin Han, Republic of Korea

14:00 SP092.3 - EMG artifact removal using ICA-based dipole distribution from scalp EEG of epileptic patients
Chunsheng Li, Canada

14:15 SP092.4 - Power based features of epileptic iEEG rhythms to demarcate brain regions for resection
Joshua Dian, Canada

14:30 SP092.5 - The alpha rhythm in a rodent model of epilepsy is enhanced when adenosine receptors are blocked
Vanessa Breton, Canada

SESSION TIME: 13:30 – 14:15
SESSION ROOM: 715A
SESSION TRACK: TRACK 19: BIOPHYSICS AND MODELLING
SESSION NAME: SP094 – BIOLOGICAL MODELLING
SESSION CHAIR(S): IULIANA TOMA-DASU, SWEDEN

13:30 SP094.1 - Finite Element Analysis of Dynamics of Two Microbubbles Under Ultrasonic Field
Xiao-hui Qiu, People's Republic of China

13:45 SP094.2 - The value of individual measurements for tumor control probability predictions in head and neck patients
Iuliana Toma-Dasu, Sweden

14:00 SP094.3 - A Novel Technique for Measuring Electrical Permittivity of Biological Tissues at Low Frequencies (100 KHz or lower)
Seyyed Hesabgar, Canada

SESSION TIME: 13:30 – 15:15
SESSION ROOM: 713B
SESSION TRACK: PRESIDENT’S CALL
SESSION NAME: SP095 – BIOSIGNAL PROCESSING & PULMONARY & RESPIRATORY
SESSION CHAIR(S): VENKATESHWARLA RAJU, INDIA NATAŠA RELJIĆ, UNITED STATES

13:30 SP095.1 - Power Spectral Density Analysis of Tonic Electrodermal Activity for Sympathetic Arousal Assessment
Hugo Posada-Quintero, United States

13:45 SP095.2 - Multivariate Analysis Classification Based on Multi-Channel EMG Multisite Microelectrode Recording, Principal Component Analysis, and Hierarchical Clustering
Venkateshwarla Raju, India

14:00 SP095.3 - Blanket Fractal Dimension for Estimating Tidal Volume from the Smartphone Acquired Tracheal Sounds: Preliminary Results
Natasa Reljin, United States

13:45 SP093.2 - Global Medical Devices Pricing Survey
Adriana Velazquez Berumen, Switzerland

14:00 SP093.3 - Methodology to evaluate physical environment parameters in healthcare services
Saide Calli, Brazil

14:15 SP093.4 - HB-HTA method for the evaluation of exclusive Medical Devices
Paolo Lago, Italy

14:30 SP093.5 - Applying Heuristic Evaluation on Medical Devices User Manuals
Fernando Andrade, Brazil

13:30 SP091.2 - Enhanced uptake of gold nanoparticles coated with polyethylene glycol
Charmainne Cruje, Canada

14:15 SP091.3 - Nuclear targeting of gold nanoparticles for improved therapeutics
Celina Yang, Canada

SESSION TIME: 13:30 – 14:45
SESSION ROOM: 717A
SESSION TRACK: TRACK 11: NEUROENGINEERING, NEURAL SYSTEMS
SESSION NAME: SP092 – NEURAL SIGNAL PROCESSING: PART 1
SESSION CHAIR(S): BERJ BARDAKJIAN, CANADA

13:30 SP092.1 - Delta-Modulated High Frequency Oscillations Linked to Pathological Brain in Female Mecp2-Deficient Mice
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Joshua Dian, Canada

14:30 SP092.5 - The alpha rhythm in a rodent model of epilepsy is enhanced when adenosine receptors are blocked
Vanessa Breton, Canada
14:15 SP095.4 - A Robust and Realistic Framework for Clinical Classification of Myocardial Infarction
Yasin Mamatjan, Canada

14:30 SP095.5 - A Mother Wavelet Selection Algorithm for Respiratory Rate Estimation from Photopletysmogram
Dan Guo, People's Republic of China

14:45 SP095.6 - Mathematical assessment of variability in respiratory airflow patterns
Saravana Raman, United States

15:00 SP095.7 - Spectral Analysis of Respiratory and Cardiac Signals Using Doppler Radar
Philip Tworzydlo, Canada

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15:00 SP095.7 - Spectral Analysis of Respiratory and Cardiac Signals Using Doppler Radar
Philip Tworzydlo, Canada

15:00 SP097.1 - Ischemia-time dependent CBF threshold for infarction determined in a porcine model of stroke using CT Perfusion and F-18 FFMZ PET imaging
Eric Wright, Canada

15:15 SP097.2 - Characterization of scatter factors in thyroid studies using a pinhole collimator by Monte Carlo Simulation.
Aley Palau, Cuba

15:30 SP097.3 - Fluid Quantification Using Temporal Subtraction: Comparing Single to Dual-Energy Digital Chest Radiography
Shailaja Sajja, Canada

15:45 SP097.4 - Quantitative low-kVp CT angiography in carotid artery imaging
Tianye Niu, People's Republic of China

16:00 SP097.5 - Evaluation of the ΔV Ventilation Calculation Method Using In Vivo XeCT Ventilation Data
Geoffrey Zhang, United States

16:15 SP097.6 - Predicting Survival Outcomes of Post-Treatment Glioma Patients by Quantification of Viable Tumour Volume on CMET/FLT PET and MRI.
Christopher Leatherday, Australia

16:30 SP097.7 - A Novel Method for Lung’s Air Volume Estimation in Exhalation and Inhalation Phases From CT Images
Elham Karami, Canada

16:45 SP097.8 - High-resolution micro-CT protocol for assessing lung ventilation and perfusion: image subtraction versus multi-energy analysis
Nancy Ford, Canada

15:00 SP096.1 - Live-cell Raman microspectroscopy to differentiate between normal and malignant ovarian surface epithelial cells
Santa Borel, Canada

15:15 SP096.2 - Quantitative image analysis of fluorescence endomicroscopy video sequences for mesenchymal stem cell tracking in regenerative lung treatment
Jessica Perez, Canada

15:30 SP096.3 - Shape-Based Diffuse Optical Tomography for Reconstruction of Photothermal Lesions in Prostate Focal Therapy
Robert Weersink, Canada

15:45 SP096.4 - Transrectal diffuse optical tomography to monitor photocogulation during interstitial photothermal therapy of focal prostate cancer
Robert Weersink, Canada

16:00 SP096.5 - The first in vivo, optical images of neuroblasts migrating away from the subventricular zone deep in mouse brain reveal two patterns of migration: implications for future therapeutic use
Teresa Murray, United States

15:00 SP098.1 - Finite Element Analysis of Abdominal Aortic Aneurysms to Predict Risk of Rupture - The Role of the Thrombosis Thicknesses.
Omar Altwijri, Saudi Arabia

15:15 SP098.2 - High-Frequency Ultrasonic Measurement of Ischemia and Revascularization in Mice with Ligated Femoral Arteries
Andrea Quiroz, United States

15:30 SP098.3 - Prevention of Thrombogenesis with a new Silane Based Adlayer on Commonly used Polymers in Medical Equipment Components
Kiril Fedorov, Canada

15:45 SP098.4 - Nature’s Own ’Smart’ Biological Material to Inspire Next-Generation Biomaterials
Joanna Ng, Australia
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<th>Session Title</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>16:00</td>
<td>SP098.5 - Vascular endothelial cell adhesion and hemocompatibility of biochemically- and topographically-modified poly(vinyl alcohol)</td>
<td>Evelyn Yim, Singapore</td>
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<tr>
<td>16:15</td>
<td>SP012.1 - Effects of PEMF on Neuroblastoma Cells Previously Exposed to Antidepressants</td>
<td>Teodoro Cordova-Fraga, Mexico</td>
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<tr>
<td>16:30</td>
<td>SP012.2 Porous bio-Sic ceramics from wood: approaching new medical implants</td>
<td>Birgit Glasmacher, Germany</td>
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**SESSION TIME:** 15:00 – 16:30  
**SESSION ROOM:** 716A  
**SESSION TRACK:** TRACK 05: DOSIMETRY AND RADIATION PROTECTION  
**SESSION NAME:** SP099 – SPECIAL SESSION: CURRENT SITUATION OF DOSIMETRY IN RADIOLOGY AND RADIATION PROTECTION  
**SESSION CHAIR(S):** MADAN REHANI, UNITED STATES

**Speakers:**  
SP099.1 - Madan Rehani, United States  
SP099.2 - Pablo Jimenez, United States  
SP099.3 - Joanna Izewska, Austria

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<td>15:00</td>
<td>SP101.1 - Biological Targets of Seizure Therapy in Major Depressive Disorder using EEG Microstate Analysis</td>
<td>Sravya Atluri, Canada</td>
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<tr>
<td>15:15</td>
<td>SP101.2 - Magnetic Seizure Therapy for Treatment Resistant Depression: Insights from TMS-EEG Measures</td>
<td>Yinming Sun, Canada</td>
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<tr>
<td>15:30</td>
<td>SP101.3 - Deep Transcranial Magnetic Stimulation Using Figure-of-Eight and Halo Coils</td>
<td>Shoogo Ueno, Japan</td>
</tr>
<tr>
<td>15:45</td>
<td>SP101.4 - Optogenetic Stimulation and Wireless Cortical Recording in Modulating Motor Plasticity and Performance of Free-Moving Rat</td>
<td>Chun-Wei Wu, Chinese Taipei</td>
</tr>
<tr>
<td>16:00</td>
<td>SP101.5 - Identification of calf muscles response to functional electrical stimulation as linear models</td>
<td>Hossein Rouhani, Canada</td>
</tr>
<tr>
<td>16:15</td>
<td>SP101.6 - Establishment of Real Human Head Conductivity Model with Ventricular Structure used in TMS Simulation Study</td>
<td>Tao Yin, People's Republic of China</td>
</tr>
<tr>
<td>16:30</td>
<td>SP101.7 - Study on electric field in real head model induced by H-coil</td>
<td>Tao Yin, People's Republic of China</td>
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</table>

**SESSION TIME:** 15:00 – 17:00  
**SESSION ROOM:** 715A  
**SESSION TRACK:** TRACK 13: INFORMATICS IN HEALTH CARE AND PUBLIC HEALTH  
**SESSION NAME:** SP102 – CLINICAL INFORMATION SYSTEMS AND DECISION SUPPORT  
**SESSION CHAIR(S):** LEANDRO PECCHIA, UNITED KINGDOM  
JORGE DOS SANTOS, GREECE

**Speakers:**  
SP102.1 - A Multi-Attribute Decision Theory Approach to Radiation Dose De-escalation in Oropharyngeal Cancer | Wade Smith, United States

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<td>15:00</td>
<td>SP100.1 - A Contribution to the Establishment of Diagnostic Reference Levels in Computed Tomography in Brazil</td>
<td>Ana Marques Da Silva, Brazil</td>
</tr>
<tr>
<td>15:15</td>
<td>SP100.2 - Canada’s Computed Tomography (CT) Survey: Overview and Moving Toward Establishment of DRLs</td>
<td>Graeme Wardlaw, Canada</td>
</tr>
<tr>
<td>15:30</td>
<td>SP100.3 - Review UAE Dental Radiology Dosimetry Results for National DRLs Establishment</td>
<td>Fatima Al Kaabi, United Arab Emirates</td>
</tr>
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<td>15:45</td>
<td>SP100.4 - Should restrictions on the patients’ behavior during the radiopharmaceuticals incorporation and after 99mTc bone scans be imposed?</td>
<td>Josep Marti-Climent, Spain</td>
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**SESSION TIME:** 15:00 – 16:45  
**SESSION ROOM:** 717A  
**SESSION TRACK:** TRACK 11: NEUROENGINEERING, NEURAL SYSTEMS  
**SESSION NAME:** SP101 – STIMULATION AND MONITORING  
**SESSION CHAIR(S):** JOSE ZARIFFA, CANADA

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|-------|-----------------------------------------------------|
| 15:30 | SP102.3 - Substituting human MRI-observed tumor length with automated tumor length calculations for prediction model application  
*Johan Van Soest, Netherlands*
| 15:45 | SP102.4 - An Artifact Detection Framework for Clinical Decision Support Systems  
*Shermeen Nizami, Canada*
| 16:00 | SP102.5 - Design and implementation of an IT management system for a Medical Physics Department activity workflows  
*Massimiliano Paolucci, Italy*
| 15:15 | SP102.6 - Differential Feature Space in Mean Shift Clustering for Automated Melanoma Assessment  
*Javier Eslava, United States*
| 16:15 | SP102.7 - Fuzzy-state machine for Triage priority classifier in emergency room  
*Emmanuel Sánchez Velarde, Mexico*
| 16:45 | SP102.8 - An Australian mining boom: development of an Australian radiotherapy datamining network for rapid learning from clinical data to support improved clinical decisions  
*David Thwaites, Australia*

**SESSION TIME:** 15:00 – 16:15  
**SESSION ROOM:** 701A  
**SESSION TRACK:** TRACK 16: CLINICAL ENGINEERING, CLINICAL PHYSICS, AND PATIENT SAFETY  
**SESSION NAME:** SP103 - HEALTH TECHNOLOGY ASSESSMENT AND COST EFFECTIVE TECHNOLOGIES FOR DEVELOPING COUNTRIES AND USABILITY AND HUMAN FACTORS ENGINEERING FOR MEDICAL DEVICES AND SYSTEM DESIGN: PART 2  
**SESSION CHAIR(S):** JAMES WEAR, UNITED STATES

| Time  | Session 
|-------|-----------------------------------------------------|
| 17:00 | SP104.1 - Monte Carlo simulation of interventional cardiac scenarios using a newborn hybrid phantom and MCNPX code  
*Fernanda Cavalcante, Brazil*
| 17:15 | SP104.2 - Computed tomography of a beating heart: High resolution simulator for the assessment of motion artifacts during CT scan of the heart  
*Dov Malonek, Israel*
| 17:30 | SP104.3 - Development of Dynamic Anthropomorphic Heart Phantom for Computed tomography  
*Ali Ursani, Canada*
| 17:45 | SP104.4 - Development of a PET/MR/CT Compatible Tumour Motion Phantom  
*John Patrick, Canada*

**SESSION TIME:** 17:00 – 18:00  
**SESSION ROOM:** 701B  
**SESSION TRACK:** TRACK 01: IMAGING  
**SESSION NAME:** SP105 – MRI: NOVEL APPROACHES AND MOLECULAR IMAGING & APPLICATIONS  
**SESSION CHAIR(S):** HAI-LING MARGARET CHENG, CANADA  
NADER RIAHI-ALAM, IRAN

| Time  | Session 
|-------|-----------------------------------------------------|
| 17:00 | SP105.1 - KEYNOTE: Advancing MRI for Non-invasive Physiological and Cellular Imaging  
*Hai-Ling Margaret Cheng, Canada*
| 17:30 | SP105.2 - Detection of Regional Radiation-Induced Lung Injury using Hyperpolarized 129Xe Localized Magnetic Resonance Spectroscopy  
*Brandon Zanette, Canada*
| 17:42 | SP105.3 - Conjugate-Mapped Compressed Sensing: a technique to mitigate the side effects of compressed sensing on MTF  
*Amr Heikal, Canada*
| 17:54 | SP105.4 - Gadolinium Labeled Glycosylated Nanomagnetic Particles as Metabolic Contrast Agents in Molecular Magnetic Resonance Imaging  
*Nader Riahi-Alam, Iran*
| 18:06 | SP105.5 - Hyperpolarized 129Xe Magnetic Resonance Imaging of a Rat Model of Radiation-Induced Lung Injury Involving Single-Lung Radiation Therapy  
*Ozkan Doganay, Canada*
| 18:18 | SP105.6 - Ultra-short Echo Time (UTE) Magnetic Resonance Imaging of Cortical Bone: An Undersampled Acquisition Study  
*Yanchun Zhu, People's Republic of China*
18:30 SP105.7 - Brain activation associated with working memory maintenance under anxiety-provoking distracter in patients with obsessive compulsive disorder
Gwang-Woo Jeong, Republic of Korea

18:42 SP105.8 - Fractional Anisotropy, Voxel Wise Morphometry and Resting State in Patients with Lateral Amyotrophic Sclerosis
Maria Lopez-Titila, Mexico

17:00 SP106.1 - KEYNOTE: Proton therapy – close to becoming mainstream
Jan Unkelbach, United States

17:30 SP106.2 - Monte Carlo-based Inverse Treatment Plan Optimization for Intensity Modulated Proton Therapy
Yongbao Li, People’s Republic of China

17:45 SP106.3 - FoCa: a protontherapy treatment planning system written in object-oriented MATLAB
Daniel Sanchez-Parcerisa, United States

18:00 SP106.4 - Assessment of the limitations of the dose calculation algorithm of a commercially-available treatment planning system for proton pencil beam scanning
Jessica Scholey, United States

17:00 SP107.1 - A Quantitative Analysis of Teletherapy in Low Resource Settings: Cobalt or Linac?
Rachel McCarrroll, United States

17:00 SP106.5 - Monte Carlo based optimization of flattening filters for a cobalt-60 total body irradiation unit
Ingrid Lai, Canada

17:15 SP106.6 - Magnetically scanned-beam proton radiography using Micromegas detectors
Derek Dolney, United States

17:30 SP108.1 - Radiation dose to patients from cardiac interventions performed using image intensifier, flat detector and novel flat detector systems
Roshan Livingstone, India

17:45 SP108.2 - First National Occupational Radiation Dose Registry in Ministry of Health and its Validation: An Oman Experience
Arun Kumar L S, Oman

18:00 SP106.7 - Impact of the microdosimetric spread on cell survival data analysis
Shirin Enger, Canada

18:15 SP106.8 - IMRT and VMAT comparison for a case of bilateral breast carcinoma
Erick Montenegro, Guatemala

18:30 SP108.3 - A dosimetric evaluation of flattening filter-free volumetric modulated arc therapy for postoperative treatment of cervical cancer
Fuli Zhang, People’s Republic of China

18:45 SP108.4 - A wireless personal dosimeter for Interventional Radiology medical personnel.
Massimiliano Paolucci, Italy
SESSION TIME:  17:00 – 18:15
SESSION ROOM:  717A
SESSION TRACK:  TRACK 05: DOSIMETRY AND RADIATION PROTECTION
SESSION NAME:  SP109 – MICRO- AND NANO-DOSIMETRY
SESSION CHAIR(S):  ROWAN THOMSON, CANADA  
PATRICIA OLIVER, CANADA

17:00  SP109.1 - Development of a Thick Gas Electron Multiplier Based Multi-element Microdosimetric Detector
Soo Hyun Byun, Canada

17:15  SP109.2 - Development of a 2-D THGEM Microdosimetric Detector
Sahar Darvish-Molla, Canada

17:30  SP109.3 - Quantum versus classical trajectory Monte Carlo simulations of low energy electron transport in condensed media
Rowan Thomson, Canada

17:45  SP109.4 - Investigation of the relations between absorbed dose to cellular targets and to bulk tissue for kilovoltage radiation using Monte Carlo simulations and cavity theory
Patricia Oliver, Canada

18:00  SP109.5 - Development of transmitted alpha particle microdosimetry using Timepix: Investigation of A549 lung carcinoma cells exposed to alpha particles irradiated from Ra-223
Ruqaya Al Darwish, Australia

SESSION TIME:  17:00 – 18:45
SESSION ROOM:  715B
SESSION TRACK:  TRACK 07: SURGERY, COMPUTER AIDED SURGERY, MINIMAL INVASIVE INTERVENTIONS, ENDOSCOPY AND IMAGE-GUIDED THERAPY, MODELLING AND SIMULATION
SESSION NAME:  SP110 – SURGICAL NAVIGATION: PART 2
SESSION CHAIR(S):  TERRY PETERS, CANADA  
MICHAEL DALY, CANADA

17:00  SP110.1 - KEYNOTE: Optical Navigation in Functional Neurosurgery
Karin Wårdell, Sweden

17:30  SP110.2 - Endoscopic Electrospray: A minimal invasive tool for physical targeted gene delivery
David Hradetzky, Switzerland

17:45  SP110.3 - Cone-Beam CT-Guided Fluorescence Tomography for Intraoperative 3D Imaging
Michael Daly, Canada

18:00  SP110.4 - An Optimal Motion Profile for a Wireless Endoscopic Capsule Robot
Sina Mahmoudzadeh, Iran

18:15  SP110.6 - Orthogonal IR System for Instrumental tracking in Minimally Invasive Spine Procedures for training using Wiimote Technology
Juana Martinez, Mexico

18:30  SP110.7 - Use of a Patient-Specific Venticulostomy Surgical Simulator to Develop a Model for Preoperative Risk Assessment Based on Measures of Anatomical Variation
Ryan Armstrong, Canada

SESSION TIME:  17:00 – 19:00
SESSION ROOM:  716B
SESSION TRACK:  TRACK 12: MEDICAL DEVICES
SESSION NAME:  SP111 – CARDIOVASCULAR
SESSION CHAIR(S):  OLIVIA COIADO, UNITED STATES  
MICHAEL CHENG, CANADA

17:00  SP111.1 - Ultrasound-induced heart rate decrease: Role of age in female rats
Olivia Coiado, United States

17:15  SP111.2 - Low cost pulsed wave Doppler ultrasound system for vascular studies
Isabel Arnaiz, Cuba

17:30  SP111.3 - Real-Time Three Degree-of-Freedom Measurement of Catheter Motion for Input to a Robotic Catheter Navigation System
Daniel Gelman, Canada

17:45  SP111.4 - Pulse Wave Velocity as a Function of Cuff Pressure? Extra Information About the Cardiovascular System
Akos Jobbagy, Hungary

18:00  SP111.5 - Cardiac Output estimation through Impedance Cardiography using reconfigurable hardware.
Leidy Alvero González, Cuba

18:15  SP111.6 - Microfluorimetry System Instrumentation for Ca2+-Associated Fluorescence Imaging of Cardiomyocytes in Response to High Electric Fields
Marcelo Zoccoler, Brazil

18:30  SP111.7 - A practical device to warn on impending syncopal episodes
Michael Cheng, Canada

18:45  SP111.8 - Robust Blood Pressure Monitoring in Atrial Fibrillation Patients
Saif Ahmad, Canada
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<td>SESSION TRACK:</td>
<td>TRACK 12: MEDICAL DEVICES</td>
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<tr>
<td>SESSION NAME:</td>
<td>SP112 – INSTRUMENTATION</td>
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<td>SESSION CHAIR(S):</td>
<td>ANTHONY EASTY, CANADA GUILERMO AVENDANO, CHILE</td>
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17:00 SP112.1 - Adaptation of Surgical Instruments for the Removal of Bladder Tumours  
Spencer Barnes, United Kingdom

17:15 SP112.2 - A compact gantry based on pulse powered magnets for a laser-based proton radiotherapy  
Leonhard Karsch, Germany

17:30 SP112.3 - Developing a pH Responsive Mesh as a Smart Skin Wafer in Ostomy Appliances  
Anna McLister, United Kingdom

17:45 SP112.4 - Development of a smart needle integrated with a micro-structured impedance sensor for the detection of breast cancer  
Niall Savage, Ireland

18:00 SP112.5 - Towards development of a wearable, miniaturized, bioartificial lung  
Esther Novosel, Germany

18:15 SP112.6 - Development of a Low Cost Spectrometer for Studies of Diffuse Reflectance with Dermatological Science and Applications  
Gerardo Romo-Cardenas, Mexico

18:30 SP112.7 - Correctness of bioimpedance data for body composition obtained by BIA approach in various external conditions  
Jan Hlubik, Czech Republic

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<tr>
<td>SESSION ROOM:</td>
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<tr>
<td>SESSION TRACK:</td>
<td>TRACK 14: INFORMATION TECHNOLOGIES IN HEALTHCARE DELIVERY AND MANAGEMENT</td>
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<tr>
<td>SESSION NAME:</td>
<td>SP113 – INFORMATION TECHNOLOGIES IN HEALTHCARE DELIVERY AND MANAGEMENT: PART 1</td>
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<tr>
<td>SESSION CHAIR(S):</td>
<td>BRUCE CURRAN, UNITED STATES JOSEPH CAFAZZO, CANADA</td>
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17:00 SP113.1 - KEYNOTE: Technologies for Patient Self-Care of Chronic Illness: Development and Evidence  
Joseph Cafazzo, Canada

17:30 SP113.2 - A mobile monitoring tool for the automatic activity recognition and its application for Parkinson’s disease rehabilitation  
Jorge Cancela, Spain

17:45 SP113.3 - My Patient: An Electronic Patient Information Management System  
Satish Jaywant, Kwail

18:00 SP113.4 - Hom-e-call? An enhanced fall detection system based on accelerometer and optical sensors applicable in domestic environment  
Daniel Wohlrab, Germany

18:15 SP113.5 - An Algorithm Based on Voice Description of Meal for Insulin Dose Calculation to Compensate Food Intake  
Piotr Foltynski, Poland

18:30 SP113.6 - Building neuroscientific evidence and best practices in active and healthy aging  
Panagiotis Bamidis, Greece

18:45 SP113.7 - Intelligent System for Identification of patients in Healthcare  
Giovanni Sagbay, Ecuador

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<tr>
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<td>SESSION TRACK:</td>
<td>PRESIDENT’S CALL</td>
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<td>SESSION NAME:</td>
<td>SP114 – DOSIMETRY AND RADIATION PROTECTION</td>
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<tr>
<td>SESSION CHAIR(S):</td>
<td>SAMBA RICHARD NDI, CAMEROON PANKAJ PARASHAR, INDIA</td>
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17:00 SP114.1 - Development of Object Simulator for Evaluation Periapical Radiographs  
Fernanda Ferreira, Brazil

17:15 SP114.2 - Impact Created by Medical Physicist from Regulatory Quality Assurance Controls in Developing Country  
Samba Richard Ndi, Cameroon

17:30 SP114.3 - Evaluation of Dental X-rays equipment in Sobral-CE, Brazil  
Fernanda Ferreira, Brazil

17:45 SP114.4 - Effect of static magnetic field exposure on human blood electrolyte levels in vitro  
Pankaj Parashar, India
Thursday, June 11 2015

SESSION TIME: 08:00 – 10:00
SESSION ROOM: 718A
SESSION TRACK: TRACK 01: IMAGING
SESSION NAME: SP115 – CT IMAGE QUALITY AND DOSE OPTIMIZATION
SESSION CHAIR(S): ANA MARIA MARQUES DA SILVA, BRAZIL

08:00 SP115.1 - Towards Image Quality Analysis of Small and Full Field of View Dental Cone Beam CT Systems
Ana Maria Marques Da Silva, Brazil

08:15 SP115.2 - Rapid non-invasive spatially varying HVL measurements for CT sources
Matthew Randazzo, United States

08:30 SP115.3 - Development of a CT protocol management system for automated review of CT scanner protocols
Josh Grimes, United States

08:45 SP115.4 - Evaluation of automatic exposure control systems in computed tomography
Paulo Costa, Brazil

09:00 SP115.5 - Development of a Software for Image Quality Assessment in Computed Tomography using the Catphan500® Phantom
Paulo Costa, Brazil

09:15 SP115.6 - Performance of attenuation-based dynamic CT beam-shaping filtration for elliptical subject geometries in dependence of fan- and projection-angle
Stella Veloza, Colombia

09:30 SP115.7 - A software tool for automated artifact detection in scans of the CT daily water phantom
Josh Grimes, United States

09:45 SP115.8 - Monte Carlo Simulation of X-ray Spectra in Computed Tomography Scanner using GATE
Mohammad Reza Ay, Iran

SESSION TIME: 08:00 – 10:00
SESSION ROOM: 701B
SESSION TRACK: TRACK 01: IMAGING
SESSION NAME: SP116 – IMAGE PROCESSING AND VISUALIZATION: PART 2
SESSION CHAIR(S): YIWEN XU, CANADA

08:00 SP116.1 - Automated segmentation of whole-slide histology for vessel morphology comparison
Yiwen Xu, Canada

08:15 SP116.2 - Using Gamma Maps of Anatomy to Highlight Changes in Anatomy During Image-Guided Adaptive Radiotherapy: Head and neck example
Jeff Kempe, Canada

08:30 SP116.3 - Improvement of Ventricle Volumetric Calculation and Visualization in Cardiac MRI
William Rae, South Africa

08:45 SP116.4 - Inter-operator variability of 3D prostate magnetic resonance image segmentation using manual and semi-automatic approaches
Maysam Shahedi, Canada

09:00 SP116.5 - Derivation of Residual Noise of Filtered Poisson and Gaussian Series
Weiguang Yao, United States

09:15 SP116.6 - Fast Registration of Intraoperative Ultrasound and Preoperative MR Images Based on Calibrations of 2D and 3D Ultrasound Probes
Fang Chen, People’s Republic of China

09:30 SP116.7 - Development of digital subtraction angiography for coronary artery without motion artifacts enabling real-time processing
Megumi Yamamoto, Japan

09:45 SP116.8 - Real-time measurement of cardiomyocyte contraction and calcium transients using fast image processing algorithms
Ivo Provazník, Czech Republic
08:00  SP117.1 - **KEYNOTE**: Next Generation Radiotherapy Treatment Planning: Current Status and Future Prospects
*Steve Jiang, United States*

08:30  SP117.2 - Overlap-Guided Fixed-Patient Support Positioning for Cranial SRT
*Rober Macdonald, Canada*

08:45  SP117.3 - Automated Dose Map Prediction Through Radiomics and Regression on the Patient Manifold
*Chris McIntosh, Canada*

09:00  SP117.5 - Models for Predicting Objective Function Weights in Prostate Cancer IMRT
*Justin Boutilier, Canada*

08:00  SP118.1 - Measuring absorbed-dose to cardiac implantable electronic device using OSL.
*Étienne Létourneau, Canada*

08:15  SP118.2 - Organ dose estimation in computed tomography based on Monte Carlo simulation
*Camille Adrien, France*

08:30  SP118.3 - Comparative study of Average Glandular Doses of three different digital mammography units in three Ministry of Health Hospitals in Oman: An analysis
*Arun Kumar L S, Oman*

08:45  SP118.4 - First Data on Quality Control Test done in Diagnostic X-ray facility at Major Public Hospitals in Kathmandu Valley, Nepal.
*Kanchan Adhikari, Nepal*

09:00  SP118.5 - Estimation of dose distributions in mammography into a tissue equivalent phantom
*Josilene Santos, Brazil*

08:00  SP119.1 - CT Dose Optimization: First Results from a Province-Wide Program in Quebec
*Manon Rouleau, Canada*

08:15  SP119.2 - CT overexposure as a consequence of scan length
*Mohamed Badawy, Australia*

08:30  SP119.3 - Regional survey of pediatric patient doses from CT examinations in Tehran, Iran
*Hamid Khosravi, Canada*

08:45  SP119.4 - Dose Reduction Efforts in PET/CT: the Quebec Experience
*Manon Rouleau, Canada*

09:00  SP119.5 - Assessment of high cumulative patient doses of repetitive CT examinations
*Cecile Jeukens, Netherlands*

09:15  SP119.6 - IAEA survey of pediatric computed tomography practice in Pakistan procedures and protocols (2005-2015)
*Areesha Zaman, Pakistan*

09:30  SP119.7 - Occupational Dose Measurement in an Interventional Radiology Facility in Jakarta
*Lukmanda Evan Lubis, Indonesia*

09:45  SP119.8 - Evaluation of the Comparative Effectiveness of Various Jurisdictional Computed Tomography Radiation Dose Reduction Models
*Anne Li, Canada*
08:00 SP120.1 - Desaturation event characteristics and mortality risk in severe sleep apnea
Antti Kulkas, Finlandia

08:15 SP120.2 - Static Posturography of Elderly Fallers and Non-Fallers with Eyes Open and Closed
Jennifer Howcroft, Canada

08:30 SP120.3 - Quantitative analysis of ventricular ectopic beats evaluated from short-term recordings of heart rate variability before imminent tachyarrhythmia
Marisol Martinez-Alanis, Mexico

08:45 SP120.4 - An evaluation of Arterial Stiffness Index in Relation to the State of the Cardiovascular System
Jan Havlik, Czech Republic

09:00 SP120.5 - Investigating a Novel Non-invasive Measure to Assess the Upper Airway Narrowing during Sleep
Ying Xuan Zhi, Canada

09:15 SP120.6 - Establishing a New Biomarker to Determine Patients at Increased Risk of Developing Obstructive Sleep Apnea Due To Fluid Overloading
Bojan Gavrilovic, Canada

08:00 SP121.1 - A 16-bit High-Voltage Digital Charge-Control Electrical Stimulator
Ulrich Hofmann, Germany

08:15 SP121.2 - A method for side effect analysis based on electric field simulations for intraoperative test stimulation in deep brain stimulation surgery
Simone Hemm-Ode, Switzerland

08:30 SP121.3 - Comparison of Three Deep Brain Stimulation Lead Designs under Voltage and Current Modes
Fabiola Alonso, Sweden

08:45 SP121.4 - Effect of closed-loop and open-loop deep brain stimulation on chronic seizures control
Muhammad Salam, Canada
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<td>08:00 – 09:45</td>
<td>SP123.1 - Keynote: Incident reporting and learning systems improving quality and safety in radiation oncology</td>
<td>701A</td>
<td>Track 16: Clinical Engineering, Clinical Physics, and Patient Safety</td>
<td>Mary Coffey, Ireland, Andrew Ibej, Canada</td>
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<td>08:00</td>
<td>SP123.2 - Applying an Evidence-based Approach to Managing Alarm Safety: A University Health Network Case Study</td>
<td>717A</td>
<td>Track 17: Educational and Professional Activities</td>
<td>Anne Li, Canada</td>
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<td>08:45</td>
<td>SP123.3 - Using infusion pump logs to recreate a patient safety event: considerations for smart pump improvement</td>
<td>713A</td>
<td>Track 17: Educational and Professional Activities</td>
<td>Andrew Ibej, Canada</td>
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<td>08:45</td>
<td>SP123.4 - Developing an information retrieval engine for medical devices? Vigilance reports</td>
<td>715A</td>
<td>Track 19: Biophysics and Modelling</td>
<td>Nicolas Pallikarakis, Greece</td>
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<td>08:45</td>
<td>SP123.5 - Efficient, all-in-one, Monte Carlo simulations of transit EPID cine-mode dose distributions for patient-specific VMAT quality assurance</td>
<td>715A</td>
<td>Track 19: Biophysics and Modelling</td>
<td>Shiqin Su, Canada</td>
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<td>08:45</td>
<td>SP123.6 - Development of an interactive training tool to help reduce error rate associated with shared infusion volume management tasks</td>
<td>715A</td>
<td>Track 19: Biophysics and Modelling</td>
<td>Patricia Trbovich, Canada</td>
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<td>08:00 – 10:00</td>
<td>SP124.1 - Medical Physics Training Resources for Developing Countries</td>
<td>717A</td>
<td>Track 17: Educational and Professional Activities</td>
<td>Muthana Al-Ghazi, United States</td>
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<td>08:00</td>
<td>SP124.2 - Medical Physics in Indonesia: Current Status and Plans</td>
<td>717A</td>
<td>Track 17: Educational and Professional Activities</td>
<td>Supriyanto Ardjo Pawiro, Indonesia</td>
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<td>08:00</td>
<td>SP124.3 - Surveying Trends in Radiation Oncology Medical Physics in the Asia Pacific Region</td>
<td>715A</td>
<td>Track 19: Biophysics and Modelling</td>
<td>Tomas Kron, Australia</td>
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<td>08:00</td>
<td>SP124.4 - The Status of Medical Physics in Iraq</td>
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<td>Track 19: Biophysics and Modelling</td>
<td>Muthana Al-Ghazi, United States</td>
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<td>09:00</td>
<td>SP124.5 - Evaluation and Adaptation of Medical Physics Practicum for Nicaraguan Students at a Canadian Cancer Centre</td>
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<td>Track 19: Biophysics and Modelling</td>
<td>Alana Hudson, Canada</td>
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<td>09:00</td>
<td>SP124.6 - Coordination of AAPM Educational Courses for Developing Countries with Major International and Regional Organizations of Medical Physicists</td>
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<td>Track 19: Biophysics and Modelling</td>
<td>Eugene Lief, United States</td>
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<td>08:00</td>
<td>SP125.1 - Keynote: e-Learning in Medical Physics? pioneering and future trends</td>
<td>717A</td>
<td>Track 17: Educational and Professional Activities</td>
<td>Slavik Tabakov, United Kingdom</td>
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<td>08:00</td>
<td>SP125.2 - A Desk-Top Optical Scanner for Teaching the Principles of Computed Tomography (CT)</td>
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<td>Track 17: Educational and Professional Activities</td>
<td>Linada Kaci, Canada</td>
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<td>08:45</td>
<td>SP125.3 - Medical Physics e-Encyclopaedia and Multilingual Dictionary? Upgrade and New Developments</td>
<td>715A</td>
<td>Track 19: Biophysics and Modelling</td>
<td>Slavik Tabakov, United Kingdom</td>
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<td>08:45</td>
<td>SP125.4 - Physics for Medical Students: Technology Enhanced Teaching from the Dipole to the Vectorcardiogram</td>
<td>715A</td>
<td>Track 19: Biophysics and Modelling</td>
<td>Ernst Hofer, Austria</td>
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<td>08:45</td>
<td>SP125.5 - matRad: a multimodality open source treatment planning toolkit</td>
<td>715A</td>
<td>Track 19: Biophysics and Modelling</td>
<td>Eduardo Cisternas, Chile</td>
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<td>08:45</td>
<td>SP125.6 - Creation of a model for online education of clinical engineering and management of medical technologies to reach professionals worldwide</td>
<td>715A</td>
<td>Track 19: Biophysics and Modelling</td>
<td>Maria Moreno Carbajal, Mexico</td>
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<td>09:00</td>
<td>SP125.7 - Develop of a Mixed, Haptic and Virtual System to Simulate Radiographic Images</td>
<td>715A</td>
<td>Track 19: Biophysics and Modelling</td>
<td>Guillermo Avendaño, Chile</td>
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08:00 SP126.1 - Evaluation of Decomposition Analysis on Multi-Models for Digital Volume Pulse Signal Sheng-Cheng Huang, Chinese Taipei

08:15 SP126.2 - Discordant alternans in a one-dimensional cable of ischemic heart tissue. Yunuen Cervantes Espinosa, Mexico

08:30 SP126.3 - A Novel Biomechanical Model of the Left Ventricle for Cardiac Contraction Force Reconstruction Applications Seyyed Mohammad Hassan Haddad, Canada

08:45 SP126.4 - A simulative model approach of cardiopulmonary interaction Chuong Ngo, Germany

09:00 SP126.5 - The Development of SIM to Characterize Blood Volumetric Flow Rate and Hemodynamics in Human Coronary Arteries Iyad Fayssal, Lebanon

09:15 SP126.6 - Determination of Bemang’s Minimal Model parameters for diabetic mice treated with Ibervillea sonorae Rodrigo Sánchez-González, Mexico

09:30 SP126.7 - Investigation of flow and turbulence in carotid artery models of varying compliance using particle image velocimetry Amanda Dicarlo, Canada

08:00 SP127.1 - A study on the leading cause of immunisation schedule fall up defaulting and early child hood malnutrition sicknesses in developing countries (Uganda in particular) rural areas/villages Waigonda Saad, Uganda

08:15 SP127.2 - From Smart Phones to Smart Health Ricardo Silva, Ecuador

08:30 SP127.3 - Diagnostic Data: a Manifesto Peter Pennefather, Canada

08:45 SP127.4 - Comparative analysis of co-expression networks reveals molecular changes during the cancer progression Pegah Khosravi, Iran

09:00 SP127.5 - Copper Meshed Carbon Black PDMS Electrode for Underwater ECG Monitoring Justin Bales, United States

09:15 SP127.6 - Smartphone-based Monitoring of Tidal Volume and Respiratory Rate Bersain Reyes, United States

10:30 SP128.1 - Localizing cortical motor representation: A comparative study between navigated transcranial magnetic stimulation, BOLD contrast and arterial spin labeling fMRI Elisa Kallioniemi, Finlandia

10:45 SP128.2 - Evaluation of probable dementia with Lewy bodies using 123I-IMP brain perfusion SPECT, 123I-MIBG myocardial SPECT and voxel-based MRI morphometry Naoki Kodama, Japan

11:00 SP128.3 - Targeted all-organic nanovesicles for multimodal PET/CT and optical fluorescence assessment of lymphatic disseminations in gynaecologic cancers: A radio-pharmaceutical kit to prepare parenteral injections for a ‘first-in-woman’ clinical study. Michael Valic, Canada

11:15 SP128.4 - Generation of 4-Class Attenuation Map for MRI Based Attenuation Correction of PET Data in the Head Area Using a Novel Combination of STE/DIXON-MRI and FCM Clustering Hamidreza Saligheh Rad, Iran

11:30 SP128.5 - A new low field MRI/gamma detector hybrid system Andrea Abril, Colombia

08:00 SP129.1 - Kilovoltage-CBCT of a Linear Accelerator as a relative imaging device of a spiral CT scanner - dosimetric results James Annkah, United Kingdom

08:15 SP129.2 - Overall performance, image quality and dose in CR mammography systems operating in the Mexico public health sector Maria-Ester Brandan, Mexico

08:30 SP129.3 - A Catphan attachment for three dimensional measurements of the modulation transfer function Elsayed Ali, Canada
11:15  SP129.4 - Sensitometric analyses of screen-film systems for mammography exams in Brazil  
*Luis Magalhaes, Brazil*

11:30  SP129.5 - New Line Contrast Figure of Merit for image quality assessment  
*Aris Dermitzakis, Greece*

11:45  SP129.6 - Assessment of Photostimulable Storage Phosphor Imaging Plates Quality in Computed Radiography  
*Bárbara Friedrich, Brazil*

**SESSION TIME:** 10:30 – 12:00  
**SESSION ROOM:** 718B  
**SESSION TRACK:** TRACK 04: RADIATION ONCOLOGY  
**SESSION NAME:** SP130 – TREATMENT PLANNING  
**SESSION CHAIR(S):** WINNIE LI, CANADA

10:30  SP130.1 - Comprehensive Dosimetric Planning Comparison for Early Stage Non-Small Cell Lung Cancer with SABR: Fixed-Beam IMRT versus VMAT versus Tomotherapy  
*Ilma Xhaferllari, Canada*

10:45  SP130.2 - Development and Validation of an Open Source Tool for Determining Planning Target Volume Margins in Intracranial Stereotactic Radiotherapy  
*Winnie Li, Canada*

11:00  SP130.3 - Dosimetric impact of accurately delineating of the left anterior descending artery in photon and proton radiotherapy  
*Janid Blanco Kiely, United States*

11:15  SP130.4 - Objective function surrogates for iterative beam angle selection  
*Jan Unkelbach, United States*

11:30  SP130.5 - A preliminary study on the effect of modulated photon radiotherapy (XMRT) optimization for prostate cancer treatment planning  
*Philipp McGeachy, Canada*

11:45  SP130.6 - Measuring radiation treatment plan similarity in the cloud  
*Jennifer Andrea, Canada*

10:30  SP131.1 - Sensitivity of Helical Tomotherapy and Elekta Agility VMAT dose distributions to multileaf collimator motion uncertainties for breast radiation treatment with extensive nodal irradiation  
*Eric Vandervoort, Canada*

10:45  SP131.2 - Use of Varian Trajectory Log Files for Patient Specific Quality Control of TrueBeam VMAT FFF Treatment Deliveries with Portal Dosimetry and Eclipse  
*Michael Fan, Canada*

11:00  SP131.3 - Machine Learning Facilitates Failure Mode Analysis and Virtual QA for IMRT  
*Gilmer Valdes, United States*

11:15  SP131.4 - Dosimetric analysis of respiratory-gated RapidArc with varying gating window times  
*Ju Young Song, Republic of Korea*

11:30  SP131.5 - Current status of dose-tracking using an integrated commercial system  
*Stina Svensson, Sweden*

11:45  SP131.6 - Enabling Continuous Quality Improvement in a Rapidly Changing Clinical Environment through a Multi-Year Multi-Centre IMRT QC Program: 3 Year Experience  
*Andrea McNiven, Canada*

12:00  SP131.7 - A new approach to spatial gradient signal encoding for external beam radiotherapy delivery verification  
*Robert Heaton, Canada*

**SESSION TIME:** 10:30 -11:30  
**SESSION ROOM:** 715B  
**SESSION TRACK:** TRACK 05: DOSIMETRY AND RADIATION PROTECTION  
**SESSION NAME:** SP132 – SPECIAL SESSION: IMPLEMENTATION OF THE NEW BSS INCLUDING RADIATION SAFETY CULTURE IN MEDICINE  
**SESSION CHAIR(S):** MADAN REHANI, UNITED STATES

**Speaker:** SP132.1 - *Madan Rehani, United States*  
**Speaker:** SP132.2 - *Ola Holmberg, Austria*  
**Speaker:** SP132.3 - *Pablo Jimenez, United States*
Panelists: SP133.1 - James Chow, Canada  
SP133.2 - Michel Lalonde, Canada  
SP133.3 - Kamlesh Passi, India  
SP133.4 - Nader Moshiri Sedeh, United States

10:30 SP133.1 - Impedance and comfort of dry multipin electrodes for electroencephalography  
Patrice Fiedler, Germany

10:45 SP133.2 - Wearable Gait Analysis using Vision-aided Inertial Sensor Fusion  
Eric Ma, Canada

11:00 SP133.3 - Two-Vector Capacitive Electrocardiogram Measurement Using Three Fabric Electrodes for Automobile Application  
Shunsuke Takayama, Japan

11:15 SP133.4 - Detection of REM Behaviour Disorder Based on Low-Power Compressive Sensing of EMG  
Sridhar Krishnan, Canada

11:30 SP133.5 - Externally applied pressure on the skin electrode impedance  
Bahareh Taji, Canada
11:15 SP136.4 - Transcranial Direct Current Stimulation of the Rat Medial Prefrontal Cortex: Antidepressant Effects and Regional Brain Changes
Francis Bambico, Canada

SESSION TIME: 10:30 – 12:00
SESSION ROOM: 714A
SESSION TRACK: TRACK 17: EDUCATIONAL AND PROFESSIONAL ACTIVITIES
SESSION NAME: SP137 – SPECIAL SESSION: BUILDING MEDICAL PHYSICS CAPACITY IN DEVELOPING COUNTRIES
SESSION CHAIR(S): SLAVIK TABAKOV, UNITED KINGDOM FRIDTJOF NUESSLIN, GERMANY

10:30 Opening Remarks
Slavik Tabakov, United Kingdom
Fridtjof Nuesslin, Germany

10:40 SP137.1 - Cost-Effective Provision of Medical Physics and Medical Engineering Services in Healthcare
Peter H S Smith, United Kingdom

10:50 SP137.2 - Implementing Training Modules of the Emerald Program in Brazil
Ricardo Terini, Brazil

11:00 SP137.3 - Pilot Implementation In The Philippines Of Structured Medical Physics Residency Programs Using The Iaea Training Guides For The Clinical Training Of Medical Physicists
Agnette Peralta, Republic of the Philippines

11:10 SP137.4 - Capacity Building of Medical Physics in Bangladesh
Hasin Anupama Azhari, Bangladesh

11:20 SP137.5 - Education & Training of Medical Physics in Africa: Challenges & Opportunities
Ahmed IbnSeddick

11:30 SP137.6 - Retention of trained medical physicists in African states: Do our Governments have a role to play
Rebecca Nakatudde

11:40 SP137.7 - Strengthening Medical Physics Clinical Competencies in a Challenging Environment - Update on the IAEA Supported Nigerian (NIR/6/023) Project
Taofeeq Ige, Nigeria

11:50 SP137.8 - Capacity Building of Medical Physics in Ghana and Africa
Stephen Inkoom, Ghana

SESSION TIME: 10:30 - 11:45
SESSION ROOM: 713B
SESSION TRACK: PRESIDENT’S CALL
SESSION NAME: SP138 - BIOSENSOR, NANOTECHNOLOGY, BIOMEMS AND BIOPHOTONICS / NEW TECHNOLOGIES IN CANCER RESEARCH AND TREATMENT
SESSION CHAIR(S): MOHAMMAD KHOSROSHAHI, CANADA NAZANIN MOSAVIAN, UNITED STATES

10:30 SP138.1 - Measurement of the Received Power in a Realistic Intrabody Communication Scenario
Zeljka Lucev Vasic, Croatia

10:45 SP138.2 - Focused ultrasound-triggered release of Sorafenib from temperature sensitive liposomes for treating renal cell carcinoma
Hakm Murad, United States

11:00 SP138.3 - Synthesis and Characterization of SPION Functionalized third Generation dendrimers Conjugated by Gold Nanoparticles and Folic acid for Targeted Breast Cancer Laser Hyperthermia: An Invitro-assay
Mohammad Khosroshahi, Canada

11:15 SP138.4 - FIB/SEM Characterization of Microcavity Surface Plasmon Resonance Biosensors
Nazanin Mosavian, United States

11:30 SP138.5 - The current status of Microbeam Radiation Therapy at the ESRF and future perspectives
Elke Brauer-Krisch, France

SESSION TIME: 15:00 – 16:30
SESSION ROOM: 718A
SESSION TRACK: TRACK 01: IMAGING
SESSION NAME: SP139 – OPTICAL IMAGING: METHODS
SESSION CHAIR(S): ARASH DARAFSHEH, UNITED STATES HEPING XU, CANADA

15:00 SP139.1 - Toward super-resolution imaging of proton radiation-induced DNA double-strand breaks for characterization of -H2AX foci clusters
Arash Darafsheh, United States

15:15 SP139.2 - Solution of radiative transport equation in turbid layered media in spatial and frequency domains
HePing Xu, Canada

15:30 SP139.3 - Development of a hybrid optical-gamma camera: A new innovation in bedside molecular imaging
Aik Hao Ng, Malaysia

15:45 SP139.4 - Sidestream Dark-Field Oximetry with Multicolor LEDs
Tomohiro Kurata, Japan
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<td>SP139.5 - Development of Polymer Substrates for Waveguide Evanescent Field Fluorescence Microscopy</td>
<td>Rony Sharon, Canada</td>
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<td>16:15</td>
<td>SP139.6 - Higher-Order Structural Investigation of Mammalian Septins by Super-Resolution Fluorescence Microscopy</td>
<td>Adriano Vissa, Canada</td>
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<td>SP140.1 - Credentialing of radiotherapy centres in Australasia for a phase III clinical trial on SABR</td>
<td>Tomas Kron, Australia</td>
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<td>SP140.2 - LED-optimized SBRT for Peripheral Early Stage Lung Cancer: A technique to reduce lung dose and potentially allow for re-irradiation</td>
<td>Brandon Disher, Canada</td>
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<tr>
<td>15:30</td>
<td>SP140.3 - Delivery of VMAT treatments with nonstandard SAD using dynamic trajectories</td>
<td>Joel Mullins, Canada</td>
</tr>
<tr>
<td>15:45</td>
<td>SP140.4 - Cone-Beam CT assessment of inter-fraction and intra-fraction motions during lung stereotactic body radiotherapy with and without abdominal compression</td>
<td>Runqing Jiang, Canada</td>
</tr>
<tr>
<td>16:00</td>
<td>SP140.5 - Initial experience in establishing frameless intra-cranial stereotactic radiosurgery program with Varian TrueBeam STx, 6DoF couch and VisionRT motion control system</td>
<td>Sergei Zavgorodni, Canada</td>
</tr>
<tr>
<td>15:00</td>
<td>SP141.1 - Theoretical description of the saturation correction of ionization chambers in pulsed fields with arbitrary repetition rate</td>
<td>Leonhard Karsch, Germany</td>
</tr>
<tr>
<td>15:15</td>
<td>SP141.2 - Performance characteristics of Gafchromic EBT3 film in therapeutic electron beams and its practical application as an in-vivo dosimeter in the clinic</td>
<td>Amanda Barry, Ireland</td>
</tr>
<tr>
<td>15:30</td>
<td>SP141.3 - Photon and electron spectra inside small field detectors for narrow and broad 6 MV photon beams</td>
<td>Hamza Benmakhloul, Sweden</td>
</tr>
<tr>
<td>15:45</td>
<td>SP141.4 - Real Time Dose Reconstruction in MV Photon Therapy using a 2D solid state detector array.</td>
<td>Michael Lerch, Australia</td>
</tr>
<tr>
<td>16:00</td>
<td>SP141.5 - Energy Correction factor for Plane Parallel ion-chamber and its Use in Clinical photon Beam Dosimetry</td>
<td>Kamlesh Passi, India</td>
</tr>
<tr>
<td>15:00</td>
<td>SP142.1 - Proton Minibeam Radiation Therapy (pMBRT): implementation at a clinical center</td>
<td>Yolanda Prezado, France</td>
</tr>
<tr>
<td>15:15</td>
<td>SP142.2 - Hadron minibeam radiation therapy: feasibility study at Heidelberg Ion Therapy Center</td>
<td>Yolanda Prezado, France</td>
</tr>
<tr>
<td>15:30</td>
<td>SP142.3 - Acoustic Range Verification of Proton Beams: Simulation Assessment of the Challenges of Clinical Application</td>
<td>Kevin Jones, United States</td>
</tr>
<tr>
<td>15:45</td>
<td>SP142.4 - Radiochromic Film Based Dose Calibration and Monitoring for Radiobiological Experiments using Low Energy Proton Beams</td>
<td>Belal Moftah, Saudi Arabia</td>
</tr>
<tr>
<td>16:00</td>
<td>SP142.5 - Development of 3D measurement device dedicated for range-compensator QA</td>
<td>Shigekazu Fukuda, Japan</td>
</tr>
</tbody>
</table>
15:00 SP143.1 - Sliced Mary: a deformable phantom for the validation of set-up based on surface imaging in radiotherapy treatments
Stefania Pallotta, Italy

15:15 SP143.2 - Evaluation of ion chamber response in high dose per pulse electron beams of IORT accelerator using EGSnrc Monte Carlo code
Mostafa Robatjazi, Iran

15:30 SP143.3 - Compared QA of APEX Radiosurgery System using ARCHECK Phantom in Dynamic Conformal Arc System and VMAT System
Jaee Hyuk Seo, Republic of Korea

15:45 SP143.4 - Head and Neck CT/CBCT Deformable Registration for Image-guided Accurate Radiotherapy System ARTS-IGRT
Xi Pei, People's Republic of China

16:00 SP143.5 - A treatment planning optimization method based on expert plan database for γ ray stereotactic radiotherapy
Ren Xinxin, People's Republic of China

15:00 SP144.1 - Estimation of dorsiflexion torque from a mechanomyogram using a Kalman filter
Takanori Uchiyama, Japan

15:15 SP144.2 - Upper-Limb Force Modeling using Rotated Ensembles with Fast Orthogonal Search on High-Density Electromyography
Gregg Johns, Canada

15:30 SP144.3 - MMG detection of intentional movement in the presence of dyskinetic movements
Marcela Correa Villada, Canada

15:45 SP144.4 - Dynamic Noise Reduction in Accelerometer-based Mechanomyography during Pediatric Gait
Katherine Plewa, Canada

16:00 SP144.5 - Effects of slipped icy surface on older adults? gait in a simulated winter environment
Yue Li, Canada

16:45 SP144.7 - The Effect of Sub chronic Low Dose of DDVP and Sodium Azide on some Bone Biochemical Indices of Albino Rats
Patrick Agbasi, Nigeria
15:45 SP146.4 - Electrical Stimulation of the Calf Muscle to Reduce Seated Leg Fluid Accumulation and Subsequent Rostral Fluid Shift While Supine
Daniel Vena, Canada

16:00 SP146.5 - Surgical process analysis identifies lack of connectivity between sequential fluoroscopic 2D alignment as a critical impediment in femoral intramedullary nailing
Hamid Ebrahimi, Canada

15:00 SP147.1 - KEYNOTE: The Electronic Medical Record: Can it be integrated with Treatment Delivery and Management?
Bruce Curran, United States

15:30 SP147.2 - AIM Quality Assurance Program Development for CT X-Ray Systems
Douglas McTaggart, Canada

15:45 SP147.3 - Evaluation of Improved Automatic Speech Recognition Prototype for Estonian Language in Radiology Domain
Andrus Paats, Estonia

16:00 SP147.4 - Usability engineering approach towards secure open networks in the integrated operating room of the future
Klaus Rademacher, Germany

16:15 SP147.5 - Whiteboard ESB: Next Generation Data and Workflow Management for Radiation Oncology
John Wolfgang, United States

15:00 SP148.1 - Oncometer
Priyajit Ghosh, India

15:15 SP148.2 - Ways to outreach medical devices in low resource countries (LRC)
K Siddique Rabbani, Bangladesh

15:30 SP148.3 - South African-Swedish effort on pre-hospital diagnostics of stroke and traumatic injuries
Mikael Persson, Sweden

15:45 SP148.4 - A portable multi-frequency impedance measuring device for biodynamic analysis
Takao Nakamura, Japan

16:00 SP148.5 - A Study of the Challenges of Donating Medical Equipment to Developing Countries
Bill Gentles, Canada

16:15 SP148.6 - The Clinicopathologic Characters and Activity Survey of Sudden Death of Infant in a Depressed Economy: South-Eastern Nigeria Experience.
Gideon Ndubuka, Nigeria

17:00 SP149.1 - Preliminary study on reduction of cartoon artifact in the iteratively reconstructed images from sparse projection views
Sunhee Wi, Republic of Korea

17:15 SP149.2 - Evaluation of the OSC-TV Reconstruction Algorithm for Optical Cone-Beam Computed Tomography
Dmitri Matenine, Canada

17:30 SP149.3 - Subjective low contrast performance of four CT scanners with iterative reconstruction
Azeez Omotayo, Canada

17:45 SP149.5 - Sparse-view image reconstruction with compressed sensing and its application in low dose CT myocardial perfusion imaging
Esmaeil Enjilela, Canada

18:00 SP149.6 - Feasibility study for 3D cone-beam computed tomography reconstruction with few projection data using MLEM algorithm with total variation minimization
Dong Hoon Lee, Republic of Korea

18:15 SP149.7 - A weighted stochastic gradient descent algorithm for image reconstruction in 3D computed tomography
Davood Karimi, Canada

18:30 SP149.8 - Investigation of sparse-angle view in cone beam computed tomography (CBCT) reconstruction algorithm using a sinogram interpolaton method
Dohyeon Kim, Republic of Korea
### Thursday June 11 2015

#### SESSION TIME: 17:00 – 18:45
#### SESSION ROOM: 701B
#### SESSION TRACK: TRACK 01: IMAGING
#### SESSION NAME: SP150 – X-RAY PHASE CONTRAST & SCATTER IMAGING
#### SESSION CHAIR(S): Paul Johns, Canada

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Chair(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17:00</td>
<td>SP150.1 - Reducing signal extraction artefacts for x-ray scatter imaging with multiple pencil beams</td>
<td>Paul Johns, Canada</td>
</tr>
<tr>
<td>17:15</td>
<td>SP150.2 - Live animal phase contrast x-ray velocimetry of the lungs: Optimising imaging speed for synchrotron and lab source imaging</td>
<td>Rhiannon Murrie, Australia</td>
</tr>
<tr>
<td>17:30</td>
<td>SP150.3 - X-ray Phase-Contrast imaging: from mammography to breast tomodensitometry using synchrotron radiation</td>
<td>Renata Longo, Italy</td>
</tr>
<tr>
<td>17:45</td>
<td>SP150.4 - 4 Years of X-ray Imaging at 05B1-1 Beamline at BMIT</td>
<td>Tomasz Wysokinski, Canada</td>
</tr>
<tr>
<td>18:00</td>
<td>SP150.5 - An energy dispersive bent Laue monochromator for K-edge subtraction imaging</td>
<td>Nazanin Samadi, Canada</td>
</tr>
<tr>
<td>18:15</td>
<td>SP150.6 - An incoherent implementation of x-ray phase contrast imaging and tomodensitometry that maintains high sensitivity at low delivered doses</td>
<td>Alessandro Olivo, United Kingdom</td>
</tr>
<tr>
<td>18:30</td>
<td>SP150.7 - Indirect measurement of average alveolar size using dynamic phase-contrast imaging</td>
<td>Mercedes Martinson, Canada</td>
</tr>
</tbody>
</table>

#### SESSION TIME: 17:00 – 19:00
#### SESSION ROOM: 714B
#### SESSION TRACK: TRACK 03: BIOMECHANICS AND ARTIFICIAL ORGANS
#### SESSION NAME: SP151 – CARDIO MECHANICS & ORGANS
#### SESSION CHAIR(S): David Macku, Czech Republic

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Chair(s)</th>
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</thead>
<tbody>
<tr>
<td>17:00</td>
<td>SP151.1 - KEYNOTE: Biomechanics and artificial organs</td>
<td>Birgit Glasmacher, Germany</td>
</tr>
<tr>
<td>17:30</td>
<td>SP151.2 - The Continuous Flow Total Artificial Heart in Clinical Practice</td>
<td>David Macku, Czech Republic</td>
</tr>
<tr>
<td>17:45</td>
<td>SP151.3 - Power Control Range of Operation for the Left Ventricular Assist Device in Bridge-to-Recovery Treatment</td>
<td>Marwan Simaan, United States</td>
</tr>
</tbody>
</table>

#### SESSION TIME: 17:00 – 18:30
#### SESSION ROOM: 718B
#### SESSION TRACK: TRACK 04: RADIATION ONCOLOGY
#### SESSION NAME: SP152 – SPECIAL TREATMENT TECHNIQUES: PART 2
#### SESSION CHAIR(S): Emily Heath, Canada

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Chair(s)</th>
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</thead>
<tbody>
<tr>
<td>18:00</td>
<td>SP152.4 - An quantitative estimation method of peripheral perfusion by using a CCD camera during rotary blood pump support</td>
<td>Yasuyuki Shiraishi, Japan</td>
</tr>
<tr>
<td>18:15</td>
<td>SP152.5 - Mathematical Modeling of Left Ventricle Stroke Work Following Transcatheter Aortic Valve Replacement Associated With Paravalvular Leaks</td>
<td>Azadeh Saeedi, Canada</td>
</tr>
<tr>
<td>18:30</td>
<td>SP152.6 - Criteria to study Heart Failure derived from ESPVR</td>
<td>Rachad Shoucri, Canada</td>
</tr>
<tr>
<td>18:45</td>
<td>SP152.7 - Fluid Dynamics of Transcatheter Aortic Valve Associated with Paravalvular Leak</td>
<td>Azadeh Saeedi, Canada</td>
</tr>
</tbody>
</table>
### SESSION TIME: 17:00 – 18:45
### SESSION ROOM: 701A
### SESSION TRACK: TRACK 04: RADIATION ONCOLOGY
### SESSION NAME: SP153 – QUALITY ASSURANCE: PART 4
### SESSION CHAIR(S): YOUNG LEE, CANADA

**17:00**
SP153.1 - Comparison of AAA and CCC Algorithms for H&N RapidArc pre-patient treatment QA  
_Thuso Ramaloko, South Africa_

**17:15**
SP153.2 - Tuning treatment planning system model parameters for accurate VMAT dose calculation using conformal arc plans  
_Orest Ostapiak, Canada_

**17:30**
SP153.3 - Prostate brachytherapy with Oncentra Seeds: Intra-operative planning and delivery software validation assisted by an FMEA  
_Renee Larouche, Canada_

**17:45**
SP153.4 - Investigation of predictive parameters for pre-treatment measurement pass rates in hypo-fractionated volumetric arc therapy (HF-VMAT) plans of single brain metastasis  
_Young Lee, Canada_

**18:00**
SP153.5 - Inter-centre comparison of dose delivery accuracy for six different linac-planning system combinations for SBRT lung cancer treatment using FFF beams.  
_David Thwaites, Australia_

**18:15**
SP153.6 - A pilot study investigating the impact of treatment delivery uncertainties for lung SABR using step and shoot IMRT and VMAT  
_David Thwaites, Australia_

**18:30**
SP153.7 - Adaptive patient dose assessment using daily 3D cone beam CTs and Monte Carlo simulations  
_Nevin McVicar, Canada_

### SESSION TIME: 17:00 – 19:00
### SESSION ROOM: 716A
### SESSION TRACK: TRACK 05: DOSIMETRY AND RADIATION PROTECTION
### SESSION NAME: SP154 – DEVELOPMENTS IN RADIATION PROTECTION
### SESSION CHAIR(S): STEPHEN SAWCHUK, CANADA

**17:00**
SP154.1 - Ferrous - methylthymol blue - gelatin gel dosimeter with improved auto-oxidation stability  
_Kalin Penev, Canada_

**17:15**
SP154.2 - The dosimetric property of TLD2000 thermoluminescent dosimeter  
_Nan Zhao, People’s Republic of China_

**17:30**
SP154.3 - Application of 2D thermoluminescent dosimetry in QA test of Cyberknife  
_Renata Kopec, Poland_

**17:45**
SP154.4 - Towards Optical CT scanning of radiochromic 3D dosimeters in mismatched refractive index solutions  
_Kurtis Dekker, Canada_

**18:00**
SP154.5 - Development of a Novel Linear Energy Transfer Detector Using Doped Plastic Scintillators and Monte Carlo Simulation  
_Humza Nusrat, Canada_

**18:15**
SP154.6 - Reduction of residual signal in LiF:Mg, Cu, P thermoluminescent material.  
_Vinod Nelson, Australia_

**18:30**
SP154.7 - Application of dose gels in HDR brachytherapy  
_Diana Adliene, Lithuania_

**18:45**
SP154.8 - Practical 3D QA for Radiation Therapy Based on High-Resolution Laser CT of Reusable Radiochromic Polymer-Gel Dosimeters in Dedicated Phantoms  
_Stephen Avery, United States_

### SESSION TIME: 17:00 – 18:00
### SESSION ROOM: 715B
### SESSION TRACK: TRACK 05: DOSIMETRY AND RADIATION PROTECTION
### SESSION NAME: SP155 – CHARACTERIZATION OF DETECTOR SYSTEMS FOR THERAPY DOSIMETRY: PART 3
### SESSION CHAIR(S): DIANA ADLIENE, LITHUANIA

**17:00**
SP155.1 - Ferrous - methylthymol blue - gelatin gel dosimeter with improved auto-oxidation stability  
_Kalin Penev, Canada_

**17:15**
SP155.2 - The dosimetric property of TLD2000 thermoluminescent dosimeter  
_Nan Zhao, People’s Republic of China_

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_Diana Adliene, Lithuania_

**18:45**
SP155.8 - Practical 3D QA for Radiation Therapy Based on High-Resolution Laser CT of Reusable Radiochromic Polymer-Gel Dosimeters in Dedicated Phantoms  
_Stephen Avery, United States_
17:00 SP156.1 - A Technique for Prostate Registration by Finite Element Modeling
Fangsen Cui, Singapore

17:15 SP156.2 - Modeling study of neo-aortic root for arterial switch operation: a structural finite element analysis
Zhaoyong Gu, People's Republic of China

17:30 SP156.3 - Preoperative in silico analysis of atherosclerotic calcification vulnerability in carotid artery stenting using Finite Element Analysis by considering Agatston score
Sadegh Riyahi Alam, Italy

17:45 SP156.4 - Biomechanical modeling for foot inversion
Junchao Guo, People's Republic of China

18:00 SP156.5 - Deformation Method and 3D Modeling of the female body to simulate Core Biopsy procedure
Lourdes Brasil, Brazil

18:15 SP156.6 - Effects of Band Position on Hemodynamics of Pulmonary Artery: A Numerical Study of Patient-specific Virtual Procedure
Jin Long Liu, People's Republic of China

18:30 SP156.7 - Experimentally validated Biomechanical Model of in vivo Lung under EBRT considering Diaphragm motion hysteresis
Elham Karami, Canada

17:00 SP157.1 - KEYNOTE: On-chip blood Plasma separation using vacuum-assisted micropumping for point-of-care application
Kwang Oh, United States

17:30 SP157.2 - Multi-Functional Platform for Blood Group Phenotyping using Surface Plasmon Resonance
Whui Lyn Then, Australia

17:45 SP157.3 - Harmonic generation microscopy investigation of human pathological samples for automated cancer determination
Richard Cisek, Canada

18:00 SP157.4 - Protein Patterning: An investigation on the use of different protein deposition techniques and parameters to transfer proteins onto various surfaces.
Kathryn Clancy, Canada

17:00 SP158.1 - Medical Physics Residencies-101: The What’s, Where’s, and How’s
Jeff Frimeth, Canada

17:15 SP158.2 - Education and Clinical Training of Medical Physics in Thailand
Anchali Krisanachinda, Thailand

17:30 SP158.3 - Radiation Protection in Medical Imaging and Radiation Oncology
Magdalena Stoeva, Bulgaria

17:45 SP158.4 - It’s a Medical Physics World! Presenting the Official Bulletin of the International Organization for Medical Physics
Magdalena Stoeva, Bulgaria

18:00 SP158.5 - The new IOMP Professional Journal - Medical Physics International - first results
Slavik Tabakov, United Kingdom

18:15 SP158.6 - Two First Years of Reuniting, Engaging and Discovering: The Canadian Congress for Undergraduate Women in Physics
Madison Rilling, Canada

18:30 SP158.7 - Students’ perspective on studying online at Heidelberg University, Germany (UHD)
Marcel Schaefer, Germany

18:45 SP158.8 - Launching of the ASEAN College of Medical Physics
Kwan Hoong Ng, Malaysia
17:00 SP159.1 - **KEYNOTE:** Dwarfing Big Data for Oncology Applications: Necessity and Possibilities
*Issam El Naqa, Canada*

17:30 SP159.2 - Improved temperature monitoring and treatment planning for loco-regional hyperthermia treatments of Non-Muscle Invasive Bladder Cancer (NMIBC)
*Gerben Schooneveldt, Netherlands*

17:45 SP159.3 - A Full 3D CFD Model Coupled with an Outflow Lumped Boundary and Inflow Total Pressure Formulation to Estimate Human Cardiac Perfusion
*Iyad Fayssal, Lebanon*

18:00 SP159.4 - Simulation Model of Image-Guided Percutaneous Thermal Ablation in the Assessment of Optimal Approach for Complete Tumour Ablation
*Chai Hong Yeong, Malaysia*

17:00 SP160.1 - From ‘Fracking’ and ‘Macrovoids’ to the Onset of Cancer Metastasis: A Mechano-Metabolomics Model of a Plausible Fluid-Solid Network Instability in Tumors
*Sai Prakash, United States*

17:15 SP160.2 - Surface electromyography in quantifying Parkinson’s disease and its treatment with deep brain stimulation
*Pasi Karjalainen, Finlandia*

17:30 SP160.3 - A Decade of Experience with Intraoperative Microelectrode Recording in Determining the Subthalamic Nuclie (STN) Deep Brain Stimulation? Lead Positions in 260 Parkinson Diseased Conditions in South India? A Retrospective Study
*Venkateshwarla Raju, India*

17:45 SP160.4 - Vortex of the Magnetic Field on the Growth Rate of Escherichia Coli
*Teodoro Cordova - Fraga, Mexico*

18:00 SP160.5 - Electro Magnetic Therapy and Laser in the Chronic Pain Of The Woman
*Manuel Zuniga, Ecuador*
**Friday, June 12 2015**

**SESSION TIME:** 08:00 – 09:45  
**SESSION ROOM:** 718A  
**SESSION TRACK:** TRACK 01: IMAGING  
**SESSION NAME:** SP161 – ANGIOGRAPHY / X-RAY IMAGING  
**SESSION CHAIR(S):** JOSÉ CARLOS DE LA VEGA, CANADA  
JEFF FRIMETH, CANADA

**08:00**  
SP161.1 - 5D DSA Using Dual Energy Acquisition  
*Gabe Shaughnessy, United States*

**08:15**  
SP161.2 - Investigation of Rhenium-Doped Microsphere-Based Contrast Agents for Diagnostic X-Ray Imaging  
*José Carlos De La Vega, Canada*

**08:45**  
SP161.3 - Theoretical and experimental comparison of image signal and noise for dual-energy subtraction angiography and conventional x-ray angiography  
*Christiane Burton, Canada*

**09:00**  
SP161.4 - Some Physical and Clinical Factors Influencing the Measurement of Precision Error, Least Significant Change, and Bone Mineral Density in Dual-Energy X-Ray Absorptiometry  
*Jeff Frimeth, Canada*

**09:15**  
SP161.5 - Use of Conventional Regional DXA Scans for Estimating Whole Body Composition  
*Mohammad Reza Salamat, Iran*

**09:30**  
SP161.6 - Multiple Energy Synchrotron Biomedical Imaging System? Preliminary Results  
*Bassey Bassey, Canada*

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**SESSION TIME:** 08:00 – 10:00  
**SESSION ROOM:** 716A  
**SESSION TRACK:** TRACK 05: DOSIMETRY AND RADIATION PROTECTION  
**SESSION NAME:** SP163 – PRIMARY DOSIMETRY STANDARDS  
**SESSION CHAIR(S):** NATALKA SUCHOWERSKA, AUSTRALIA  
RONALD TOSH, UNITED STATES

**08:00**  
SP163.1 - KEYNOTE: Candidate Technologies for Next-Generation Dosimetry Standards  
*Ronald Tosh, United States*

**08:30**  
SP163.2 - Absorbed dose to water measurements in a clinical carbon ion beam using water calorimetry  
*Julia-Maria Osinga, Germany*

**08:45**  
SP163.3 - Results from the on-going key comparison BIPM.RI(I)-K6 : What have we learned?  
*Susanne Picard, France*

**09:00**  
SP163.4 - Absorbed dose-to-water primary standard and traceability system for radiotherapy in China  
*Kun Wang, People’s Republic of China*
09:30 SP163.5 - Design of an MRI-compatible water calorimeter for use in an integrated MRI-Linac and Gamma-Knife
   *Niloufar Entezari, Canada*

09:45 SP163.6 - On the practical use of calorimetry for routine absolute dosimetry in the radiotherapy clinic
   *James Renaud, Canada*

08:00 SP164.1 - Real-time dose reconstruction for adaptive radiation therapy
   *Martin Fast, United Kingdom*

08:15 SP164.2 - Evaluation of unified intensity-modulated arc therapy (UIMAT) for the treatment of head-and-neck cancer
   *Michael Macfarlane, Canada*

08:30 SP164.3 - A Hybrid IMRT/VMAT Technique for the Treatment of Nasopharyngeal Cancer
   *Nan Zhao, People’s Republic of China*

08:45 SP164.4 - Interactive real time adaptation of IMRT treatment plans
   *Cornelis Philippus Kamerling, United Kingdom*

09:00 SP164.5 - A Hybrid IMRT/VMAT technique for the treatment of non-small cell lung cancer
   *Nan Zhao, People’s Republic of China*

09:15 SP164.6 - Offline adaptive VMAT - feasibility study using planning CT deformed electron density mapping on daily CBCT to estimate parotid dose volume relationship
   *Vellian Subramani, India*

09:30 SP164.7 - Plan Optimization for a Lung Patient on a Parallel Linac-MR System
   *Daniel Tamagi, Canada*

08:15 SP165.2 - A Real-Time Clustered MUSIC algorithm for the localization of synchronous MEG/EEG source activity
   *Daniel Baumgarten, Germany*

08:30 SP165.3 - Spatial harmonics for compressive sensing in electroencephalography
   *Jens Haueisen, Germany*

08:45 SP165.4 - An Evaluation of Performance for an Independent SSVEP-BCI Based on Compression Sensing System
   *Teodiano Bastos-Filho, Brazil*

09:00 SP165.5 - Multi-way based Source Localization of Multichannel EEG signals Exploiting Hilbert-Huang Transform
   *Saeed Pouryazdian, Canada*

08:00 SP166.1 - Enhanced Transcutaneous Electrical Nerve Stimulation (eTENS): A Novel Method of Achieving Posterior Tibial Nerve Stimulation Therapy for Overactive Bladder
   *Paul Yoo, Canada*

08:15 SP166.2 - Decreasing Upper Extremity Demands During Sitting Pivot Transfers for Individuals with Spinal Cord Injury by Utilizing Functional Electrical Stimulation
   *Stephanie Bailey, United States*

08:30 SP166.3 - Design of Orthotic Mechanisms to Control Stand-to-Sit Maneuver for Individuals with Paraplegia
   *Ronald Triolo, United States*

08:45 SP166.4 - Improved Peripheral Nerve Recording with a Small Form-Factor Nerve Cuff Electrode: A Computational Study
   *Parisa Sabetian, Canada*

09:00 SP166.5 - Effect of stimulation on non-erect postures with a standing neuroprosthesis
   *Brooke Odle, United States*

09:15 SP166.6 - Automatic Detection of Destabilizing Wheelchair Conditions for Modulating Actions of Neuroprostheses to Maintain Seated Posture
   *Ronald Triolo, United States*

09:30 SP166.7 - Selecting Upper Extremity Command Signals to Modulate Electrical Stimulation of Trunk Muscles during Manual Wheelchair Propulsion
   *Stephanie Bailey, United States*
SESSION TIME: 08:00 – 10:00
SESSION ROOM: 715B
SESSION TRACK: TRACK 12: MEDICAL DEVICES
SESSION NAME: SP167 – GI AND GU
SESSION CHAIR(S): FRANCO SIMINI, URUGUAY
PHILIPPA MAKOBORE, UGANDA

08:00  SP167.1 - KEYNOTE: Medical Devices
Aaron Fenster, Canada

08:30  SP167.2 - Dielectric Properties of Urine for Diabetes Mellitus and Chronic Kidney Disease between 0.2 GHz and 50 GHz
Hua Nong Ting, Malaysia

08:45  SP167.3 - Intraoperative Bioelectrical Impedance Measurement for Assisting Segmental Renal Artery Clamping Partial Nephrectomy
Yu Dai, People's Republic of China

09:00  SP167.4 - Renal Volume Estimation by Ultrasound Parallel Scanning for Polycystic Kidney Disease Follow-up
Franco Simini, Uruguay

09:15  SP167.5 - Can Removal of Middle Molecular Uremic Retention Solutes be Estimated by UV-absorbance Measurements in Spent Dialysate?
Kai Lauri, Estonia

09:30  SP167.6 - Discrimination of prostate tissue with a combination of Raman spectroscopy and tactile resonance technology
Olof Lindahl, Sweden

09:45  SP167.7 - Appropriate Medical Devices for Low Resource Settings: Electronically Controlled Gravity-Feed Intravenous Infusion Set
Philippa Makobore, Uganda

SESSION TIME: 08:00 – 09:45
SESSION ROOM: 717B
SESSION TRACK: TRACK 12: MEDICAL DEVICES
SESSION NAME: SP168 – HEALTH CHALLENGES IN RESOURCE-POOR NATIONS
SESSION CHAIR(S): Mladen Poluta, South Africa
Karim S Karim, Canada

08:00  SP168.1 - KEYNOTE: Medical Devices
Adriana Velazquez Berumen, Switzerland

08:30  SP168.2 - Distributed learning: developing a predictive model for dyspnea in lung cancer patients based on data from multiple hospitals
Johan Van Soest, Netherlands

08:45  SP168.3 - User Centered Design to incorporate predictive models for Type 2 Diabetes screening and management into professional decision support tools: preliminary results.
Giuseppe Fico, Spain

09:00  SP168.4 - Quantifying Bipolar Disorder for Technology-Assisted Self-Management
James Amor, United Kingdom

09:15  SP168.5 - Hippocratic Protocol Design to Improve Security and Privacy in Healthcare Applications for NFC Smartphone
Jose Pirrone Puma, Venezuela

09:30  SP168.6 - Extracting Intention from Web Queries? Application in eHealth Personalization
George Drosatos, Greece

SESSION TIME: 08:00 – 09:45
SESSION ROOM: 701A
SESSION TRACK: TRACK 13: INFORMATICS IN HEALTH CARE AND PUBLIC HEALTH
SESSION NAME: SP169 – SELF ENGAGEMENT, PATIENT EMPOWERMENT AND MHEALTH
SESSION CHAIR(S): Giuseppe Fico, Spain
Eleni Kaldoudi, Greece

08:00  SP169.1 - KEYNOTE: Empowering patients through information technologies
Eleni Kaldoudi, Greece

08:30  SP169.2 - Can Removal of Middle Molecular Uremic Retention Solutes be Estimated by UV-absorbance Measurements in Spent Dialysate?
Kai Lauri, Estonia

09:00  SP169.4 - Quantifying Bipolar Disorder for Technology-Assisted Self-Management
James Amor, United Kingdom

09:15  SP169.5 - Hippocratic Protocol Design to Improve Security and Privacy in Healthcare Applications for NFC Smartphone
Jose Pirrone Puma, Venezuela

09:30  SP169.6 - Extracting Intention from Web Queries? Application in eHealth Personalization
George Drosatos, Greece

09:00  SP168.4 - Bending the cost curve: Towards a $1000 diagnostic X-ray imager for scalable and sustainable healthcare
Karim S Karim, Canada

09:15  SP168.5 - Creating a Continental Network of Healthcare Innovation Centers: Collaborating across National Boundaries to design Devices and Best Practices
Fred Hosea, United States

9:30  SP168.6 - Towards a WHO List of Priority Medical Devices for Cancer Care, targeting low and middle income countries
Miriam Mikhail Lette, Switzerland
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**SESSION TIME:** 08:00 – 09:30
**SESSION ROOM:** 715A
**SESSION TRACK:** TRACK 14: INFORMATION TECHNOLOGIES IN HEALTHCARE DELIVERY AND MANAGEMENT
**SESSION NAME:** SP170 – INFORMATION TECHNOLOGIES IN HEALTHCARE DELIVERY AND MANAGEMENT: PART 3
**SESSION CHAIR(S):** BRUCE CURRAN, UNITED STATES
JOSEPH CAFAZZO, CANADA

08:00 SP170.1 - Wireless equipment localization for medical environments
*Daniel Laqua, Germany*

08:15 SP170.2 - Exploring Approaches to Optimise the Estimation of Preterm Birth Using Machine Learning Techniques
*Monique Frize, Canada*

08:30 SP170.3 - Smartwatch App as the Chest Compression Depth Feedback Device
*Yujin Jeong, Republic of Korea*

08:45 SP170.4 - Diagnosis of the corporal movement in Parkinson's Disease using Kinect Sensors
*Jose Pirrone Puma, Republic of Korea*

09:00 SP170.5 - A System to Support Regional Screening Programs to Identify School-age Children at Risk of Neurodevelopmental Disorders
*Elsa Santos Febles, Cuba*

09:15 SP170.6 - Support platform to decision making in research and technological development in public health: a brazilian scenario approach
*Carlos Rocha, Brazil*
10:45  SP173.2 - Temperature Dependence of Nonlinear Acoustic Harmonics in Water: Measurement and Simulation  
       Borna Maraghechi, Canada  
11:00  SP173.3 - 3D trans-rectal ultrasound for high-dose-rate prostate brachytherapy: a comparison of sagittally-reconstructed 3D image volumes with sagittally-assisted axial image sets  
       William Hrinivich, Canada  
11:15  SP173.4 - Understanding lung ultrasound artifacts using a phantom lung model  
       Justine Shuhui Loh, United Kingdom  
11:30  SP173.5 - Accuracy of Tissue Elasticity Measurement using Shear Wave Ultrasound Elastography: A Comparative Phantom Study  
       Chai Hong Yeong, Malaysia  

10:45  SP175.2 - Dosimetric and clinical benefits of conformal radiotherapy combined plus volumetric modulated arc therapy in the treatment of non-small cell lung cancer  
       Xiance Jin, People’s Republic of China  
11:00  SP175.3 - Non-uniform spatiotemporal fractionation schemes in photon radiotherapy  
       Jan Unkelbach, United States  
11:15  SP175.4 - Compressed Sensing-Based LDR Brachytherapy Inverse Treatment Planning with Biological Models  
       Christian Guthier, Germany  
11:30  SP175.5 - Investigation of Dosimetric and Biological Differences between Flattened and Unflattened Beams from the TrueBeam System  
       Bhudatt Paliwal, United States
10:30 SP177.1 - Simple expression of x-ray doses below 1 MeV grazing incident on shields of concrete and iron backed by lead
Nobuteru Nariyama, Japan

10:45 SP177.2 - Evaluation of conversion coefficients from Air Kerma to Ambient Dose Equivalent for secondary barriers in diagnostic radiological facilities
Paulo Costa, Brazil

11:00 SP177.3 - Shielding photon beams to account for adjacent, underground building of a radiation therapy facility
Dario Sanz, Argentina

11:15 SP177.4 - Vectorization of the time-dependent Boltzmann transport equation for photon beams: applications in radiation shielding
Dario Sanz, Argentina

11:30 SP177.5 - The use of FLUKA Monte Code in the re-design of radiotherapy mazes with the use of lead cladding of a few mm thickness
Ihsan Al-Affan, United Kingdom

10:30 SP178.1 - Characterization of Single Units in Human Neocortical Slices Maintained In Vitro
Sara Mahallati, Canada

10:45 SP178.2 - Astrocytes enhance neuronal long term potentiation in a biophysical model of epilepsy
Vasily Grigorovsky, Canada

11:00 SP178.3 - Influence of the 'sympathetic slump' on biomechanics of the sympathetic trunk
Liesbeth Van Hauwermeiren, Belgium

11:15 SP178.4 - Superparamagnetic Nanoparticles for Epilepsy Detection
Ebrahim Ghafar-Zadeh, Canada

11:30 SP178.5 - Automatic detection of epileptic seizures in scalp EEG
Yasser Pérez, Cuba

11:45 SP178.6 - Beta/Theta Neurofeedback Training Effects in Physical Balance of Healthy People
Wenya Nan, People's Republic of China

12:00 SP178.7 - Potential Benefits in Comparing the Neural Control Networks Studies Between the Oculomotor and Cardiac Pacing Systems
Michael Cheng, Canada

10:30 SP179.1 - Acceptance Test of the first Hospital Cyclotron for Production of PET tracers in Iran
Pardis Ghafarian, Iran

10:45 SP179.2 - HiFEM - An Integrated Approach for Human Centered Risk Management for Medical Devices
Klaus Radermacher, Germany

11:00 SP179.3 - Ultrasonic Microscanning for Digital Dental Impressioning
Klaus Radermacher, Germany

11:15 SP179.4 - A study on prefrontal blood flow in patients with moderate dementia and severe dementia using near-infraredinfrared
Shingo Takahashi, Japan

10:30 SP180.1 - Increasing efficiency of data transfer in WBANs
Luka Celic, Croatia

10:45 SP180.2 - Decision support system for no common emergency in a big city with intelligent routing algorithm and attention quality parameters evaluation.
Lupe Toscano, Peru

11:00 SP180.3 - Development of a Multi-Center Clinical Trial Data Archiving and Analysis Platform
Brandon Driscoll, Canada

11:15 SP180.4 - Global Health Catalyst: A systematic Space-time compression platform for catalyzing global health collaborations in Radiation Oncology
Wilfred Ngwa, United States
The IUPESM 2015 Posters will be displayed in the Exhibit Hall during open hours.

Presenting Author Stand By Time:
Presenters are request to stand by their posters during the networking breaks scheduled 10:00 - 10:30 and 16:30 - 17:00 Monday, June 8 to Thursday, June 11.

PS01 – TRACK 01: IMAGING

**PS01.001** – A discontinuity artefact at the isocenter of on-board CBCT images
Elsayed Ali, Canada

**PS01.002** – Correction of Metal Artefacts Induced from Pacemaker and ICD Leads in CT-Based Attenuation Correction of Cardiac SPECT data
Mohammad Reza Ay, Iran

**PS01.003** – Anthropomorphic Phantom of the Pancreas for Scintillation Camera Tests
Lourdes Brasil, Brazil

**PS01.004** – Comparing two image processing techniques, Wavelet and Segmentation by threshold, for detecting microcalcifications in an image mammographic.
Lourdes Brasil, Brazil

**PS01.005** – Measuring red blood cell velocity in capillary using video and image processing
Surapong Chatpun, Thailand

**PS01.006** – Development of a Quantitative PET QA Procedure for Multi-Center Clinical Trials
Brandon Driscoll, Canada

**PS01.007** – Unwrapping highly wrapped phase using Nonlinear Multi-Echo phase unwrapping
Chemseddine Fatnassi, Switzerland

**PS01.008** – Investigation of optimal display size for viewing MRI images using a digital contrast-detail phantom
Hideki Fujita, Japan

**PS01.009** – Investigation of presampled MTF using a slit device with slightly wider aperture
Rumi Gotanda, Japan

**PS01.010** – 3D Tumor delineation in Positron Emission Tomography reconstructed images restored by the use of Lucy Richardson blind deconvolution method
Albert Guvenis, Turkey

**PS01.011** – Different options for stimulation intensity in mapping cortical motor area in navigated transcranial magnetic stimulation
Petro Julkunen, Finland

**PS01.012** – Software Breast Phantom for Phase Contrast Imaging Applications
Nicolas Pallikarakis, Greece

**PS01.013** – Actions for Implementation Program of Image Quality of Mammography
Ana Cláudia Patrocinio, Brazil

**PS01.014** – Evaluating Techniques of Transformation Intensity for Contrast Enhancement in Mammographic Images
Ana Cláudia Patrocinio, Brazil

**PS01.015** – Influence of Contrast Enhancement to Breast Density Classification by Using Sigmoid Function
Ana Cláudia Patrocinio, Brazil

**PS01.016** – Evaluation of the difficulties of the learning process of mammographic readings
Ana Cláudia Patrocinio, Brazil

**PS01.017** – Non-deterministic optimization using Differential Evolution algorithm to launch seeds for liver segmentation in MDCT
Ana Cláudia Patrocinio, Brazil

**PS01.018** – Influence of ROI pattern on segmentation in lung lesions
Ana Cláudia Patrocinio, Brazil

**PS01.019** – Comparison between Elliptical and Squared ROI to Launch an Automatic Seed to Region Growing Algorithm on Hepatic Segmentation using CT images
Ana Cláudia Patrocinio, Brazil

**PS01.020** – Gd-based Nanoparticles Mediated Magnetic Field Enhancement Inside Homogenous Tissue: Simulation using Finite Element Method
Nader Riyahi-Alama, Iran

**PS01.022** – Linear tomosynthesis with flat-panel detector for image guided radiation therapy
Tae-Suk Suh, Republic of Korea

**PS01.023** – Evaluation of image quality and dose for digital breast tomosynthesis (DBT) using a semi-analytical model
Alessandra Tomal, Brazil

**PS01.024** – Optimization of acquisition parameters of the test of an overall SPECT/CT system performance.
Piotr Tulik, Poland

**PS01.025** – Dosimetric Analysis of Patient to a Z-Gradient Coil in Head Magnetic Resonance Imaging
Shoogo Ueno, Japan

**PS01.026** – A Novel Optical System for Contrast Enhancement in Histological Plates to Be Processed Digitally
Rubiel Vargas-Canas, Colombia

**PS01.027** – Pixel-based dynamic contrast-enhanced CT study with low temporal resolution
Ivan Yeung, Canada

**PS01.028** – Method for restoring CT images obtained at low doses
Marlen Perez-Diaz, Cuba
PS02.001 – Chitosan: A Chitinous Biopolymer For The Treatment Of Crude Oil Polluted Water
Eileen Agoha, Nigeria

PS02.002 – Temperature of ice formation affects integrity of alginate 3D constructs after cryopreservation
Birgit Glasmacher, Germany

PS02.003 – Influence of proteins on magnesium in vitro degradation
Birgit Glasmacher, Germany

PS02.004 – Electrosprinning of vascular prostheses with anti-kinking properties
Birgit Glasmacher, Germany

PS02.005 – Electrosprinning of polycaprolactone/chitosan polymeric fibrous membranes as scaffolds for cardiovascular tissue engineering applications
Birgit Glasmacher, Germany

PS02.006 – Coaxial electrosprinning of piezoelectric PVDF/PCL scaffolds for nerve regeneration
Birgit Glasmacher, Germany

PS02.007 – Bio rapid prototyping project: Evaluation of spheroid formation for cells construct
Takeshi Shimoto, Japan

PS02.008 – Scaffold Prototype for Heart Valve Tissue Engineering: Design and Material Analyses
Marcia Simbara, Brazil

PS02.009 – Unidirectionally-frozen silk/gelatin scaffolds for cardiac tissue engineering
Siew-Lok Toh, Singapore

PS02.010 – Engineering Mesenchymal Stromal Cells (MSCs) to be More Immunevasive by Altering Cell Culture Conditions
Sowmya Viswanathan, Canada

PS02.011 – Novel zwitterionic polypeptides for improving resistance to non-specific protein adsorption
Xiaojuan Wang, People’s Republic of China

PS02.012 – Study on preparation and mechanical properties of polyurethane foam with negative Poisson’s ratio
Lizhen Wang, People’s Republic of China

PS02.013 – Proliferation of cardiomyocytes in neonatal, further implication in heart regeneration
Lincai Ye, People’s Republic of China

PS02.014 – Synergistic effects of released ions from CaO-MgO-SiO2-based multiphase bioceramics on osteogenic proliferation and differentiation
Meng Zhang, People’s Republic of China

PS02.015 – Cooling Rate Effects on the Microstructure Evolutions of Biodegradable Mg2Ca Potential Medical Implant Alloy
Li Li Zhou, People’s Republic of China

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PS02.030 – Proliferation of cardiomyocytes in neonatal, further implication in heart regeneration
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PS02.033 – Study on preparation and mechanical properties of polyurethane foam with negative Poisson’s ratio
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PS02.034 – Proliferation of cardiomyocytes in neonatal, further implication in heart regeneration
Lincai Ye, People’s Republic of China

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Meng Zhang, People’s Republic of China

PS02.036 – Cooling Rate Effects on the Microstructure Evolutions of Biodegradable Mg2Ca Potential Medical Implant Alloy
Li Li Zhou, People’s Republic of China

PS02.037 – Study on preparation and mechanical properties of polyurethane foam with negative Poisson’s ratio
Lizhen Wang, People’s Republic of China

PS02.038 – Proliferation of cardiomyocytes in neonatal, further implication in heart regeneration
Lincai Ye, People’s Republic of China

PS02.039 – Synergistic effects of released ions from CaO-MgO-SiO2-based multiphase bioceramics on osteogenic proliferation and differentiation
Meng Zhang, People’s Republic of China

PS02.040 – Cooling Rate Effects on the Microstructure Evolutions of Biodegradable Mg2Ca Potential Medical Implant Alloy
Li Li Zhou, People’s Republic of China

PS02.041 – Study on preparation and mechanical properties of polyurethane foam with negative Poisson’s ratio
Lizhen Wang, People’s Republic of China

PS02.042 – Proliferation of cardiomyocytes in neonatal, further implication in heart regeneration
Lincai Ye, People’s Republic of China

PS02.043 – Synergistic effects of released ions from CaO-MgO-SiO2-based multiphase bioceramics on osteogenic proliferation and differentiation
Meng Zhang, People’s Republic of China

PS02.044 – Cooling Rate Effects on the Microstructure Evolutions of Biodegradable Mg2Ca Potential Medical Implant Alloy
Li Li Zhou, People’s Republic of China

PS02.045 – Study on preparation and mechanical properties of polyurethane foam with negative Poisson’s ratio
Lizhen Wang, People’s Republic of China

PS02.046 – Proliferation of cardiomyocytes in neonatal, further implication in heart regeneration
Lincai Ye, People’s Republic of China

PS02.047 – Synergistic effects of released ions from CaO-MgO-SiO2-based multiphase bioceramics on osteogenic proliferation and differentiation
Meng Zhang, People’s Republic of China

PS02.048 – Cooling Rate Effects on the Microstructure Evolutions of Biodegradable Mg2Ca Potential Medical Implant Alloy
Li Li Zhou, People’s Republic of China

PS02.049 – Study on preparation and mechanical properties of polyurethane foam with negative Poisson’s ratio
Lizhen Wang, People’s Republic of China

PS02.050 – Proliferation of cardiomyocytes in neonatal, further implication in heart regeneration
Lincai Ye, People’s Republic of China

PS02.051 – Synergistic effects of released ions from CaO-MgO-SiO2-based multiphase bioceramics on osteogenic proliferation and differentiation
Meng Zhang, People’s Republic of China

PS02.052 – Cooling Rate Effects on the Microstructure Evolutions of Biodegradable Mg2Ca Potential Medical Implant Alloy
Li Li Zhou, People’s Republic of China

PS02.053 – Study on preparation and mechanical properties of polyurethane foam with negative Poisson’s ratio
Lizhen Wang, People’s Republic of China

PS02.054 – Proliferation of cardiomyocytes in neonatal, further implication in heart regeneration
Lincai Ye, People’s Republic of China

PS02.055 – Synergistic effects of released ions from CaO-MgO-SiO2-based multiphase bioceramics on osteogenic proliferation and differentiation
Meng Zhang, People’s Republic of China

PS02.056 – Cooling Rate Effects on the Microstructure Evolutions of Biodegradable Mg2Ca Potential Medical Implant Alloy
Li Li Zhou, People’s Republic of China

PS02.057 – A biomechanical evaluation of a novel pedicle screw-based interspines device used to stabilize the lumbar spine
Yu-Shu Lai, Chinese Taipei

PS02.058 – Hematological, Biochemical, and End-organ effects of the CH-VAD in Ovine Model
Changyan Lin, People’s Republic of China

PS02.059 – Novel Low-Profile External Fixator with Simple Locking Mechanism Compared with Commercial Available External Device Could Provide Better Stability in Multicycle Dynamic Loadings
Kang-Ping Lin, Chinese Taipei

PS02.060 – A simple external fixation technique for treating bicondylar tibial plateau fracture: a finite element study
Kang-Ping Lin, Chinese Taipei

PS02.061 – Numerical analysis of the elaborate sound amplification mechanism of the mammalian inner ear
Michio Murakoshi, Japan
PS04.007 – Evaluation of the Applicability of Pinpoint ion chamber for Dosimetric Quality Assurance of SRS
Jong Geun Baek, Republic of Korea

PS04.008 – Development of a VARIAN 600 C/D Linear Accelerator model using MCNPX 2.6 Monte Carlo code.
Jorge Batista Cancino, Brazil

PS04.009 – A Comparison of Dosimetric Characteristic Between Integrated and Cine Acquisition Modes of a-Si EPID
Omenh Bawazeer, Australia

PS04.010 – Predicting clinical outcomes in locally-advanced non-small cell lung cancer using machine learning focusing on tumor and node imaging features
Nathan Becker, Canada

PS04.011 – Risk estimate of second primary cancers after breast radiotherapy
Eva Bezak, Australia

PS04.012 – A beam angle optimization technique for proton pencil beam scanning treatment planning of lower pelvis targets
Janid Blanco Kiely, United States

PS04.013 – Neutron-Photon mixed field dosimetry by TLD700 glow curve analysis and its implementation in dose monitoring for Boron Neutron Capture Therapy (BNCT) treatments
Esteban Boggio, Argentina

PS04.014 – Boron Neutron Capture Therapy (BNCT) neutron beam at RA-6 reactor: Quality Assurance and Quality Control
Esteban Boggio, Argentina

PS04.015 – Improved Pareto navigation using a plan database with segmented plans
Rasmus Bokrantz, Sweden

PS04.016 – Automated measurement of dwell and tandem position in ring HDR applicators
Bruno Carozza, Canada

PS04.017 – eMU Whisperer: An application for assessing patient surface topology and its impact on monitor units in electron beam therapy
Paule Charland, Canada

PS04.018 – Beam modeling of the flattening filter-free beams for VMAT SBRT using the collapsed cone convolution superposition algorithm
Samju Cho, Republic of Korea

PS04.019 – Dependence of Collimator Angle on Prostate VMAT: A Treatment Planning Study
James Chow, Canada

PS04.020 – Dosimetry of Pacemaker in VMAT for Lung SBRT
James Chow, Canada

PS04.021 – Determination of ion chamber correction factors for small composite fields used by the CyberKnife radiosurgery system
Eric Christiansen, Canada

PS04.022 – One-year review of a real-time, ultrasound-based, single-fraction prostate HDR program ? the Halifax experience
Krista Chytryk-Praznik, Canada

PS04.023 – Retrospective evaluation of visually monitored deep inspiration breath hold for breast cancer patients using edge detection
Leigh Conroy, Canada

PS04.024 – DECT Tissue Characterisation and Artefact Suppression Method for Improved Dose Calculations in Brachytherapy Treatments.
Nicolas Cote, Canada

PS04.025 – Radiotherapy Planning using CEER and CADPLAN in a Prostate Cancer Patient
Juan Alberto Cruz, Brazil

PS04.026 – Impact of increasing irradiation time on the treatment of prostate cancers
Alexandru Dasu, Sweden

PS04.027 – Hemi-body Electron irradiation: Development and Verification of this new technique
Panagiotis Delinikolas, Greece

PS04.028 – Deformable image registration and automatic contouring using Cone-Beam CT imaging: A study of volume statistics and similarity measures
Olivier Fillion, Canada

PS04.029 – Acceptance Modulated Radiation Intensity and Enhanced Dynamic Wedge using 2D Ion Chamber Array
Oscar Garcia Contreras, Colombia

PS04.030 – Dose Calculation in Gynecological Brachytherapy using Monte Carlo simulation for intracavitary treatment of Cervical Cancer
Oscar Garcia Contreras, Colombia

PS04.031 – An inverse treatment planning module for Gamma Knife® Perfexion? using 3D Slicer
Kimia Ghobadi, Canada

PS04.032 – Bladder and rectum DVH prediction: a statistical approach for prostate treatment
Frédéric Girard, Canada

PS04.033 – Retrospective evaluation of applicator localization for HDR cervix brachytherapy ? A comparison of MR versus CT
Lisa Glass, Canada

PS04.034 – A general source model for clinical linac heads in photon mode
Wilfredo González, Spain

PS04.035 – Measurement of the beam quality TPR 20,10 of small radiotherapy fields: Comparison of experimental measurements and Monte Carlo simulations
Eduardo González-Villa, Mexico

PS04.036 – The Effect of Assessment Criteria on Inter-rater Variability in the Evaluation of Skin Reactions following Breast Cancer Radiation Therapy
Riya Goyal, United States

PS04.037 – Two-dimensional probability density function presenting the pre-treatment variability of the rectal wall integrating the variability of the motion of the rectum and the rectal wall thickness
Grigor Grigorov, Canada

PS04.038 – Unbiased Assessment of Detail Detectability in Image Guided Radiation Therapy
Victor Gurvich, United States

PS04.039 – Assessing radiation protection of members living close to patients with implanted 125I seeds in prostate
Takashi Hanada, Japan
Sung Kyu Kim, Republic of Korea

using a visible guidance system

radiotherapy from statistical analysis

optimal phase for respiratory gated

PS04.051 – Determination of the

Tania Karan, Canada

– Partial Arc Breast Boost

PS04.050 – Republic of Cancer Tumours in the Czech

Capture Therapy in the Treatment

PS04.049 – The Use of Boron Neutron

Kevin Jordan, United States

CyberKnife M6 Daily AQA Test

Of The Error Sources Within The

– A Systematic Analysis

PS04.048

PS04.047 – Electron Density Measurements of Metallic

Implants with Cobalt-60 Computed

Tomography

Christopher Jechel, Canada

PS04.046 – IAEA multicentre study of the methodology for advanced
dosimetry audit: single IMRT field
dose delivery

Joanna Izewska, Austria

PS04.045 – Physical plan evaluation of Head and Neck Cancer at Square
Hospital, Bangladesh.

Md. Anwarul Islam, Bangladesh

PS04.044 – Dynamic resource allocation: Investigating ways to
distribute resources in a patient
cohort based on plan quality

Elin Hynning, Sweden

PS04.043 – Dosimetric impact of the

Acuros XB Algorithm for 25 lung SABR patients treated using the TrueBeam
FFF 6MV

Derek Hyde, Canada

PS04.042 – Accuracy in simulating tumor translation and rotation: Commissioning a motion platform, Hexamotion for tumor motion
management QA

Chen-Yu Huang, Australia

PS04.041 – Determination of exit fluency by elimination of Compton scattered photons and re-projection as primary photons

Masatsugu Hariu, Japan

PS04.040 – Improvement of MV planar image by elimination of Compton scattered photons and re-projection as primary photons

PS04.039

PS04.038 – Dosimetric Verifications of the Output Factors in the Small Field less than 3 cm² using the GaFochromatic EBT2 films and the Various Detectors

Sung Kyu Kim, Republic of Korea

PS04.037 – Methodology to Evaluate Combined EBRT and HDR Brachytherapy for Cervical Cancer using Equivalent Uniform Dose (EUD) and Tumor Control Probability (TCP)

Yusung Kim, United States

PS04.036 – International Multi-Institutional Bench Mark Study on Dosimetric and Volumetric Modulation using Helical TomoTherapy Treatment Planning for Malignant Pleural Mesothelioma Tumors

Tommy Knöös, United States

PS04.035 – Factors predicting of local relapse in irradiated patients with breast cancer: A Syrian Cohort study

Moussa Krayem, Syria

PS04.034 – Automated Routine Quality Assurance of VMAT

Michael Lamey, Canada

PS04.033 – Evaluation of the clinical usefulness of modulated Arc treatment

Young Kyu Lee, Republic of Korea

PS04.032 – A comparison of linac-based IMRT with helical tomotherapy for craniospinal irradiation

Young Lee, Canada

PS04.031 – A Hardware-Accelerated Software Platform for Adaptive Radiation Therapy

Junghoon Lee, United States

PS04.030 – Predicting the impact of Surgery on Quality of Life and Risk Management in Patients Afflicted with Glioblastoma Multiforme

Luca Li, Canada

PS04.029 – A memetic algorithm for body gamma knife stereotactic radiotherapy treatment planning

Bin Liang, People’s Republic of China

PS04.028 – Gamma evaluation of dose distributions from newly developed dosimetry system for helical tomotherapy

Sangwook Lim, Republic of Korea

PS04.027 – Suitability of a Light Transient and Electrically Conductive Glass Plate for Construction of a Beam Monitor for Radiation Therapy

Xun Lin, Canada

PS04.026 – Volumetric Modulated Arc Therapy of Pancreatic Cancer: Dosimetric Advantages as Compared to 3D Conformal Radiation Treatment

Xiangyang Mei, Canada

PS04.025 – Application of ExacTrack BrainLab system for Choroidal melanoma treatments using Stereotactic Radiotherapy and a not invasive immobilization system

Artur Menezes, Brazil

PS04.024 – Dosimetric evaluation of deliverable and navigated Pareto optimal plans generated with Multi-Criteria Optimization

Raphaël Moeckli, Switzerland

PS04.023 – 2D and 3D Approximate Entropy Algorithms for On-line Quantification of Threshold Structure Content in Large Radiotherapy Image Data

Christopher Moore, United Kingdom

PS04.022 – Dosimetric effects of seed positioning uncertainties in ophthalmic plaque brachytherapy

Hail Morrison, Canada

PS04.021 – A Method for Evaluating Deformable Dose Accumulation in RayStation

Joanne Moseley, Canada

PS04.020 – Dosimetric comparison between 3D CRT, full Arc and Partial Arc Vmat techniques in the management of locally advanced lung Cancer using External Beam Radiation Therapy (EBRT).

Samir Mouatassim, Marocco

PS04.019 – Dosimetric and clinical considerations for implementing CBCT based adaptive planning using RayStation

Bongile Mzenda, New Zealand
PS04.074 – A Statistical Study based on comparison between two treatment planning systems while exporting RT structure set
Kamlesh Passi, India

PS04.075 – The Characteristics and Implementation of XR-RV3 Gafchromic Film for Radiotherapy Dosimetry
Supriyanto Ardjo Pawiro, Indonesia

PS04.076 – Weighted comprehensive score evaluation of CBCT image guided positioning accuracy in lung cancer radiation treatment
Yinglin Peng, People’s Republic of China

PS04.077 – MCNP Simulation of Leksell Gamma Knife Using Disk Sources for Different Phantom Materials
Ma. Vanessa Francheska Perianes, Philippines

PS04.078 – Dosimetric comparison between RAPIDARC and 3DCRT planning in extremity soft tissue sarcoma
Yannick Poirier, Canada

PS04.079 – Cerebral Functional Alterations Before and After Intensity-Modulated Radiation Therapy in Patients with Nasopharyngeal Carcinoma
Wenting Ren, People’s Republic of China

PS04.080 – A Study of Accuracy from Varian Portal Dosimetry for VMAT Patient Specific QA using Monte Carlo
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PS16.025 – A Simulation Based Model for Planning Operating Theater Activity in Complex Hospitals: Case Study in Orthopedics
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PS16.037 – Integral clearance of medical rooms based on the type of medical treatment ensures a safe environment upon first use
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PS17.004 – An Experience on the dosimetry of HDR Brachytherapy Treatment Planning of Cervical Carcinoma at BPKM Cancer Hospital, Nepal
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PS17.005 – Health IT Education for Clinical Engineers
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PS17.011 – Detection of Eye Movement; possibility how to control world
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Marta Wasilewska-Radwanska, Poland

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