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World Congress on Medical Physics and Biomedical Engineering

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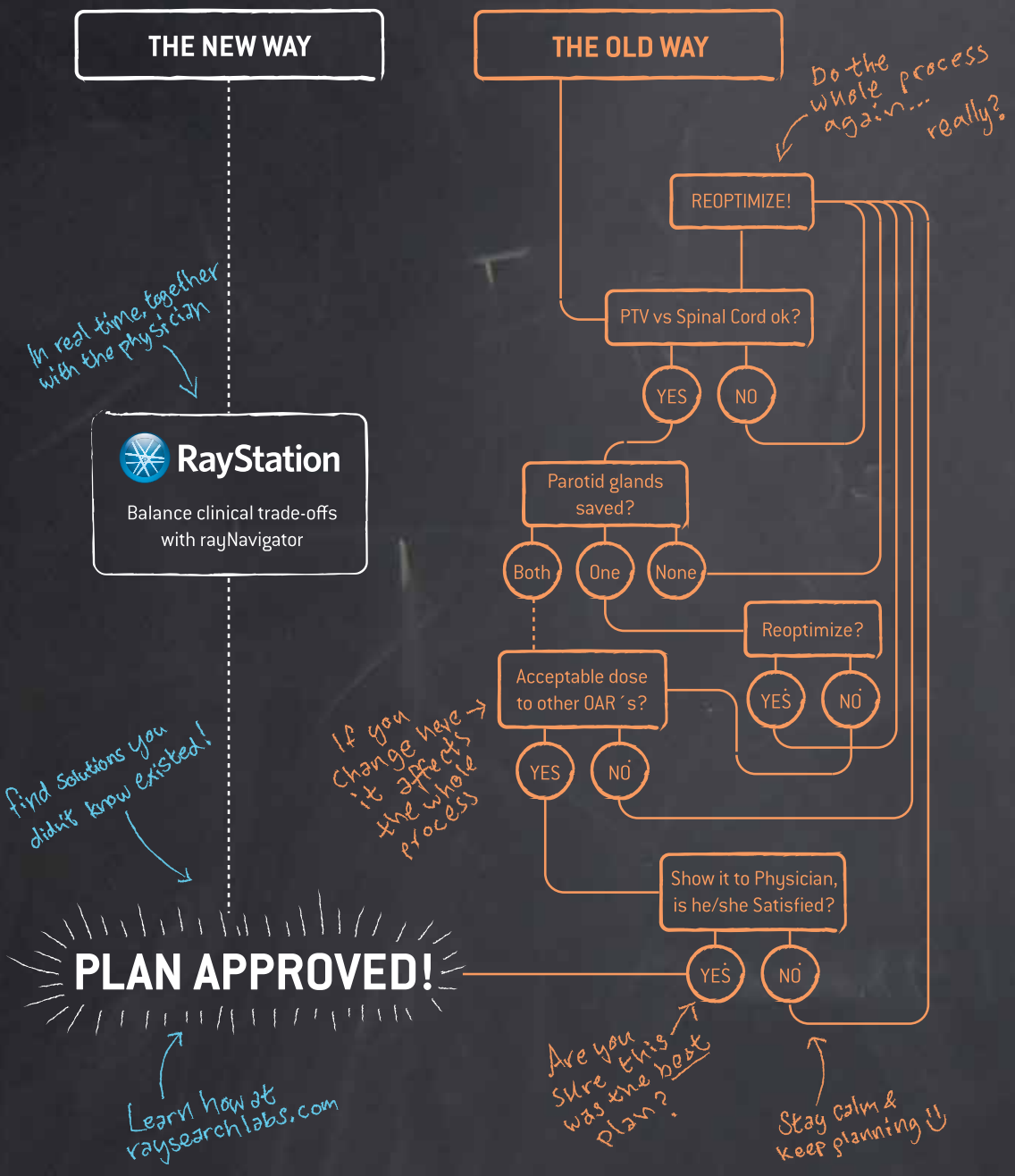

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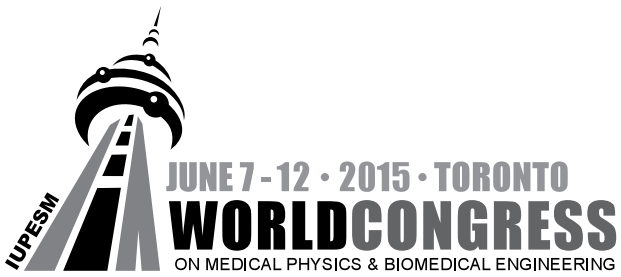

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WELCOME
MESSAGES

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 MESSAGES

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
MESSAGES

INTERNATIONAL ORGANIZATION FOR MEDICAL PHYSICS

Member of the International Union of Physical and Engineering Sciences in Medicine
(Union Member of the International Council for Science)

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
MESSAGES

IFMBE 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 Magjarević, PhD
President, IFMBE

WELCOME
MESSAGES

Ontario

Premier of Ontario - Première ministre de l'Ontario

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
MESSAGES

CMBES/SCGB

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

WELCOME
MESSAGES

Dear Delegates of the 2015 World Congress on Medical Physics and Biomedical Engineering,

COMP
Canadian Organization of Medical Physicists

OCPM
Organisation canadienne des physiciens médicaux

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 congresss, 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.

HOSTS & COMMITTEES

▶ COMMITTEES

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Ratko Magjarevic, Croatia
James Goh, Singapore
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CONGRESS **VENUE**

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.

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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.

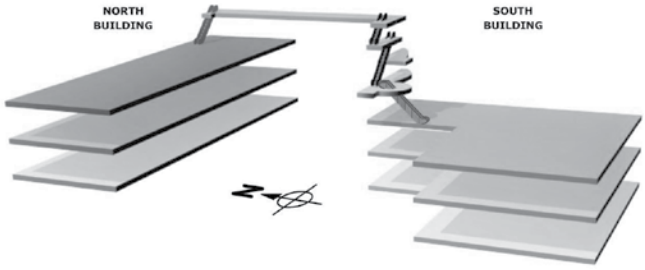
The landmark CN Tower is the tallest freestanding structure in the world. Take the elevator to the top for a breathtaking view of the city, Lake Ontario and more. Stroll next door and experience Ripley's Aquarium as you explore the wonders of the sea or a catch a Blue Jays Baseball game at Rogers Centre 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.

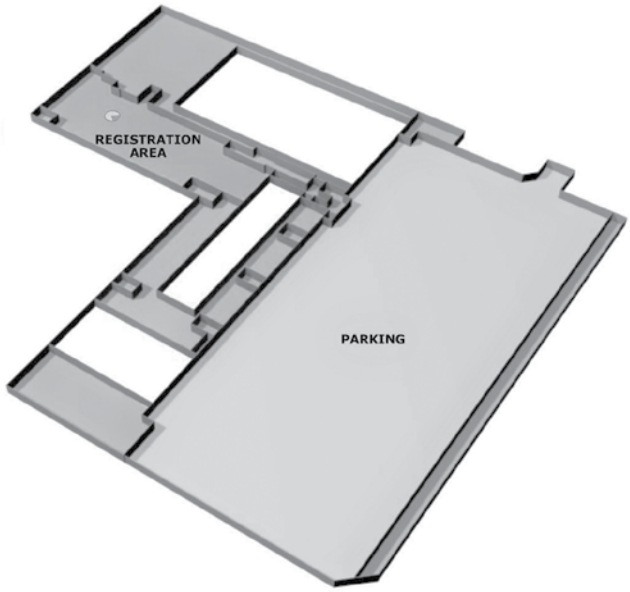
Explore the area and take a day trip to another wonder of the world and experience Niagara Falls or take a break right next door and experience Ontario's wine country. Toronto and the surrounding areas are a great family destination and most attractions are child-friendly. The city itself is clean, safe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

CONGRESS **VENUE**

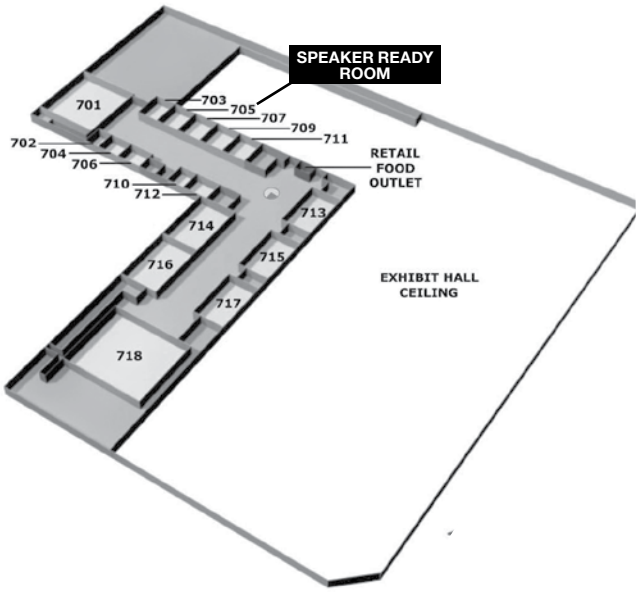
South Building



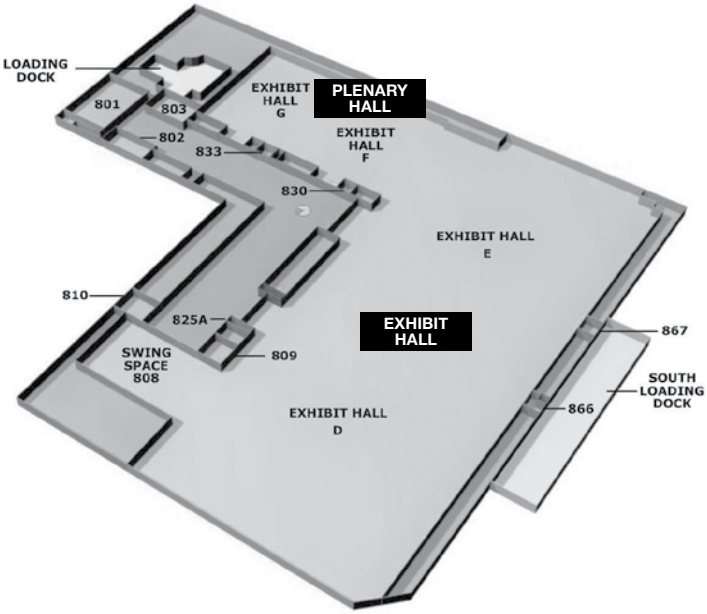
Level 600



Level 700



Level 800



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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
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David Jaffray
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Murray Rice
Grace Zeng
Wiliam 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.

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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

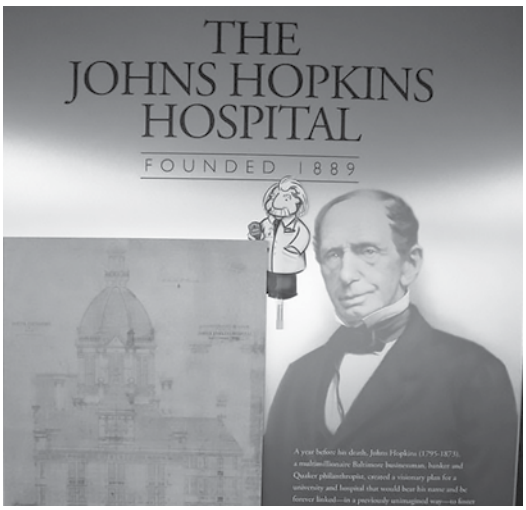
This app allows you to view abstracts, presenters, the program schedule and sessions, selecting abstracts and sessions of interest to build your own personal itinerary builder.

FLAT ALBERT

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.

Sunday, June 7	**11:00 – 20:00**
Monday, June 8	**07:00 – 17:30**
Tuesday, June 9	**07:00 – 17:30**
Wednesday, June 10	**07:00 – 17:30**
Thursday, June 11	**07:00 – 17:30**
Friday, June 12	**07:00 – 13:00**

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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Thursday, June 11	**07:00 – 17:30**
Friday, June 12	**07:00 – 13:00**

If you require assistance or any information regarding the Congress, please see the staff at the Delegate Information Counter located in the registration area, on Level 600, South Building of Metro Toronto Convention Centre.

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

Sunday, June 7	**11:00 – 20:00**
Monday, June 8	**07:00 – 17:30**
Tuesday, June 9	**07:00 – 17:30**

Delegate Bags include:

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

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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.

Lost Badge/Name Changes:
A 50 CAD fee applies for any reprints due to onsite name changes or lost badges.

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

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

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.

Sunday, June 7	**11:00 – 20:00**
Monday, June 8	**07:00 – 17:30**
Tuesday, June 9	**07:00 – 17:30**
Wednesday, June 11	**07:00 – 17:30**
Thursday, June 12	**07:00 – 17:30**
Friday, June 12	**07:00 – 13:00**

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.

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.

Poster set up time:	**Sunday, June 7**	**15:00 – 17:45**
Poster take down:	**Thursday, June 11**	**17:00 – 19:00**

(any posters not removed by 19:00 will be discarded by management)

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.

ONSITE SERVICES & GENERAL INFORMATION

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

SUPPORTED BY

Canadian Nuclear Safety Commission / Commission canadienne de sûreté nucléaire

VARIAN medical systems

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

Internet Café

SUPPORTED BY RaySearch Laboratories

The internet café is located in the Exhibit Hall.

Wireless Internet

SUPPORTED BY tba

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

Charging Station & Lounge

SUPPORTED BY RaySearch Laboratories

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

All delegates are invited to attend the Welcome Reception on Sunday June 9 at 18:00 in the Exhibit Hall.

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.

Networking Breaks

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

▶ **Monday, June 8** 10:00 – 10:30 and 16:30 – 17:00
SUPPORTED BY ELEKTA

▶ **Tuesday, June 9** 10:00 – 10:30 and 16:30 – 17:00
SUPPORTED BY VARIAN medical systems

▶ **Wednesday, June 10** 10:00 – 10:30 and 16:30 – 17:00
SUPPORTED BY ELEKTA

▶ **Thursday, June 11** 10:00 – 10:30
SUPPORTED BY SIEMENS
and 16:30 – 17:00
SUPPORTED BY CSA Group

▶ **Friday, June 12** 10:00 – 10:30
SUPPORTED BY SIEMENS

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**
Exhibit 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**
Exhibit 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 **15:00 – 16:00**
Exhibit 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!

SOCIAL
TOURS

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-theLake 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 whirl pool, 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 l obby 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

Sunday, June 7	**18:00 – 20:00**
Monday, June 8	**09:30 – 17:00**
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Wednesday, June 10	**09:30 – 17:00**
Thursday, June 11	**09:30 – 17:00**

Exhibit Features

- Exhibit Information Booth
- Show Service Provider Desk
- Internet Café
  SUPPORTED BY
  RaySearch Laboratories
- Charging Station & Lounge
  SUPPORTED BY
  RaySearch Laboratories
- Food & Beverage Stations
- Delegate Lounges
  SUPPORTED BY
  CNSC CCSN
  Canadian Nuclear Safety Commission / Commission canadienne de sûreté nucléaire
  VARIAN medical systems

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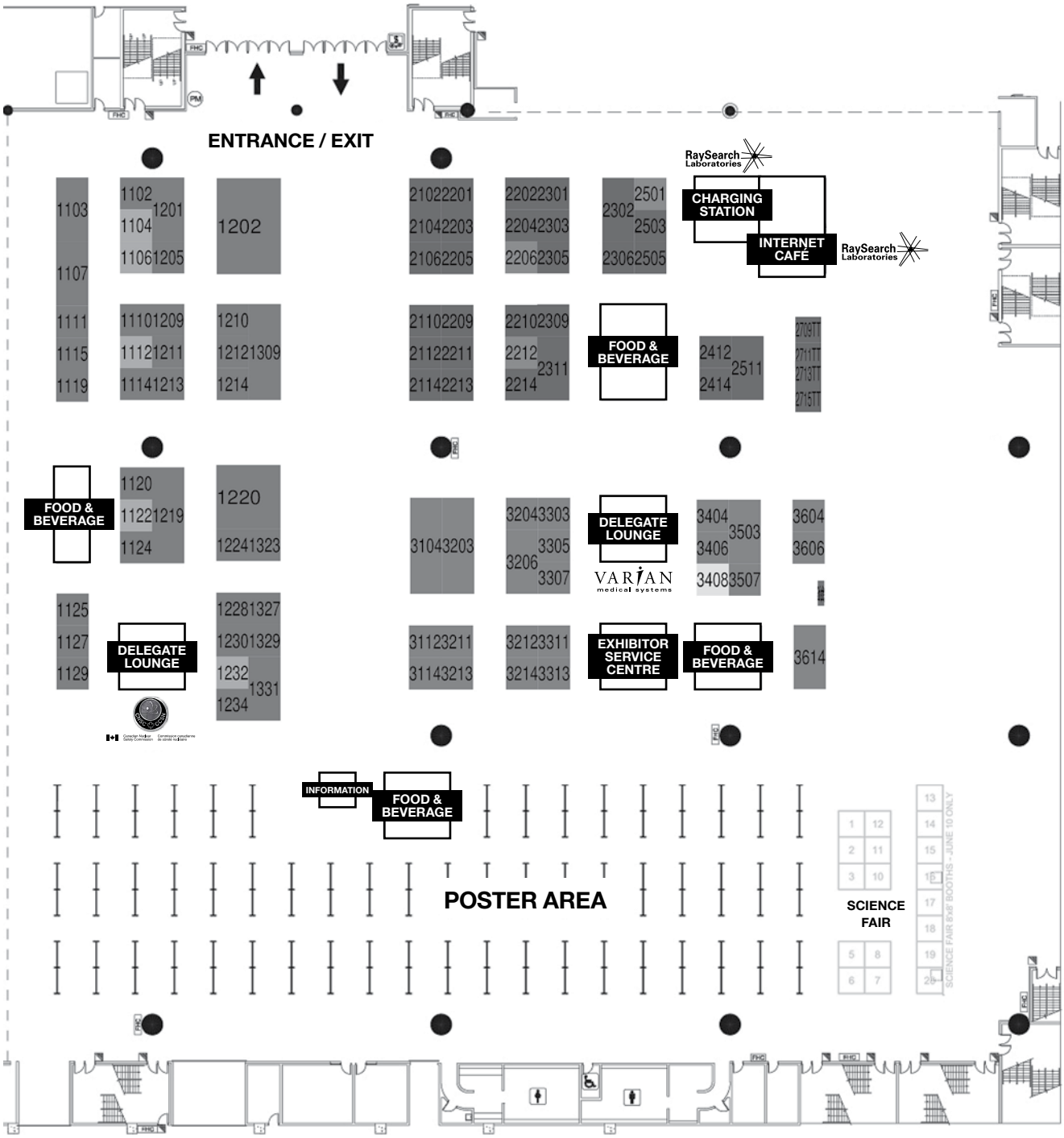
EXHIBIT
FLOOR PLAN



EXHIBITOR BIOGRAPHIES

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.

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 ACISTCVi™, CTExpres3D™ 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

CMBES/SCGB

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.

Please stop by the CMBES booth # 2513 to find out more about our role, programs, networking opportunities and the 2016 Congress in May, 2016 in Calgary, Alberta.

Canadian Nuclear Safety Commission | Booth # 1228

Canadian Nuclear Safety Commission / Commission canadienne de sûreté nucléaire

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

COMP Canadian Organization of Medical Physicists / OCPM Organisation canadienne des physiciens médicaux

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

CareFusion *has joined BD*

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
Canada's Capital University

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 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

CDR Systems

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/CDRSystems and online www.cdrsys.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.

GCX Corporation | Booth # 2505

GCX Corporation - the worldwide leader in medical instrument mounting solutions. Over forty years of industry experience has given us a unique understanding of the interaction between medical devices, users, and healthcare environments. We partner with you to create mounting products that enable caregivers to deliver improved patient care.

GE Healthcare | Booth # 2302

GE (NYSE: GE) imagines things others don't, builds things others can't and delivers outcomes that make the world work better. GE brings together the physical and digital worlds in ways no other company can. In its labs and factories and on the ground with customers, GE is inventing the next industrial era to move, power, build and cure the world. www.ge.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 is a subsidiary of the publicly listed 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.

MedTech Hub | Booth # 3203, 3206

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.

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

Comprising Hong Kong Science Park, InnoCentre and Industrial Estates, Hong Kong Science & Technology Parks Corporation (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.

Institute of Biomedical Engineering | Booth # 3203, 3206

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.

Medical Valley EMN | Booth # 3203, 3206

The Medical Valley EMN (e.V.) association assumes key tasks in the medical technology cluster and supports all members with comprehensive services. The association facilitates knowledge exchange, promotes the cluster internationally, and supports start-up companies. The overall goal is to develop the EMN area into a model region for optimal healthcare.

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.

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

Oncology Systems Limited Inc. | Booth # 1230

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 Industries America | Booth # 1211

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 | Booth # 2106

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 | Booth # 2209

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.

Phillips Healthcare | Booth # 1201

Philips is dedicated to creating the future of healthcare and saving lives. We develop innovative solutions across the continuum of care in partnership with clinicians and our customers to improve patient outcomes, provide better value, and expand access to care. www.philips.com

Physio-Control | Booth # 2306

LIFEPAK® defibrillator/monitors and automated external defibrillators from Physio-Control set the standard for quality and reliability and are used by more physicians, hospitals and emergency medical services than any other brand. 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 | Booth # 1210

Precision X-Ray is the leading provider of safe, high output X-Ray irradiators 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 | Booth # 1220

Since 1922 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 | Booth # 1327

Qfix provides state-of-the-art patient positioning and immobilization devices to optimize patient outcomes. The Qfix kVue™ IGRT Couch Top design allows customization for individual patient needs through the most advanced array of treatment solutions for head and neck, breast, lung, prostate and other disease sites. Please visit www.Qfix.com for more information.

Radcal Corporation | Booth # 3204

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.

Providing Better Solutions for You. www.Radcal.com

Radiological Imaging Technology Inc. | Booth # 1213

RIT manufacturers 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 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

Western Medical Biophysics and BME | Booth # 3507

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.

World Congress 2018, Prague | Booth # 3311

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.

World Congress 2021, Candidate City - Mexico City | Booth # 3307

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 nationalwide and its utilization for human health and well-being. www.somib.org.mx

World Congress 2021, Candidate City – Singapore | Booth # 3614

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.

World Congress 2021, Candidate City – Taipei | Booth # 3212

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.

World Health Organization | Booth # 3313

The World Health Organization is a U.N. specialized agency with a mandate as the directing and coordinating authority of international public health work. Through its 6 regional offices, 147 country offices, 8000+ staff, and collaborators the WHO strives towards: "Attainment by all peoples of the highest possible level of health." The World Health Organization is a U.N. specialized agency with a mandate as the directing and coordinating authority of international public health work. Through its 6 regional offices, 147 country offices, 8000+ staff, and collaborators the WHO strives towards: "Attainment by all peoples of the highest possible level of health."

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

Founded in 1927 and headquartered in Indiana, Zimmer designs, develops, manufactures and markets orthopaedic reconstructive, spinal, trauma and dental implants, plus related surgical products. Zimmer has operations in more than 25 countries and sells products in more than 100 countries. The Company is supported by more than 8,500 employees worldwide.

CONNECTED CARE

Because the future is collaborative

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

ELEKTA

INDUSTRY SUPPORTED **SYMPOSIA**

Monday, June 8, 2015 | 12:15 – 13:15

▶ **Room 718A**

SYMPOSIUM SUPPORTED BY

RaySearch Laboratories

Advancing Radiation Therapy through Software Innovation

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.

Tuesday, June 9, 2015 | 12:15 – 13:15

▶ **Room 718A**

SYMPOSIUM SUPPORTED BY

ELEKTA

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.

Wednesday, June 10, 2015 | 12:15 – 13:15

▶ **Room 716B**

SYMPOSIUM SUPPORTED BY

CareFusion
has joined BD

Improving Medication Safety through Infusion Pump Auto-Programming and EMR System Interoperability

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.

Thursday, June 11, 2015 | 12:15 – 13:15

▶ **Room 714B**

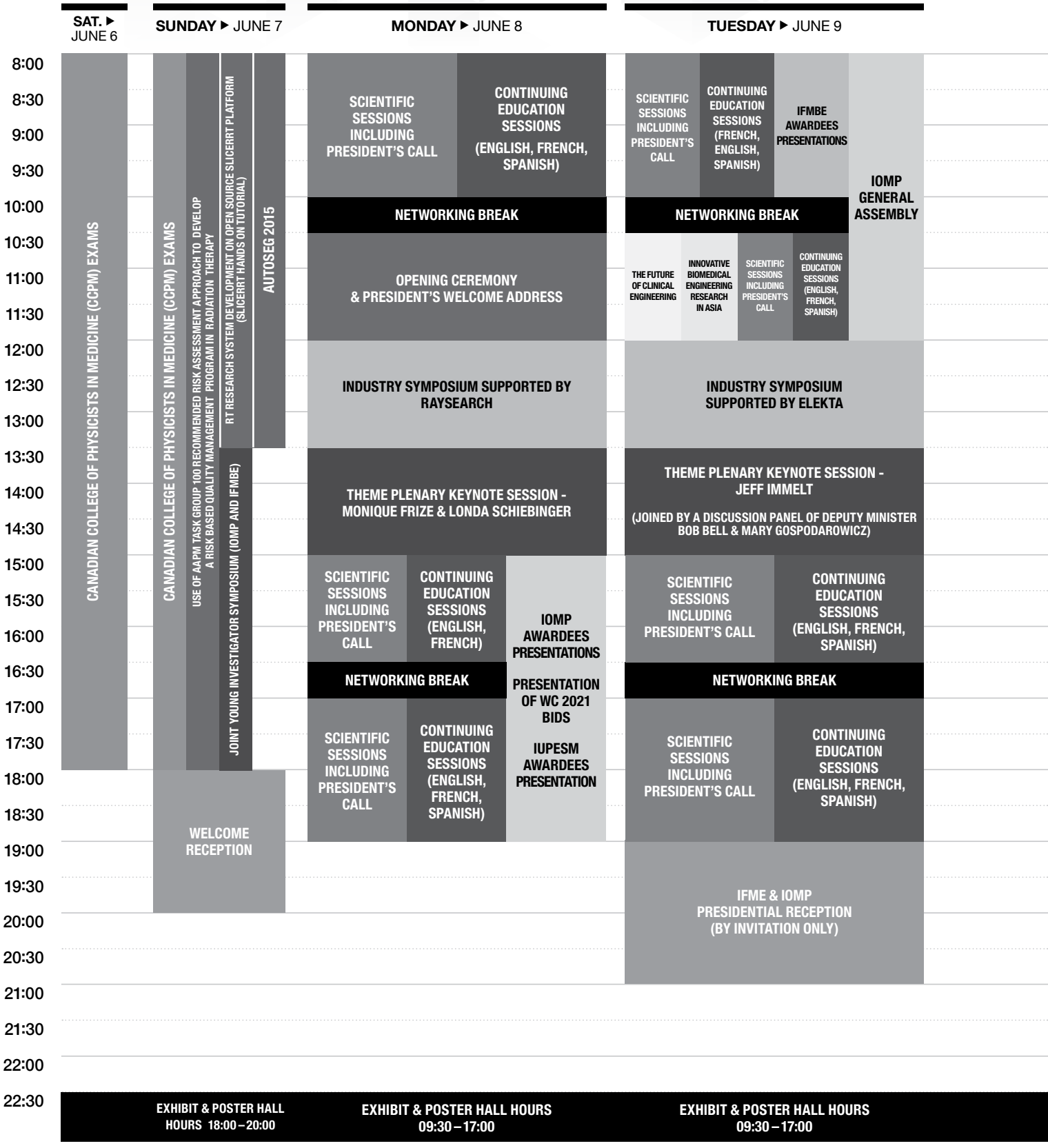
SYMPOSIUM SUPPORTED BY

ACCURAY®

Accuray's Innovative Radiation Therapy and Clinical Benefits

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.

PROGRAM AT A GLANCE



WEDNESDAY ▶ JUNE 10

- THEME PLENARY KEYNOTE SESSION - GORDON MCBEAN & MARY GOSPODAROWICZ
- NETWORKING BREAK
- ICSU BIOUNIONS CLUSTER SESSION
- WORLD SUMMIT ON THE SUPPORT-ABILITY OF MEDICAL DEVICES
- CONTINUING EDUCATION SESSIONS (ENGLISH, FRENCH, SPANISH)
- SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL
- IAMBE GENERAL ASSEMBLY
- HTA ROUND TABLE
- INDUSTRY SYMPOSIUM SUPPORTED BY CAREFUSION
- IFMBE GENERAL ASSEMBLY
- HTA FOR BIOMEDICAL ENGINEERS WORKSHOP
- MEDICAL PHYSICS & BIOMEDICAL ENGINEERING RESPONSE TO CANCER CONTROL: A GLOBAL HEALTH CHALLENGE
- CONTINUING EDUCATION SESSIONS (ENGLISH, FRENCH, SPANISH)
- SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL
- NETWORKING BREAK
- CONTINUING EDUCATION SESSIONS (ENGLISH, FRENCH, SPANISH)
- SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL
- IUPESM GENERAL ASSEMBLY
- GALA DINNER

THURSDAY ▶ JUNE 11

- SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL
- CONTINUING EDUCATION SESSIONS (ENGLISH)
- IFMBE STUDENT DESIGN COMPETITION PRESENTATIONS
- NETWORKING BREAK
- SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL
- CONTINUING EDUCATION SESSIONS (ENGLISH)
- ADDRESSING GLOBAL CHANGES
- INDUSTRY SYMPOSIUM SUPPORTED BY ACCURAY
- SPREADING & INTEGRATING HUMAN FACTORS EXPERTISE IN HEALTHCARE
- SOCIAL IMPLICATIONS OF TECHNOLOGY WORKSHOP
- MEDICAL PHYSICISTS WITHOUT BORDERS
- EMBEDDED SENSOR SYSTEMS FOR HEALTH WORKSHOP
- CHALLENGES & BENEFITS OF CLINICAL ENGINEERING PEER REVIEW
- THEME PLENARY KEYNOTE SESSION - EDWARD SHORTLIFFE & VIMLA PATEL
- SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL
- CONTINUING EDUCATION SESSIONS (ENGLISH)
- WC2015 LEADERS' SUMMIT
- IUPESM - HTTG WORKSHOP ON INNO-VATIONS IN THE USE OF MOBILE DEVICES IN HEALTH-CARE
- NETWORKING BREAK
- SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL
- CONTINUING EDUCATION SESSIONS (ENGLISH)
- CCPM AGM
- QC IN RADIO-THERAPY: DEFINING THE NEXT STEPS
- MEDTECH INSTITUTES RECEPTION (BY INVITATION ONLY)
- CMBES AGM
- COMP AGM

FRIDAY ▶ JUNE 12

- SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL
- CONTINUING EDUCATION SESSIONS (ENGLISH)
- NETWORKING BREAK
- SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL
- CONTINUING EDUCATION SESSIONS (ENGLISH)
- CLOSING CEREMONY & YOUNG INVESTIGATORS AWARDS PRESENTATION

8:00 8:30 9:00 9:30 10:00 10:30 11:00 11:30 12:00 12:30 13:00 13:30 14:00 14:30 15:00 15:30 16:00 16:30 17:00 17:30 18:00 18:30 19:00 19:30 20:00 20:30 21:00 21:30 22:00 22:30

EXHIBIT & POSTER HALL HOURS
09:30 – 17:00

EXHIBIT & POSTER HALL HOURS
09:30 – 17:00

PLENARY SESSIONS

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: "Fixing 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

SESSION DATE:	**TUESDAY, JUNE 9 2015**
SESSION TIME:	**13:30 - 14:30**
SESSION ROOM:	**PLENARY HALL (HALLS F&G)**
SESSION TITLE:	**PL02 - NEXT GENERATION MEDICINE**
SPEAKER(S):	**JEFF IMMELT**

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

SESSION DATE:	**WEDNESDAY, JUNE 10 2015**
SESSION TIME:	**8:00 - 10:00**
SESSION ROOM:	**PLENARY HALL (HALLS F&G)**
SESSION TITLE:	**PL03 - URBAN HEALTH AND FUTURE EARTH / GLOBAL HEALTH CHALLENGES**
SPEAKER(S):	**GORDON MCBEAN & MARY GOSPODAROWICZ**

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.

SPECIAL SESSIONS

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:	
TG-100 overview and introduction	***Saiful Huq***
Safety Guidance for Radiotherapy	***Peter Dunscombe***
Incident learning systems: Structure, terminology and taxonomies	***Peter Dunscombe***
Exercise 1: Event Classification	
Process mapping	***Saiful Huq***
Exercise 2: Process Mapping	
Systems and Culture	***Jean-Pierre Bissonnette***
LUNCH	
Fault Trees	***Peter Dusncombe***
Exercise 3: Fault Tree Analysis	
Design of QM from the Risk Assessment	***Ellen Yorke***
Exercise 4: QM Layout	
Change Management	***Jean-Pierre Bissonnette***
Wrap and final questions	***Saiful Huq***

SESSION DATE: **SUNDAY, JUNE 7 2015**
SESSION TIME: **08:00 - 13:30**
SESSION ROOM: **715B**
SESSION TITLE: **SS02 - AUTOSEG 2015**
SESSION ORGANIZER(S): **STEPHEN BREEN & VLADIMIR PEKAR**

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.

SESSION DATE: **SUNDAY, JUNE 7 2015**
SESSION TIME: **08:00 - 13:30**
SESSION ROOM: **715A**
SESSION TITLE: **SS03 - RT RESEARCH SYSTEM DEVELOPMENT ON OPEN-SOURCE SLICERRT PLATFORM**
SESSION ORGANIZER(S): **GABOR FICHTINGER AND CSABA PINTER**

SESSION DATE: **SUNDAY, JUNE 7 2015**
SESSION TIME: **13:30 - 18:00**
SESSION ROOM: **718A**
SESSION TITLE: **SS04 - YIS PRESENTATIONS – JOINT IOMP & IFMBE**

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**

AGENDA:	
PiDRL: A European Commission project on Paediatrc DRLs	***Professor John Damilakis, EFOMP President.***
Overview of EFOMP projects on Radiation Protection	***Professor Virginia Tsapaki, EFOMP***
Collaboration of AAPM and EFOMP on Radiation Protection Projects	***Dr. Eugene Lief, AAPM***
Question and Answer time	

SESSION DATE: **MONDAY, JUNE 8 2015**
SESSION TIME: **15:00 - 16:00**
SESSION ROOM: **PLENARY HALL (HALLS F&G)**
SESSION TITLE: **SS06 - IOMP 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: **MONDAY, JUNE 8 2015**
SESSION TIME: **18:00 - 19:00**
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 Mertit - Medical Physics: ***Peter Smith***

Tuesday, June 9 2015

SESSION DATE: **TUESDAY, JUNE 9 2015**
SESSION TIME: **08:00 - 10:00**
SESSION ROOM: **PLENARY HALL (HALLS F&G)**
SESSION TITLE: **SS10 - IFMBE AWARDEES PRESENTATIONS**

The Awardees will include:

- IFMBE Laura M.C. Bassi Award: ***Alison Noble***
- IFMBE Otto Schmidt Award: ***Karin Wardell***
- IFMBE Vladimir Zworykin Award: ***Chwee Teck Lim***
- IFMBE John A. Hopps Distinguished Service Award: ***Robert M. Nerem***

SESSION DATE: **TUESDAY, JUNE 9 2015**
SESSION TIME: **10:30 - 12:00**
SESSION ROOM: **713A**
SESSION TITLE: **SS08 - THE FUTURE OF CLINICAL ENGINEERING EDUCATION**
SESSION ORGANIZER(S): **HERBERT F. VOIGT**

SESSION DATE: **TUESDAY, JUNE 9 2015**
SESSION TIME: **10:30 - 12:00**
SESSION ROOM: **714B**
SESSION TITLE: **SS09 - INNOVATIVE BIOMEDICAL ENGINEERING RESEARCH IN ASIA**
SESSION ORGANIZER(S): **TOH SIEW-LOK AND JAMES GOH**

Wednesday, June 10 2015

SESSION DATE: **WEDNESDAY, JUNE 10 2015**
SESSION TIME: **10:30 - 12:00**
SESSION ROOM: **714A**
SESSION TITLE: **SS11 - ICSU BIO-UNIONS CLUSTER SESSION**
SESSION ORGANIZER(S): **HERBERT F. VOIGT**

SESSION DATE: **WEDNESDAY, JUNE 10 2015**
SESSION TIME: **10:30 - 12:00**
SESSION ROOM: **713A**
SESSION TITLE: **SS12 - WORLD SUMMIT ON THE SUPPORTABILITY OF MEDICAL DEVICES**
SESSION ORGANIZER(S): **MIKE CAPUANO AND JEAN NGOIE**

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. Manufactures 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***

SESSION DATE: **WEDNESDAY, JUNE 10 2015**

SESSION TIME: **13:30 - 15:00**

SESSION ROOM: **713A**

SESSION TITLE: **SS15 - METHODS AND TOOLS FOR PRE-MARKET HTA OF MEDICAL DEVICES (HEALTH TECHNOLOGY ASSESSMENT FOR BIOMEDICAL ENGINEERS WORKSHOP)**

SESSION ORGANIZER(S): **NICOLAS PALLIKARAKIS AND LEANDRO PECCHIA**

AGENDA:	
Multi-criteria decision analysis for medical devices assessment	***Marjan Hummel, University of Twenty, the Nederland***
A tool to monitor the European Innovation Partnership on Active and Healthy Ageing: development, implementation and potential use for pre-market HTA	***Christian Boehler, Joint Research Centre, European Commission, Seville, Spain***
AHP for user need elicitation: method and available tools	***Leandro Pecchia, University of Warwick and Treasurer of HTA Division of the IFMBE***

Thursday, June 11 2015

SESSION DATE: **THURSDAY, JUNE 11 2015**

SESSION TIME: **10:30 - 12:00**

SESSION ROOM: **713A**

SESSION TITLE: **SS16 - ADDRESSING GLOBAL CHALLENGES**

SESSION ORGANIZER(S): **ROGER KAMM**

Introduction to Session:

This Special Session "Addressing Global Challenges" will be presented by the past and current Chairs of the International Academy of Medical and Biological Engineering of the IFMBE.

The Opening Presentation by Robert Nerem is on "Bioengineering in the 21st Century", followed by presentations on a variety of topics addressing global challenges from different perspectives including device technologies, information technologies, and innovative uses of physiological modeling.

AGENDA:	
Bioengineering in the 21st Century	***Robert Nerem (Georgia Technological Institute, USA)***
Contribution of medical and biological engineering to medical care in coming super-aging society -collaboration among academia, industry and government	***Ueno Shoogo (Dept of Applied Quantum Physics, Graduate School of Engineering, Kyushu University, Japan)*** ***Fumihiko Kajiya (Kawasaki University of Medical Welfare and Kawasaki Medical School, Japan)***
ICT for Prevention of Non-Communicable Diseases	***Niilo Saranummi (VTT Technical Research Centre of Finland, Finland)***
The Future Potential for Living, Multicellular Machines	***Roger Kamm (Massachusetts Institute of Technology, USA)***

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: **713B**
SESSION TITLE: **SS18 - MEDICAL PHYSICISTS WITHOUT BORDERS**
SESSION ORGANIZER(S): **JAKE VAN DYK**

SESSION DATE: **THURSDAY, JUNE 11 2015**
SESSION TIME: **12:00 - 13:30**
SESSION ROOM: **717B**
SESSION TITLE: **SS19 - SOCIAL IMPLICATIONS OF TECHNOLOGY WORKSHOP (IN HONOR OR OUR FRIEND & COLLEAGUE; DR LODEWIJK BOS)**
SESSION ORGANIZER(S): **LUIS KUN**

AGENDA:	
Introductory Words from the President of IUPESM	***Dr. Herbert F. Voigt (USA)***
A Homage to Rene Favaloro´s Life: Upgrading Biomedical Engineering Curricula Through Medical Humanism	***Dr. Ricardo Armentano (Argentina)***
Social Implications of Technology Reuse for a Sustainable Growth	***Dr. Laura Roa (Spain)***
Realizing and Preserving Privacy and Security for Self, in Interoperable Global Healthcare Venues	***Dr. Robert Mathews (USA)***
Ethical Issues in Public Health Epidemiology	***Dr. Rajaram Lakshminarayan (USA)***
A 2015 Moral and Ethical version of the Internet Neutrality Debate: The Digital Divide and Homecare Delivery for the less fortunate	***Dr. Luis Kun (USA)***

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***
13:05-13:20	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: **12:00 - 13:30**

SESSION ROOM: **713A**

SESSION TITLE: **SS25 - CHALLENGES AND BENEFITS OF CLINICAL ENGINEERING PEER REVIEW**

SESSION ORGANIZER(S): **MICHAEL J. CAPUANO & JEAN NGOIE**

AGENDA:	
13:00 pm	Introduction
13:05pm	Setting the Stage
13:15pm	Panelist Commentary
13:45pm	Panel Discussion
14:15pm	Last Word
14:25pm	Closing Comments

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.

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**

AGENDA:

15.00-15.15	Welcome Remarks; Objectives of the Workshop	Cari Borrás, IUPESM-HTTG Chair, Washington DC, USA
15.15-16.00	General Overview (The state of TeleHealth, TeleMedicine, and mHealth)	Kwan-Hoong Ng, Department of Biomedical Imaging, University of Malaya, Kuala Lumpur, Malaysia
	Implementation, Barriers and Policy Issues:	
16.00-16.25	Industrialized Areas	Yadin David, Biomedical Engineering Consultants, LLC., Houston, USA
16.25-16.50	Resource-limited Regions	K. Siddique-e Rabbani, Department of Biomedical Physics & Technology, University of Dhaka, Bangladesh
16.50-17.05	Development of Healthcare Applications using Facilities and Functions available in Modern Mobile Devices	Marlen Perez-Diaz, Center for Studies on Electronic and Information Technologies. Central University of Las Villas, Santa Clara, Villa Clara, Cuba
17.05-17.20	Quality of Service Assessment, Maintenance and Sustainability Issues	J. Tobey Clark, Instrumentation and Technical Services, University of Vermont, Burlington, Vermont, USA
	Point of Care Solutions:	
17.20-17.55	Demonstration	K. Siddique-e Rabbani, Department of Biomedical Physics & Technology, University of Dhaka, Bangladesh
17.55-18.30	Demonstration	Kwan Hoong Ng, Department of Biomedical Imaging, University of Malaya, Kuala Lumpur, Malaysia
18.30-18.50	Discussion	
18.50-19.00	Summary and Recommendations	Colin Orton, Wayne University, Detroit, Michigan, USA

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 BISSONNETTE**

SESSION DATE: **THURSDAY, JUNE 11 2015**

SESSION TIME: **08:00 - 10:00**

SESSION ROOM: **714A**

SESSION TITLE: **SS24 - IFMBE "STUDENT DESIGN COMPETITION" PRESENTATIONS**

SESSION ORGANIZER(S): **IFMBE**

SESSION TITLE: **MEDTECH SESSIONS**

MedTech INSTITUTES

SESSION #1: **TUESDAY, JUNE 9 2015, 15:00 – 16:30; IN ROOM 803A**

SESSION #2: **WEDNESDAY, JUNE 10 2015, 17:00 – 19:00; IN ROOM 713A**

SESSION #3 **THURSDAY, JUNE 11 2015, 15:00 – 16:30; IN ROOM 802B**

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 MPF01.1: Tomodensitométrie: les nouveaux développements et avenues de recherché
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

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **801B**
SESSION NAME: **MPE01 - MEDICAL PHYSICS EDUCATION& PROFESSIONAL ISSUES**

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

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **803B**
SESSION NAME: **MPF02 - SYSTÈMES INFORMATISÉS**

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

SESSION TIME: **15:00 – 16:00**
SESSION ROOM: **802B**
SESSION NAME: **MPE02 - RADIATION THERAPY**

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

SESSION TIME: **15:00 – 16:00**
SESSION ROOM: **803B**
SESSION NAME: **BMEF02 - GESTION EN GÉNIE BIOMÉDICAL/ CLINIQUE**

15:00 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

SESSION TIME: **18:00 – 19:00**
SESSION ROOM: **801A**
SESSION NAME: **BMEE03 - BIOINFORMATICS, TELEMEDICINE AND HOSPITAL**

18:00 BMEE03.1: DICOM & PACS: Managing Digital Imaging Networks Information Systems
Marvin Mitchell, Canada

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **801B**
SESSION NAME: **MPE03 - RADIATION THERAPY**

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

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **802B**
SESSION NAME: **MPS02 - COMPUTERIZED SYSTEMS**

17:00 MPS02.1: Radiation Treatment Planning Systems and Dose Computation Algorithms (including Monte Carlo)
Antonio Leal Plaza, Spain

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **803A**
SESSION NAME: **MPF03 - RADIOTHÉRAPIE**

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

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **803B**
SESSION NAME: **BMEF03 - GESTION EN GÉNIE BIOMÉDICAL/ CLINIQUE**

17:00 BMEF03.1: Impacts de la Technologie Médicale sur la Santé de la Mére et de l'Enfant
Gnahoua Zoabli, Canada

Tuesday, June 9 2015

SESSION TIME: **08:00 – 10:00**
SESSION ROOM: **801A + 801B**
SESSION NAME: **JT02 - PROCUREMENT & EQUIPMENT SELECTION**

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

SESSION TIME: **08:00 – 09:00**
SESSION ROOM: **802B**
SESSION NAME: **MPF04 - LA FORMATION ET LE CHEMINEMENT DE CARRIÈRE DES PHYSICIENS MÉDICAUX**

08:00 MPF04.1: Les Standards Professionnels et la Certification des Physiciens Médicaux
Clément Arsenault, Canada

SESSION TIME: **08:00 – 10:00**
SESSION ROOM: **802B**
SESSION NAME: **MPS03 - RADIATION THERAPY**

08:00 MPS03.1: Protontherapy
Alejandro Mazal

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

SESSION TIME: **08:00 – 10:00**
SESSION ROOM: **803A**
SESSION NAME: **MPF05 - QUALITÉ ET SÉCURITÉ**

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

SESSION TIME: **08:00 – 10:00**
SESSION ROOM: **803B**
SESSION NAME: **BMEF04 - GESTION EN GÉNIE BIOMÉDICAL/ CLINIQUEN**

08:00 BMEF04.1: La Gestion de Projets et de Portefeuille de Projets en Technologies de la Santée
Mochine El Garch, Canada

SESSION TIME: **10:30 – 12:00**
SESSION ROOM: **801A + 801B**
SESSION NAME: **JT03 - IMAGING**

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

SESSION TIME: **10:30 – 11:30**
SESSION ROOM: **803B**
SESSION NAME: **BMEF04 - GESTION EN GÉNIE BIOMÉDICAL/ CLINIQUE**

10:30 BMEF04.1: La Gestion de Projets et de Portefeuille de Projets en Technologies de la Santé
Mochine El Garch, Canada

SESSION TIME: **10:30 – 12:00**
SESSION ROOM: **802A**
SESSION NAME: **BMES01 - INTEROPERABILITY IN HEALTH TECHNOLOGY**

10:30 BMES01.1: Healthcare Continuum
Vladimir Quintero, Columbia

SESSION TIME: **10:30 – 11:30**
SESSION ROOM: **802B**
SESSION NAME: **MPS04 - IMAGING**

10:30 MPS04.1: CT Basics
Caridad Borràs, United States

SESSION TIME: **10:30 – 12:00**
SESSION ROOM: **803A**
SESSION NAME: **MPF06 - IMAGERIE**

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

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **801B**
SESSION NAME: **MPF03 - RADIOTHÉRAPIE**

15:00 MPE04.1: Quality Framework: The Canadian Partnership for Quality Radiotherapy
Michael Milosevic, Canada

16:00 MPE04.2: Radiation Oncology Practice Accreditation in the United States
Steve de Boer, United States

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **802A**
SESSION NAME: **BMES02 - INTEROPERABILITY IN HEALTH TECHNOLOGY**

15:00 BMES02.1: Business Opportunities
Mario Castañeda, United States

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **802B**
SESSION NAME: **MPS05 - COMPUTERIZED SYSTEM**

15:00 MPS05.1: Managing Respiratory Motion, Including 4D and Gating Techniques; QC
Miguel A. de la Casa, Spain

16:00 MPS05.2: Computerized Systems Basics: Servers, Data Standards (DICOM, HL7), Virtual Machines, Portable Devices
Armando Alaminos Bouza, Brazil

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **801A**
SESSION NAME: **BMEE04 - GENERAL BME EDUCATION**

15:00 BMEE04.1: Biomaterials - Polymer/Organic Coatings
Min Wang, People's Republic of China

SESSION TIME: **15:00 – 18:30**
SESSION ROOM: **803B**
SESSION NAME: **BMEF05 - GESTION EN GÉNIE BIOMÉDICAL/ CLINIQUE**

15:00 BMEF05.1: Implantation du Guide des Bonnes Pratiques de L'ingénierie Biomédicale en Etablissement de Santé
Fabienne Debiais, Canada
Christine Lafontaine, Canada

SESSION TIME: **17:00 – 18:30**
SESSION ROOM: **801B**
SESSION NAME: **MPE05 - COMPUTERIZED SYSTEMS**

17:00 MPE05.1: Database Rudiments and Clinical Use
John Kildea, Canada

17:30 MPE05.2: Modern Radiotherapy Treatment Planning: Capabilities, Commissioning, and Clinical Use
Benedick Fraass, United States

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **803B**
SESSION NAME: **BMEF05 - GESTION EN GÉNIE BIOMÉDICAL/ CLINIQUE**

17:00 BMEF05.1: Implantation du Guide des Bonnes Pratiques de L'ingénierie Biomédicale en Etablissement de Santé
Fabienne Debiais, Canada
Christine Lafontaine, Canada

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **801A**
SESSION NAME: **BMEE05 - CLINICAL ENGINEERING/ TECHNOLOGY MANAGEMENT**

17:00 BMEE05.1: Introduction to Medical Technology Management (Clinical Engineering Practice)
Calill Saide, Brazil

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **803A**
SESSION NAME: **MPF07 - RADIOTHÉRAPIE**

17:00 MPF07.1: Nouvelles Technologies et Approches en Curiethérapie
Luc Beaulieu, Canada

18:00 MPF07.2: Protontherapy
Alejandro Mazal, France

SESSION TIME: **17:00 – 18:30**
SESSION ROOM: **802A**
SESSION NAME: **MPS06 - COMPUTERIZED SYSTEM**

17:00 MPS06.1: Optimization: IMRT and VMAT
Antonio Leal Plaza, Spain

18:00 MPS06.2: Automated Contouring
Armando Alaminos Bouza, Brazil

SESSION TIME: **17:00 – 19:10**
SESSION ROOM: **802B**
SESSION NAME: **MPS07 - RADIATION THERAPY**

17:00 MPS07.1: Image-Guided Radiotherapy, Including QC and Imaging Dose; Adaptative Radiotherapy
Daniel Venencia, Argentina

Wednesday, June 10 2015

SESSION TIME: **10:30 – 12:00**
SESSION ROOM: **801A + 801B**
SESSION NAME: **JT04 - ETHICS**

10:30 JT04.1: Ethics for Biomedical Engineers and Medical Physicists Workshop
Jean-Pierre Bissonnette, Canada
Monique Frize, Canada

SESSION TIME: **10:30 – 11:30**
SESSION ROOM: **802B**
SESSION NAME: **MPS09 - RADIATION THERAPY**

10:30 MPS09.1: Peripheral Neutron and Photon Doses
Beatriz Sanchez Nieto, Chile

SESSION TIME: **10:30 – 11:30**
SESSION ROOM: **802A**
SESSION NAME: **MPS08 - MEDICAL PHYSICS EDUCATION AND PROFESSIONAL ISSUES**

10:30 MPS08.1: Curriculum Design: How to Train the Next Generation of Physicists?
Maria Ester Brandan, Mexico

SESSION TIME: **10:30 – 11:30**
SESSION ROOM: **803B**
SESSION NAME: **BMEE06 - MEDICAL DEVICE DEVELOPMENT AND COMMERCIALIZATION**

10:30 BMEE06.1: Regulatory Issues in Biocompatibility
Paul Santerre, Canada

SESSION TIME: **10:30 – 12:30**
SESSION ROOM: **803A**
SESSION NAME: **MPF08 - SYSTÈMES INFORMATISÉS / QUALITÉ ET SÉCURITÉ**

10:30 MPF08.1: Algorithmes de Calcul de Dose, Incluant Monte Carlo
Raphaël Moeckli, Switzerland

11:30 MPF08.2: Utilisation de la Maîtrise Statistique des Processus en Milieu Hospitalier
Karine Herlevin (Gérard), France

SESSION TIME: **13:30 – 14:30**
SESSION ROOM: **801A**
SESSION NAME: **BMEE07 - BIOINFORMATICS, TELEMEDICINE AND HOSPITAL INFORMATION SYSTEMS**

13:30 BMEE07.1: E-medicine and Remote Medical Consultations
Gilad Epstein, Canada

SESSION TIME: **13:30 – 15:00**
SESSION ROOM: **801B**
SESSION NAME: **MPE06 - IMAGING**

13:30 MPE06.1: 4D Imaging/ 460
Stewart Gaede, Canada

14:30 MPE06.2: Dose from X-Ray Imaging Procedures
John Boone, United States

SESSION TIME: **13:30 – 14:30**
SESSION ROOM: **802B**
SESSION NAME: **MPS10 - RADIATION THERAPY**

13:30 MPS10.1: The Modern Physicist Tool Box: How to Choose Between Current Dosimeters
Faustino Gómez, Spain

SESSION TIME: **13:30 – 15:00**
SESSION ROOM: **803A**
SESSION NAME: **MPF09 - IMAGERIE**

13:30 MPF09.1: TEP: Les Nouveaux Développements et Avenues de Recherche
Roger Lecomte, Canada

14:30 MPF09.2: Dosimétrie et Radioprotection en Radiologie
Sylvain Deschênes, Canada

SESSION TIME: **15:00 – 16:00**
SESSION ROOM: **803A**
SESSION NAME: **BMEE08 - GENERAL BME EDUCATION**

15:00 BMEE08.1: Biomechanics - Implant design
Cheng-Kung (Richard) Cheng, Chinese Taipei

SESSION TIME: **13:30 – 16:00**
SESSION ROOM: **802A**
SESSION NAME: **MPE07 - RADIATION SAFETY**

13:30 MPE07.1: What can IAEA do for the Clinical Medical Physicist?
Joanna Izewska, Austria

14:20 MPE07.2: Safety Learning and Safety Management to Prevent Radiotherapy Incidents
Ola Holmberg, Austria

15:20 MPE07.3: Equipment Standards and Performance Measurements for Radiotherapy
Jean Moran, United States

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **801A**
SESSION NAME: **BMEE09 - BIOINFORMATICS, TELEMEDICINE AND HOSPITAL**

15:00 BMEE09.1: Medical Device Network Connectivity
Ryan Forde, United States

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **801B**
SESSION NAME: **MPE08 - QUALITY & SAFETY**

15:00 MPE08.1: Quality Systems in Radiotherapy
Mary Coffey, Ireland

16:00 MPE08.2: Cost and Resource Management of Radiotherapy
Peter Dunscombe, Canada

SESSION TIME: **15:00 – 16:00**
SESSION ROOM: **802B**
SESSION NAME: **MPS11 - RADIATION THERAPY**

15:00 MPS11.1: Dosimetry Under Non-Reference Conditions
Faustino Gómez, Spain

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **803A**
SESSION NAME: **MPF10 - RADIOTHÉRAPIE**

15:00 MPF10.1: La Radiothérapie Guidée par L'image, Incluant Doses et CQ
Myriam Ayadi-Zahra, France

16:00 MPF10.2: Dosimétrie in Vivo
Louis Archambault, Canada

SESSION TIME: **15:00 – 16:00**
SESSION ROOM: **803B**
SESSION NAME: **BMEE10 - GENERAL BME EDUCATION**

15:00 BMEE10.1: Multiscale Biomechanics in Deep Tissue Injuries
Arthur Mak, Hong Kong

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **801A**
SESSION NAME: **BMEE11 - CLINICAL ENGINEERING/ TECHNOLOGY MANAGEMENT**

17:00 BMEE11.1: Trends in Medical Device Certification and improving Patient Safety through Evolving Standards
Dale Morgan, Canada

18:00 BMEE11.2: Quantitative Musculoskeletal Ultrasound
Yongping Zheng, China

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **802B**
SESSION NAME: **MPS12 - IMAGING**

17:00 MPS12.1: PET State-of-the Art and Current Research Topics (Including CT-PET and CT-MRI)
Josep Martí-Climent, Spain

18:00 MPS12.2: 4D Imaging
Manuel Llorente Manso, Spain

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **803A**
SESSION NAME: **MPF11 - RADIOTHÉRAPIE**

17:00 MPF11.1: Stéréotaxie Extra-Crânienne: Techniques et CQ
Myriam Ayadi-Zahra, France

18:00 MPF11.2: La Radiothérapie Adaptative
Bernard Lachance, Canada

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **803B**
SESSION NAME: **BMEE12 - GENERAL BME EDUCATION**

17:00 BMEE12.1: Clinical Engineers & Biomedical Engineering Technologists Certification - International Perspective
Larry Boyce, Canada
Petr Kresta, Canada

SESSION TIME: **17:00 – 18:30**
SESSION ROOM: **801B**
SESSION NAME: **MPE09 - RADIATION THERAPY**

17:00 MPE09.1: The Modern Physicist Tool Box: How to Choose Between Current Dosimeters
Jan Seuntjens, Canada

17:30 MPE09.2: Radiobiology Applications for Clinical Physicists: Isoeffective dose calculations; Hypofractionation; TCP/NTCP; Peripheral doses and secondary cancers
Michael Joiner, United States

SESSION TIME: **16:00 – 19:00**
SESSION ROOM: **802A**
SESSION NAME: **BMES03 - INTEROPERABILITY IN HEALTH TECHNOLOGY**

16:00 BMES03.1: Trends on IT and Health Technology
Antono Hernandez, United States

17:30 BMES03.2: Interoperability - Profiles - IHE
Vladimir Quintero, Columbia

Thursday, June 11 2015

SESSION TIME: **08:00 – 10:00**
SESSION ROOM: **801A + 801B**
SESSION NAME: **JT05 - LEADERSHIP**

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

SESSION TIME: **08:00 – 10:00**
SESSION ROOM: **803A**
SESSION NAME: **BMEE13 - CLINICAL ENGINEERING**

08:00 BMEE13.1: Patient safety and Optimal Performance: A Holistic Framework for Medical Devices
Saleh Altayyar, Saudi Arabia
Michael Cheng, Canada
Hal Hilfi, Canada
Julie Polisena, Canada

SESSION TIME: **08:00 – 10:00**
SESSION ROOM: **802B**
SESSION NAME: **MPE10 - COMPUTERIZED SYSTEMS**

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

SESSION TIME: **08:00 – 10:00**
SESSION ROOM: **803B**
SESSION NAME: **MPE11 - RADIATION THERAPY**

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

SESSION TIME: **10:30 – 12:00**
SESSION ROOM: **802B**
SESSION NAME: **MPE12 - COMPUTERIZED SYSTEMS**

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

SESSION TIME: **10:30 – 11:30**
SESSION ROOM: **802A**
SESSION NAME: **BMEE14 - NEURAL & REHABILITATION ENGINEERING**

10:30 BMEE14.1: Neuro-robotics – Neurally Interfaced and Inspired Prosthesis
Nitish Thakor, Singapore

SESSION TIME: **10:30 – 11:30**
SESSION ROOM: **803B**
SESSION NAME: **MPE13 - MEDICAL PHYSICS EDUCATION AND PROFESSIONAL ISSUES**

10:30 MPE13.1: Advocacy for Physicists and How to Deal with Government, Unions, Regulators, and Employers
Jerry Battista, Canada
Wayne Beckham, Canada

SESSION TIME: **10:30 – 12:00**
SESSION ROOM: **801A + 801B**
SESSION NAME: **JT06 - LEADERSHIP**

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

SESSION TIME: **10:30 – 12:30**
SESSION ROOM: **803A**
SESSION NAME: **BMEE15 - CLINICAL ENGINEERING/TECHNOLOGY MANAGEMENT/ GENERAL BME EDUCATION**

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

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **8031B**
SESSION NAME: **MPE14 - RADIATION THERAPY**

15:00 MPE14.1: Radiotherapy Units: Cobalt-60 Units and Gamma Knife Units
Steve Goetsch, United States

15:30 MPE14.2: Brachytherapy: Overview of State-Of-The-Art and New Developments
Nicole Nesvacil, Austria

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **803B**
SESSION NAME: **MPE15 - COMPUTERIZED SYSTEMS**

15:00 MPE15.1: Managing Respiratory Motion in Radiation Oncology
Paul Keall, Australia

16:00 MPE15.2: RadOnc Treatment Management Systems and the Paperless Treatment Process
Benedick Fraass, United States

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **801A**
SESSION NAME: **BMEE16 - BME TECHNICAL/SERVICE COURSES**

15:00 BMEE16.1: Surgical Laser: Technology and Safety Issues
Murray Greenwood, Canada

SESSION TIME: **15:00 – 16:00**
SESSION ROOM: **802A**
SESSION NAME: **BMEE17 - MEDICAL DEVICE DEVELOPMENT & COMMERCIALIZATION**

15:00 BMEE17.1: Technology Commercialization - Road Map and Precautions
Thomas Rock Mackie, United States

SESSION TIME: **15:00 – 16:00**
SESSION ROOM: **803A**
SESSION NAME: **BMEE18 - GENERAL BME EDUCATION**

15:00 BMEE18.1: BioMEMS - Microsensors; Microactuators; Microfluidics; Micro-Total Analysis Systems (e.g., Genomics and Proteomics)
David Weitz, Canada

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **801A**
SESSION NAME: **BMEE19 - BME TECHNICAL/SERVICE COURSES**

17:00 BMEE19.1: Rechargeable Batteries: Characteristics, Performance, and Maintenance
Isidor Buchmann, Canada

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **801B**
SESSION NAME: **MPE16 - RADIATION THERAPY**

17:00 MPE16.1: Specialized Units: Tomotherapy and CyberKnife Systems
Martina Descovich, United States
Robert Staton, United States

18:00 MPE16.2: Heavy Particle / Light Ion Therapy
Oliver Jäkel, Germany

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **803A**
SESSION NAME: **BMEE21 - GENERAL BME EDUCATION**

17:00 BMEE21.1: Biomaterials - Cell-surface Interaction
Caroline Loy, Canada

18:00 BMEE21.2: Biomaterials - Plasma Medicine
Michael Keidar, United States

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **803B**
SESSION NAME: **MPE17 - RADIATION THERAPY**

17:00 MPE17.1: Chemotherapy and its Influence on Radiotherapy: Basics for Clinical Physicists
Eva Bezak, Australia

18:00 MPE17.2: Models of Delivery of Radiation Therapy (Private, Public, BCCA/CCO, etc)
Thomas McGowan, The Bahamas
Michael Sherar, Canada

SESSION TIME: **17:00 – 18:00**
SESSION ROOM: **802A**
SESSION NAME: **BMEE20 - HUMAN FACTORS & MEDICAL DEVICE SAFETY**

17:00 BMEE20.1: Clinical Alarms Management (incl. IHE Alarm Communication Mgt)
Tobey Clark, United States
Yadin David, United States
Marjorie Funk, Germany

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: **BMEE23 - CLINICAL ENGINEERING/ TECHNOLOGY MANAGEMENT**

08:00 BMEE23.1: Clinical Engineering Standards of Practice – Canadian New Edition and Other Countries
Anthony Chan, Canada
Bill Gentles, Canada

09:00 BMEE23.2: Emerging Medical Technologies - What to Expect, How to Prepare for it
Jim Keller, United States

SESSION TIME: **08:00 – 10:00**
SESSION ROOM: **803B**
SESSION NAME: **MPE19 - RADIATION THERAPY**

08:00 MPE19.1: Commissioning, Clinical Implementation and Quality Assurance for Stereotactic Body Radiation Therapy
Timothy Solberg, United States

SESSION TIME: **10:30 – 12:00**
SESSION ROOM: **802A**
SESSION NAME: **BMEE24 - MEDICAL DEVICE DEVELOPMENT AND COMMERCIALIZATION**

10:30 BMEE24.1: The Product Development Cycle
Lahav Gill, Canada

SESSION TIME: **10:30 – 12:00**
SESSION ROOM: **801A + 801B**
SESSION NAME: **JT08 - SCIENCES & RESEARCH**

10:30 JT08.1: How to get Grants: Tips for Success
Aaron Foster, United Kingdom

11:30 JT08.2: How to Write and Review Research Articles
David Rogers, Canada
David Thwaites, Australia

SESSION TIME: **10:30 – 12:00**
SESSION ROOM: **803A**
SESSION NAME: **BMEE25 - CLINICAL ENGINEERING/ TECHNOLOGY MANAGEMENT**

10:30 BMEE25.1: Clinical Engineering Best Practice and Bench-marking
Binseng Wang, China

SESSION TIME: **10:30 – 12:00**
SESSION ROOM: **802B**
SESSION NAME: **BMEE26 - CLINICAL ENGINEERING**

10:30 BMEE26.1: Collaboration on Health Care Decision-Making
Michael Cheng, Canada
Julie Polisena, Canada
Hal Hilfi, Canada

WORLD CONGRESS ON MEDICAL PHYSICS & BIOMEDICAL ENGINEERING

INVITATION TO RAYSEARCH'S LUNCH SYMPOSIUM

ADVANCING RADIATION THERAPY THROUGH SOFTWARE INNOVATION

Monday, June 8, 2015
At 12:15 to 13:15
Metro Toronto Convention Centre, South Building
Room 718A
Lunch will be provided

12:15 - 12:35

Considerations for implementing adaptive therapy using RayStation

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

12:35 - 12:55

Deformable Image Registration and Dose Accumulation

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

12:55 - 13:15

Advancing radiation therapy through software innovation

Johan Löf, CEO
RaySearch Laboratories AB, Stockholm, Sweden

Moderator: Marc Mlyn, CEO, *RaySearch Americas Inc.*

ADVANCING CANCER TREATMENT

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SCIENTIFIC PROGRAM
BY TRACK

TRACK 01: IMAGING				
SESSION DATE	TIME	ROOM		SESSION TITLE
MONDAY, JUNE 8, 2015	08:00 – 09:30	718A	SP001	Image Processing and Visualization: Part 1
	15:00 – 16:00	718A	SP013	MRI: Methods
	17:00 – 18:00	718A	SP023	Quantitative Imaging: Part 1
	17:00 – 18:45	701A	SP024	Breast CAD and New Breast Imaging Techniques
TUESDAY, JUNE 9, 2015	08:00 – 10:00	718A	SP034	CT: New Techniques
	08:00 – 09:30	701B	SP035	Imaging Detector Technology
	10:30 – 12:00	701B	SP044	Bio-Impedance and Imaging (Other)
	17:00 – 18:45	718A	SP065	Conebeam CT
	17:00 – 18:45	701B	SP070	Molecular Imaging PET/SPECT: Part 2
WEDNESDAY, JUNE 10, 2015	13:30 – 14:45	718A	SP088	Computer Aided Diagnosis
	15:00 – 16:15	718A	SP096	Optical Imaging: Applications
	15:00 – 17:00	701B	SP097	Quantitative Imaging: Part 2
	17:00 – 18:00	701B	SP104	Phantoms
	17:00 – 19:00	718A	SP105	MRI: Novel Approaches and Molecular Imaging & Applications
THURSDAY, JUNE 11, 2015	10:30 – 11:45	718A	SP128	Multimodality Imaging
	08:00 – 10:00	718A	SP115	CT Image Quality and Dose Optimization
	08:00 – 10:00	701B	SP116	Image Processing and Visualization: Part 2
	10:30 – 12:00	701B	SP129	Image Quality Assessment (Mammography and Other)
	15:00 – 16:30	718A	SP139	Optical Imaging: Methods
	17:00 – 18:45	718A	SP149	Iterative Reconstruction
	17:00 – 18:45	701B	SP150	X-Ray Phase Contrast & Scatter Imaging
FRIDAY, JUNE 12, 2015	08:00 – 09:45	718A	SP161	Angiography / X-ray Imaging
	08:00 – 10:00	701B	SP162	Ultrasound and OCT: Applications
	10:30 – 12:00	718A	SP172	Mammography and Tomosynthesis
	10:30 – 11:45	701B	SP173	Ultrasound and OCT: Methods

TRACK 02: BIOMATERIALS AND REGENERATIVE MEDICINE				
SESSION DATE	TIME	ROOM		SESSION TITLE
MONDAY, JUNE 8, 2015	08:00 – 09:45	717B	SP002	Stem Cells in Tissue Engineering and Regeneration
TUESDAY, JUNE 9, 2015	17:00 – 18:45	717B	SP071	Scaffolds in Tissue Engineering
WEDNESDAY, JUNE 10, 2015	15:00 – 16:45	717B	SP098	Biomaterials and Regenerative Medicine

TRACK 03: BIOMECHANICS AND ARTIFICIAL ORGANS				
SESSION DATE	TIME	ROOM		SESSION TITLE
MONDAY, JUNE 8, 2015	15:00 – 16:15	701B	SP014	Bone Mechanics
TUESDAY, JUNE 9, 2015	15:00 – 16:30	715A	SP055	Cellular & Molecular Mechanics
	17:00 – 18:15	714B	SP066	Human Movement
WEDNESDAY, JUNE 10, 2015	13:30 – 14:45	701B	SP089	Tissue Modelling
THURSDAY, JUNE 11, 2015	17:00 – 19:00	714B	SP151	Cardio Mechanics & Organs

TRACK 04: RADIATION ONCOLOGY				
SESSION DATE	TIME	ROOM		SESSION TITLE
MONDAY, JUNE 8, 2015	08:00 – 09:45	701A	SP003	Brachy Therapy: Part 1
	08:00 – 09:15	718B	SP004	Quality Assurance: Part 1
	15:00 – 16:15	701A	SP015	Other Radiation Oncology: Part 1
	15:00 – 16:30	718B	SP016	Image Guided RT: Part 1
	17:00 – 19:00	718B	SP025	Dose Calculation: Part 1
TUESDAY, JUNE 9, 2015	08:00 – 10:00	718B	SP036	Treatment Planning – Motion and Robustness
	10:30 – 12:00	718B	SP046	Assessment of Radiotherapy Response
	10:30 – 12:00	701A	SP047	Dose Calculation: Part 2
	15:00 – 16:15	701A	SP056	Image Guided RT: Part 2
	15:00 – 16:45	718B	SP057	Quality Assurance: Part 2
	17:00 – 18:45	718B	SP072	Imaging
WEDNESDAY, JUNE 10, 2015	17:00 – 18:45	701A	SP106	PR: Proton Therapy
	17:00 – 18:45	718B	SP107	Beam Delivery
	10:30 – 12:00	701A	SP078	Brachy Therapy: Part 2
	10:30 – 12:00	718B	SP079	Motion Management: Part 1
	10:30 – 11:45	701B	SP080	Other Radiation Oncology: Part 2
THURSDAY, JUNE 11, 2015	08:00 – 19:15	718B	SP117	Treatment Planning – Knowledge Based
	10:30 – 12:00	718B	SP130	Treatment Planning
	10:30 – 12:15	701A	SP131	Quality Assurance: Part 3
	15:00 – 16:15	718B	SP140	Special Treatment Techniques: Part 1
	17:00 – 18:30	718B	SP152	Special Treatment Techniques: Part 2
	17:00 – 18:45	701A	SP153	Quality Assurance: Part 4
FRIDAY, JUNE 12, 2015	10:30 – 11:45	701A	SP174	Motion Management: Part 2
	10:30 – 11:45	718B	SP175	Treatment Planning – Biology & Fractionation

TRACK 05: DOSIMETRY AND RADIATION PROTECTION				
SESSION DATE	**TIME**	**ROOM**		**SESSION TITLE**
MONDAY, JUNE 8, 2015	08:00 – 09:15	715B	SP005	Patient Specific QA
	08:00 – 09:15	716A	SP006	Dosimetry in CT
	15:00 – 16:30	716A	SP017	Calculational Techniques in Therapy Dosimetry
	17:00 – 19:00	716A	SP026	Reference Dosimetry – Developments and Monitoring
	17:00 – 18:45	715B	SP027	Development and Application of Phantoms in Clinical Dosimetry
TUESDAY, JUNE 9, 2015	08:00 – 09:45	716A	SP037	Dosimetry in Nuclear Medicine
	08:00 – 09:15	715B	SP038	Dosimetry of Non-Standard Fields
	10:30 – 12:00	716A	SP048	Dosimetry of Protons and Heavy Ions
	15:00 – 16:15	716A	SP058	Characterization of Detector Systems for Therapy Dosimetry: Part 1
	17:00 – 18:30	716A	SP067	Characterization of Detector Systems for Therapy Dosimetry: Part 2
	17:00 – 18:30	715B	SP068	Development of New Methods in Therapy Dosimetry
WEDNESDAY, JUNE 10, 2015	10:30 – 12:00	716A	SP081	Validation and Verification of Therapy Dose Delivery: Part 1
	13:30 – 15:00	716A	SP090	QA Measurements for Therapy Dosimetry
	15:00 – 16:30	716A	SP099	Special Session: Current situation of dosimetry in radiology and radiation protection
	15:00 – 16:00	716B	SP100	Dose Optimization: Focus on DRLs
	17:00 – 18:00	716A	SP108	Patient and Occupational Dose Assessment
	17:00 – 18:30	717A	SP109	Micro- and Nano-Dosimetry
THURSDAY, JUNE 11, 2015	08:00 – 09:30	715B	SP118	Diagnostic Radiology: Dosimetry and Quality Control
	08:00 – 10:00	716A	SP119	Dose Surveys in CT and Interventional Radiology
	10:30-11:30	715B	SP132	Special Session: Implementation of the new BSS including radiation safety culture in medicine
	10:30-11:30	716A	SP133	Validation and Verification of Therapy Dose Delivery: Part 2
	15:00 – 16:15	716A	SP141	Development of New Methods in Therapy Dosimetry: Part 3
	17:00 – 18:00	716A	SP154	Developments in Radiation Protection
	17:00 – 19:00	715B	SP155	Characterization of Detector Systems for Therapy Dosimetry: Part 3
FRIDAY, JUNE 12, 2015	08:00 – 10:00	716A	SP163	Primary Dosimetry Standards
	10:30 – 11:30	716A	SP176	Characterization of Detector Systems for Therapy Dosimetry: Part 4
	10:30 – 11:45	716B	SP177	Radiation Shielding – Design and Outcomes

TRACK 06: NEW TECHNOLOGIES IN CANCER RESEARCH AND TREATMENT				
SESSION DATE	TIME	ROOM		SESSION TITLE
MONDAY, JUNE 8, 2015	15:00 – 16:30	717A	SP018	Small Animal Research Technologies
	17:00 – 18:45	717A	SP028	HIFU Therapy, Microwave Ablation, Radiofrequency Ablation, Cryotherapy
TUESDAY, JUNE 9, 2015	10:30 – 12:00	717B	SP049	Nanotechnology in Radiation Therapy and Imaging: Part 1
	17:00 – 18:30	701A	SP069	Novel Detectors, Phantoms and Software, Diagnostic Techniques
WEDNESDAY, JUNE 10, 2015	13:30 – 14:30	717B	SP091	Nanotechnology in Radiation Therapy and Imaging: Part 2
THURSDAY, JUNE 11, 2015	15:00 – 16:15	701B	SP142	Light Ion Radiotherapy
FRIDAY, JUNE 12, 2015	08:00 – 09:45	718B	SP164	Adaptive Radiation Therapy (ART)

TRACK 07: SURGERY, COMPUTER AIDED SURGERY, MINIMAL INVASIVE INTERVENTIONS, ENDOSCOPY AND IMAGE-GUIDED THERAPY, MODELLING AND SIMULATION				
SESSION DATE	TIME	ROOM		SESSION TITLE
MONDAY, JUNE 8, 2015	17:00 – 18:45	715A	SP029	Surgical Navigation: Part 1
TUESDAY, JUNE 9, 2015	17:00 – 19:00	715A	SP073	Robotics and Virtual Reality in Surgery
WEDNESDAY, JUNE 10, 2015	17:00 – 18:45	715B	SP110	Surgical Navigation: Part 2
THURSDAY, JUNE 11, 2015	15:00 – 16:00	701A	SP143	Radiotherapy and Guidance
	17:00 – 18:45	715A	SP156	Patient-Specific Modeling and Simulation in Surgery

TRACK 08: BIOSENSOR, NANOTECHNOLOGY, BIOMEMS AND BIOPHOTONICS				
SESSION DATE	TIME	ROOM		SESSION TITLE
MONDAY, JUNE 8, 2015	15:00 – 16:30	717B	SP019	Nanobiosensors and Nanotheranostics
	17:00 – 19:00	717B	SP030	Lab-on-chip, BioMEMS and Microfluidics
TUESDAY, JUNE 9, 2015	15:00 – 16:15	717B	SP059	Drug Delivery and Control Release
THURSDAY, JUNE 11, 2015	10:30 – 11:45	717B	SP134	Biosignal Sensing and Body Sensor Networks
	17:00 – 18:15	717B	SP157	Biochips and Blood Analysis

TRACK 09: BIOSIGNAL PROCESSING				
SESSION DATE	TIME	ROOM		SESSION TITLE
MONDAY, JUNE 8, 2015	08:00 – 10:00	716B	SP007	Biomedical Signal Quality Analysis
	15:00 – 16:15	716B	SP020	Biomedical Modeling
	17:00 – 18:15	716B	SP031	Pattern Classification
TUESDAY, JUNE 9, 2015	08:00 – 09:45	716B	SP039	ECG
	10:30 – 12:15	716B	SP050	Time-Frequency Analysis
	17:00 – 19:00	716B	SP074	Biomedical Monitoring & Bioelectromagnetism
WEDNESDAY, JUNE 10, 2015	10:30 – 11:45	716B	SP082	Nonlinear Dynamic Analysis
THURSDAY, JUNE 11, 2015	08:00 – 09:30	716B	SP120	Biomedical Diagnosis & Prediction
	15:00 – 16:30	716B	SP144	EMG/MMG
FRIDAY, JUNE 12, 2015	08:00 – 09:15	716B	SP165	EEG

TRACK 10: REHABILITATION MEDICINE, SPORTS MEDICINE, REHABILITATION ENGINEERING AND PROSTHETICS				
SESSION DATE	TIME	ROOM		SESSION TITLE
MONDAY, JUNE 8, 2015	08:00 – 10:00	715A	SP008	Spinal Cord / Brain Injury & Upper Limb Measurement and Treatments
TUESDAY, JUNE 9, 2015	08:00 – 09:30	715A	SP040	Ergonomics, Wearable Sensors and Virtual Reality
	10:30 – 11:30	715A	SP051	Rehabilitation Robotics
WEDNESDAY, JUNE 10, 2015	10:30 – 11:30	715B	SP083	Lower Limb Injury Assessment and Treatment & Prosthetics and Assistive Devices
THURSDAY, JUNE 11, 2015	15:00 – 17:00	715A	SP145	Developing Tools for Successful Aging: Independent Mobility & Visual Impairment

TRACK 11: NEUROENGINEERING, NEURAL SYSTEMS				
SESSION DATE	TIME	ROOM		SESSION TITLE
MONDAY, JUNE 8, 2015	17:00 – 18:30	701B	SP032	Neural Interfaces and Regeneration
TUESDAY, JUNE 9, 2015	08:00 – 09:45	714A	SP041	Brain Computer/Machine Interfaces
	10:30 – 11:45	714A	SP052	Functional Neuroimaging and Neuronavigation
WEDNESDAY, JUNE 10, 2015	13:30 – 14:45	717A	SP092	Neural Signal Processing: Part 1
	15:00 – 16:45	717A	SP101	Stimulation and Monitoring
THURSDAY, JUNE 11, 2015	08:00 – 09:45	714B	SP121	Deep Brain Stimulation
	10:30 – 12:00	714B	SP135	Neural Signal Processing: Part 2
FRIDAY, JUNE 12, 2015	08:00 – 09:45	714B	SP166	NeuroProstheses
	10:30 – 12:00	715B	SP178	Neuroimaging, Neuronavigation and Neurological Disorders

TRACK 12: MEDICAL DEVICES				
SESSION DATE	TIME	ROOM		SESSION TITLE
MONDAY, JUNE 8, 2015	15:00 – 16:45	715B	SP021	Public Health, Active and Healthy Aging
TUESDAY, JUNE 9, 2015	10:30 – 11:45	715B	SP053	Cardiovascular Instrumentation
	15:00 – 16:30	714B	SP060	Special Session: UNESCO International Year of Light
	15:00 – 16:45	715B	SP061	Improvement of Diagnosis and Therapies
WEDNESDAY, JUNE 10, 2015	10:30 – 12:00	717B	SP084	New Designing Ideas
	15:00 – 17:00	715A	SP102	Clinical Information Systems and Decision Support
	17:00 – 18:45	716B	SP111	Cardiovascular
	17:00 – 18:45	717B	SP112	Instrumentation
	10:30 – 11:30	716B	SP136	Brain, Head/Neck, Spine: Part 1
THURSDAY, JUNE 11, 2015	15:00 – 16:15	717B	SP146	MSK
FRIDAY, JUNE 12, 2015	08:00 – 10:00	715B	SP167	GI and GU
	08:00 – 09:45	717B	SP168	Health Challenges in Resource-Poor Nations
	08:00 – 09:45	701A	SP169	Self Engagement, Patient Empowerment and mHealth
	10:30 – 11:30	715B	SP179	Medical Devices: Miscellaneous

TRACK 14: INFORMATION TECHNOLOGIES IN HEALTHCARE DELIVERY AND MANAGEMENT				
SESSION DATE	TIME	ROOM		SESSION TITLE
WEDNESDAY, JUNE 10, 2015	17:00 – 19:00	715A	SP113	Information Technologies in Healthcare Delivery and Management: Part 1
THURSDAY, JUNE 11, 2015	15:00 – 16:30	715B	SP147	Information Technologies in Healthcare Delivery and Management: Part 2
FRIDAY, JUNE 12, 2015	08:00 – 09:30	715A	SP170	Information Technologies in Healthcare Delivery and Management: Part 3
	10:30 – 11:30	715A	SP180	Information Technologies in Healthcare Delivery and Management: Part 4

TRACK 15: BIOINFORMATICS				
SESSION DATE	TIME	ROOM		SESSION TITLE
THURSDAY, JUNE 11, 2015	08:00 – 10:00	717B	SP122	Bioinformatics

TRACK 16: CLINICAL ENGINEERING, CLINICAL PHYSICS, AND PATIENT SAFETY				
SESSION DATE	**TIME**	**ROOM**		**SESSION TITLE**
MONDAY, JUNE 8, 2015	07:00 – 09:00	701B	SP009	Patient Safety, Medical Errors and Adverse Events Prevention Related to Health Technologies and Incident Analysis and Management
TUESDAY, JUNE 9, 2015	08:00 – 09:45	701A	SP042	Technology Management Programmes and Equipment Management Systems
	15:00 – 16:45	701B	SP062	Clinical Process Analysis, Optimization, Productivity and Benchmarking
WEDNESDAY, JUNE 10, 2015	13:30 – 14:45	701A	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
	15:00 – 16:15	701A	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
THURSDAY, JUNE 11, 2015	08:00 – 09:45	701A	SP123	Patient Safety, Medical Errors and Adverse Events Prevention Related to Health Technologies

TRACK 17: EDUCATIONAL AND PROFESSIONAL ACTIVITIES				
SESSION DATE	**TIME**	**ROOM**		**SESSION TITLE**
MONDAY, JUNE 8, 2015	08:00 – 09:45	715A	SP010	Education and Training in Biomedical Engineering
TUESDAY, JUNE 9, 2015	15:00-17:00	717A	SP063	Accreditation, Certification and Licensure Issues
	17:00 – 19:00	713A	SP075	Special Session: Appropriate Technology in Imaging and Radiotherapy – Functionality and Safety Aspects
THURSDAY, JUNE 11, 2015	17:00 – 19:00	717A	SP158	Educational Activities and Training in Medical Physics
	08:00 – 09:30	717A	SP124	Medical Physics in Developing Countries
	08:00 – 10:00	713A	SP125	Technology Enhanced Education
	10:30 – 12:00	714A	SP137	Special Session: Building Medical Physics Capacity in Developing Countries

TRACK 18: GENDER, SCIENCE AND TECHNOLOGY				
SESSION DATE	**TIME**	**ROOM**		**SESSION TITLE**
MONDAY, JUNE 8, 2015	08:00 – 09:30	717A	SP011	Overview of Gender Roles in Medical Physics in North America
TUESDAY, JUNE 9, 2015	08:00 – 09:30	717A	SP043	Women in BioMedical Engineering
	10:30 – 12:00	717A	SP054	Women in Medical Physics: Current Status
WEDNESDAY, JUNE 10, 2015	10:30 – 11:45	717A	SP085	Women in Medical Physics: Current Status

TRACK 19: BIOPHYSICS AND MODELLING				
SESSION DATE	**TIME**	**ROOM**		**SESSION TITLE**
TUESDAY, JUNE 9, 2015	17:15 – 19:00	717A	SP076	Radiobiological Modelling
WEDNESDAY, JUNE 10, 2015	10:30 – 11:45	715A	SP086	Biological Effects of Ionizing Radiation
	13:30 – 14:15	715A	SP094	Biological Modelling
THURSDAY, JUNE 11, 2015	08:00 – 09:45	715A	SP126	Computational Biology & Hemodynamics
	17:00 – 18:15	716B	SP159	Transport and Physiological Modelling

PRESIDENT'S CALL				
SESSION DATE	**TIME**	**ROOM**		**SESSION TITLE**
MONDAY, JUNE 8, 2015	15:00 – 16:30	713B	SP022	Educational and Professional Activities: Part 1
	17:00 – 18:15	713B	SP033	Imaging: Part 1
TUESDAY, JUNE 9, 2015	15:00 – 16:15	713B	SP064	Biomechanics and Artificial Organs
	17:00 – 18:45	713B	SP077	Radiation Oncology
WEDNESDAY, JUNE 10, 2015	10:30 – 12:15	713B	SP087	Educational and Professional Activities: Part 2
	13:30 – 15:15	713B	SP095	Biosignal Processing & Pulmonary & Respiratory
	17:00 – 18:00	713B	SP114	Dosimetry and Radiation Protection
THURSDAY, JUNE 11, 2015	08:00 – 09:30	713B	SP127	Informatics In Health Care And Public Health / Biosensor, Nanotechnology, Biomems And Biophotonics
	10:30 – 11:45	713B	SP138	Biosensor, Nanotechnology, Biomems And Biophotonics / New Technologies In Cancer Research And Treatment
	15:00 – 16:30	713B	SP148	Medical Devices / Surgery, Computer Aided Surgery, Minimal Invasive Interventions, Endoscopy And Image-Guided Therapy, Modeling And Simulation
	17:00 – 18:15	713B	SP160	Neuroengineering, Neural Systems / Biophysics And Modelling
FRIDAY, JUNE 12, 2015	08:00 – 10:00	714A	SP171	Clinical Engineering / Physics, Patient Safety & Imaging

SCIENTIFIC PROGRAM
BY DAY

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
Iina 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

09:15 SP003.6 - Investigation of electromagnetic catheter tracking approach for spatial reconstruction of implant geometry in high dose rate brachytherapy of prostate cancer
Gabor Fichtinger, Canada

09:30 SP003.7 - Endoscopic Tracking for improved Applicator Insertion in Esophagus and Lung HDR Brachytherapy
Robert Weersink, Canada

SESSION TIME: **08:00 – 09:15**
SESSION ROOM: **718B**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP004 – QUALITY ASSURANCE: PART 1**
SESSION CHAIR(S): **STEFANO PECA, CANADA**
VELLAIYAN SUBRAMANI, INDIA

08:00 SP004.1 - In Vivo EPID Dosimetry Detects Interfraction Errors in 3D-CRT of Rectal Cancer
Stefano Peca, Canada

08:15 SP004.2 - Establishing action thresholds for patient anatomy changes and machine errors during complex treatment using EPID and gamma analysis
Ophélie Piron, Canada

08:30 SP004.3 - Dosimetrical characteristics of amorphous silicon electronic portal imager for flattening filter free (FFF) photon beam of upgraded C-series Linear accelerator
Vellian Subramani, India

08:45 SP004.4 - Radiation field size, junction and MLC QA using amorphous silicon electronic portal imaging device, an efficient approach to improve routine accuracy
Dany Simard, Canada

09:00 SP004.6 - Real-time detection of deviations in radiotherapy beam delivery using a head-mounted detector
Richard Canters, Netherlands

SESSION TIME: **08:00 – 09:15**
SESSION ROOM: **715B**
SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**
SESSION NAME: **SP005 – PATIENT SPECIFIC QA**
SESSION CHAIR(S): **DAVID ROGERS, CANADA**

08:00 SP005.1 - Verifying dynamic planning in gamma knife radiosurgery using gel dosimetry
Gopishankar Natanasabapathi, India

08:15 SP005.2 - Influence of Jaw Tracking in Intensity Modulated and Volumetric Modulated Arc Radiotherapy for Head and Neck Cancers? A Dosimetric Study
Kh Anamul Haque, Bangladesh

08:30 SP005.3 - Evaluation of the eye lens dose according to patient setup errors in pediatric head CT examination
Rumi Gotanda, Japan

08:45 SP005.4 - Multi-Point Sources on Skin to Assess the Annual Effective Dose by Usage of TENORM added Pillow
Do hyeon Yoo, Republic of Korea

09:00 SP005.5 - Patient-Specific Quality Assurance of Respiratory-Gated VMAT Using a Programmable Cylindrical Respiratory Motion Insert for the ArcCHECK™ Phantom
Heather Young, Canada

SESSION TIME: **08:00 – 09:30**
SESSION ROOM: **716A**
SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**
SESSION NAME: **SP006 – DOSIMETRY IN CT**
SESSION CHAIR(S): **ÉTIENNE LÉTOURNEAU, CANADA**
JONATHAN BOIVIN, CANADA

08:00 SP006.1 - **KEYNOTE:** Dosimetry and Radiation Protection
Virginia Tsapakis, Greece

08:30 SP006.2 - Organ dose reduction while using in-house CBCT patient-specific protocols based on OSL dosimetry
Étienne Létourneau, Canada

08:45 SP006.3 - A novel tool for in vivo dosimetry in diagnostic and interventional radiology using plastic scintillation detectors
Jonathan Boivin, Canada

09:00 SP006.5 - Assessment of patient's eye lens dose using a custom made anthropomorphic head phantom
Kwan Hoong Ng, Malaysia

09:15 SP006.6 - Dose Profile and Equilibrium Doses in CT
Ricardo Terini, Brazil

SESSION TIME: **08:00 – 10:00**

SESSION ROOM: **716B**

SESSION TRACK: **TRACK 09: BIOSIGNAL PROCESSING**

SESSION NAME: **SP007 – BIOMEDICAL SIGNAL QUALITY ANALYSIS**

SESSION CHAIR(S): **OMAR ESCALONA, UNITED KINGDOM**
GEOFFREY CLARKE, CANADA

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

SESSION TIME: **08:00 – 10:15**

SESSION ROOM: **715A**

SESSION TRACK: **TRACK 10: REHABILITATION MEDICINE, SPORTS MEDICINE, REHABILITATION ENGINEERING AND PROSTHETICS**

SESSION NAME: **SP008 – SPINAL CORD / BRAIN INJURY & UPPER LIMB MEASUREMENT AND TREATMENTS**

SESSION CHAIR(S): **AUSTIN BERGQUIST, CANADA**
JAMES TUNG, 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

SESSION TIME: **08:00 - 09:00**

SESSION ROOM: **701B**

SESSION TRACK: **TRACK 16: CLINICAL ENGINEERING, CLINICAL PHYSICS, AND PATIENT SAFETY**

SESSION NAME: **SP009 - PATIENT SAFETY, MEDICAL ERRORS AND ADVERSE EVENTS PREVENTION RELATED TO HEALTH TECHNOLOGIES AND INCIDENT ANALYSIS AND MANAGEMENT**

SESSION CHAIR(S): **MARY COFFEY, IRELAND**

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

08:15 SP009.2 - Evaluating Patient Safety Risks Related to Oral Chemotherapy: Evolution of a Human Factors Informed Failure Mode and Effects Analysis Framework
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**

SESSION ROOM: **715A**

SESSION TRACK: **TRACK 17: EDUCATIONAL AND PROFESSIONAL ACTIVITIES**

SESSION NAME: **SP010 – EDUCATION AND TRAINING IN BIOMEDICAL ENGINEERING**

SESSION CHAIR(S): **SHANKAR KRISHNAN, UNITED STATES**
MLADEN POLUTA, SOUTH AFRICA

08:00 SP010.1 - Biomedical Engineering in Nigeria: A Developmental Overview
Kenneth Nkuma-Udah, Nigeria

08:15 SP010.2 - Biomedical Engineering Education in Peru in 2015: A Unique and Innovative Collaboration in Latin America
Rossana Rivas, Peru

08:30 SP010.3 - Improving Biomedical Engineering in Uganda through education, benchmarking and mentorship
Robert Ssekitoleko, Uganda

08:45 SP010.4 - Designing Biomedical Engineering Programs to Prepare for Medtech Industry
Shankar Krishnan, United States

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 – 09:30**

SESSION ROOM: **717A**

SESSION TRACK: **TRACK 18: GENDER, SCIENCE AND TECHNOLOGY**

SESSION NAME: **SP011 – OVERVIEW OF GENDER ROLES IN MEDICAL PHYSICS IN NORTH AMERICA**

SESSION CHAIR(S): **PATRICIA TRBOVICH, CANADA**
KRISTY BROCK, UNITED STATES

08:00 SP011.1 - **KEYNOTE:** Gender, Science and Technology: The Role of Women in Medical Physics
Kristy Brock, United States

08:30 SP011.2 - Biography of Women in Medical Physics: Maryellen Giger, Ph.D.
Maryellen Giger, United States

08:45 SP011.3 - My STEM story: from Martinique in the Caribbean to Quebec City, through France and Vietnam
Nadia Octave, Canada

09:00 SP011.4 - My strategies for living (and enjoying) academic research
Rebecca Fahrig, United States

09:15 SP011.5 - Early exposure to science leads to fulfilling career in medical physics
Renee Larouche, Canada

SESSION TIME: **15:00 – 16:00**

SESSION ROOM: **718A**

SESSION TRACK: **TRACK 01: IMAGING**

SESSION NAME: **SP013 – MRI: METHODS**

SESSION CHAIR(S): **ZOFIA DRZAZGA, POLAND**
CHEMSEDDINE FATNASSI, SWITZERLAND

15:00 SP013.1 - Numerical Simpson's Rule for Real Time and Accurate T2* maps generation Using 3D Quantitative GRE
Chemseddine Fatnassi, Switzerland

15:15 SP013.2 - Optimization of Pulse-Triggered fMRI Measurement Delay with Acoustic Stimulation
Zofia Drzazga, Poland

15:30 SP013.3 - Improvement of Pseudo Multispectral Classification of Brain MR Images
Chemseddine Fatnassi, Switzerland

15:45 SP013.4 - Image reconstruction of RF encoded MRI signals in an inhomogeneous B0 field
Somaie Salajeghe, Canada

SESSION TIME: **15:00 – 16:15**

SESSION ROOM: **701B**

SESSION TRACK: **TRACK 03: BIOMECHANICS AND ARTIFICIAL ORGANS**

SESSION NAME: **SP014 – BONE MECHANICS**

SESSION CHAIR(S): **JIE YAO, PEOPLE'S REPUBLIC OF CHINA**

15:00 SP014.1 - **KEYNOTE:** Biomechanics and Artificial Organs
Yubo Fan, People's Republic of China

15:30 SP014.2 - Improved Semi-automated 3D Kinematic Measurement of Total Knee Arthroplasty Using X-ray Fluoroscopic Images
Takaharu Yamazaki, Japan

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

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

SESSION TIME: **15:00 – 16:15**
SESSION ROOM: **701A**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP015 – OTHER RADIATION ONCOLOGY: PART 1**
SESSION CHAIR(S): **ESTEBAN BOGGIO, ARGENTINA**

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 SP016.4 - Samarium-153 Labelled Microparticles for Targeted Radionuclide Therapy of Liver Tumor
Chai Hong Yeong, Malaysia

16:00 SP016.5 - Anatomical Modelling of the Pregnant Radiotherapy Patient
Tanya Kairn, Australia

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **718B**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP016 – IMAGE GUIDED RT: PART 1**
SESSION CHAIR(S): **JIHYUN YUN, CANADA**

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

16:15 SP016.6 - Ultrasound guided radiotherapy with rotational correction for patient setup: a feasibility study
Sook Kien Ng, United States

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **716A**
SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**
SESSION NAME: **SP017 – CALCULATIONAL TECHNIQUES IN THERAPY DOSIMETRY**
SESSION CHAIR(S): **VICTOR MALKOV, CANADA**

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

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **717A**
SESSION TRACK: **TRACK 06: NEW TECHNOLOGIES IN CANCER RESEARCH AND TREATMENT**
SESSION NAME: **SP018 – SMALL ANIMAL RESEARCH TECHNOLOGIES**
SESSION CHAIR(S): **DONNA MURRELL, CANADA**

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 NANOTHERANOSTICS**
SESSION CHAIR(S): **KWANG OH, UNITED STATES**
WALTER H. CHANG, CHINESE TAIPEI

15:00 SP019.1 - Synthesis and evaluation of C595 mAb-conjugated SPIONs nanoprob for specific detection of Prostate cancer
Mohammad Abdolahi, Iran

15:15 SP019.2 - Magnetic Resonance Nanotheranostics of Guerin's Carcinoma
Valerii Orel, Ukraine

15:30 SP019.3 - Effects of Fluorescence Gold Nanoclusters on Anti-oxidation and Anti-aging by Cell Model
Walter H. Chang, Chinese Taipei

15:45 SP019.4 - Nanoparticle-aided Radiotherapy for Retinoblastoma and Choroidal Melanoma
Wilfred Ngwa, United States

16:00 SP019.5 - Nanoparticle enhancement of radiation dose: experimental confirmation using scintillation dosimetry
Natalka Suchowerska, Australia

16:15 SP019.6 - Graphene Plasmonics as Promising Platform for Highly Sensitive Plasmonic Sensing
Dong Ha Kim, Republic of Korea

SESSION TIME: **15:00 – 16:15**
SESSION ROOM: **716B**
SESSION TRACK: **TRACK 09: BIOSIGNAL PROCESSING**
SESSION NAME: **SP020 – BIOMEDICAL MODELING**
SESSION CHAIR(S): **RUI FONSECA-PINTO, PORTUGAL**
KYUICHI NIIZEKI, JAPAN

15:00 SP020.1 - Respiratory parameters have different patterns in imposed-inspiration and imposed-expiration within a closed pneumatic circuit in rats
Fabio Aoki, Brazil

15:15 SP020.2 - Autonomic and cardiovascular responses to food ingestion and gum chewing in healthy young subjects
Kyuichi Niizeki, Japan

15:30 SP020.3 - Characteristic Analysis and Modeling for Signals of Auditory Propagation Pathway
Qin Gong, People's Republic of China

15:45 SP020.4 - Numerical Optimization Performance of a Perfusion Kinetic Modelling Algorithm using Volumetric DCE CT
Igor Svistoun, Canada

16:00 SP020.5 - Validation of a Sympathovagal Balance Model to Evaluate Autonomic Function in Rats Using Time-Frequency Analysis
Rui Fonseca-Pinto, Portugal

SESSION TIME: **15:00 – 16:45**
SESSION ROOM: **715B**
SESSION TRACK: **TRACK 13: INFORMATICS IN HEALTH CARE AND PUBLIC HEALTH**
SESSION NAME: **SP021 – PUBLIC HEALTH, ACTIVE AND HEALTHY AGING**
SESSION CHAIR(S): **ELINA KALDOUDI, GREECE**
CHRISTIAN BOEHLER, SPAIN

15:00 SP021.1 - **KEYNOTE:** Informatics in Health Care and Public Health
Leandro Pecchia, United Kingdom

15:30 SP021.2 - Monitoring Information System of Aedes Aegypti Reproduction
Lourdes Brasil, Brazil

15:45 SP021.3 - Design and Functionality of a Meta-Reporting Tool within a Medical Devices Vigilance System
Aris Dermitzakis, Greece

16:00 SP021.4 - Evaluation of the Impact in the Physical Condition of School Age Children Exposed to an Intervention of Exergaming in Montemorelos Mexico
Gerardo Romo-Cardenas, Mexico

16:15 SP021.5 - Using the EIP on AHA monitoring tool for the early technology assessment of a planned device to predict in-hospital falls in the elderly
Christian Boehler, Spain

16:30 SP021.6 - An innovative Decision Support System (DSS) for patients with Inflammatory Bowel Disease (IBD)
Vasileios Tsianos, Greece

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **713B**
SESSION TRACK: **PRESIDENT'S CALL**
SESSION NAME: **SP022 – EDUCATIONAL AND PROFESSIONAL ACTIVITIES: PART 1**
SESSION CHAIR(S): **KEITH ISON, UNITED KINGDOM**
NILS CHR. STENSETH, FRANCE

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
Nils 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

SESSION TIME: **17:00 – 18:00**
SESSION ROOM: **718A**
SESSION TRACK: **TRACK 01: IMAGING**
SESSION NAME: **SP023 – QUANTITATIVE IMAGING: PART 1**
SESSION CHAIR(S): **HAI-LING MARGARET CHENG, 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

SESSION TIME: **17:00 – 18:45**
SESSION ROOM: **701A**
SESSION TRACK: **TRACK 01: IMAGING**
SESSION NAME: **SP024 – BREAST CAD AND NEW BREAST IMAGING TECHNIQUES**
SESSION CHAIR(S): **NANCY MCDONALD, CANADA**

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

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **718B**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP025 – DOSE CALCULATION: PART 1**
SESSION CHAIR(S): **HUGO BOUCHARD, UNITED KINGDOM**
VELLIAN SUBRAMANI, INDIA

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 - Performance of the ACUROS? dose calculation algorithm for 6 MV FFF beams in inhomogeneous media
Matthew Schmid, Canada

18:45 SP025.8 - 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

SESSION TIME: **17:00 – 19:00**

SESSION ROOM: **716A**

SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**

SESSION NAME: **SP026 – REFERENCE DOSIMETRY – DEVELOPMENTS AND MONITORING**

SESSION CHAIR(S): **MCEWEN MALCOLM, CANADA**
CLAUDIU COJOCARU, CANADA

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

SESSION TIME: **17:00 - 18:45**

SESSION ROOM: **715B**

SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**

SESSION NAME: **SP027 - DEVELOPMENT AND APPLICATION OF PHANTOMS IN CLINICAL DOSIMETRY**

SESSION CHAIR(S): **BORRAS CARI, UNITED STATES**
STEPHEN INKOOM, GREECE

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 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**

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 radiofrquency ablation in cancer therapy
Shefali Kulkarni-Thaker, Canada

SESSION TIME: **17:00 - 18:45**

SESSION ROOM: **715A**

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**

17:00 SP029.1 - Preliminary evaluation of positron emission based 3D tracking system (PeTrack) in image guided interventions
Simin Razavi, Canada

17:15 SP029.2 - Seymour Shield? An Operative Adjunct Device for Maintaining Visualization during Laparoscopic Surgery
Karthik Kannan, Singapore

17:30 SP029.3 - Optimizing MRI-targeted fusion prostate biopsy: the effect of systematic error and anisotropy on tumour sampling
Peter Martin, Canada

17:45 SP029.4 - Is hemolysis influenced by the dynamic calibration method of CPB roller pumps?
Eduardo Costa, Brazil

18:00 SP029.5 - 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 SP029.6 - Mechanism design a flexible endoscope with USB adaptation to training.
Francisco Perez Reynoso, Mexico

18:30 SP029.7 - 3D Quantitative Evaluation System for Integral Photography based 3D Autostereoscopic Medical Display
Zhencheng Fan, People's Republic of China

SESSION TIME: **17:00 – 19:00**

SESSION ROOM: **717B**

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**

17:00 SP030.1 - **KEYNOTE:** Drop-based microfluidics for diagnostic applications
David Weitz, United States

17:30 SP030.2 - 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 SP030.3 - On-line monitoring of 2D and 3D cell cultures: electrode configurations for impedance based sensors
Chiara Canali, Denmark

18:00 SP030.4 - Development of Microfluidic Paper-Based Electrochemical Immunoassays for the Detection of Prostate Cancer
Sean Rawlinson, United Kingdom

18:15 SP030.5 - Investigating chip design for a Raman microfluidic system with clinical radiobiological applications.
Samantha Harder, Canada

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

SESSION TIME: **17:00 – 18:15**
SESSION ROOM: **713B**
SESSION TRACK: **PRESIDENT'S CALL**
SESSION NAME: **SP033 – IMAGING: PART 1**
SESSION CHAIR(S): **SABEE MOLLOI, UNITED STATES**

17:00 SP033.1 - Quantification of breast density using dual-energy mammography, CT and MRI
Sabee Molloi, United States

17:15 SP033.2 - Study on the Main Nonconformities Found in no Mammography Alagoas State
Fernanda Ferreira, Brazil

17:30 SP033.3 - Affordable medical x-ray imaging for the developing world: a global vision
Sorin Marcovici, Canada

17:45 SP033.4 - Characterization and Analysis of the Physical Parameters in Dental X-Rays Phantom
Fernanda Ferreira, Brazil

18:00 SP033.5 - In Vitro and In Vivo Studies Glycosylated Gadolinum Nanomagnetic Particleas (GD-DTPA-DG) as New Potential Metabolic Contrast Agent in MMRI
Nader Riyahi-Alam, Iran

SCIENTIFIC PROGRAM
BY DAY

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

SESSION TIME: **08:00 – 09:30**
SESSION ROOM: **701B**
SESSION TRACK: **TRACK 01: IMAGING**
SESSION NAME: **SP035 – IMAGING DETECTOR TECHNOLOGY**
SESSION CHAIR(S): **FRANCIS LOIGNON-HOULE, CANADA**
ÉMILIE GAUDIN, 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 SP035.6 - An alternate mathematical modeling of image formation, and framework for performance analysis of positioning algorithms in the scintillation camera
Mohammad Reza Ay, Iran

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
Émilie Gaudin, Canada

09:15 SP035.2 - The performance of the CMOS APS detector for dual energy contrast enhanced digital mammography
Ilias Billas, United Kingdom

SESSION TIME: **08:00 – 10:00**
SESSION ROOM: **718B**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP036 – TREATMENT PLANNING – MOTION AND ROBUSTNESS**
SESSION CHAIR(S): **JAN UNKELBACH, UNITED STATES**
ALBIN FREDRIKSSON, SWEDEN

08:00 SP036.1 - Robust optimization with independent beams produces robustly matched fields for intensity-modulated proton therapy treatments
Albin Fredriksson, Sweden

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

SESSION TIME: **08:00 – 09:45**
SESSION ROOM: **716A**
SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**
SESSION NAME: **SP037 – DOSIMETRY IN NUCLEAR MEDICINE**
SESSION CHAIR(S): **ALEXANDRA ZVEREVA, GERMANY**

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

09:30 SP037.8 - Biological Excretion and Half - Life of Remnant Radioactive Iodine 131I in Post Treated Hyperthyroidism Patients.
Shuaa Al-Sadoon, Jo

SESSION TIME: **08:00 – 09:15**
SESSION ROOM: **715B**
SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**
SESSION NAME: **SP038 – DOSIMETRY OF NON-STANDARD FIELDS**
SESSION CHAIR(S): **HUGO BOUCHARD, UNITED KINGDOM**
SIJI PAUL, INDIA

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

SESSION TIME: **08:00 – 09:45**
SESSION ROOM: **716B**
SESSION TRACK: **TRACK 09: BIOSIGNAL PROCESSING**
SESSION NAME: **SP039 – ECG**
SESSION CHAIR(S): **ADRIAN CHAN, CANADA**
PHILIP WARRICK, CANADA

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): **MICHELE 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**
TOM JUDD, UNITED STATES

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

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

09:15 SP042.6 - An assessment of Preventive and Performance Maintenance Of Theater Equipment In Public Hospitals Kenya: Case study Five Public Hospitals.
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: **701B**
SESSION TRACK: **TRACK 01: IMAGING**
SESSION NAME: **SP044 – BIO-IMPEDANCE AND IMAGING (OTHER)**
SESSION CHAIR(S): **OLAF DOESSEL, GERMANY**
ZHIPENG LIU, PEOPLE'S REPUBLIC OF CHINA

10:30 SP044.1 - Personal Time-Varying Magnetic Fields Evaluation During Activities in MRI Sites
Giuseppe Acri, Italy

10:45 SP044.2 - ECG Imaging of Ventricular Extrasystoles
Olaf Doessel, Germany

11:00 SP044.3 - Experimental Study on Amplitude Frequency of Acoustic Signal Excited by Coupling Magneto-Acoustic Field
Zhipeng Liu, People's Republic of China

11:15 SP044.4 - In vivo electric conductivity values of cervical cancer patients reconstructed with a 3T MR system for improved SAR determination
Edmond Balidemaj, Netherlands

11:30 SP044.5 - Focus Tunable Gel Lens Using Annular Dielectric Elastomer Actuator
Thanh Giang La, Singapore

11:45 SP044.6 - Ultra-low-field MRI for improving spatial accuracy of bioelectric source imaging
Koos Zevenhoven, Finlandia

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

SESSION TIME: **10:30 – 12:00**

SESSION ROOM: **718B**

SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**

SESSION NAME: **SP046 – ASSESSMENT OF RADIOTHERAPY RESPONSE**

SESSION CHAIR(S): **ISSAM EL NAQA, CANADA**
SARAH MATTONEN, CANADA

10:30 SP046.1 - Early prediction of lung cancer recurrence after stereotactic radiotherapy using texture analysis of automatic graph cuts segmentations
Sarah Mattonen, Canada

10:45 SP046.2 - Can parametric response maps predict voxel-wise treatment response? Implications for locally adaptive radiotherapy.
Anthony Lausch, Canada

11:00 SP046.3 - Using Magnetic Resonance Imaging Radiomics to Personalize Brain Metastases Treatment
Sarah Mattonen, Canada

11:15 SP046.4 - Raman spectroscopy for assessment of radiation therapy response: Pre-clinical animal study results for lung cancer
Suneetha Devpura, United States

11:30 SP046.5 - Serial 4DCT sand 4DPET imaging to monitor response for locally-advanced non-small cell lung cancer patients undergoing combined chemotherapy and radiotherapy
Jean-Pierre Bissonnette, Canada

11:45 SP046.6 - Evaluation and Visualization of Radiogenomic Modeling Frameworks for the Prediction of Normal Tissue Toxicities
Issam El Naqa, Canada

SESSION TIME: **10:30 – 12:00**

SESSION ROOM: **701A**

SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**

SESSION NAME: **SP047 – DOSE CALCULATION: PART 2**

SESSION CHAIR(S): **OTTO SAUER, GERMANY**
ALESSANDRO ESPOSITO, PORTUGAL

10:30 SP047.1 - Non-Standard IOERT Dose Distributions Scenarios by Monte Carlo Studies
Alessandro Esposito, Portugal

10:45 SP047.2 - Validation of a Commercial GPU-Based Monte Carlo Dose Calculation Algorithm for use with an Elekta MRI-Linear Accelerator
Moti Paudel, Canada

11:00 SP047.3 - A Dosimetric Evaluation of Interface Effects Using Two Commercial Electron Treatment Planning Algorithms
Mark Yudelev, United States

11:15 SP047.4 - 4D Monte Carlo simulation for verification of delivered dose to deforming anatomy
Sara Gholampourkashi, Canada

11:30 SP047.5 - Clinical implementation of an EPID-based in vivo dose verification system for SBRT-VMAT delivery; catching errors
Peter McCowan, Canada

11:45 SP047.6 - pGPUMCD, a GPU-based Monte Carlo proton transport code
Daniel Maneval, Canada

SESSION TIME: **10:30 – 12:00**

SESSION ROOM: **716A**

SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**

SESSION NAME: **SP048 – DOSIMETRY OF PROTONS AND HEAVY IONS**

SESSION CHAIR(S): **HEIDI NETTELBECK, GERMANY**
GIULIA ARICO, GERMANY

10:30 SP048.1 - An Attempt to Predict the Proton Relative Biological Effectiveness using Radical Recombination
Kiyofumi Haneda, Japan

10:45 SP048.2 - A correction method for absorbed dose estimation using TEP-TLSD/SR1 in therapeutic carbon beam
Weishan Chang, Japan

11:00 SP048.3 - Biologically-weighted dosimetric quantities based on a multiscale approach
Heidi Nettelbeck, Germany

11:15 SP048.4 - Studies of Helium and Carbon Ion Fragmentation processes in Water and in PMMA, using versatile Semiconductor Detectors
Giulia Arico, Germany

11:30 SP048.5 - Monte Carlo study of secondary neutron dose for multipurpose nozzle in proton therapy
Sungkoo Cho, Republic of Korea

11:45 SP048.6 - Investigation of the uncertainties involved in the low energy proton interaction in different MC-codes for proton therapy application
Lalageh Mirzakhanian, Canada

SESSION TIME: **10:30 – 12:00**

SESSION ROOM: **717B**

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

SESSION NAME: **SP049 – NANOTECHNOLOGY IN RADIATION THERAPY AND IMAGING: PART 1**

SESSION CHAIR(S): **LUC BEAULIEU, CANADA**
MICHAEL ANTOSH, UNITED STATES

10:30 SP049.1 - A plasma electrochemistry reactor enabling the rapid, efficient, automatic and on-site synthesis of radioactive gold nanoparticles for brachytherapy treatments
Mathieu Bouchard, Canada

10:45 SP049.2 - Dose Enhancement in Radiotherapy by Novel Application Of Gadolinium Based MRI Contrast Agent Nanomagnetic Particles in Gel Dosimetry
Nader Riyahi Alam, Iran

11:00 SP049.3 - Monte Carlo simulation of the radiosensitizing effect by gold nanoparticles: comparison between proton and X-ray irradiation
Jihun Kwon, Japan

11:15 SP049.4 - Colloidal quantum dots: radiation resistant nano-scintillators for radiation-based applications
Marie-Ève Delage, Canada

11:30 SP049.5 - Use of gold nanoparticles and pHLIP (pH Low Insertion Peptide) to increase radiation effectiveness in cancer cells.
Michael Antosh, United States

11:45 SP049.6 - The use of nanoparticles to improve hadrontherapy
Marta Bolsa-Ferruz, France

SESSION TIME: **10:30 – 12:15**
SESSION ROOM: **716B**
SESSION TRACK: **TRACK 09: BIOSIGNAL PROCESSING**
SESSION NAME: **SP050 – TIME-FREQUENCY ANALYSIS**
SESSION CHAIR(S): **NITISH THAKOR, SINGAPORE**
SRI KRISHNAN, CANADA

10:30 SP050.1 - **KEYNOTE: Frontiers of Neuroengeneering**
Nitish Thakor, Singapore

11:00 SP050.2 - Neural responses to hearing own names comparing with repeated/non-repeated unfamiliar stimuli
Kaori Tamura, Japan

11:15 SP050.3 - MRS data deconvolution through KBDM with multiple signal truncation and clustering: circumventing noise effects
Danilo Da Silva, Brazil

11:30 SP050.4 - Quantification of Wavelet Band Metrics for Assessing Heart Rate Variability
Mark Wachowiak, Canada

11:45 SP050.5 - Effect of Coffee on EEG Spectral Asymmetry
Maie Bachmann, Estonia

12:00 SP050.6 - Effects of Changing in the Neck Fluid Volume, Neck Circumference and Upper Airway during Sleep on Snoring Sound Characteristics
Zahra Moussavi, Canada

SESSION TIME: **10:30 – 11:30**
SESSION ROOM: **715A**
SESSION TRACK: **TRACK 10: REHABILITATION MEDICINE, SPORTS MEDICINE, REHABILITATION ENGINEERING AND PROSTHETICS**
SESSION NAME: **SP051 – REHABILITATION ROBOTICS**
SESSION CHAIR(S): **YAHIA AL-SMADI, UNITED STATES**

10:30 SP051.1 - Biomechanical Simulation of Upper Extremities Exoskeleton to Aid Stroke Patients
Yahia Al-Smadi, United States

10:45 SP051.2 - Testing a mobile robot toy for children with disabilities
William Rodríguez, Colombia

11:00 SP051.3 - Pilot study of a soft metal hydride actuator for a wearable rehabilitation system
Minako Hosono, Japan

11:15 SP051.4 - Robotic Spasticity Quantification: Velocity Dependent Component of Biomechanical Resistance
Nitin Seth, Canada

SESSION TIME: **10:30 – 11:45**
SESSION ROOM: **714A**
SESSION TRACK: **TRACK 11: NEUROENGINEERING, NEURAL SYSTEMS**
SESSION NAME: **SP052 – FUNCTIONAL NEUROIMAGING AND NEURONAVIGATION**
SESSION CHAIR(S): **ERVIN SEJDIC, UNITED STATES**
HOSSEIN ROUHANI, CANADA

10:30 SP052.1 - **KEYNOTE:** From human neuron to human brain: Neurosurgical contributions to understanding the brain
Taufik Valiante, Canada

11:00 SP052.2 - Modulation of event-related desynchronization and synchronization during right finger flexion in patients with Amyotrophic Lateral Sclerosis
Natasa Bizovicar, Slovenia

11:15 SP052.3 - Functional connectivity patterns associated with swallowing of fluids with various viscosity
Ervin Sejdic, United States

11:30 SP052.4 - Distribution of F-Latency (DFL) - a new nerve conduction parameter for early detection of radiculo-myelopathy
K Siddique Rabbani, Bangladesh

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 Stoeva, United Kingdom

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

SESSION TIME: **15:00 – 16:30**

SESSION ROOM: **715A**

SESSION TRACK: **TRACK 03: BIOMECHANICS AND ARTIFICIAL ORGANS**

SESSION NAME: **SP055 – CELLULAR & MOLECULAR MECHANICS**

SESSION CHAIR(S): **ANDREW QUIGLEY, CANADA**
SAMUEL BALDWIN, CANADA

15:00 SP055.1 - Neurite outgrowth induced by shock waves
Youn Kihwan, Japan

15:15 SP055.2 - Investigating mechanical behavior and structural response to strain of bovine tendon collagen fibrils using atomic force microscopy
Andrew Quigley, Canada

15:30 SP055.3 - Collagen fibrils from overloaded tendons show sites of discrete plasticity and overall perturbation in molecular packing
Samuel Baldwin, Canada

15:45 SP055.4 - Mechanobiology of Hepatic Cells and Engineered Construction of Liver
Mian Long, People's Republic of China

16:00 SP055.5 - Modelling and Understanding Normal Pressure Hydrocephalus
Christine Goffin, Germany

16:15 SP055.6 - Osteolytic tumour involvement modifies characteristics of Collagen-I within the vertebral bone matrix impacting mechanical behaviour
Mikhail Burke, Canada

SESSION TIME: **15:00 – 16:15**

SESSION ROOM: **701A**

SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**

SESSION NAME: **SP056 – IMAGE GUIDED RT: PART 2**

SESSION CHAIR(S): **LI ZHOU, PEOPLE'S REPUBLIC OF CHINA**
YUDY ASCENCION, CUBA

15:00 SP056.1 - Imaging Dose and Dose Pattern in Image-guided Radiotherapy of Cancers
Li Zhou, People's Republic of China

15:15 SP056.2 - Residual errors and dosimetric consequences related to the spinal cord in head and neck radiotherapy
Jinkoo Kim, United States

15:30 SP056.3 - An automatic dosimetric and geometric tracking system for head and neck adaptive radiotherapy
Jinkoo Kim, United States

15:45 SP056.4 - Morphological Analysis of Tumor Regression and Its Impact on Deformable Image Registration for Adaptive Radiotherapy of Lung Cancer Patients
Hualiang Zhong, United States

16:00 SP056.5 - Assessment of a 4D-CBCT system for managing respiratory motion in Radiotherapy
Yudy Ascencion, Cuba

SESSION TIME: **15:00 – 16:45**
SESSION ROOM: **718B**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP057 – QUALITY ASSURANCE: PART 2**
SESSION CHAIR(S): **EDUARD GERSHKEVITSH, ESTONIA**

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

SESSION TIME: **15:00 – 16:15**
SESSION ROOM: **716A**
SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**
SESSION NAME: **SP058 – CHARACTERIZATION OF DETECTOR SYSTEMS FOR THERAPY DOSIMETRY: PART 1**
SESSION CHAIR(S): **THEODOROU KIKI, GREECE**
WARREN CAMPBELL, 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

15:30 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

SESSION TIME: **15:00 – 16:15**
SESSION ROOM: **717B**
SESSION TRACK: **TRACK 08: BIOSENSOR, NANOTECHNOLOGY, BIOMEMS AND BIOPHOTONICS**
SESSION NAME: **SP059 – DRUG DELIVERY AND CONTROL RELEASE**
SESSION CHAIR(S): **DONG HA KIM, REPUBLIC OF KOREA**

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

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **714B**
SESSION TRACK: **TRACK 12: MEDICAL DEVICES**
SESSION NAME: **SP060 – SPECIAL SESSION: UNESCO INTERNATIONAL YEAR OF LIGHT**
SESSION CHAIR(S): **BRIAN WILSON, CANADA**

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
Joel Espinosa-Barrios, Mexico

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

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

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): **BETTSY 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

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

17:30 SP065.2 - 2D/3D Registration for Motion Compensated Reconstruction in Cone-Beam CT of Knees Under Weight-Bearing Condition
Martin Berger, Germany

17:45 SP065.3 - Direct Scatter Estimation and Separation for Cone-beam CT Images Utilizing Monte Carlo Simulation
Yu Wang, People's Republic of China

18:00 SP065.4 - Automatic Motion Estimation and Compensation Framework for Weight-bearing C-arm CT scans using Fiducial Markers
Kerstin Mueller, United States

18:15 SP065.5 - Evaluation of two-pass view aliasing artifact suppression algorithm using clinical data
Kerstin Mueller, United States

18:30 SP065.6 - A simple algorithm to remove metal artifacts in frame based radiosurgical treatments
Gopishankar Natanasabapathi, India

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

17:30 SP067.3 - Angular dependence of diode detectors and PinPoint ionization chamber in Gamma Knife dosimetry
Hrvoje Hrsak, Croatia

17:45 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
Joanna Izewska, Austria

18:00 SP067.5 - Reference and relative dosimetry of standard and small photon fields with new commercially available detectors
Bryan Muir, Canada

18:15 SP067.6 - Evaluation of detectors response for small field output factor measurement using multichannel film dosimetry
Gunther Rucka, France

SESSION TIME: **17:00 – 18:30**

SESSION ROOM: **715B**

SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**

SESSION NAME: **SP068 – DEVELOPMENT OF NEW METHODS IN THERAPY DOSIMETRY**

SESSION CHAIR(S): **RICARDO TERINI, BRAZIL**
MEHRAN ZAINI, UNITED STATES

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

SESSION TIME: **17:00 – 18:30**

SESSION ROOM: **701A**

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

SESSION NAME: **SP069 – NOVEL DETECTORS, PHANTOMS AND SOFTWARE, DIAGNOSTIC TECHNIQUES**

SESSION CHAIR(S): **NATALKA SUCHOWERSKA, AUSTRALIA**
MICHAEL LERCH, AUSTRALIA

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 Marín, 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

SESSION TIME: **17:00 – 18:45**

SESSION ROOM: **701B**

SESSION TRACK: **TRACK 01: IMAGING**

SESSION NAME: **SP070 – MOLECULAR IMAGING PET/SPECT: PART 2**

SESSION CHAIR(S): **MOHAMMAD REZA AY, IRAN**
HONGYAN SUN, CANADA

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

SESSION TIME: **17:00 – 18:45**

SESSION ROOM: **717B**

SESSION TRACK: **TRACK 02: BIOMATERIALS AND REGENERATIVE MEDICINE**

SESSION NAME: **SP071 – SCAFFOLDS IN TISSUE ENGINEERING**

SESSION CHAIR(S): **ALICIA EL-HAJ, UNITED KINGDOM**
GILDA BARABINO, UNITED STATES

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 - Biomineralization 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

SESSION TIME: **17:00 – 18:45**

SESSION ROOM: **718B**

SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**

SESSION NAME: **SP072 – IMAGING**

SESSION CHAIR(S): **AMY WALKER, AUSTRALIA**
MICHAEL VELEC, CANADA

17:00 SP072.1 - Variations in geometric distortion using static and moving table acquisition for radiotherapy treatment planning applications
Amy Walker, Australia

17:15 SP072.2 - Translation of biomechanical deformable image registration (MORFEUS) to the RayStation radiotherapy treatment planning system
Michael Velec, Canada

17:30 SP072.3 - Phantom Validation of a Point-Set Deformable Registration Method using Pig Bladder
Roja Zakariaee, Canada

17:45 SP072.4 - Automatic bone and air segmentation during generation of synthetic CT from MR data in the brain
Joshua Kim, United States

18:00 SP072.5 - Effect of Deformable Registration Accuracy Uncertainty on Lung Dose Accumulation
Navid Samavati, Canada

18:15 SP072.6 - Development of a Multi-Modality 4D biomechanical Phantom for Evaluation of Simultaneous Registration/Segmentation Algorithms
Daniel Markel, Canada

18:30 SP072.7 - Using Magnetic Resonance Image (MRI) alone in Treatment Planning and Treatment Localization
Shupeng Chen, United States

SESSION TIME: **17:00 – 19:00**

SESSION ROOM: **715A**

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

SESSION NAME: **SP073 – ROBOTICS AND VIRTUAL REALITY IN SURGERY**

SESSION CHAIR(S): **KARIN WARDELL, SWEDEN**
TERRY PETERS, CANADA

17:00 SP073.1 - **KEYNOTE:** Augmented Reality in Image-guided Cardiac Interventions.
Terry Peters, Canada

17:30 SP073.2 - Assistant Laparoscopic Postural: Kinematic Behavior
Daniel Lorias-Espinoza, Mexico

17:45 SP073.3 - Workspace optimization of a surgical instrument for single port access surgery
Bastian Blase, Germany

18:00 SP073.4 - High-Dexterity Telemanipulation Robot for Minimally Invasive Surgery
Sebastian Schlegel, Germany

18:15 SP073.5 - Integrated Sensors for a Single-Incision Laparoscopic Instrument
Simon Albrecht, Germany

18:30 SP073.6 - Development and Evaluation of an Open-Source 3D Virtual Simulator with Integrated Motion-Tracking as a Teaching Tool for Pedicle Screw Insertion
Stewart McLachlin, Canada

18:45 SP073.7 - A Robotic System with Ultrasound Imaging for Patient Setup and Monitoring during Fractionated Radiotherapy
Kai Ding, United States

SESSION TIME: **17:00 – 19:00**
SESSION ROOM: **716B**
SESSION TRACK: **TRACK 09: BIOSIGNAL PROCESSING**
SESSION NAME: **SP074 – BIOMEDICAL MONITORING & BIOELECTROMAGNETISM**
SESSION CHAIR(S): **MILOS POPVIC, CANADA**
MALCOLM LATORRE, SWEDEN

17:00 SP074.1 - Towards Dual Respiratory and Cardiac Gated Radiotherapy
Kirpal Kohli, Canada

17:15 SP074.2 - A mobile terminal to follow-up the evolution of chronic diseases
Hector Torres, Cuba

17:30 SP074.3 - Relationship between the tuning characteristics of stimulus frequency otoacoustic emissions and behavioral tests at moderate levels
Qin Gong, People's Republic of China

17:45 SP074.4 - An Axon Mimic for Medical Electrode Tests
Malcolm Latorre, Sweden

18:00 SP074.5 - Evaluation the Accuracy of Oscillometric Blood Pressure Measurement According to the AAMI SP10
Haiyan Xiang, People's Republic of China

18:15 SP074.6 - PEMF effects on chondrocyte cellularity and gene expression of the rat distal femoral metaphyseal articular cartilage.
Fernando Sotelo-Barroso, Mexico

18:30 SP074.7 - Classification of responders versus non-responders to tDCS by analyzing voltage between anode and cathode during treatment session
Isar Nejadgholi, Canada

18:45 SP074.8 - Matlab toolbox for bioelectric cardiac images analysis
Juan Alberto Cruz, Brazil

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

Speakers:
SP075.1 - ***Kin-Yin Cheung, Hong Kong***
SP075.2 - ***Adriana Valazquez Berumen, Switzerland***
SP075.3 - ***Joanna Izewska, Austria***
SP075.4 - ***Simone Kodlulovich, Brazil***
SP075.5 - ***Ahmed Ibn Seddik, Morocco***
SP075.6 - ***Yimin Hu, People's Republic of China***

SESSION TIME: **17:15 – 19:00**
SESSION ROOM: **717A**
SESSION TRACK: **TRACK 19: BIOPHYSICS AND MODELLING**
SESSION NAME: **SP076 – RADIOBIOLOGICAL MODELLING**
SESSION CHAIR(S): **LEYLA MOGHADDASI, AUSTRALIA**

17:15 SP076.1 - Radiation Pneumonitis and Low Dose Radiation Hypersensitivity
J. James Gordon, United States

17:30 SP076.2 - Dose distribution optimization methods based on biological parameters: Impact of the objective function and reoxygenation and proliferation effects
Araceli Gago Arias, Chile

17:45 SP076.3 - Healthy Tissues in The Present of Gold Nano Particles against 103Pd and 125I: Monte Carlo study
Somayeh Asadi, Iran

18:00 SP076.4 - Monte-Carlo model development for evaluation of current clinical target volume definitions for Glioblastoma using Boron Neutron Capture Therapy
Leyla Moghaddasi, Australia

18:15 SP076.5 - Exploring RBE Dependence on Proton Track Angular Incidence
Piotr Pater, Canada

18:30 SP076.6 - DNA Damage Induced in Glioblastoma Cells by I-131: A Comparison between Experimental Data and Monte Carlo Simulation
Fereshteh Koosha, Iran

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

SCIENTIFIC PROGRAM
BY DAY

Wednesday, June 10 2015

SESSION TIME: **10:30 – 12:00**
SESSION ROOM: **701A**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP078 – BRACHY THERAPY: PART 2**
SESSION CHAIR(S): **JUSTIN SUTHERLAND, CANADA**
MICHELLE HILTS, CANADA

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 Hilts, 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

SESSION TIME: **10:30 – 12:00**
SESSION ROOM: **718B**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP079 – MOTION MANAGEMENT: PART 1**
SESSION CHAIR(S): **AMIT SAWANT, UNITED STATES**
TAE SUK SUH, REPUBLIC OF KOREA

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

SESSION TIME: **10:30 – 11:45**
SESSION ROOM: **701B**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP080 – OTHER RADIATION ONCOLOGY: PART 2**
SESSION CHAIR(S): **KEVIN ALEXANDER, CANADA**
CSABA PINTER, CANADA

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

SESSION TIME: **10:30 – 12:00**

SESSION ROOM: **716A**

SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**

SESSION NAME: **SP081 – VALIDATION AND VERIFICATION OF THERAPY DOSE DELIVERY: PART 1**

SESSION CHAIR(S): **GEOFFREY IBBOTT, UNITED STATES**
SAADAT ALI, PAKISTAN

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 Microdosimeter 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

SESSION TIME: **10:30 – 11:45**

SESSION ROOM: **716B**

SESSION TRACK: **TRACK 09: BIOSIGNAL PROCESSING**

SESSION NAME: **SP082 – NONLINEAR DYNAMIC ANALYSIS**

SESSION CHAIR(S): **ZAHRA MOUSSAVI, CANADA**
RICARDO ARMENTANO, ARGENTINA

10:30 SP082.1 - Aging Process: Central Pressure Waveform Loss of Complexity
Ricardo Armentano, Argentina

10:45 SP082.2 - Changes in COP scaling behaviour in quiet stance after mTBI
Coren Walters-Stewart, Canada

11:00 SP082.3 - Tracking algorithm of spiral wave core in a cardiac tissue using Hilbert transform and phase variance analysis
Naoki Tomii, Japan

11:15 SP082.4 - Mapping the Fractal Dimension of Arterial Pressure
Leandro Cymberknop, Argentina

11:30 SP082.5 - Moving deterended fluctuation analysis for inspecting time evolution of scale invariant structures in biomedical signals
Hamidreza Saghir, Canada

SESSION TIME: **10:30 – 11:30**

SESSION ROOM: **715B**

SESSION TRACK: **TRACK 10: REHABILITATION MEDICINE, SPORTS MEDICINE, REHABILITATION ENGINEERING AND PROSTHETICS**

SESSION NAME: **SP083 – LOWER LIMB INJURY ASSESSMENT AND TREATMENT & PROSTHETICS AND ASSISTIVE DEVICES**

SESSION CHAIR(S): **AMY HSIAO, 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 – 11:45**
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

10:50 SP085.2 - Is there a 'Leaky Pipeline' for Women in Clinical Medical Physics in Canada?
Wendy Smith, Canada

11:10 SP085.3 - Women in Medical field in Brazil: gender equality?
Simone Renha, Brazil

11:30 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
Andrel 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 Enginering: 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

11:45 SP087.6 - A Health Information Technology Management Course for Brazilian Clinical Engineers
Fernando Andrade, Brazil

12:00 SP087.7 - A Successful High School Science Mentorship Program: Students on the Beamlines at the Canadian Light Source
Denise Miller, Canada

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

SESSION TIME: **13:30 – 14:45**
SESSION ROOM: **701B**
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

14:15 SP089.4 - 3D numerical investigation of the effects of altered mechanical loading during skeletal growth
Kamel Madi, United Kingdom

14:30 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

SESSION TIME: **13:30 – 15:00**
SESSION ROOM: **716A**
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

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

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 - 14:45**
SESSION ROOM: **701A**
SESSION TRACK: **TRACK 16: CLINICAL ENGINEERING, CLINICAL PHYSICS, AND PATIENT SAFETY**
SESSION NAME: **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**
SESSION CHAIR(S): **ERNESTO IADANZA, ITALY**
STEPHEN BREEN, CANADA

13:30 SP093.1 - The maintenance needs of oxygen concentrators in low-resource settings and implications for technician training: Experience from The Gambia
Beverly Bradley, Canada

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 Calil, 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

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**
NATASA RELJIN, 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

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 Photoplethysmogram
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

SESSION TIME: **15:00 – 16:15**
SESSION ROOM: **718A**
SESSION TRACK: **TRACK 01: IMAGING**
SESSION NAME: **SP096 – OPTICAL IMAGING: APPLICATIONS**
SESSION CHAIR(S): **SANTA BOREL, CANADA**
JESSICA PEREZ, 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 photocoagulation during interstitial photothermal theraphy 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

SESSION TIME: **15:00 – 17:00**
SESSION ROOM: **701B**
SESSION TRACK: **TRACK 01: IMAGING**
SESSION NAME: **SP097 – QUANTITATIVE IMAGING: PART 2**
SESSION CHAIR(S): **HAI-LING MARGARET CHENG, CANADA**
GEOFFREY ZHANG, UNITED STATES

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 Imges
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

SESSION TIME: **15:00 – 16:45**
SESSION ROOM: **717B**
SESSION TRACK: **TRACK 02: BIOMATERIALS AND REGENERATIVE MEDICINE**
SESSION NAME: **SP098 – BIOMATERIALS AND REGENERATIVE MEDICINE**
SESSION CHAIR(S): **ALICIA EL-HAJ, UNITED KINGDOM**
GILDA BARABINO, 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

16:00 SP098.5 - Vascular endothelial cell adhesion and hemocompatibility of biochemically- and topographically-modified poly(vinyl alcohol)
Evelyn Yim, Singapore

16:15 SP012.1 - Effects of PEMF on Neuroblastoma Cells Previously Exposed to Antidepressants
Teodoro Cordova-Fraga, Mexico

16:30 SP012.2 Porous bio-Sic ceramics from wood: approaching new medical implants
Birgit Glasmacher, Germany

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***

SESSION TIME: **15:00 – 16:00**
SESSION ROOM: **716B**
SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**
SESSION NAME: **SP100 – DOSE OPTIMIZATION: FOCUS ON DRLS**
SESSION CHAIR(S): **GRAEME WARDLAW, CANADA**
JOSEP MARTÍ-CLIMENT, SPAIN

15:00 SP100.1 - A Contribution to the Establishment of Diagnostic Reference Levels in Computed Tomography in Brazil
Ana Marques Da Silva, Brazil

15:15 SP100.2 - Canada's Computed Tomography (CT) Survey: Overview and Moving Toward Establishment of DRLs
Graeme Wardlaw, Canada

15:30 SP100.3 - Review UAE Dental Radiology Dosimetry Results for National DRLs Establishment
Fatima Al Kaabi, United Arab Emirates

15:45 SP100.4 - Should restrictions on the patients' behavior during the radiophatmaceuticals incorporation and after 99mTc bone scans be imposed?
Josep Martí-Climent, Spain

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**

15:00 SP101.1 - Biological Targets of Seizure Therapy in Major Depressive Disorder using EEG Microstate Analysis
Sravya Atluri, Canada

15:15 SP101.2 - Magnetic Seizure Therapy for Treatment Resistant Depression: Insights from TMS-EEG Measures
Yinming Sun, Canada

15:30 SP101.3 - Deep Transcranial Magnetic Stimulation Using Figure-of-Eight and Halo Coils
Shoogo Ueno, Japan

15:45 SP101.4 - Optogenetic Stimulation and Wireless Cortical Recording in Modulating Motor Plasticity and Performance of Free-Moving Rat
Chun-Wei Wu, Chinese Taipei

16:00 SP101.5 - Identification of calf muscles response to functional electrical stimulation as linear models
Hossein Rouhani, Canada

16:15 SP101.6 - Establishment of Real Human Head Conductivity Model with Ventricular Structure used in TMS Simulation Study
Tao Yin, People's Republic of China

16:30 SP101.7 - Study on electric field in real head model induced by H-coil
Tao Yin, People's Republic of China

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

15:00 SP102.1 - A Multi-Attribute Decision Theory Approach to Radiation Dose De-escalation in Oropharyngeal Cancer
Wade Smith, United States

15:15 SP102.2 - Large-scale data of basic patient and treatment characteristics significantly improve predictions for post-radiotherapy dyspnea
Andre Dekker, Netherlands

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

16:15 SP102.6 - Differential Feature Space in Mean Shift Clustering for Automated Melanoma Assessment
Javier Eslava, United States

16:30 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**

15:00 SP103.1 - Novel Medical Device Procurement Tracking Approach
Gleb Donin, Czech Republic

15:15 SP103.2 - Influence of shifting patients with off-axis tumor for Tomotherapy
Yingjie Xu, People's Republic of China

15:30 SP103.3 - Smart pump user interface evaluation
Carlos Viviani, Brazil

15:45 SP103.4 - Studying the human computer interface of a continuous monitoring software by approaching it from both directions
Ying Ling Lin, Canada

16:00 SP103.5 - Analysis and experimentation of plantar foot segmentation from thermographic digital images for preventive diagnosis of diabetic foot
Luis Vilcahuaman, Peru

SESSION TIME: **17:00 – 18:00**

SESSION ROOM: **701B**

SESSION TRACK: **TRACK 01: IMAGING**

SESSION NAME: **SP104 – PHANTOMS**

SESSION CHAIR(S): **DOV MALONEK, ISRAEL**
FERNANDA CAVALCANTE, BRAZIL

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 – 19:00**

SESSION ROOM: **718A**

SESSION TRACK: **TRACK 01: IMAGING**

SESSION NAME: **SP105 – MRI: NOVEL APPROACHES AND MOLECULAR IMAGING & APPLICATIONS**

SESSION CHAIR(S): **HAI-LING MARGARET CHENG, CANADA**
NADER RIYAHI-ALAM, IRAN

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 Riyahi-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 - Fractioanal Anisotropy, Voxel Wise Morphometry and Resting State in Patients with Lateral Amyotrophic Sclerosis
Maria Lopez-Titla, Mexico

SESSION TIME: **17:00 – 18:45**
SESSION ROOM: **701A**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP106 – PR: PROTON THERAPY**
SESSION CHAIR(S): **DANIEL SANCHEZ-PARCERISA, UNITED STATES**
DEREK DOLNEY, UNITED STATES

17:00 SP106.1 - **KEYNOTE:** Proton therapy – close to becoming mainstream
Thomas Bortfeld, 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

18:15 SP106.5 - Impact of the microdosimetric spread on cell survival data analysis
Shirin Enger, Canada

18:30 SP106.6 - Magnetically scanned-beam proton radiography using Micromegas detectors
Derek Dolney, United States

SESSION TIME: **17:00 – 18:45**
SESSION ROOM: **718B**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP107 – BEAM DELIVERY**
SESSION CHAIR(S): **NATALKA SUCHOWERSKA, AUSTRALIA**
RACHEL MCCARROLL, UNITED STATES

17:00 SP107.1 - A Quantitative Analysis of Teletherapy in Low Resource Settings: Cobalt or Linac?
Rachel McCarroll, United States

17:15 SP107.2 - The study of Total Marrow Irradiation Based on Rotational Intensity-modulated techniques
Shouping Xu, People's Republic of China

17:30 SP107.3 - IMRT and VMAT comparison for a case of bilateral breast carcinoma
Erick Montenegro, Guatemala

17:45 SP107.4 - Measuring the Location and Dynamics of the Beam Spot and Field Centre on a Therapy Linear Accelerator in X-Ray Mode
David Spencer, Canada

18:00 SP107.5 - Monte Carlo based optimization of flattening filters for a cobalt-60 total body irradiation unit
Ingrid Lai, Canada

18:15 SP107.6 - Monte Carlo study for the design of a novel Gamma-Tomo SBRT system
Grisel Mora, Portugal

18:30 SP107.7 - A dosimetric evaluation of flattening filter-free volumetric modulated arc therapy for postoperative treatment of cervical cancer
Fuli Zhang, People's Republic of China

SESSION TIME: **17:00 – 18:00**
SESSION ROOM: **716A**
SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**
SESSION NAME: **SP108 – PATIENT AND OCCUPATIONAL DOSE ASSESSMENT**
SESSION CHAIR(S): **ARUN KUMAR L S, OMAN**

17:00 SP108.1 - Radiation dose to patients from cardiac interventions performed using image intensifier, flat detector and novel flat detector systems
Roshan Livingstone, India

17:15 SP108.2 - First National Occupational Radiation Dose Registry in Ministry of Health and its Validation: An Oman Experience
Arun Kumar L S, Oman

17:30 SP108.3 - Assessment of Patient and Staff Doses in Interventional Cerebral Angiography Using OSL
Chryzel Angelica Gonzales, Republic of the Philippines

17:45 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 Martínez, Mexico

18:30 SP110.7 - Use of a Patient-Specific Ventriculostomy 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

SESSION TIME: **17:00 – 18:45**

SESSION ROOM: **717B**

SESSION TRACK: **TRACK 12: MEDICAL DEVICES**

SESSION NAME: **SP112 – INSTRUMENTATION**

SESSION CHAIR(S): **ANTHONY EASTY, CANADA**
GUILERMO AVENDANO, CHILE

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

SESSION TIME: **17:00 – 19:00**

SESSION ROOM: **715A**

SESSION TRACK: **TRACK 14: INFORMATION TECHNOLOGIES IN HEALTHCARE DELIVERY AND MANAGEMENT**

SESSION NAME: **SP113 – INFORMATION TECHNOLOGIES IN HEALTHCARE DELIVERY AND MANAGEMENT: PART 1**

SESSION CHAIR(S): **BRUCE CURRAN, UNITED STATES**
JOSEPH CAFAZZO, CANADA

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, Kwait

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

SESSION TIME: **17:00 – 18:00**

SESSION ROOM: **713B**

SESSION TRACK: **PRESIDENT'S CALL**

SESSION NAME: **SP114 – DOSIMETRY AND RADIATION PROTECTION**

SESSION CHAIR(S): **SAMBA RICHARD NDI, CAMEROON**
PANKAJ PARASHAR, INDIA

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 read-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

SESSION TIME: **08:00 – 09:15**

SESSION ROOM: **718B**

SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**

SESSION NAME: **SP117 – TREATMENT PLANNING – KNOWLEDGE BASED**

SESSION CHAIR(S): **ROBERT MACDONALD, CANADA**
CHRIS MCINTOSH, CANADA

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
Robert 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

SESSION TIME: **08:00 – 09:30**

SESSION ROOM: **715B**

SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**

SESSION NAME: **SP118 – DIAGNOSTIC RADIOLOGY: DOSIMETRY AND QUALITY CONTROL**

SESSION CHAIR(S): **JAMILA SALEM AL SUWAIDI, UNITED ARAB EMIRATES**
ARUN KUMAR L S, OMAN

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

09:15 SP118.7 - Radiation Dose Assessment for Retrospectively ECG-Gated Coronary Computed Tomography Angiography (CCTA) Examination
C H Yeong, Malaysia

SESSION TIME: **08:00 – 10:00**

SESSION ROOM: **716A**

SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**

SESSION NAME: **SP119 – DOSE SURVEYS IN CT AND INTERVENTIONAL RADIOLOGY**

SESSION CHAIR(S): **HAMID KHOSRAVI, CANADA**

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

SESSION TIME: **08:00 – 09:30**

SESSION ROOM: **716B**

SESSION TRACK: **TRACK 09: BIOSIGNAL PROCESSING**

SESSION NAME: **SP120 – BIOMEDICAL DIAGNOSIS & PREDICTION**

SESSION CHAIR(S): **JENNIFER HOWCROFT, CANADA**
JAN HAVLÍK, CZECH REPUBLIC

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 Havlík, 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

SESSION TIME: **08:00 – 09:45**

SESSION ROOM: **714B**

SESSION TRACK: **TRACK 11: NEUROENGINEERING, NEURAL SYSTEMS**

SESSION NAME: **SP121 – DEEP BRAIN STIMULATION**

SESSION CHAIR(S): **FABIOLA ALONSO, SWEDEN**
VENKATESHWARLA RAJU, INDIA

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

09:00 SP121.5 - Clinical validation of a precise tremor assessment system to aid deep brain stimulation parameter optimisation
Thushara Perera, Australia

09:15 SP121.6 - The Role of Microelectrode Recording (MER) in STN DBS Electrode Implantation
Venkateshwarla Raju, India

09:30 SP121.7 - Effectiveness of Micro-Electrode-Recording(MER) in Determining Subthalamic-Nuclei Deep Brain Stimulation (STN-DBS) Lead Position in PD Conditions
Venkateshwarla Raju, India

SESSION TIME: **08:00 – 10:00**

SESSION ROOM: **717B**

SESSION TRACK: **TRACK 15: BIOINFORMATICS**

SESSION NAME: **SP122 – BIOINFORMATICS**

SESSION CHAIR(S): **JAMES GREEN, CANADA**
PARVIN MOUSAVI, CANADA

08:00 SP122.1 – **KEYNOTE:** Machine learning for bioinformatics in the face of class imbalance
James Green, Canada

08:30 SP122.2 - Bioinformatics-based identification of osteoarthritis-associated genes in synovial tissues
Yi-Jiang Song, People's Republic of China

08:45 SP122.3 - Dynamic Epistasis Analysis
Aseel Awdeh, Canada

09:00 SP122.4 - Transcription factor binding in an expanded epigenetic alphabet
Michael Hoffman, Canada

09:15 SP122.5 - Identification of Molecular Phenotypes in Lung Cancer by Integrating Radiomics and Genomics
Patrick Grossmann, United States

09:30 SP122.6 - A machine learning method to build multi-SNP predictive models of clinical radiosensitivity
Jung Hun Oh, United States

09:45 SP122.7 - Updated Free Energy Parameters Increase MicroRNA Prediction Performance
Robert Peace, Canada

SESSION TIME: **08:00 – 09:45**

SESSION ROOM: **701A**

SESSION TRACK: **TRACK 16: CLINICAL ENGINEERING, CLINICAL PHYSICS, AND PATIENT SAFETY**

SESSION NAME: **SP123 – PATIENT SAFETY, MEDICAL ERRORS AND ADVERSE EVENTS PREVENTION RELATED TO HEALTH TECHNOLOGIES**

SESSION CHAIR(S): **MARY COFFEY, IRELAND**
ANDREW IBEY, CANADA

08:00 SP123.1 - **KEYNOTE:** Incident reporting and learning systems improving quality and safety in radiation oncology
Mary Coffey, Ireland

08:30 SP123.2 - Applying an Evidence-based Approach to Managing Alarm Safety: A University Health Network Case Study
Anne Li, Canada

08:45 SP123.3 - Using infusion pump logs to recreate a patient safety event: considerations for smart pump improvement
Andrew Ibey, Canada

09:00 SP123.4 - Developing an information retrieval engine for medical devices? Vigilance reports
Nicolas Pallikarakis, Greece

09:15 SP123.5 - Efficient, all-in-one, Monte Carlo simulations of transit EPID cine-mode dose distributions for patient-specific VMAT quality assurance
Shiqin Su, Canada

09:30 SP123.6 - Development of an interactive training tool to help reduce error rate associated with shared infusion volume management tasks
Patricia Trbovich, Canada

SESSION TIME: **08:00 – 09:30**

SESSION ROOM: **717A**

SESSION TRACK: **TRACK 17: EDUCATIONAL AND PROFESSIONAL ACTIVITIES**

SESSION NAME: **SP124 – MEDICAL PHYSICS IN DEVELOPING COUNTRIES**

SESSION CHAIR(S): **AGNETTE PERALTA, REPUBLIC OF THE PHILIPPINES**
W.H. ROUND, NEW ZEALAND

08:00 SP124.1 - Medical Physics Training Resources for Developing Countries
Muthana Al-Ghazi, United States

08:15 SP124.2 - Medical Physics in Indonesia: Current Status and Plans
Supriyanto Ardjo Pawiro, Indonesia

08:30 SP124.3 - Surveying Trends in Radiation Oncology Medical Physics in the Asia Pacific Region
Tomas Kron, Australia

08:45 SP124.4 - The Status of Medical Physics in Iraq
Muthana Al-Ghazi, United States

09:00 SP124.5 - Evaluation and Adaptation of Medical Physics Practicum for Nicaraguan Students at a Canadian Cancer Centre
Alana Hudson, Canada

09:15 SP124.6 - Coordination of AAPM Educational Courses for Developing Countries with Major International and Regional Organizations of Medical Physicists
Eugene Lief, United States

SESSION TIME: **08:00 – 10:00**

SESSION ROOM: **713A**

SESSION TRACK: **TRACK 17: EDUCATIONAL AND PROFESSIONAL ACTIVITIES**

SESSION NAME: **SP125 – TECHNOLOGY ENHANCED EDUCATION**

SESSION CHAIR(S): **JAMES WEAR, UNITED STATES**
SLAVIK TABAKOV, UNITED KINGDOM

08:00 SP125.1 - **KEYNOTE:** e-Learning in Medical Physics? pioneering and future trends
Slavik Tabakov, United Kingdom

08:30 SP125.2 - A Desk-Top Optical Scanner for Teaching the Principles of Computed Tomography (CT)
Linada Kaci, Canada

08:45 SP125.3 - Medical Physics e-Encyclopaedia and Multilingual Dictionary? Upgrade and New Developments
Slavik Tabakov, United Kingdom

09:00 SP125.4 - Physics for Medical Students: Technology Enhanced Teaching from the Dipole to the Vectorcardiogram
Ernst Hofer, Austria

09:15 SP125.5 - matRad: a multimodality open source treatment planning toolkit
Eduardo Cisternas, Chile

09:30 SP125.6 - Creation of a model for online education of clinical engineering and management of medical technologies to reach professionals worldwide
Maria Moreno Carbajal, Mexico

09:45 SP125.7 - Develop of a Mixed, Haptic and Virtual System to Simulate Radiographic Images
Guillermo Avendaño, Chile

SESSION TIME: **08:00 – 09:45**

SESSION ROOM: **715A**

SESSION TRACK: **TRACK 19: BIOPHYSICS AND MODELLING**

SESSION NAME: **SP126 – COMPUTATIONAL BIOLOGY & HEMODYNAMICS**

SESSION CHAIR(S): **IYAD FAYSSAL, LEBANON**

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 Bermang'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

SESSION TIME: **08:00 – 09:30**
SESSION ROOM: **713B**
SESSION TRACK: **PRESIDENT'S CALL**
SESSION NAME: **SP127 – INFORMATICS IN HEALTH CARE AND PUBLIC HEALTH / BIOSENSOR, NANOTECHNOLOGY, BIOMEMS AND BIOPHOTONICS**
SESSION CHAIR(S): **RICARDO SILVA, ECUADOR**
PETER PENNEFATHER, CANADA

08:00 SP127.1 - Astudy 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

SESSION TIME: **10:30 – 11:45**
SESSION ROOM: **718A**
SESSION TRACK: **TRACK 01: IMAGING**
SESSION NAME: **SP128 – MULTIMODALITY IMAGING**
SESSION CHAIR(S): **GANG ZHENG, CANADA**
ELISA KALLIONIEMI, FINLANDIA

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

SESSION TIME: **10:30 – 12:00**
SESSION ROOM: **701B**
SESSION TRACK: **TRACK 01: IMAGING**
SESSION NAME: **SP129 – IMAGE QUALITY ASSESSMENT (MAMMOGRAPHY AND OTHER)**
SESSION CHAIR(S): **JAMES ANNKAH, UNITED KINGDOM**
MARÍA-ESTER BRANDAN, MEXICO

10:30 SP129.1 - Kilovoltage-CBCT of a Linear Accelerator as a relative imaging device of a spiral CT scanner - dosimetric results
James Annkah, United Kingdom

10:45 SP129.2 - Overall performance, image quality and dose in CR mammography systems operating in the Mexico public health sector
María-Ester Brandan, Mexico

11:00 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
Philip McGeachy, Canada

11:45 SP130.6 - Measuring radiation treatment plan similarity in the cloud
Jennifer Andrea, Canada

SESSION TIME: **10:30 – 12:15**
SESSION ROOM: **701A**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP131 – QUALITY ASSURANCE: PART 3**
SESSION CHAIR(S): **JIANRONG DAI, PEOPLE'S REPUBLIC OF CHINA**
ANDREA MCNIVEN, 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***

SESSION TIME: **10:30 – 12:00**

SESSION ROOM: **716A**

SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**

SESSION NAME: **SP133 – VALIDATION AND VERIFICATION OF THERAPY DOSE DELIVERY: PART 2**

SESSION CHAIR(S): **SARFEHNIA ARMAN, CANADA**
JAMES CHOW, CANADA

Panelists: **SP133.1 -** ***James Chow, Canada***
SP133.2 - ***Michel Lalonde, Canada***
SP133.3 - ***Kamlesh Passi, India***
SP133.4 - ***Nader Moshiri Sedeh, United States***

SESSION TIME: **10:30 – 11:45**

SESSION ROOM: **717B**

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

SESSION NAME: **SP134 – BIOSIGNAL SENSING AND BODY SENSOR NETWORKS**

SESSION CHAIR(S): **KWANG OH, UNITED STATES**
JONATHAN LOVELL, UNITED STATES

10:30 SP134.1 - Impedance and comfort of dry multipin electrodes for electroencephalography
Patrique Fiedler, Germany

10:45 SP134.2 - Wearable Gait Analysis using Vision-aided Inertial Sensor Fusion
Eric Ma, Canada

11:00 SP134.3 - Two-Vector Capacitive Electrocardiogram Measurement Using Three Fabric Electrodes for Automobile Application
Shunsuke Takayama, Japan

11:15 SP134.5 - Detection of REM Behaviour Disorder Based on Low-Power Compressive Sensing of EMG
Sridhar Krishnan, Canada

11:30 SP134.6 - Externally applied pressure on the skin electrode impedance
Bahareh Taji, Canada

SESSION TIME: **10:30 – 12:00**

SESSION ROOM: **714B**

SESSION TRACK: **TRACK 11: NEUROENGINEERING, NEURAL SYSTEMS**

SESSION NAME: **SP135 – NEURAL SIGNAL PROCESSING: PART 2**

SESSION CHAIR(S): **MILOS POPOVIC, CANADA**
ANGELO ALL, SINGAPORE

10:30 SP135.1 - Epileptogenic zone estimation by localizing the generators of delta and high-frequency rhythms extracted from human scalp EEG
Daniel Jacobs, Canada

10:45 SP135.2 - Automated Alzheimer's Disease Diagnosis Using a Portable 7-Channel Electroencephalography Device
Raymundo Cassani, Canada

11:00 SP135.3 - Transient Propagation of Information Among Cultured Hippocampal Cell Assemblies in a Two-Chamber MEMs Device
Bruce Wheeler, United States

11:15 SP135.4 - Investigating the Cortical Dominance in the Pre-Motor Potential during Unilateral Voluntary Task
Antonio Infantosi, Brazil

11:30 SP135.5 - A New Dynamic Virtual Stimulation Protocol to Evoke M-VEP and Linear Vection during Orthostatic Posture Control
Antonio Infantosi, Brazil

11:45 SP135.6 - Assessment of Bilateral SSEP Signals Enhancement following Transectional Spinal Cord Injury Using Linear Modeling
Angelo All, Singapore

SESSION TIME: **10:30 – 11:30**

SESSION ROOM: **716B**

SESSION TRACK: **TRACK 12: MEDICAL DEVICES**

SESSION NAME: **SP136 – BRAIN, HEAD/NECK, SPINE: PART 1**

SESSION CHAIR(S): **ANDREAS SCHMOCKER, SWITZERLAND**
FRANCIS BAMBICO, CANADA

10:30 SP136.1 - Photopolymerization device for minimally invasive implants: application to nucleus pulposus replacement
Andreas Schmocker, Switzerland

10:45 SP136.2 - Design and Technical Evaluation of an Implantable Passive Sensor for Minimally Invasive Wireless Intracranial Pressure Monitoring
Mohammadhossein Behfar, Finlandia

11:00 SP136.3 - Investigating the Feasibility of EVestG Assessment for Screening Concussion
Zahra Moussavi, 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

16:00 SP139.5 - Development of Polymer Substrates for Waveguide Evanescent Field Fluorescence Microscopy
Rony Sharon, Canada

16:15 SP139.6 - Higher-Order Structural Investigation of Mammalian Septins by Super-Resolution Fluorescence Microscopy
Adriano Vissa, Canada

SESSION TIME: **15:00 – 16:15**
SESSION ROOM: **718B**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP140 – SPECIAL TREATMENT TECHNIQUES: PART 1**
SESSION CHAIR(S): **WILLIAM Y. SONG, CANADA**

15:00 SP140.1 - Credentialing of radiotherapy centres in Australasia for a phase III clinical trial on SABR
Tomas Kron, Australia

15:15 SP140.2 - LED-optimized SBRT for Peripheral Early Stage Lung Cancer: A technique to reduce lung dose and potentially allow for re-irradiation
Brandon Disher, Canada

15:30 SP140.3 - Delivery of VMAT treatments with nonstandard SAD using dynamic trajectories
Joel Mullins, Canada

15:45 SP140.4 - Cone-Beam CT assessment of inter-fraction and intra-fraction motions during lung stereotactic body radiotherapy with and without abdominal compression
Runqing Jiang, Canada

16:00 SP140.5 - Initial experience in establishing frameless intra-cranial stereotactic radiosurgery program with Varian TrueBeam STx , 6DoF couch and VisionRT motion control system
Sergei Zavgorodni, Canada

SESSION TIME: **15:00 – 16:15**
SESSION ROOM: **716A**
SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**
SESSION NAME: **SP141 – DEVELOPMENT OF NEW METHODS IN THERAPY DOSIMETRY: PART 3**
SESSION CHAIR(S): **NICOLE RANGER, UNITED STATES**
SIMONE KODLULOVICH, BRAZIL

15:00 SP141.1 - Theoretical description of the saturation correction of ionization chambers in pulsed fields with arbitrary repetition rate
Leonhard Karsch, Germany

15:15 SP141.2 - Performance characteristics of Gafchromic EBT3 film in therapeutic electron beams and its practical application as an in-vivo dosimeter in the clinic
Amanda Barry, Ireland

15:30 SP141.3 - Photon and electron spectra inside small field detectors for narrow and broad 6 MV photon beams
Hamza Benmakhlouf, Sweden

15:45 SP141.4 - Real Time Dose Reconstruction in MV Photon Therapy using a 2D solid state detector array.
Michael Lerch, Australia

16:00 SP141.5 - Energy Correction factor for Plane Parallel ion-chamber and its Use in Clinical photon Beam Dosimetry
Kamlesh Passi, India

SESSION TIME: **15:00 – 16:15**
SESSION ROOM: **701B**
SESSION TRACK: **TRACK 06: NEW TECHNOLOGIES IN CANCER RESEARCH AND TREATMENT**
SESSION NAME: **SP142 – LIGHT ION RADIOTHERAPY**
SESSION CHAIR(S): **ALBIN FREDRIKSSON, SWEDEN**
YOLANDA PREZADO, FRANCE

15:00 SP142.1 - Proton Minibeam Radiation Therapy (pMBRT): implementation at a clinical center
Yolanda Prezado, France

15:15 SP142.2 - Hadron minibeam radiation therapy: feasibility study at Heidelberg Ion Therapy Center
Yolanda Prezado, France

15:30 SP142.3 - Acoustic Range Verification of Proton Beams: Simulation Assessment of the Challenges of Clinical Application
Kevin Jones, United States

15:45 SP142.4 - Radiochromic Film Based Dose Calibration and Monitoring for Radiobiological Experiments using Low Energy Proton Beams
Belal Moftah, Saudi Arabia

16:00 SP142.5 - Development of 3D measurement device dedicated for range-compensator QA
Shigekazu Fukuda, Japan

SESSION TIME: **15:00 – 16:00**
SESSION ROOM: **701A**
SESSION TRACK: **TRACK 07: SURGERY, COMPUTER AIDED SURGERY, MINIMAL INVASIVE INTERVENTIONS, ENDOSCOPY AND IMAGE-GUIDED THERAPY, MODELLING AND SIMULATION**
SESSION NAME: **SP143 – RADIOTHERAPY AND GUIDANCE**
SESSION CHAIR(S): **STEFANIA PALLOTTA, ITALY**

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

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **716B**
SESSION TRACK: **TRACK 09: BIOSIGNAL PROCESSING**
SESSION NAME: **SP144 – EMG/MMG**
SESSION CHAIR(S): **GREGG JOHNS, CANADA**

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 - EMG-EMG Coherence in Multisite Writer's Cramp Waveforms - A Study with Advanced Multi-Channel EMG System
Venkateshwarla Raju, India

16:15 SP144.6 - An Exploration of the Erector Spinae Muscle for Knee Exoskeleton Control
Teodiano Freire Bastos, Brazil

SESSION TIME: **15:00 – 17:00**
SESSION ROOM: **715A**
SESSION TRACK: **TRACK 10: REHABILITATION MEDICINE, SPORTS MEDICINE, REHABILITATION ENGINEERING AND PROSTHETICS**
SESSION NAME: **SP145 – DEVELOPING TOOLS FOR SUCCESSFUL AGING: INDEPENDENT MOBILITY & VISUAL IMPAIRMENT**
SESSION CHAIR(S): **CHARANJIT BAMBRA, CANADA**
OLOF LINDAHL, SWEDEN

15:00 SP145.1 - **KEYNOTE:** Aging Successfully at Home: Research and Development to Address the Biggest Challenges Older Adults Face
Tilak Dutta, Canada

15:30 SP145.2 - The effect of age and previous exposure to slippery surface on gait adaptation
Yue Li, Canada

15:45 SP145.3 - An intelligent rollator for people with mobility impairment
Olof Lindahl, Sweden

16:00 SP145.4 - Rehabilitation Engineering: A review of current teaching tools ad project based learning
Charanjit Bambra, Canada

16:15 SP145.5 - Effects of sloped icy surface on older adults? gait in a simulated winter environment
Yue Li, Canada

16:30 SP145.6 - Judging Weight of an Object by a White Cane
Kiyohiko Nunokawa, Japan

16:45 SP145.7 - The Effect of Sub chronic Low Dose of DDVP and Sodium Azide on some Bone Biochemical Indices of Albino Rats
Patrick Agbasi, Nigeria

SESSION TIME: **15:00 – 16:15**
SESSION ROOM: **717B**
SESSION TRACK: **TRACK 12: MEDICAL DEVICES**
SESSION NAME: **SP146 – MSK**
SESSION CHAIR(S): **RICARDO ARMENTANO, ARGENTINA**
ANA TERESA GABRIEL, PORTUGAL

15:00 SP146.1 - Development of Personalized Tourniquet Systems Using a New Technique for Measuring Limb Occlusion Pressure
James McEwen, Canada

15:15 SP146.2 - Vertebral Metrics? development of a third and improved prototype
Ana Teresa Gabriel, Portugal

15:30 SP146.3 - Does low-intensity pulsed ultrasound stimulation effectively promote bone fracture repair? An overview
Orlando Rey Rúa, Cuba

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

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **715B**
SESSION TRACK: **TRACK 14: INFORMATION TECHNOLOGIES IN HEALTHCARE DELIVERY AND MANAGEMENT**
SESSION NAME: **SP147 – INFORMATION TECHNOLOGIES IN HEALTHCARE DELIVERY AND MANAGEMENT: PART 2**
SESSION CHAIR(S): **BRUCE CURRAN, UNITED STATES**
JOSEPH CAFAZZO, 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 Radermacher, Germany

16:15 SP147.5 - Whiteboard ESB: Next Generation Data and Workflow Management for Radiation Oncology
John Wolfgang, United States

SESSION TIME: **15:00 – 16:30**
SESSION ROOM: **713B**
SESSION TRACK: **PRESIDENT'S CALL**
SESSION NAME: **SP148 - MEDICAL DEVICES / SURGERY, COMPUTER AIDED SURGERY, MINIMAL INVASIVE INTERVENTIONS, ENDOSCOPY AND IMAGE-GUIDED THERAPY, MODELING AND SIMULATION**
SESSION CHAIR(S): **GIDEON NDUBUKA, NIGERIA**

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

SESSION TIME: **17:00 – 18:45**
SESSION ROOM: **718A**
SESSION TRACK: **TRACK 01: IMAGING**
SESSION NAME: **SP149 – ITERATIVE RECONSTRUCTION**
SESSION CHAIR(S): **IDRIS ELBAKRI, CANADA**
DMITRI MATENINE, CANADA

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

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**
RHIANNON MURRIE, AUSTRALIA

17:00 SP150.1 - Reducing signal extraction artefacts for x-ray scatter imaging with multiple pencil beams
Paul Johns, Canada

17:15 SP150.2 - Live animal phase contrast x-ray velocimetry of the lungs: Optimising imaging speed for synchrotron and lab source imaging
Rhiannon Murrie, Australia

17:30 SP150.3 - X-ray Phase-Contrast imaging: from mammography to breast tomography using synchrotron radiation
Renata Longo, Italy

17:45 SP150.4 - 4 Years of X-ray Imaging at 05B1-1 Beamline at BMIT
Tomasz Wysokinski, Canada

18:00 SP150.5 - An energy dispersive bent Laue monochromator for K-edge subtraction imaging
Nazanin Samadi, Canada

18:15 SP150.6 - An incoherent implementation of x-ray phase contrast imaging and tomography that maintains high sensitivity at low delivered doses
Alessandro Olivo, United Kingdom

18:30 SP150.7 - Indirect measurement of average alveolar size using dynamic phase-contrast imaging
Mercedes Martinson, Canada

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**

17:00 SP151.1 - **KEYNOTE:** Biomechanics and artificial organs
Birgit Glasmacher, Germany

17:30 SP151.2 - The Continuous Flow Total Artificial Heart in Clinical Practice
David Macku, Czech Republic

17:45 SP151.3 - Power Control Range of Operation for the Left Ventricular Assist Device in Bridge-to-Recovery Treatment
Marwan Simaan, United States

18:00 SP151.4 - An quantitative estimation method of peripheral perfusion by using a CCD camera during rotary blood pump support
Yasuyuki Shiraishi, Japan

18:15 SP151.5 - Mathematical Modeling of Left Ventricle Stroke Work Following Transcatheter Aortic Valve Replacement Associated With Paravalvular Leaks
Azadeh Saeedi, Canada

18:30 SP151.6 - Criteria to study Heart Failure derived from ESPVR
Rachad Shoucri, Canada

18:45 SP151.7 - Fluid Dynamics of Transcatheter Aortic Valve Associated with Paravalvular Leak
Azadeh Saeedi, Canada

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**
CHARLES SHANG, UNITED STATES

17:00 SP152.1 - Optimal timing in concomitant chemoradiation therapy of colorectal tumors in nude mouse treated with Cisplatin and LipoplatinTM
Thititip Tippayamontri, Canada

17:15 SP152.2 - Grid therapy: impact of radiobiological models on calculation of therapeutic ratio
Hassan Ali Nedaie, Iran

17:30 SP152.3 - Will CyberKnife M6? Multileaf collimator offer advantages over IRIS? collimator in prostate SBRT?
Charles Shang, United States

17:45 SP152.4 - Retrospective analysis of treatment margins for stereotactic ablative lung cancer treatments based on 4D CBCT
Sheeba Thengumpallil, Switzerland

18:00 SP152.5 - Using surgical clips in the tracking of liver tumors applied to CyberKnife SBRT treatments
Leonie Petitclerc, Canada

18:15 SP152.6 - A Novel Couch-Gantry Trajectory Based Stereotactic Treatment Method
Byron Wilson, Canada

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**
DAVID THWAITES, AUSTRALIA

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 – 18:00**

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 - Out-of-field radiation dose to critical organs due to radiotherapy for testicular seminoma with modified dog-leg fields: is there a risk for stochastic effects?
Michalis Mazonakis, Greece

17:15 SP154.2 - Peripheral photon dose in organs
Beatriz Sanchez Nieto, Chile

17:30 SP154.3 - Gamma Radiation Dose-Response Relationship of Human Thyroid Follicular Cells
Shyamal Chakraborty, Bangladesh

17:45 SP154.5 - Aligning the ALARA principle with FFF treatment modalities
Stephen Sawchuk, Canada

SESSION TIME: **17:00 – 19:00**

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 dosimter 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

17:30 SP155.3 - Application of 2D thermoluminescent dosimetry in QA test of Cyberknife
Renata Kopec, Poland

17:45 SP155.4 - Towards Optical CT scanning of radiochromic 3D dosimeters in mismatched refractive index solutions
Kurtis Dekker, Canada

18:00 SP155.5 - Development of a Novel Linear Energy Transfer Detector Using Doped Plastic Scintillators and Monte Carlo Simulation
Humza Nusrat, Canada

18:15 SP155.6 - Reduction of residual signal in LiF:Mg, Cu, P thermoluminescent material.
Vinod Nelson, Australia

18:30 SP155.7 - Application of dose gels in HDR brachytherapy
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

SESSION TIME: **17:00 – 18:45**

SESSION ROOM: **715A**

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

SESSION NAME: **SP156 – PATIENT-SPECIFIC MODELING AND SIMULATION IN SURGERY**

SESSION CHAIR(S): **KLAUS RADEMACHER, GERMANY**
JIN LONG LIU, PEOPLE'S REPUBLIC OF CHINA

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

SESSION TIME: **17:00 – 18:15**

SESSION ROOM: **717B**

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

SESSION NAME: **SP157 – BIOCHIPS AND BLOOD ANALYSIS**

SESSION CHAIR(S): **JONATHAN LOVELL, UNITED STATES**

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

SESSION TIME: **17:00 – 19:00**

SESSION ROOM: **717A**

SESSION TRACK: **TRACK 17: EDUCATIONAL AND PROFESSIONAL ACTIVITIES**

SESSION NAME: **SP158 – EDUCATIONAL ACTIVITIES AND TRAINING IN MEDICAL PHYSICS**

SESSION CHAIR(S): **ANCHALI KRISANACHINDA, THAILAND**
JOHN DAMILAKIS, GREECE

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

SESSION TIME: **17:00 – 18:15**

SESSION ROOM: **716B**

SESSION TRACK: **TRACK 19: BIOPHYSICS AND MODELLING**

SESSION NAME: **SP159 – TRANSPORT AND PHYSIOLOGICAL MODELLING**

SESSION CHAIR(S): **CHAI HONG YEONG, 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

SESSION TIME: **17:00 – 18:15**

SESSION ROOM: **713B**

SESSION TRACK: **PRESIDENT'S CALL**

SESSION NAME: **SP160 – NEUROENGINEERING, NEURAL SYSTEMS / BIOPHYSICS AND MODELLING**

SESSION CHAIR(S): **VENKATESHWARLA RAJU, INDIA**
TEODORO CORDOVA - FRAGA, MEXICO

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

SCIENTIFIC PROGRAM
BY DAY

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

SESSION TIME: **08:00 – 10:00**
SESSION ROOM: **701B**
SESSION TRACK: **TRACK 01: IMAGING**
SESSION NAME: **SP162 – ULTRASOUND AND OCT: APPLICATIONS**
SESSION CHAIR(S): **DAVID GOERTZ, CANADA**
WU QIU, CANADA

08:00 SP162.1 - Endoluminal Ultrasound Biomicroscopy for in vivo detection of caustic esophagitis in rats
João Machado, Brazil

08:15 SP162.2 - To tap or not to tap: A comparison of cranial 3D to 2D ultrasound in extremely preterm neonates with post-hemorrhagic ventricle dilation to predict the necessity of interventional ventricular tap
Jessica Kishimoto, Canada

08:30 SP162.3 - Endoleak and Thrombus Characterization with Dynamic Elastography after Endoleak Embolization following Aneurysm Endovascular Repair
Antony Bertrand-Grenier, Canada

08:45 SP162.4 - Detecting lipid-rich artery plaque using a handheld photoacoustic imaging device
Susumu Hirano, Japan

09:00 SP162.5 - Intersex differences in posterior eye chamber by spectral optical coherent tomography
Zofia Drzazga, Poland

09:15 SP162.6 - Longitudinal Analysis of 3D Pre-Term Neonatal Ventricle Ultrasound Images
Wu Qiu, Canada

09:30 SP162.7 - Breast Invasive Ductal Carcinoma Assessed by Conventional Ultrasound and Contrast-Enhanced Ultrasound in Different T-Stages
Yanchun Zhu, People's Republic of China

09:45 SP162.8 - Comparison of ultrasound systems in scoliosis measurement
Maggie Hess, Canada

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

SESSION TIME: **08:00 – 09:45**
SESSION ROOM: **718B**
SESSION TRACK: **TRACK 06: NEW TECHNOLOGIES IN CANCER RESEARCH AND TREATMENT**
SESSION NAME: **SP164 – ADAPTIVE RADIATION THERAPY (ART)**
SESSION CHAIR(S): **EVA BEZAK, AUSTRALIA**
DANIEL TAMAGI, 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

SESSION TIME: **08:00 – 09:15**
SESSION ROOM: **716B**
SESSION TRACK: **TRACK 09: BIOSIGNAL PROCESSING**
SESSION NAME: **SP165 – EEG**
SESSION CHAIR(S): **JENS HAUEISEN, GERMANY**
TEODIANO BASTOS-FILHO, BRAZIL

08:00 SP165.1 - A Fully Unsupervised Clustering on Adaptively Segmented Long-term EEG Data
Vaclav Gerla, Czech Republic

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

SESSION TIME: **08:00 – 10:00**
SESSION ROOM: **714B**
SESSION TRACK: **TRACK 11: NEUROENGINEERING, NEURAL SYSTEMS**
SESSION NAME: **SP166 – NEUROPROSTHESES**
SESSION CHAIR(S): **PAUL YOO, 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 - Challenges of introducing health technologies to low resource settings in global framework: a case study at WHO
Cai Long, Switzerland

08:45 SP168.3 - Portable microwave based stroke and trauma diagnostics
Mikael Persson, Sweden

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

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 - Distributed learning: developing a predictive model for dyspnea in lung cancer patients based on data from multiple hospitals
Johan Van Soest, Netherlands

08:45 SP169.3 - 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 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

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, Venezuela

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 plataform to decision making in research and technological development in public health: a brazilian scenario approach
Carlos Rocha, Brazil

SESSION TIME: **08:00 – 10:00**

SESSION ROOM: **714A**

SESSION TRACK: **PRESIDENT'S CALL**

SESSION NAME: **SP171 – CLINICAL ENGINEERING / PHYSICS, PATIENT SAFETY & IMAGING**

SESSION CHAIR(S): **GORDON CHAN, CANADA**
VICTOR MALVAEZ, MEXICO

08:00 SP171.1 - Properties Evaluation of Gd2O3-DEG as New Contrast Agent Nanomagnetic Particles Comparing to Gd-DTPA in MRI
Nader Riahi-Alam, Iran

08:15 SP171.2 - Imaging the Schlemm's Canal using an ultrahigh resolution spectral-domain optical coherence tomography working at 1.3 micrometer center wavelength
Masreshaw Bayleyegn, Ethiopia

08:30 SP171.3 - Technology Trayectory Hybrid Tomography by Positron Emissions
Victor Malvaez, Mexico

08:45 SP171.4 - Myocardial perfusion imaging by low-dose CT
Sabee Molloi, United States

09:00 SP171.5 - Renal Dynamic Phantom for Use in SPECT
Divanizia Souza, Brazil

09:15 SP171.6 - Physics Plan Checking Practices
Gordon Chan, Canada

09:30 SP171.7 - Commissioning of a Flattening Filter Free
Satya Ranjan Saha, Bangladesh

09:45 SP171.8 - Effects of 24 hour Wakefulness on Tilt Based Targeting Tasks
Jeffrey Bolkhovsky, United States

SESSION TIME: **10:30 – 12:00**

SESSION ROOM: **718A**

SESSION TRACK: **TRACK 01: IMAGING**

SESSION NAME: **SP172 – MAMMOGRAPHY AND TOMOSYNTHESIS**

SESSION CHAIR(S): **ALESSANDRA TOMAL, BRAZIL**
KWAN HOONG NG, MALAYSIA

10:30 SP172.1 - **KEYNOTE:** Evaluation of automatic exposure control in digital mammography
Alessandra Tomal, Brazil

11:00 SP172.2 - Comparing the use of force-standardized and pressure-standardized mammographic compression protocols in an Asian context
Kwan Hoong Ng, Malaysia

11:15 SP172.3 - Radiation dose of step-and-shoot digital breast tomosynthesis using an anti-scatter grid compared to full field digital mammography in a clinical population
Cecile Jeukens, Netherlands

11:45 SP172.4 - Absorbed dose in PMMA and Equivalent Breast Phantom in a Digital Breast Tomosynthesis system: Monte Carlo Assessment
Luis Magalhães, Brazil

SESSION TIME: **10:30 – 11:45**

SESSION ROOM: **701B**

SESSION TRACK: **TRACK 01: IMAGING**

SESSION NAME: **SP173 – ULTRASOUND AND OCT: METHODS**

SESSION CHAIR(S): **BORNA MARAGHECHI, CANADA**
WILLIAM HRINIVICH, CANADA

10:30 SP173.1 - A comparision study on shear wave velocity estimation of thin layered media using shear wave imaging
Jun Keun Jang, Japan

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

SESSION TIME: **10:30 – 11:45**
SESSION ROOM: **701A**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP174 – MOTION MANAGEMENT: PART 2**
SESSION CHAIR(S): **JOANNA CYGLER, CANADA**
PETA LONSKI, AUSTRALIA

10:30 SP174.1 - Assessment of lung dose in patients undergoing deep inspiration breath hold for left sided breast cancer
Peta Lonski, Australia

10:45 SP174.2 - Evaluation of 4D dose accumulation in CyberKnife and IMRT treatments
Vincent Cousineau Daoust, Canada

11:00 SP174.3 - Application of RADPOS System for Dose and Position Quality Assurance of 4D CyberKnife Treatments
Raanan Marants, Canada

11:15 SP174.4 - Derivation of the probabilistic treatment margin for two targets with correlated motion
Marcel Van Herk, Netherlands

11:30 SP174.5 - How Truthful Is the 4D Dose Calculation?
Gang Liu, People's Republic of China

SESSION TIME: **10:30 – 11:45**
SESSION ROOM: **718B**
SESSION TRACK: **TRACK 04: RADIATION ONCOLOGY**
SESSION NAME: **SP175 – TREATMENT PLANNING – BIOLOGY & FRACTIONATION**
SESSION CHAIR(S): **JAN UNKELBACH, UNITED STATES**

10:30 SP175.1 - Adaptive radiotherapy for bladder cancer using deformable image registration of empty and full bladder
Prabhjot Juneja, Australia

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

SESSION TIME: **10:30 – 11:30**
SESSION ROOM: **716A**
SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**
SESSION NAME: **SP176 – CHARACTERIZATION OF DETECTOR SYSTEMS FOR THERAPY DOSIMETRY: PART 4**
SESSION CHAIR(S): **GEOFFREY IBBOTT, UNITED STATES**
THORARIN BJARNASON, CANADA

10:30 SP176.1 - Evaluation of surface dose distributions using ferrous benzoic xylenol orange translucent PVA cryogel radiochromic dosimeters
Molham Eyadeh, Canada

10:45 SP176.2 - Suitability of Diodes for Point Dose Measurements in IMRT/VMAT Beams
Tanya Kairn, Australia

11:00 SP176.3 - Development of a boron distribution monitor using prompt gamma-rays for boron neutron capture therapy
Hiroki Tanaka, Japan

11:15 SP176.4 - Study of potential effects of a strong magnetic field on radiation dosimeters (TLD, OSLD, EBT3 film, PRESAGE)
Geoffrey Ibbott, United States

SESSION TIME: **10:30 – 11:45**
SESSION ROOM: **716B**
SESSION TRACK: **TRACK 05: DOSIMETRY AND RADIATION PROTECTION**
SESSION NAME: **SP177 – RADIATION SHIELDING – DESIGN AND OUTCOMES**
SESSION CHAIR(S): **BORRAS CARI, UNITED STATES**
PAULO COSTA, BRAZIL

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

SESSION TIME: **10:30 – 12:15**
SESSION ROOM: **714B**
SESSION TRACK: **TRACK 11: NEUROENGINEERING, NEURAL SYSTEMS**
SESSION NAME: **SP178 – NEUROIMAGING, NEURONAVIGATION AND NEUROLOGICAL DISORDERS**
SESSION CHAIR(S): **TAUFIK VALINATE, CANADA**

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

SESSION TIME: **10:30 – 11:30**
SESSION ROOM: **715B**
SESSION TRACK: **TRACK 12: MEDICAL DEVICES**
SESSION NAME: **SP179 – MEDICAL DEVICES: MISCELLANEOUS**
SESSION CHAIR(S): **KLAUS RADERMACHER, GERMANY**

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

SESSION TIME: **10:30 – 11:30**
SESSION ROOM: **715A**
SESSION TRACK: **TRACK 14: INFORMATION TECHNOLOGIES IN HEALTHCARE DELIVERY AND MANAGEMENT**
SESSION NAME: **SP180 – INFORMATION TECHNOLOGIES IN HEALTHCARE DELIVERY AND MANAGEMENT: PART 4**
SESSION CHAIR(S): **BRUCE CURRAN, UNITED STATES**
JOSEPH CAFAZZO, CANADA

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

POSTERS

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

PS01.021 – Novel Cylindrical Source Tank for Inserts of Emission Computed Tomography Phantoms
Inayatullah Sayed, Malaysia

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 – TRACK 02: BIOMATERIALS AND REGENERATIVE MEDICINE

PS02.001 – Chitosan: A Chitinous Biopolymer For The Treatment Of Crude Oil Polluted Water
Eillen 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 – Electrospinning of vascular prostheses with anti-kinking properties
Birgit Glasmacher, Germany

PS02.005 – Electrospinning of polycaprolactone/chitosan polymeric fibrous membranes as scaffolds for cardiovascular tissue engineering applications
Birgit Glasmacher, Germany

PS02.006 – Coaxial electrospinning 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 Immunoevasive 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, furture implication in heart regeneration
Lincai Ye, People's Republic of China

PS02.014 – Synergetic 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

PS03 – TRACK 03: BIOMECHANICS AND ARTIFICIAL ORGANS

PS03.001 – Musculoskeletal and Finite Element Simulation of Archery
Yahia Al-Smadi, United States

PS03.002 – Dysfunction Screening in Experimental Arteriovenous Grafts for Hemodialysis Using Inflow and Outflow Hemodynamic Game Analysis
Wei-Ling Chen, Chinese Taipei

PS03.003 – The Effects of Limb Dominance, Sex, and Gait Speed on Multisegment Foot Kinematics During Gait
Victoria Chester, Canada

PS03.004 – Investigation of transfibular locking plate to treat open extra-articular distal tibia fractures
Helena Greene, Canada

PS03.005 – Kinematic analysis after total hip arthroplasty during weight-bearing activities
Satoru Ikebe, Japan

PS03.006 – Estimation of Compressive and Shear Forces on Lumbar Spine during Lifting by Wii Balance Board
Hieyong Jeong, Japan

PS03.007 – A biomechanical evaluation of a novel pedicle screw-based interspinous device used to stabilize the lumbar spine
Yu-Shu Lai, Chinese Taipei

PS03.008 – Hematological, Biochemical, and End-organ effects of the CH-VAD in Ovine Model
Changyan Lin, People's Republic of China

PS03.009 – 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

PS03.010 – A simple external fixation technique for treating bicondylar tibial plateau fracture: a finite element study
Kang-Ping Lin, Chinese Taipei

PS03.011 – Numerical analysis of the elaborate sound amplification mechanism of the mammalian inner ear
Michio Murakoshi, Japan

PS04 – TRACK 04 RADIATION ONCOLOGY

PS04.001 – Image-Guided Intra-arterial Delivery of Yttrium-90 Radioactive Microspheres for the Treatment of Liver Tumors
Muthana Al-Ghazi, United States

PS04.002 – Commissioning of an ASi EPID for patient specific IMRT QA.
David Alonso Fernández, Cuba

PS04.003 – Status of Radiotherapy Treatment in Lebanon
Antar Aly, Qatar

PS04.004 – Verification of VMAT Arc Radiation Therapy Technique for Full Scalp Treatment
Cynthia Araujo, Canada

PS04.005 – Estimating Setup Margins using IGRT Techniques. Preliminary results in Havana
Raul Argota, Cuba

PS04.006 – Uncertainty evaluation of radiation treatment with DIBH for left-sided breast cancer using MV cine imaging
Jae Beom Bae, Republic of Korea

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
Omemh 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 Chytyk-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

PS04.040 – Improvement of MV planar image by elimination of Compton scattered photons and re-projection as primary photons
Masatsugu Hariu, Japan

PS04.041 – Determination of exit fluence by MCNP4 code for IMRT treatment fields and its validation with a conventional EPID system
Benjamin Hernandez Reyes, Mexico

PS04.042 – Accuracy in simulating tumor translation and rotation: Commissioning a motion platform, Hexamotion for tumor motion management QA
Chen-Yu Huang, Australia

PS04.043 – Dosimetric impact of the Acuros XB Algorithm for 25 lung SABR patients treated using the TrueBeam FFF 6MV
Derek Hyde, Canada

PS04.044 – Dynamic resource allocation: Investigating ways to distribute resources in a patient cohort based on plan quality
Elin Hynning, Sweden

PS04.045 – Physical plan evaluation of Head and Neck Cancer at Square Hospital, Bangladesh.
Md. Anwarul Islam, Bangladesh

PS04.046 – IAEA multicentre study of the methodology for advanced dosimetry audit: single IMRT field dose delivery
Joanna Izewska, Austria

PS04.047 – Electron Density Measurements of Metallic Implants with Cobalt-60 Computed Tomography
Christopher Jechel, Canada

PS04.048 – A Systematic Analysis Of The Error Sources Within The CyberKnife M6 Daily AQA Test
Kevin Jordan, United States

PS04.049 – The Use of Boron Neutron Capture Therapy in the Treatment of Cancer Tumours in the Czech Republic
Ivana Jurickova, Czech Republic

PS04.050 – Partial Arc Breast Boost
Tania Karan, Canada

PS04.051 – Determination of the optimal phase for respiratory gated radiotherapy from statistical analysis using a visible guidance system
Sung Kyu Kim, Republic of Korea

PS04.052 – Dosimetric Verifications of the Output Factors in the Small Field less than 3 cm2 using the Gafchromic EBT2 films and the Various Detectors
Sung Kyu Kim, Republic of Korea

PS04.053 – 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

PS04.054 – 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

PS04.055 – Factors predicting of local relapse in irradiated patients with breast cancer: A Syrian Cohort study
Moussa Krayem, Syria

PS04.056 – Automated Routine Quality Assurance of VMAT
Michael Lamey, Canada

PS04.057 – Evaluation of the clinical usefulness of modulated Arc treatment
Young Kyu Lee, Republic of Korea

PS04.058 – A comparison of linac-based IMRT with helical tomotherapy for craniospinal irradiation
Young Lee, Canada

PS04.059 – A Hardware-Accelerated Software Platform for Adaptive Radiation Therapy
Junghoon Lee, United States

PS04.060 – Predicting the Impact of Surgery on Quality of Life and Risk Management in Patients Afflicted with Glioblastoma Multiforme
Luca Li, Canada

PS04.061 – A memetic algorithm for body gamma knife stereotactic radiotherapy treatment planning
Bin Liang, People's Republic of China

PS04.062 – Gamma evaluation of dose distributions from newly developed dosimetry system for helical tomotherapy
Sangwook Lim, Republic of Korea

PS04.063 – Suitability of a Light Transparent and Electrically Conductive Glass Plate for Construction of a Beam Monitor for Radiation Therapy
Xun Lin, Canada

PS04.064 – Objective assessment of skin erythema caused by radiotherapy
Hiroaki Matsubara, Japan

PS04.065 – Nasopharyngeal carcinoma tumor response to induction chemotherapy followed by concurrent chemo-radiotherapy: A volumetric magnetic resonance imaging study
Nevin McVicar, Canada

PS04.066 – Volumetric Modulated Arc Therapy of Pancreatic Cancer: Dosimetric Advantages as Compared to 3D Conformal Radiation Treatment
Xiangyang Mei, Canada

PS04.067 – Application of ExacTrack BrainLab system for Choroidal melanoma treatments using Stereotactic Radiotherapy and a not invasive immobilization system
Artur Menezes, Brazil

PS04.068 – Dosimetric evaluation of deliverable and navigated Pareto optimal plans generated with Multi-Criteria Optimization
Raphaël Moeckli, Switzerland

PS04.069 – 2D and 3D Approximate Entropy Algorithms for On-line Quantification of Threshold Structure Content in Large Radiotherapy Image Data
Christopher Moore, United Kingdom

PS04.070 – Dosimetric effects of seed positioning uncertainties in ophthalmic plaque brachytherapy
Hali Morrison, Canada

PS04.071 – A Method for Evaluating Deformable Dose Accumulation in RayStation
Joanne Moseley, Canada

PS04.072 – 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

PS04.073 – 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
Mohamad Rhani, Singapore

PS04.081 – A study on improvement method of dose distribution using bolus in boron neutron capture therapy for head and neck tumors
Yoshinori Sakurai, Japan

PS04.082 – Peripheral neutron dose estimation: comparison between experimental measurements and TPS estimation
Beatriz Sanchez Nieto, Chile

PS04.083 – Dual Energy X-ray Stereoscopic Image Guidance for Spine SBRT
Mike Sattarivand, Canada

PS04.084 – Comparison between our EPID-IMRT-QA tool and commercial phantom based QA tools
Otto Sauer, Germany

PS04.085 – Dosimetric assessment of a novel metal artifact reduction tool (iMAR)
Andrea Schwahofer, Germany

PS04.086 – An Image quality and dose comparison between Varian OBI and Elekta XVI CBCT systems.
Amani Shaaer, Canada

PS04.087 – An open-source treatment planning system for research in particle therapy: Implementation and dosimetric evaluation
Gregory Sharp, United States

PS04.088 – GMM guided automated Level Set algorithm for PET image segmentation
Chiara Soffientini, Italy

PS04.089 – Impact of the magnitude of MLC radiation leakage in IMRT treatment planning
Jaziel Soto-Muñoz, Mexico

PS04.090 – Modelling multi-leaf collimator defocusing and focal spot partial shielding for TomoTherapy and Elekta accelerators using Monte Carlo methods
Ryan Studinski, Canada

PS04.091 – Can Image-Guided Intensity Modulated Brachytherapy delivery be better than IMRT and classical brachytherapy methods for cervical cancer: A Dosimetric analysis
Vellaiyan Subramani, India

PS04.092 – Analysis on Volumetric and Dosimetric accuracy of Maximum-Intensity Projections based 4DCT for stereotactic body Radiotherapy
Vellaiyan Subramani, India

PS04.093 – 2D/3D registration for compensation of patient positioning error in Korea Heavy Ion Medical Accelerator Center
Tae-Suk Suh, Republic of Korea

PS04.094 – Cardiac movement in deep inspiration breath-hold for left-breast cancer radiotherapy
Tae-Suk Suh, Republic of Korea

PS04.095 – Dosimetric evaluation according to patient set-up errors using biophysical indices in whole breast irradiation
Tae-Suk Suh, Republic of Korea

PS04.096 – Comparison of proton boron fusion therapy with boron neutron capture therapy
Tae-Suk Suh, Republic of Korea

PS04.097 – Verification for prompt gamma ray imaging during proton boron fusion therapy: A Monte Carlo study
Tae-Suk Suh, Republic of Korea

PS04.098 – Feasibility study of flattening filter free beam for stereotactic ablative radiotherapy of localized prostate cancer patients
Tae-Suk Suh, Republic of Korea

PS04.099 – The evaluation of radiobiological and physical impacts based on multi-modality images using in-house software
Tae-Suk Suh, Republic of Korea

PS04.100 – Comparison of Conventional 3D Static Planning and 4D Planning using Dose Warping Technique for Liver SBRT
Tae-Suk Suh, Republic of Korea

PS04.101 – Monte Carlo Design and Simulation of a Grid?type Multi?layer Pixel Collimator for Radiotherapy: Feasibility Study
Tae-Suk Suh, Republic of Korea

PS04.102 – Feasibility study of patient alignment method using tactile array sensors
Tae-Suk Suh, Republic of Korea

PS04.103 – Analysis of motion-induced dose errors according to the tumor motion in helical tomotherapy
Tae-Suk Suh, Republic of Korea

PS04.104 – Drift correction techniques in the tracking of lung tumor motion
Peng Teo, Canada

PS04.105 – Application and Parametric Studies of a Sliding Window Neural Network for Respiratory Motion Predictions of Lung Cancer Patients
Peng Teo, Canada

PS04.106 – VMAT delivery through couch tops: an illustration of loss of dose coverage for prostate plans
Monique Van Prooijen, Canada

PS04.107 – Edge Detection for Automated Biological Tumor Volume Definition Based on FDG-PET/CT-fused Imaging: An Agar Phantom study
Stella Veloza, Colombia

PS04.108 – Comparison between HybridARC and sliding windows IMRT for Spine SBRT tumor
Daniel Venencia, Argentina

PS04.109 – real time dynamic prostate brachytherapy dose calculations using permanent i125 implants: technical description and preliminary experience
Daniel Venencia, Argentina

PS04.110 – Design of a simple device for end to end test of IGRT system using ExacTrac
Daniel Venencia, Argentina

PS04.111 – Study on the use of an in-house device to consider the motion effects on absorbed dose determination and measurements using different calculation algorithms in lung SBRT cases
VIctor Villamares-Vargas, Mexico

PS04.112 – In-vivo skin dose evaluation for Pd-103 permanent breast radiotherapy implants
Jose Villarreal-Barajas, Canada

PS04.113 – Dosimetric Variations in Permanent Breast Seed Implant (PBSI) Evaluated at Different Arm Positions using Deformable Image Registration
Elizabeth Watt, Canada

PS04.114 – Minimum Planning Target Volume Coverage Necessary for the Delivery of the Prescribed Dose in Lung Radiotherapy
Marcin Wierzbicki, Canada

PS04.115 – A modified methodology to accurately validate CT number constancy for proton therapy
Richard Wu, United States

PS04.116 – Development of a real-time portable applicator monitoring system for gynecologic intracavitary brachytherapy
Junyi Xia, United States

PS04.117 – Quality Assurance of the Radiotherapy Workflow Integrating a Dedicated Wide-bore 3T MRI Simulator
Aitang Xing, Australia

PS04.118 – Evaluation of deformable accumulated parotid doses using different registration algorithms in adaptive head and neck radiotherapy
Shouping Xu, People's Republic of China

PS04.119 – Optimization of brain metastases radiotherapy with TomoHDA
Slav Yartsev, Canada

PS04.120 – A Rapid Learning Approach for the Knowledge Modeling of Radiation Therapy Plan
Lulin Yuan, United States

PS04.121 – Plan comparison and delivery verification for intracranial stereotactic treatments using Varian TrueBeam STx linac
Sergei Zavgorodni, Canada

PS04.122 – A method to convert cone-beam computed tomography (CBCT) image for dose calculation and the phantom evaluation
Guangshun Zhang, People's Republic of China

PS04.123 – Phantom-based evaluations of two binning algorithms for four-dimensional CT reconstruction in lung cancer radiation therapy
Fuli Zhang, People's Republic of China

PS04.124 – Thermoluminescent dosimetry of the model BT-125-1 125I interstitial brachytherapy seed
Nan Zhao, People's Republic of China

PS05 – TRACK 05: DOSIMETRY AND RADIATION PROTECTION

PS05.005 – Dose analysis for paediatric patients under cardiac catheterization at Hamad General Hospital in Qatar. A.E.Aly, H.A. Al-Saloos, H.M. Al Naemi Hamad Medical Corporation, Qatar
Antar Aly, Qatar

PS05.006 – In vivo dosimetry implementation with diodes at the National Radiotherapy Center of the Korle-Bu Teaching Hospital, Ghana
Vivian Della Atuwo-Ampoh, Ghana

PS05.007 – Assessment of radiation dose due to radio frequency emitted from medical high voltage modules
Mohammad Reza Ay, Iran

PS05.008 – Software Assisted Skin Dose Calculation in Fluoroscopically Guided Interventional Procedures
Mohamed Badawy, Australia

PS05.009 – Current Statues of a-Si EPID Dosimtery: An Application for Dose Verification in Standard Radiotherapy Techniques
Omemh Bawazeer, Saudi Arabia

PS05.010 – Nanodosimetry of protons in the Bragg peak region based on ionisation cross sections of DNA constituents
Daniel Bennett, Germany

PS05.011 – Micronuclei assessment of Selenium and Vitamin E radioprotective effects in human lymphocytes
Vahid Changizi, Iran

PS05.012 – The Organ ans Skin Dose Distribution in Total Body Irradiation
Samju Cho, Republic of Korea

PS05.013 – Comparison of 6MeV and 9MeV Electron Beams for Total Skin Irradiation
Ricardo Contreras, Guatemala

PS05.014 – Analysis of Informal Commerce Sunglasses using Spectroscopy
Juan Alberto Cruz, Brazil

PS05.015 – Dosimetric Evaluation Of Lung Dose Using Indigenously Developed Respiratory motion phantom
G Dheva Shantha Kumari, India

PS05.016 – Activation of Medical Linear Accelerators
Adam Dodd, Canada

PS05.017 – Assessment of Patient Dose in Selected Non-Cardiac Interventional Fluoroscopy Procedures Using OSL Dosimeters
Isabel Elona, PH

PS05.018 – Measurment of Photon and Neutron Dose Distribution in Cyclotron Bunker During F18 and N13 Production
Pardis Ghafarian, Iran

PS05.019 – Energy response of the GAFCHROMIC EBT3 in diagnosis range
Rumi Gotanda, Japan

PS05.020 – Estimation of In Vivo Dosimetry Accuracy with Dose-Volume Histogram
Victor Gurvich, United States

PS05.021 – Evaluation of the dosimetric properties of water equivalent microDiamond detector in high energy photon beam.
Hyun Do Huh, Republic of Korea

PS05.022 – From simple to advanced dosimetry audits in radiotherapy: IAEA coordinated research
Joanna Izewska, Austria

PS05.023 – Noise reduction of radiochromic film: median filter processing of subtraction image
Toshizo Katsuda, Japan

PS05.024 – Proposed Guidelines for Image Quality in Chest PA X-Ray Examinations in Bangladesh
Shahed Khan, United Kingdom

PS05.025 – Evaluation of inhomogeneity correction using monte carlo simulation in stereotactic body radiation therapy (SBRT)
Ji Na Kim, Republic of Korea

PS05.026 – Dosimetric effect of low dose 4D CT by a commercial iterative reconstruction on dose calculation in radiation treatment planning: A phantom study
Hee Jung Kim, Republic of Korea

PS05.027 – An Evaluation of the Use Factor for CyberKnife using Clinical Data
Dong Han Lee, Republic of Korea

PS05.028 – Lung Dose Estimation for a Total Body Computed Tomography Protocol
Juliana Martins, Brazil

PS05.029 – Verification of axial dose distributions with radiochromic films for a translational Total Body Irradiation technique
Ignasi Mendez, Slovenia

PS05.030 – Experimental assessment of out-of-field dose components in high-energy electron beams used in external-beam-radiotherapy
Mohamad Mohamad Alabdoaburas, France

PS05.031 – Dosimetric study for a set iodine-125 seeds using radiochromic films in solid water plates
Arnaldo Mourao Filho, Brazil

PS05.032 – Evaluation of bismuth shielding use in cervical spine CT scans
Arnaldo Mourao Filho, Brazil

PS05.033 – Scanning irradiation of microbeam x-rays in ionization chambers as micro-scale dose analysis tool
Nobuteru Nariyama, Japan

PS05.034 – Dosimetric verification of the scatter integration algorithm of MIRS treatment planning system for photon dose calculations
Hassan Ali Nedaie, Iran

PS05.035 – Characterisation of EPSONV700 flatbed scanner for EBT3 Gafchromic film dosimetry.
Vinod Nelson, Australia

PS05.036 – Nanodosimetric parameters obtained using the Monte Carlo codes PARTRAC, PTra and Geant4-DNA: a comparison study
Heidi Nettelbeck, Germany

PS05.037 – A method to reduce the patient?s eye lens dose during cerebral angiography procedures
Kwan Hoong Ng, Malaysia

PS05.038 – Bremsstrahlung generating and shielding by the source of the beta ray
Hiroki Ohtani, Japan

PS05.039 – Angular dependence of absorption spectrum of Gafchromic® EBT2 film
SoAh Park, Republic of Korea

PS05.040 – Patient dose audit in mammography
Grisel Paula, Portugal

PS05.041 – Experience in implementing a dosimetric registry in an oncological facility of a developing country
Sandra Rocha Nava, Mexico

PS05.042 – Effects of irradiation with low and high doses using in vivo rats: analysis of trace elements in blood using SR-TXRF
Camila Salata, Brazil

PS05.043 – Effects of cable extension and photon irradiation on TNRD neutron detector in radiotherapy
Beatriz Sanchez Nieto, Chile

PS05.044 – Thermoluminescence dosimetry (TLD) for in vivo dosimetry in radiation therapy with high single doses
Andrea Schwahofer, Germany

PS05.045 – Study of the response of ionization chambers in photon beams for off-axis point dose
Tetsunori Shimono, Japan

PS05.046 – Analysis of gamma evaluation according to low-dose threshold on VMAT QA
Tae-Suk Suh, Republic of Korea

PS05.047 – Dosimetric accuracy of Acuros XB dose calculation algorithm on an air cavity for EBT3 Gafchromic film
Tae-Suk Suh, Republic of Korea

PS05.048 – Evaluation of Dosimetric Effects on Metal Artifact: Comparison of Dose Distributions Affected by Patient Teeth and Implants
Tae-Suk Suh, Republic of Korea

PS05.049 – Advancement of Dedicated Phantom to demonstrate Dosimetric Effect of Metal Artifact in Head and Neck Cancer
Tae-Suk Suh, Republic of Korea

PS05.050 – Accuracy of radionuclide generation simulation using Antisymmetrized Molecular Dynamics (AMD)
Masaaki Takashina, Japan

PS05.051 – Accurate small field dosimetry requires systematic consistent approaches to measurement, modelling and data reporting.
David Thwaites, Australia

PS05.052 – Determination of Radon/ Thoron Concentrations in Some Iraqi Building Materials By Using CR ?39
Abdulredha Younis, Iraq

PS05.053 - Evaluation of Scattered Dose Reduction in Interventional Radiology Using Lead-Free Protection Sheets
Chai Hong Yeong, Malaysia

PS06 – TRACK 06: NEW TECHNOLOGIES IN CANCER RESEARCH AND TREATMENT

PS06.001 – GEANT4 versus MCNP5: Monte-Carlo ophthalmic brachytherapy dosimetry in the presence of gold nanoparticles for 125I and 103Pd
Somayeh Asadi, Iran

PS06.002 – Clinical Implementation of an Elekta HexaPOD evo RT Couchtop with kV Cone beam Image Guided Radiation Therapy
Cathy Neath, Canada

PS06.003 – Ex-vivo experimental study with a new cluster-type microwave ablation antenna
Qun Nan, People's Republic of China

PS06.004 – Bio Magnetic Nano Particles (BMNPs) used for cancer treatment via Hyperthermia method
Amirsadegh Rezazadeh Nochehdehi, Iran

PS06.005 – Active control of microbubbles in flow using position and phase variations in three-dimensional acoustic field
Kohji Masuda, Japan

PS06.006 – GATE Monte Carlo Simulation for Dual Head LINAC Modeling
Seungwoo Park, Republic of Korea

PS06.007 – Adaptive radiation therapy of pancreatic cancer patients treated using Tomotherapy: Validation of dose accumulation algorithms using deformable image registration in SlicerRT
Eric Vorauer, Canada

PS07 – TRACK 07: SURGERY, COMPUTER AIDED SURGERY, MINIMAL INVASIVE INTERVENTIONS, ENDOSCOPY AND IMAGE-GUIDED THERAPY, MODELLING AND SIMULATION

PS07.001 – Predictive Fluoroscopy: Minimizing Radiation Dose in Planning Endovascular Therapy for Intracranial Aneurysms
John Baxter, Canada

PS07.002 – Automatically Better Segmentation
John Baxter, Canada

PS07.003 – Utilizing stream feature in GPU Monte Carlo Code to simulate photon Radiotherapy
Yakub Bayhaqi, Indonesia

PS07.004 – The influence of two different drug infusion profiles on the pharmacodynamics model performance
Ana Ferreira, Portugal

PS07.005 – Robotic positioning system of ultrasound transducer for ultrasonic therapy
Shinya Onogi, Japan

PS07.006 – Force Modeling of MRI-Compatible Robot for Pediatric Bone Biopsy
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