

Health.
Technology.
Humanity.

June 7-12, 2015
Toronto, Canada



JUNE 7 - 12 • 2015 • TORONTO
WORLD CONGRESS
ON MEDICAL PHYSICS & BIOMEDICAL ENGINEERING

Onsite Program

World Congress on Medical Physics and Biomedical Engineering



IFMBE

COMP

Canadian Committee
of Medical Physics



OCPM

Organisation canadienne
de physique médicale

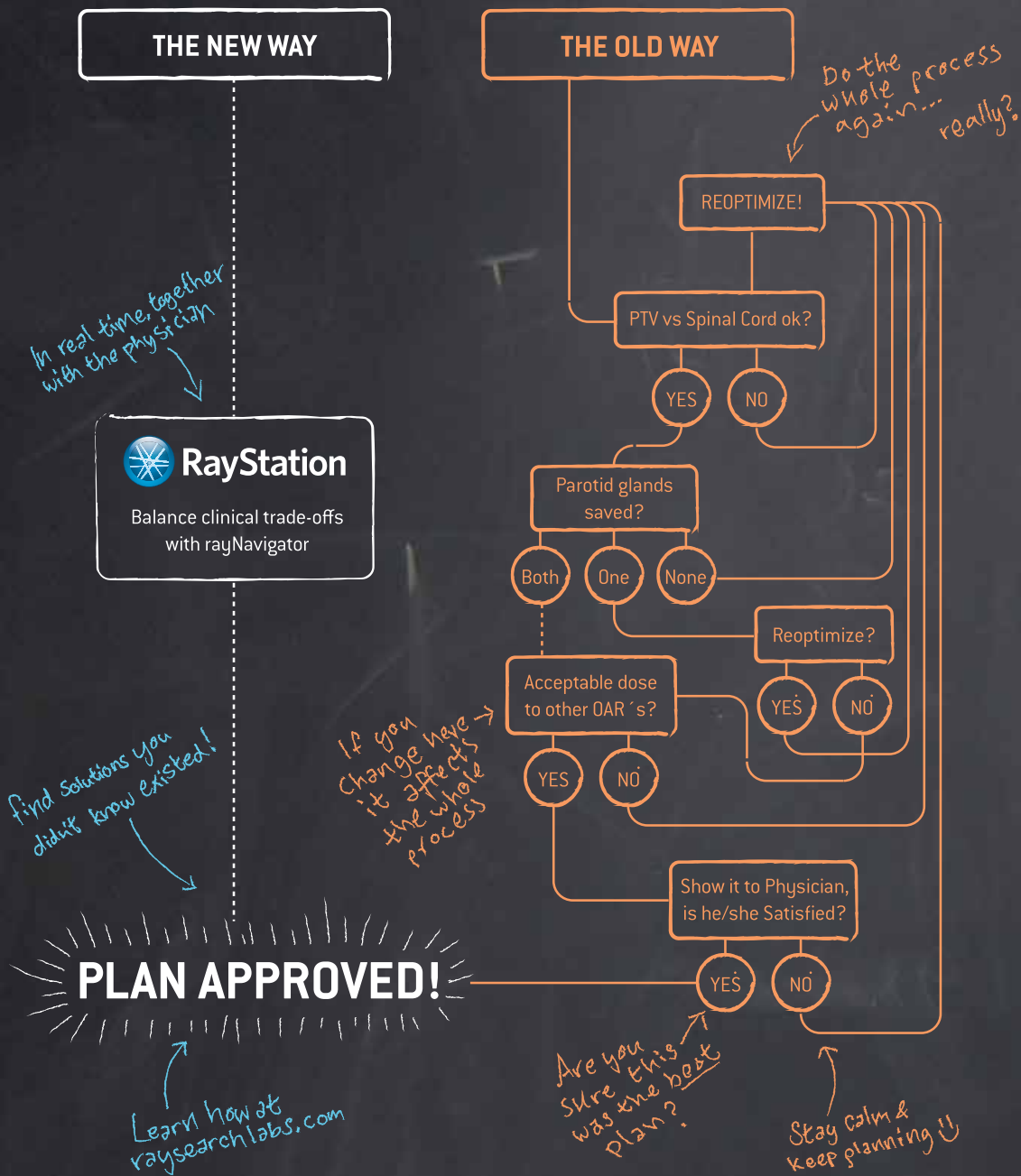


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WELCOME MESSAGES

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



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.

A handwritten signature in black ink, reading 'Kathleen Wynne'.

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 50^e 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 des 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,

A handwritten signature in dark ink, appearing to read 'M. Poulin'.

Martin Poulin, M.Eng., P.Eng.
President, CMBES/SCGB

WELCOME MESSAGES

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



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

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

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

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

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



Marco Carlone, PhD
President, COMP

HOSTS & COMMITTEES

► HOSTS

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



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

International Organization for Medical Physics (IOMP)



The 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

Congress Coordinating Committee

Herbert F. Voigt, USA
Kin Yin Cheung, China
Ratko Magjarevic, Croatia
James Goh, Singapore
Madan M. Rehani, Austria
Shankar M. Krishnan, USA

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Co-Chair: Tony Easty, Canada
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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.



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.

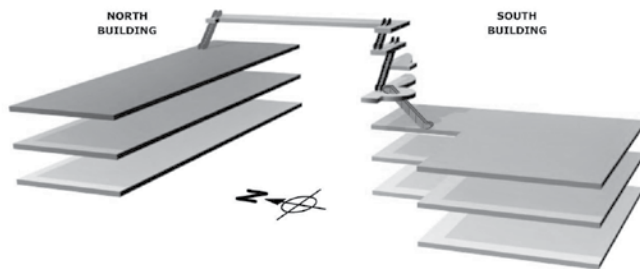
The landmark CN Tower is the tallest freestanding structure in the world. Take the elevator to the top for a breathtaking view of the city, Lake Ontario and more. Stroll next door and experience Ripley's Aquarium as you explore the wonders of the sea or catch a Blue Jays Baseball game at Rogers Centre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

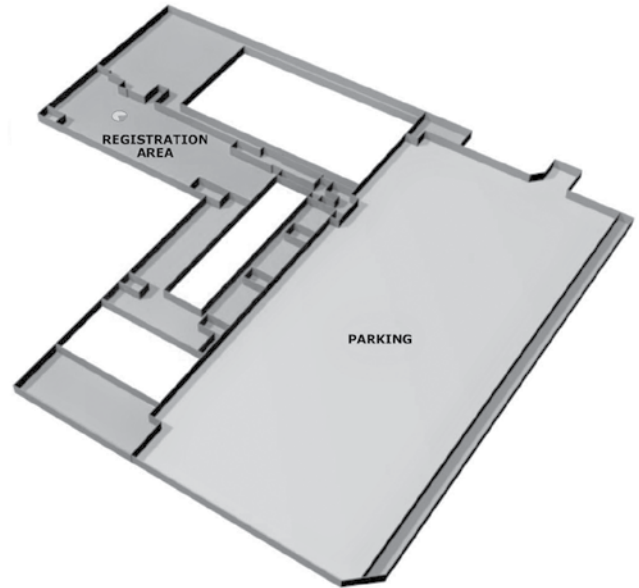
Explore the area and take a day trip to another wonder of the world and experience Niagara Falls or take a break right next door and experience Ontario's wine country. Toronto and the surrounding areas are a great family destination and most attractions are child-friendly. The city itself is clean, safe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

CONGRESS VENUE

South Building

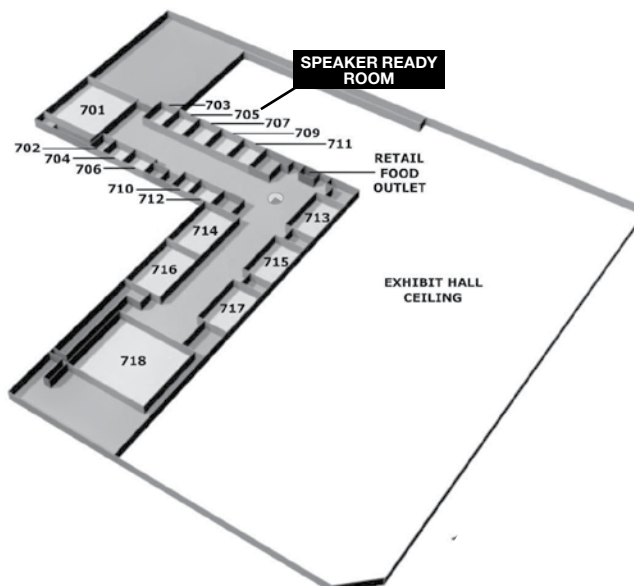


Level 600

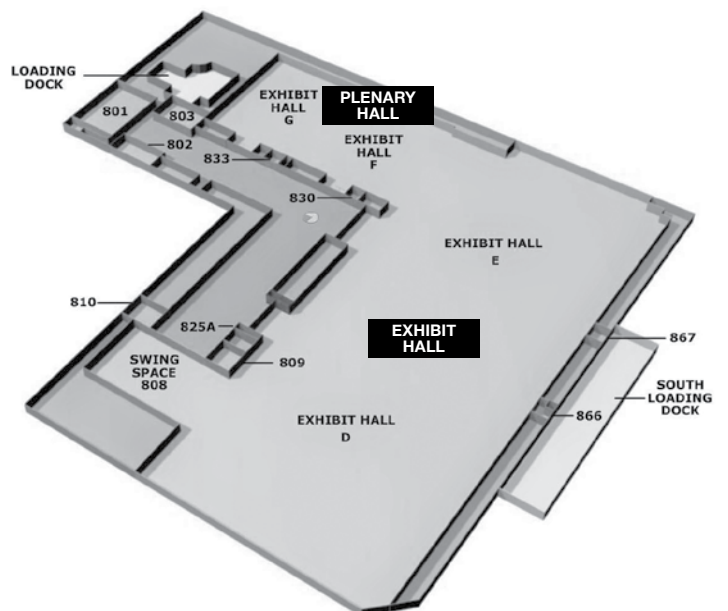


CONGRESS VENUE

Level 700



Level 800



ADOPT A DELEGATE

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

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

Herbert F. Voigt

David Rogers

David Jaffray

Modus Medical Devices Inc.

Murray Rice

Grace Zeng

William Gentles

Raymond Wu

Ichiro Sakuma

David Spencer

Vincent Lam

Joyce Shen

Tony Easty

SCIENCE FAIR YOUTH OUTREACH

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

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

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www.twitter.com/IUPESMWC2015

 **FACEBOOK**
www.facebook.com/groups/WCon2015/

DOWNLOAD THE MOBILE APP:

Abstracts Online/ Personal Itinerary Builder

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

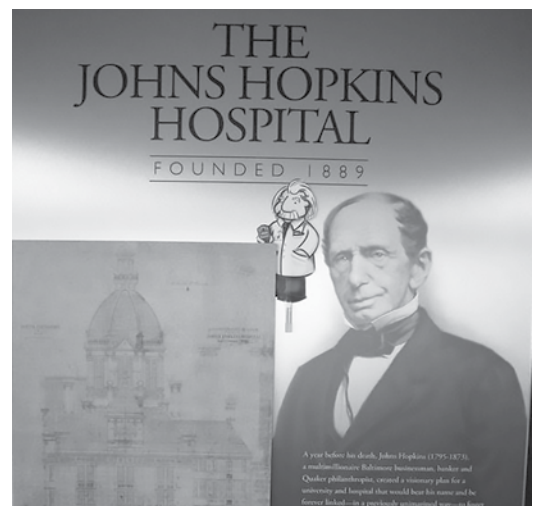
This app allows you to view abstracts, presenters, the program schedule and sessions, selecting abstracts and sessions of interest to build your own personal itinerary builder.

FLAT ALBERT

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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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

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

SUPPORTED BY



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



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

Internet Café

SUPPORTED BY



The internet café is located in the Exhibit Hall.

Wireless Internet

SUPPORTED BY



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



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

Congress Signage

SUPPORTED BY



Water Stations

SUPPORTED BY



Welcome Reception

SUPPORTED BY



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



► **Tuesday, June 9** 10:00 – 10:30
and 16:30 – 17:00

SUPPORTED BY



► **Wednesday, June 10** 10:00 – 10:30
and 16:30 – 17:00

SUPPORTED BY



► **Thursday, June 11** 10:00 – 10:30

SUPPORTED BY

SIEMENS
and 16:30 – 17:00

SUPPORTED BY



► **Friday, June 12** 10:00 – 10:30

SUPPORTED BY

SIEMENS

CAMPEP Accreditation

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, 19:00 – 23:00
June 10, 2015 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-the-Lake is a picturesque town just a few minutes drive outside of Niagara Falls. You'll enjoy 40 minutes taking pictures and exploring some of the unique shops. Before you actually reach the Falls, we'll also see the Floral Clock, Niagara River and 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 lobby between and take you the Outlets just 45 minutes outside of Toronto. Once we arrive you will receive a VIP Coupon book plus a special gift just for you from Toronto Premium Outlets management team.

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

EXHIBIT INFORMATION

Location

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

Exhibit Hours

Sunday, June 7	18:00 – 20:00
Monday, June 8	09:30 – 17:00
Tuesday, June 9	09:30 – 17:00
Wednesday, June 10	09:30 – 17:00
Thursday, June 11	09:30 – 17:00



EXHIBIT INFORMATION

Exhibit Features

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

SUPPORTED BY

**RaySearch
Laboratories**



- ▶ Charging Station & Lounge

SUPPORTED BY

**RaySearch
Laboratories**



 Canadian Nuclear
Safety Commission



Commission canadienne
de sûreté nucléaire

VARIAN
medical systems

EXHIBITORS

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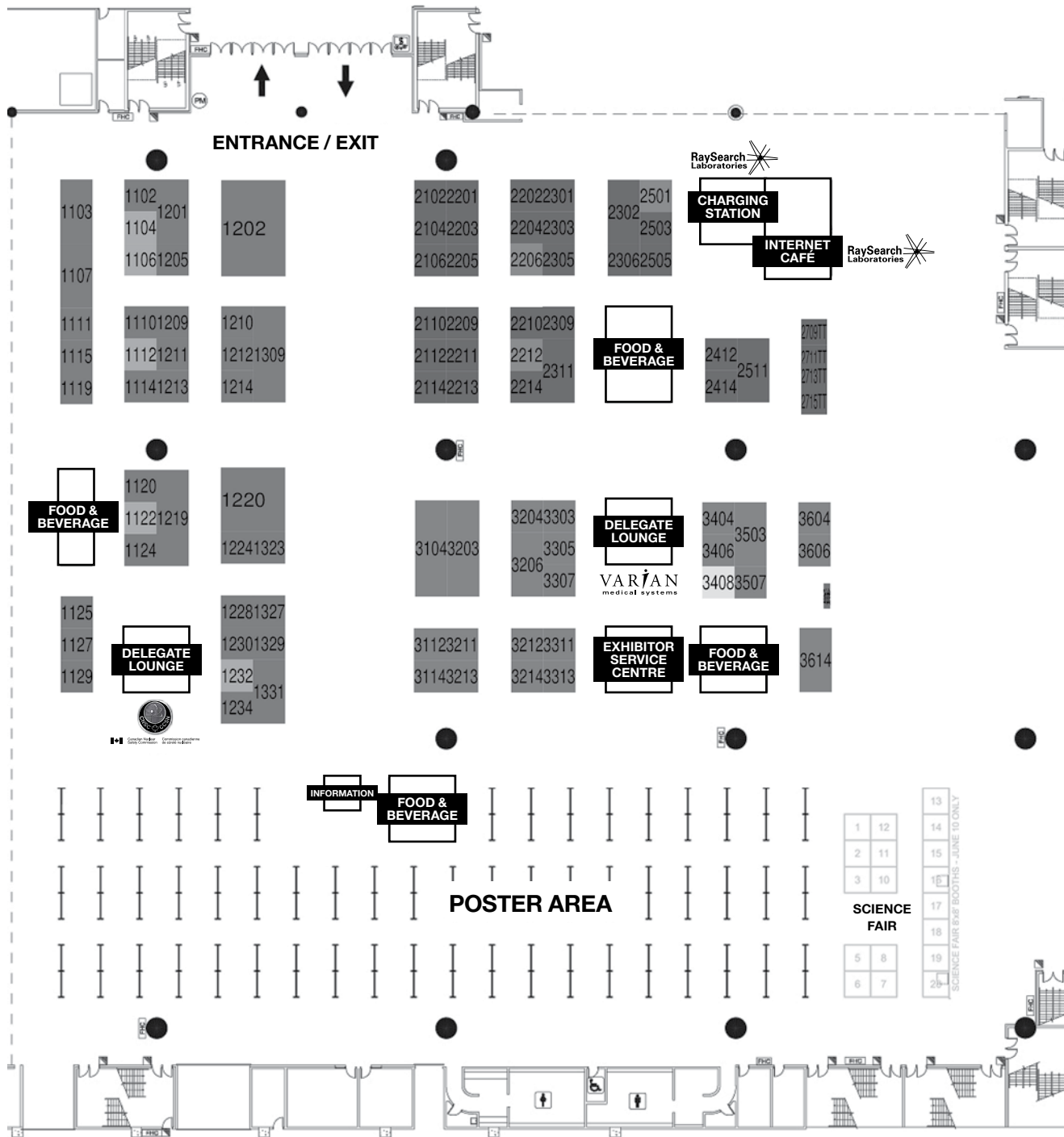
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MIM Software Inc.	2205		

EXHIBIT FLOOR PLAN



EXHIBITOR BIOGRAPHIES

Accuray | Booth # 3104



ACCURAY®

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

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

ARJOHUNTLEIGH

GETINGE GROUP

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 HealthCare

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**

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



BMES
BIOMEDICAL ENGINEERING SOCIETY

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

LIFE FROM INSIDE

BRACCO® IMAGING Canada, world leader in medical imaging presents the latest contrast injection technologies in Radiology and Cardiac CathLab with ACISTCVi™, CTEpres3D™ 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)

Canadian Organization of Medical Physicists | Booth # 1115

The Canadian Organization of Medical Physicists is the

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

Brainlab Technology | Booth # 1102

Brainlab technology powers treatments in radiosurgery as well as

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

Canadian Medical and Biological Engineering Society | Booth # 2305

The Canadian Medical and Biological Engineering Society is Canada's principal society for engineering in medicine and biology. The Society's mission is to advance and promote the

CMBES/SCGB 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.

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

A global company CDR Systems offers proven next generation Frameless SRS, SRT, IMRT,

IGRT, SBRT, Breast, Pelvis and H&N precision patient positioning and Immobilization products used by leading organizations worldwide. See why at our booth or email to arrange a demo. You can also keep in touch with the latest advancements in patient immobilization at: twitter.com/CDRSys or 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 mecha-

tronics 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

Tissue Simulation & Phantom Technology

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.

CIRS is recognized world wide for tissue simulation technology

Covidien | Booth # 2203



COVIDIEN

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.

Covidien is a leading global healthcare products company

CRC Press | Booth # 1107



CRC Press
Taylor & Francis Group

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.

CRC Press/Taylor and Francis is a leading international publisher of references, textbooks and

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



Radiation Oncology
UNIVERSITY OF TORONTO

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.

The Accelerated Education Program is putting innovation to work through

Dräger | Booth # 2110

Dräger

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.

As an international leader in medical and safety technology, Dräger develops innovative equipment and solutions that

Dunlee | Booth # 2204

DUNLEE

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.

For over 65 years, Dunlee has remained at the forefront of medical imaging as an interna-

ECRI Institute | Booth # 2711TT

ECRI Institute
The Discipline of Science. The Integrity of Independence.

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.

ECRI Institute is an independent nonprofit with more than 40 years of experience

Elekta | Booth # 1202**ELEKTA**

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.

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

Engineering World Health | Booth # 2713TT

engineeringworldhealth
www.ewh.org

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!

Getinge Group | Booth # 3114**GETINGE
GETINGE GROUP**

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.

Fibertech | Booth # 2503**FIBERTECH**

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.

Harpell Associates | Booth # 3305**HARPELL ASSOCIATES**

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.

Fluke Biomedical / Unfors RaySafe | Booth # 3112**Biomedical**

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.

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.

GCX Corporation | Booth # 2505**GCX[®]
Mounting Solutions**

GCX Corporation - the world-wide 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.

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

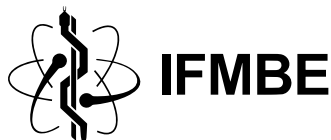


The Institution of Engineering and Technology

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

IOP Publishing (iopublishing.org) provides a range of journals, books, websites,

magazines, congress proceedings and services through which leading-edge scientific research is distributed world-wide. 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



IPEM

Institute of Physics and Engineering in Medicine

The Institute of Physics and Engineering in

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

iRT Systems | Booth # 1124



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

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

LAP Laser | Booth # 1214



LAP of America Laser Applications, L.L.C has been delivering state of the art patient alignment laser systems for radiation therapy, nuclear medicine, and diagnostic radiology since 1997.

Building on a strong tradition of excellence in the medical industry LAP has become the world leader in patient alignment laser systems.

Maquet-Dynamed | Booth # 3211**MAQUET-DYNAMED**

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

MAQUET is a subsidiary of the publicly listed

MedTech
INSTITUTES

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

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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

Thunder Bay Regional Research Institute

In partnership with
Thunder Bay Regional Health Sciences Centre
Affiliated with Lakehead University

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

ONCOLOGY SYSTEMS LIMITED

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

ONE SOLUTION FOR ALL YOUR PATIENT MONITORING NEEDS

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

PARTSOURCE® 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

Knowing what responsibility means

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 manufactures RIT113 Radiation Therapy Dosimetry software, and RADIA software for automated QC phantom analysis. RIT software

packages are designed to enable QA on all aspects of modern radiation therapy and diagnostic imaging, including TG-142 for linear accelerators, TG-148 for helical tomotherapy, and ACR CT and MRI testing.

Raysearch Laboratories | Booth # 1219



RaySearch is a medical technology company that develops advanced software solutions for improved

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

RTI (From Radiation to Information) | Booth # 1125



From Radiation
to Information

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



S P A C E L A B S
H E A L T H C A R E

An OSI Systems Company

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



Test Instrument Calibration and Repair
800-342-7748
www.goSTI.cc

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



Springer

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.

Technical Prospects has been in business

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.

The Phantom Laboratory (www.phantomlab.com) manufactures medical imaging and radiation therapy phantoms. In addition to our standard

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.

USOC Medical provides biomedical equipment repair solutions to healthcare

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

Varian Medical Systems is a leading manufacturer of medical devices for treating cancer and other conditions

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 nationwide 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



World Health Organization

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>



INDUSTRY SUPPORTED SYMPOSIA

Monday, June 8, 2015 | 12:15 – 13:15

► Room 718A

SYMPOSIUM SUPPORTED BY



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



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



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'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

**SAT. ►
JUNE 6**

SUNDAY ► JUNE 7

MONDAY ► JUNE 8

TUESDAY ► JUNE 9

PROGRAM AT A GLANCE

8:00	CANADIAN COLLEGE OF PHYSICISTS IN MEDICINE (CCPM) EXAMS	CANADIAN COLLEGE OF PHYSICISTS IN MEDICINE (CCPM) EXAMS	USE OF AAPM TASK GROUP 100 RECOMMENDED RISK ASSESSMENT APPROACH TO DEVELOP A RISK BASED QUALITY MANAGEMENT PROGRAM IN RADIATION THERAPY	RT RESEARCH SYSTEM DEVELOPMENT ON OPEN SOURCE SLICERT PLATFORM (SLICERT HANDS ON TUTORIAL)	AUTOSEG 2015	SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL		CONTINUING EDUCATION SESSIONS (ENGLISH, FRENCH, SPANISH)		SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL	CONTINUING EDUCATION SESSIONS (FRENCH, ENGLISH, SPANISH)	IFMBE AWARDEES PRESENTATIONS	IOMP GENERAL ASSEMBLY	
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10:00						NETWORKING BREAK				NETWORKING BREAK				
10:30										THE FUTURE OF CLINICAL ENGINEERING	INNOVATIVE BIOMEDICAL ENGINEERING RESEARCH IN ASIA	SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL		CONTINUING EDUCATION SESSIONS (ENGLISH, FRENCH, SPANISH)
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WEDNESDAY ► JUNE 10
THURSDAY ► JUNE 11
FRIDAY ► JUNE 12

THEME PLenary KEYNOTE SESSION - GORDON McBEAN & MARY GOSPODAROWICZ					SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL		CONTINUING EDUCATION SESSIONS (ENGLISH)		IFMBE STUDENT DESIGN COMPETITION PRESENTATIONS		SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL		CONTINUING EDUCATION SESSIONS (ENGLISH)		
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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	SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL		CONTINUING EDUCATION SESSIONS (ENGLISH)		ADDRESSING GLOBAL CHANGES			SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL	CONTINUING EDUCATION SESSIONS (ENGLISH)		
HTA ROUND TABLE	INDUSTRY SYMPOSIUM SUPPORTED BY CAREFUSION				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	CLOSING CEREMONY & YOUNG INVESTIGATORS AWARDS PRESENTATION				
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	IFMBE GENERAL ASSEMBLY	THEME PLenary KEYNOTE SESSION - EDWARD SHORTLIFFE & VIMLA PATEL										
NETWORKING BREAK					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							
CONTINUING EDUCATION SESSIONS (ENGLISH, FRENCH, SPANISH)				SCIENTIFIC SESSIONS INCLUDING PRESIDENT'S CALL	IUPESM GENERAL ASSEMBLY	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)					
GALA DINNER					CMBES AGM			COMP AGM							
EXHIBIT & POSTER HALL HOURS 09:30 – 17:00					EXHIBIT & POSTER HALL HOURS 09:30 – 17:00										

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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.

TUES./WED. JUNE 9/10 2015

PLENARY SESSIONS

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.

THURSDAY JUNE 11 2015

PLENARY SESSIONS



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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 Dunscombe
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 Paediatric 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 Skłodowska-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 Merit - 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

WEDNESDAY JUNE 10 2015

SPECIAL SESSIONS

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. Manufacturers are placing conditions on servicing their products. Either no supports are provided or they charge very high prices to acquire them. Some companies will not allow servicing in the field unless expensive training is acquired. They create proprietary manuals and information separately for OEM eyes only and may charge even more to acquire this. Manufacturers contribute to the issue citing risks to the reliable support of their product. Purchasing agents are easily swayed by vendor claims of complexity that they and only they can service it (not field serviceable) and various other unfounded risks like 'FDA won't allow it.' Manufacturers and CE need to develop an understanding and common ground that will serve both sides so only the patient benefits.

Objectives

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

The summit focus will be on questions below:

1. Is there a problem?
2. If so, how do we articulate it?
3. Define 'Supportability'
4. Provide perspective from both sides

5. Listen to comments, questions, and answers
6. List proposals, measures, and recommendations
7. Summarize
8. Publish summit outcome

Impact on the Medical Device Industry

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

Supportability Defined

The level of ease to which a specific medical device or system is serviced by entities other than representatives or direct agents of the original equipment manufacturer (OEM).

SESSION DATE: **WEDNESDAY, JUNE 10 2015**
 SESSION TIME: **12:00 - 13:30**
 SESSION ROOM: **713A**
 SESSION TITLE: **SS13 - HTA OF MEDICAL DEVICES: PREMARKET CHALLENGES (ROUNDTABLE ON HEALTH TECHNOLOGY ASSESSMENT)**
 SESSION ORGANIZER(S): **NICOLAS PALLIKARAKIS AND LEANDRO PECCHIA**

AGENDA:

Regulation of MDs, the EU prospective	Nicolas PalliKarakis, University of Patras, Greece, and Chair HTA Division of IFMBE
Pre-market HTA of Medical Devices: an overview	Leandro Pecchia, University of Warwick, UK, and Treasurer of HTA Division of the IFMBE
From Monitoring the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA) to early technology assessment	Christian Boehler, Joint Research Centre, European Commission, Seville, Spain
Multi-criteria decision analysis as a tool for medical devices assessment: a case study on R&D portfolio decision for new robotics in healthcare	Marjan Hummel, University of Twente, The Netherlands

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**

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:

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

AGENDA:

Multi-criteria decision analysis for medical devices assessment	Marjan Hummel, University of Twente, 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 Kaijiya (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 OF 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**

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**

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: **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 recherche
Philippe Després, Canada
- 09:00** MPF01.2: Résonnance magnétique: les nouveaux développements et avenues de recherche
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 recherche
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 édition 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 Mère et de l'Enfant
Gnahoua Zoabli, Canada

Tuesday, June 9 2015

TUESDAY JUNE 9 2015

CONTINUING EDUCATION

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/ CLINIQUE

08:00 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: 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 Debais, 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 Debais, 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

WEDNESDAY JUNE 10 2015

CONTINUING EDUCATION

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

THURSDAY JUNE 11 2015

CONTINUING EDUCATION

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 Polisen, 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

FRIDAY JUNE 12 2015

CONTINUING EDUCATION

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**

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 radiofrequency 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 Synthesized 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 Gadolinium 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

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 Hypofractionated 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 ^{99m}Tc-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 Infantesi, 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 and 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 Mirzakhani, 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 Neuroengineering**
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
Judy 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 Gershkevitch, 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
Betsy 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 Marin, Mexico
- 17:45** SP069.4 - Clinical Implementation of an Intraoperative Radiotherapy Program
Muthana Al-Ghazi, United States
- 18:00** SP069.5 - Performance of a Back-etched Silicon Detector Array Designed to Monitor Each Synchrotron Generated X-ray Beam in Microbeam Radiation Therapy
Michael Lerch, Australia
- 18:15** SP069.6 - Dynamic Mechanical Characterization of a Poly(vinyl alcohol) Breast Palpation Phantom
Gabriel Rodriguez, United States

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
Omern 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

TUESDAY JUNE 9 2015

SCIENTIFIC PROGRAM

Biomedical Physics & Engineering Express

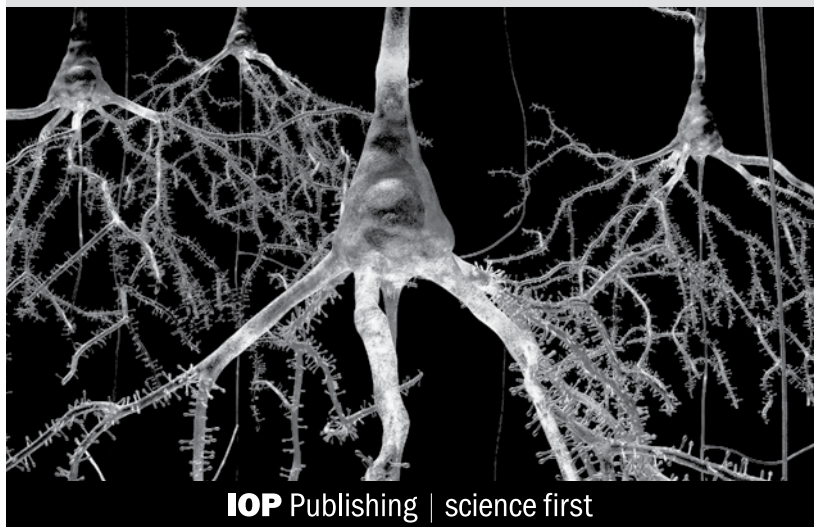
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SCIENTIFIC PROGRAM BY DAY

► **Wednesday, June 10 2015**

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 detrended 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: 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 – 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 – 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 Engineering: Designing for Ability" - A summer outreach course for attracting talented high school students to the rehabilitation engineering field
Vicki Komisar, Canada
- 11:30** SP087.5 - A Novel Approach to Train Biomedical Engineers in a Ugandan Setting
Robert Ssekitoaleko, 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
Charmaine 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 Tworzydło, 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 therapy of focal prostate cancer
Robert Weersink, Canada
- 16:00** SP096.5 - The first in vivo, optical images of neuroblasts migrating away from the subventricular zone deep in mouse brain reveal two patterns of migration: implications for future therapeutic use
Teresa Murray, United States

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 Images
Elham Karami, Canada
- 16:45** SP097.8 - High-resolution micro-CT protocol for assessing lung ventilation and perfusion: image subtraction versus multi-energy analysis
Nancy Ford, Canada

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 radiopharmaceuticals 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 RIYAH-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 - Fractional 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
GUILHERMO 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, Kuwait
- 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 Sagbaj, 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

SCIENTIFIC PROGRAM BY DAY

► Thursday, June 11 2015

THURSDAY JUNE 11 2015 ▼

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

SCIENTIFIC PROGRAM

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 - A study on the leading cause of immunisation schedule fall up defaulting and early child hood malnutrition sicknesses in developing countries (uganda in particular) rural areas/villages
Waigonda Saad, Uganda
- 08:15** SP127.2 - From Smart Phones to Smart Health
Ricardo Silva, Ecuador
- 08:30** SP127.3 - Diagnostic Data: a Manifesto
Peter Pennefather, Canada
- 08:45** SP127.4 - Comparative analysis of co-expression networks reveals molecular changes during the cancer progression
Pegah Khosravi, Iran
- 09:00** SP127.5 - Copper Meshed Carbon Black PDMS Electrode for Underwater ECG Monitoring
Justin Bales, United States
- 09:15** SP127.6 - Smartphone-based Monitoring of Tidal Volume and Respiratory Rate
Bersain Reyes, United States

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 Infantesi, Brazil
- 11:30** SP135.5 - A New Dynamic Virtual Stimulation Protocol to Evoke M-VEP and Linear Vection during Orthostatic Posture Control
Antonio Infantesi, 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 Schmock, 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 and 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
Esmail 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 dosimeter with improved auto-oxidation stability
Kalin Penev, Canada
- 17:15** SP155.2 - The dosimetric property of TLD2000 thermoluminescent dosimeter
Nan Zhao, People's Republic of China
- 17:30** SP155.3 - Application of 2D thermoluminescent dosimetry in QA test of Cyberknife
Renata Kopeck, 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 Nucleus (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

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 HAUSEISEN, 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 platform 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 comparison 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

- 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 – 11:45**
 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

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 xlenol 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 Patrocínio, Brazil

PS01.014 – Evaluating Techniques of Transformation Intensity for Contrast Enhancement in Mammographic Images

Ana Cláudia Patrocínio, Brazil

PS01.015 – Influence of Contrast Enhancement to Breast Density Classification by Using Sigmoid Function

Ana Cláudia Patrocínio, Brazil

PS01.016 – Evaluation of the difficulties of the learning process of mammographic readings

Ana Cláudia Patrocínio, Brazil

PS01.017 – Non-deterministic optimization using Differential Evolution algorithm to launch seeds for liver segmentation in MDCT

Ana Cláudia Patrocínio, Brazil

PS01.018 – Influence of ROI pattern on segmentation in lung lesions

Ana Cláudia Patrocínio, 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 Patrocínio, 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 Immuno-evasive 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, future 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

Omernh 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, Morocco

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

Vlctor 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-Saloo, 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 Dosimetry: An Application for Dose Verification in Standard Radiotherapy Techniques

Omern 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 and 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 – Measurement 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 Gurchich, 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

Peyman Shokrollahi, Canada

PS07.007 – Comparing the Effects of Three MRI RF Sequences on Ultrasonic Motors

Peyman Shokrollahi, Canada

PS08 – TRACK 08: BIOSENSOR, NANOTECHNOLOGY, BIOMEMS AND BIOPHOTONICS

PS08.002 – Novel Optical Method to Determine Glass Transition Temperature of Polymers

Yao-Xiong Huang, People's Republic of China

PS08.003 – The Comparison of Temporal Change between Typically Developing Children and Children with ADHD in Rotational Motion Speed of Arms

MIKI Kaneko, Japan

PS09 – TRACK 09: BIOSIGNAL PROCESSING

PS09.001 – Sensitivity of heart rate variability indices for artificially simulated data

Anna Alulova, Russian Federation

PS09.002 – The Smoothness of a signal as a new feature in Signal Averaged Electrocardiogram that can be used in cardiac electrophysiology diagnosis.

Mohammad Reza Ay, Iran

PS09.003 – Comparison of the Three Filter Algorithms for Detection of Electrically-Evoked Short-Latency Responses in Retinal Ganglion Cells.

Myounghwan Choi, Republic of Korea

PS09.004 – Photoacoustic Speckle and Spectral analysis of Vasculature Trees

Muhannad Fadhel, Canada

PS09.005 – The algorithm for the diagnosis of ventricular tachycardias from electrocardiogram

Martin Holub, Czech Republic

PS09.006 – Modelling of Platelet and White Blood Cell in Dengue Patients using Bioelectrical Impedance Analysis technique

Fatimah Ibrahim, Malaysia

PS09.007 – Combination of Multiple Signal Processing Techniques for Multi-class Motor Imagery Detection using Mu Rhythm

Rina Kojima, Japan

PS09.008 – The comparison of severity assessment methods of kinetic tremor in Parkinson's disease using wearable sensors

Hong Ji Lee, Republic of Korea

PS09.009 – Unobstructive blinking detection wearable device utilizing transparent conductive ITO film for smartphone users to prevent of computer vision syndrome

Jeong Su Lee, Republic of Korea

PS09.010 – A Simple, CO₂-Based Method to Reconstruct the Molar Mass of the Dried Respiratory Gas within a New Double-Tracer Single Breath Washout

Johannes Port, Germany

PS09.011 – Mirror Movements in Writer's Cramp? A Study with Multi-Channel EMG

Venkateshwarla Raju, India

PS10 – TRACK 10: REHABILITATION MEDICINE, SPORTS MEDICINE, REHABILITATION ENGINEERING AND PROSTHETICS

PS10.001 – Human Knee Simulation Using CMAC ANN

Lourdes Brasil, Brazil

PS10.002 – Development of New Method to Create In-school Tactile Maps for Visually Impaired Children

Kouki Doi, Japan

PS10.003 – Experimental Study on Usability Evaluation of a Hydraulic Jack Lever

Kouki Doi, Japan

PS10.004 – Neuromuscular Reconnection Methodology By Cap Sense Absorption And Diffusion Signal

Ricardo Jaramillo Diaz, Colombia

PS10.005 – The Development of an Isokinetic Adapter for Prosthesis Users

Usha Kuruganti, Canada

PS10.006 – High Density Electromyography (EMG) for Improved Prosthesis Control

Usha Kuruganti, Canada

PS10.007 – Influence of Spaces between Tactile Dot Patterns and Raised Boundary Line on Tactile Guide Map Line Perceptibility

Harumi Matsumori, Japan

PS10.008 – Influence of Dot Distances on Discrimination of Dot Patterns in Tactile Guide Maps

Harumi Matsumori, Japan

PS10.009 – Statistical Evaluation of Objectivisation of Rehabilitation Process

Iva Novotná, Czech Republic

PS10.010 – Satisfactory Vibrating Conditions of Latissimus Dorsi Tendon to Induce Illusory Horizontal Shoulder Flexion

Yumi Umesawa, Japan

PS10.011 – Satisfactory Vibrating Conditions of Extensor Digitorum Tendon to Induce Illusory Finger Flexion

Yumi Umesawa, Japan

PS10.012 – Prefrontal Brain Activity of Goal Keeper when Penalty Kick

Masaki Yoshida, Japan

PS10.013 – Effect of the moderate high pressure circumstances to metabolism

Masaki Yoshida, Japan

PS11 – TRACK 11: NEUROENGINEERING, NEURAL SYSTEMS

PS11.001 – Objective Evaluation of Likes and Dislikes by Prefrontal Blood Flows

Miho Asano, Japan

PS11.002 – Robotic Wheelchair Commanded by People with Disabilities Using Low/High-Frequency SSVEP-based BCI

Teodiano Bastos-Filho, Brazil

PS11.003 – Quantifying and overcoming the effect of distractions on cognitive load and brain-computer interface (BCI) performance: Implications for real-world BCI use and cognitive neuroscience

Zahra Emami, Canada

PS11.004 – How Mental Strategy Affects Beta/Theta Neurofeedback Training

Pedro Antonio Mou, Macao

PS11.005 – Stimulation to Basal Ganglia and the Efficiency of Microminiaturized Electrode Recording (MER) to Quantify STN Neurons with Deep Brain Stimulator (DBS)? the Lead Point in Parkinson Diseased Conditions

Venkateshwarla Raju, India

PS11.006 – SCHIZOPHRENIA: Interaction between factors

Bernadete Voichcoski, Brazil

PS12 – TRACK 12: MEDICAL DEVICES

PS12.001 – Challenges and opportunities in home-based monitoring of cardiac dynamics

Yashodhan Athavale, Canada

PS12.002 – Application of Support Vector Machines in Intelligent Monitoring of Cardiovascular Health on a Mobile Device

Omar Boursalie, Canada

PS12.003 – Design and Implementation of the Software for Multi-parameter Patient's Monitor

Maite Cañizares, Cuba

PS12.004 – Strategy and Tools for Validation of QRS Detection Algorithms in Real Time ECG Monitors

Maite Cañizares, Cuba

PS12.005 – Basic Study on Variability of Measured Data from Touch Test Using Semmes-Weinstein Monofilaments

Manabu Chikai, Japan

PS12.006 – Design and construction of temperature and humidity control channel for a bacteriological incubator

Carlos Duharte, Cuba

PS12.007 – High-Reliability Nerve Stimulator For Aiding Regional Anesthesia Procedures

Carlos Ferri, Brazil

PS12.008 – A study of pressure-volume characteristics of the cuff for hemodynamic parameters measurement

Jan Havlík, Czech Republic

PS12.009 – Format for National Inventory of the Genomic Technology

Beatriz Hernandez, Mexico

PS12.010 – Development of the bedridden person support system using Kinect.

Kouhei Ichimura, Japan

PS12.011 – Quantitative sensory testing using lateral skin stretch at the foot for simple screening of diabetic neuropathy

Shuichi Ino, Japan

PS12.012 – A development of the robot hand for the disability which include sensory feedback.

Tomohiro Iwaki, Japan

PS12.013 – Motor cortical excitability enhanced by paired-pulse transcranial magnetic stimulation with biphasic pulse-form

Petro Julkunen, Finland

PS12.014 – Quality management systems for medical devices in the production of hospital beds

Ivana Jurickova, Czech Republic

PS12.015 – Value of information analysis for use in health technology assessment

Ivana Jurickova, Czech Republic

PS12.016 – Development of a Software Tool for Quick Re-entrainment of the Circadian Pacemaker

Zahra Kazem-Moussavi, Canada

PS12.017 – Which one is better in detecting the speed and quantity of intravenous infusion in the hospital, transmissive or reflective optical method?

Hyun-woo Lee, Republic of Korea

PS12.018 – The effect of stented valve oversizing on hemodynamic flow in the diseased right atrium

Hwa Liang Leo, Singapore

PS12.019 – Device trial to improve blood flow rate with controlled pressure for blood flow at venous side in single needle dialysis

Yasuyuki Miwa, Japan

PS12.020 – An Embedded Software Solution for Rest ECG Devices

Gisela Montes De Oca, Cuba

PS12.021 – Development of innovative gas phase sterilization technology for nucleolytic degradation

Toshihiko Okazaki, Japan

PS12.022 – Ultrasound Modular Platform: a general purpose open architecture system for medical imaging research

Haroldo Onisto, Brazil

PS12.023 – Design and Preliminary Validation of a Dual Mechanical-Anthropomorphic Breast Phantom with Inclusions

Shigeto Ono, United States

PS12.024 – Evaluation and Analysis of the Results of a prototype Medical Device Vigilance System (MEDEVIPAS)

Nicolas Pallikarakis, Greece

PS12.025 – Medical Device Development – Risk Management

Mayur Patel, United Kingdom

PS12.026 – Analysis of the terminology to name medical devices used in Intensive Care Units – ICUs

Pamela Ribeiro, Brazil

PS12.027 – Determination of Breath Acetone in 298 Type 2 Diabetic Patients using a Ringdown Breath Acetone Analyzer

Meixiu Sun, United States

PS12.028 – A study of the differences between uncompressed sound source and compressed sound source gives EEG of human

Takashi Suzuki, Japan

PS12.029 – Evaluation of the interface pressure characteristics over a temperature regulating air-mattress under different surgical positions

Eric Tam, People's Republic of China

PS12.030 – Continuous cuff-less estimation of systolic blood pressure from pulse wave transit time measured in a chair

Toshiyo Tamura, Japan

PS12.031 – A development of the pressure distribution display which is used in robot hand for the disability

Kenya Tanaka, Japan

PS12.032 – Prototype Development Generating Vacuum for Treating Chronic Wounds Negative Pressure Level Laboratory

Edison Vazquez-Gordillo, Mexico

PS12.033 – Tunable Irradiation System for Corneal Collagen Cross-linking

Liliane Ventura, Brazil

PS12.034 – Electromagnetic high-hydrous gel phantom at a low-frequency band -Improvement in the electrical characteristics by using a carbon microcoil and investigation of its mechanism-

Takahiko Yamamoto, Japan

PS12.035 – Examination of Bisphenol A Elution Concentration in Dialyzers

Yoshihisa Yamashita, Japan

PS12.036 – Automation of a Dispersive Raman Spectrometer Using LabVIEW Aiming In Vivo Diagnosis of Skin Cancer

Renato Zangaro, Brazil

PS12.037 – Effectiveness of Ozone-Liquid Mass Transfer aiming Ozone Therapy

Renato Zangaro, Brazil

PS12.038 - Impedance plethysmograph based on reconfigurable hardware for the study of superficial vessels

Laura Castro Acevedo, Cuba

PS12.039 - The study for bioelectric properties of tissue and organ measured by electrical impedance

Toshiaki Nagakura, Japan

PS13.003 – Becoming of Ubiquitous Sensors for Ubiquitous Healthcare

Sergo Dadunashvili, Georgia

PS13.004 – Design and Implementation of an Application for ECG processing in Mobile Phones

René González-Fernández, Cuba

PS13.005 – A Telemedicine System to follow-up the Evolution of Chronic Diseases in the Community

René González-Fernández, Cuba

PS13.006 – Developing an Appropriate and Affordable Expert System for Medical Diagnosis (ESMD) in Developing Countries

Kenneth Nkuma-Udah, Nigeria

PS13.007 – Assessment of Mobile Health Applications

Nicolas Pallikarakis, Greece

PS13.008 – An Investigation into using Pulse Rate Variability to Predict Clinical Events

Usman Raza, Canada

PS13.009 – A simple device producing electrolyzed water for home care

Koichi Umimoto, Japan

PS13.010 – Developing predictive models using retrospective study of liver cancer patients treated with radiation therapy.

Jason Vickress, Canada

PS13.011 – A Study on the Problems for People to have Colorectal Cancer Screening Tests in Japan?-From the Results of Interviews for 30 Adults-

Naoko Fujiwara, Japan

PS14 – TRACK 14: INFORMATION TECHNOLOGIES IN HEALTHCARE DELIVERY AND MANAGEMENT

PS14.001 – DermApp: an application for Android mobile devices for reception and transmission of skin images

Iván Escalona, Venezuela

PS14.002 – Use of mobile devices for prevention in youngsters of risk factors common to chronic noncommunicable diseases

Iván Escalona, Venezuela

PS13 – TRACK 13: INFORMATICS IN HEALTH CARE and PUBLIC HEALTH

PS13.001 – A Method for Parental Engaged Consent in the Perpetual Secondary Usage of Health Big Data

Yvonne Choi, Canada

PS13.002 – RENEM? Brazilian National List of Equipment and Materials

Murilo Contó, Brazil

PS14.003 – Telemedicine in the Universidad Católica Andrés Bello (UCAB), Venezuela: an academic experience

Iván Escalona, Venezuela

PS14.004 - Passage from analog to digital in radiodiagnostic processes

Paola Freda, Italy

PS16 – TRACK 16: CLINICAL ENGINEERING, CLINICAL PHYSICS, AND PATIENT SAFETY

PS16.001 – Increasing the health value per dollar spent: How Human Factors can help inform procurement of healthcare technology

Sandra Ahedo, Spain

PS16.002 – Using Heuristic Analysis to support Usability Evaluation of a low risk medical device under development process

Ana Almeida, Brazil

PS16.003 – First Contact with Human Factors and Usability Evaluation in a Junior Research Project by a Biomedical Engineering Student

Ana Almeida, Brazil

PS16.004 – Non-Contact Measurement of Arterial Compliance (NCMAC)

Delran Anandkumar, United Kingdom

PS16.005 – Developing a Quantitative Performance Assurance Risk Classification Model within a Generalized Risk Scoring System

Vishvek Babbar, Canada

PS16.006 – Project Management for Clinical Engineering? Considerations in the evaluation and acquisition of medical equipment for health services in Brazil

Lourdes Brasil, Brazil

PS16.007 – Human Factors for Health Technology Safety: A new book on incorporating Human Factors into the work of biomedical technology professionals

Andrea Cassano-Piche, Canada

PS16.008 – Politics, value and risk: a system to allocate medical equipment funding

Peter Cook, United Kingdom

PS16.009 – Magnetic Resonance system configuration and editing tools

Danilo Da Silva, Brazil

PS16.010 – The Unintentional Irradiation of a Live Human Fetus During a CT Scan: a case study

Jeff Frimeth, Canada

PS16.011 – Device reconditioning service for home-based assistance. How to choose the right approach.

Ernesto Iadanza, Italy

PS16.012 – Approach to the management of infusion systems in hospitals

Ernesto Iadanza, Italy

PS16.013 – A Basic Study on the Measurement of Electromagnetic Fields in a New University Hospital Building Before and After the Hospital Opened

Kai Ishida, Japan

PS16.014 – IAEA database of national dosimetry audit networks for radiotherapy

Joanna Izweska, Austria

PS16.015 – Telehealth – Achieving its Promise in 2015

Thomas Judd, United States

PS16.016 – The New Japanese Guidelines for Use of Mobile Phones in Hospitals

Takashi Kano, Japan

PS16.017 – Study on Medical Equipment Location Systems that use RFID Technology

Manabu Kawabe, Japan

PS16.018 – Development of a Regional Prioritization Process for Diagnostic Imaging Equipment Replacements

Petr Kresta, Canada

PS16.019 – Implantable Medical Devices: more Safety with Traceability and Surveillance

Paolo Lago, Italy

PS16.020 – Using standard test methods to ensure quality and maximize supply of personal protective equipment in a time of global emergency response

Ying Ling Lin, Canada

PS16.021 – Creation of a system for the coding of medical devices

Alessio Luschi, Italy

PS16.022 – Establishment of Radiation Qualities for Radiodiagnostics in LCR/ UERJ According to IEC 61267 and TRS 457

Luis Magalhaes, Brazil

PS16.023 – A Healthcare Facilities Qualitative and Multivariate Quantitative Assessment Methodology for Mongolia

Claudio Meirovich, Spain

PS16.024 – Practice of HB-HTA on the Study of HIFU Technology for the Treatment of Prostate Cancer and Uterine Fibroma

Roberto Miniati, Italy

PS16.025 – A Simulation Based Model for Planning Operating Theater Activity in Complex Hospitals: Case Study in Orthopedics

Roberto Miniati, Italy

PS16.028 – Risk management tool in the application HFMEA in purge sector on the Material and Sterilization Centers.

Sérgio Mühlen, Brazil

PS16.029 – Generate health and wealth by innovation

Mayur Patel, United Kingdom

PS16.030 – Validating and comparing Methods for testing Endothelial Function

Ragu Prakash Ratnakumaran, United Kingdom

PS16.031 – Reliability Indicators in the Medical Equipment Management

Renato Garcia Ojeda, Brazil

PS16.032 – Methodology for Safety Movement of Clinical Facilities Focused in Oncology

Sandra Rocha Nava, Mexico

PS16.033 – Design of a remote use ECG with an Optical Communication System (FSO) for Telemedicine Applications

Raul Rodriguez-Aleman, Mexico

PS16.034 – Adverse events and death related to the use of the MRI equipment

Ricardo Sá, Brazil

PS16.035 – Adverse events and injuries related to the use of the MRI equipment

Ricardo Sá, Brazil

PS16.036 – Investigation on solar aging in sunglasses by developing of automated prototype for sun exposure of lenses

Homero Schiabel, Brazil

PS16.037 – Integral clearance of medical rooms based on the type of medical treatment ensures a safe environment upon first use

Casper Smit, Netherlands

PS16.038 – Real-Time Posture Classification and Correction based on a Neuro-Fuzzy Control System

Pedro Vieira, Portugal

PS16.039 – Management of electromagnetic interferences in healthcare facilities – A Review

Gnahoua Zoabli, Canada

PS16.040 – Hospital Mode Design in Smartphones and Tablets for Wireless Security in Healthcare Facilities

Gnahoua Zoabli, Canada

PS17 – TRACK 17: EDUCATIONAL AND PROFESSIONAL ACTIVITIES

PS17.001 – A discipline about Human Factors Engineering and Usability applied to Medical Devices for under graduation courses using Active Learning techniques

Ana Almeida, Brazil

PS17.002 – The medical equipment management inside the accreditation process: a comparison with the Brazilian accredited hospitals

Rodrigo Almeida, Brazil

PS17.003 – The Medical Physics M.Sc. program at the National University of Mexico: Results and lessons learned after 100+ graduates

María-Ester Brandan, Mexico

PS17.004 – An Experience on the dosimetry of HDR Brachytherapy Treatment Planning of Cervical Carcinoma at BPKM Cancer Hospital, Nepal

Surendra Chand, Nepal

PS17.005 – Health IT Education for Clinical Engineers

Thomas Judd, United States

PS17.006 – Professional Development of Medical Physicists in Radiation Oncology for the Commonwealth of Independent States

Marina Kislyakova, Russian Federation

PS17.007 – Assistive Technologies in Biomedical Engineering Education

Lenka Lhotska, Czech Republic

PS17.008 – Future-Proofing Physics and Engineering in Medicine

Kwan Hoong Ng, Malaysia

PS17.009 – Nuclear and Radiological Emergencies – First IAEA Training Course for Medical Physicists

Fridtjof Nuesslin, Germany

PS17.010 – Academic Real Time Digital Medical Image Processing Environment

Ana Cláudia Patrocínio, Brazil

PS17.011 – Detection of Eye Movement; possibility how to control world

Lukas Peter, Czech Republic

PS17.012 – Artificial Neural Network Interactive Activation and Competition Model Service-Oriented Applied to Health

Lourdes Mattos Brasil, Brazil

PS17.013 – Career Progression for Medical Physicists

William Round, New Zealand

PS17.014 – IOMP-W ? the International Organization for Medical Physics Women Subcommittee

Magdalena Stoeva, Bulgaria

PS17.015 – AAPM/IOMP Used Equipment Donation Program

Mohammed Zaidi, United States

PS18 – TRACK 18: GENDER, SCIENCE AND TECHNOLOGY

PS18.001 – Bone density measurements in strontium-rich bone-mimicking phantoms using quantitative ultrasound

Bisma Rizvi, Canada

PS19 – TRACK 19: BIOPHYSICS AND MODELLING

PS19.001 – Numerical Modeling Of The Electrical Impedance Method Of Peripheral Veins Localization

Mugeb Al-Harosh, Russian Federation

PS19.002 – Modeling current density maps in the heart

Mohammadali Beheshti, Canada

PS19.003 – Finite Element Modeling of Gelatin Phantom from Measured Impedance Spectra

Pedro Bertemes-Filho, Brazil

PS19.004 – Prediction of radiation induced direct and indirect cellular damage using a novel ionisation spatial clustering algorithm

Eva Bezak, Australia

PS19.005 – Research on Vibration of Cell Membrane of Plant Seed with Ultrasonic Excitation

Hui Cao, People's Republic of China

PS19.006 – The Effect of Applied Force on Arterial Pulse with a New Flexible Pressure Sensor

WENXUAN Dai, Hong Kong

PS19.007 – The Art of Engineering Medicine: A New Fast Non-Invasive Method to Directly Assess Ischemia in Human Diseased Coronary Arteries

Iyad Fayssal, Lebanon

PS19.008 – Influence of the alteration of the flow topology during the abdominal aortic aneurysm growth

Joly Florian, Canada

PS19.009 – Using the DDST to Train and Test Anthropomorphic Robotic Children

Paul Frenger, United States

PS19.010 – The new low-cost metaphase finder for biological dosimetry

Akira Furukawa, Japan

PS19.011 – Concentrated photoactivation: focusing light through scattering

Pedro Vieira, Portugal

PS19.012 – Steered Molecular Dynamic Simulation Approaches for computing the Blood Brain Barrier (BBB) Diffusion Coefficient

Ebrahim Ghafar Zadeh, Canada

PS19.013 – The study of the relationship between the scatterer particle size of soft tissue in ultrasonic focal region and the frequency offset of backscattered signal

Jianzhong Guo, People's Republic of China

PS19.014 – Dynamic Model for Shear Stress-Dependent NO and Purine Nucleotide Production from Endothelial Cells

Patrick Kirby, United States

PS19.015 – Mechanism of Phospholipase as a Potential Anti-Bacterial Drug Revealed by Nonlinear Spectroscopy

Xiaolin Lu, People's Republic of China

PS19.016 – Cancer stem cells in a hierarchical model of tumour regrowth in five head and neck carcinomas

Loredana Marcu, Australia

PS19.017 – Effects of interaction with electromagnetic field on cell culture of *Saccharomyces cerevisiae*

Aracely Martínez, Mexico

PS19.018 – Obstructive and Sclerotic Disorders affecting Carotid Blood Flow to the Brain

Onaizah Onaizah, Canada

PS19.019 – Estimation of Tissue Temperature in Tumor Hyperthermia Using Ultrasonic Methods

Xiao-jian Wang, People's Republic of China

PS19.020 – Modeling of a Photosensitizer Distribution Relevant to Photodynamic Therapy of Malignant Non-Pigmented and Pigmented Tumors

Marta Wasilewska-Radwanska, Poland

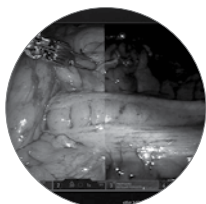
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Serious complications may occur in any surgery, including *da Vinci*® Surgery, up to and including death. Examples of serious or life-threatening complications, which may require prolonged and/or unexpected hospitalization and/or reoperation, include but are not limited to, one or more of the following: injury to tissues/organs, bleeding, infection and internal scarring that can cause long-lasting dysfunction/pain. Individual surgical results may vary. For Important Safety Information, indications for use, risks, full cautions and warnings, please also refer to www.davincisurgery.com/safety and www.intuitivesurgical.com/safety. © 2015 Intuitive Surgical, Inc. All rights reserved. Product names are trademarks or registered trademarks of their respective holders. PN 1017796 Rev A 3/15

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