

InterACTIONS

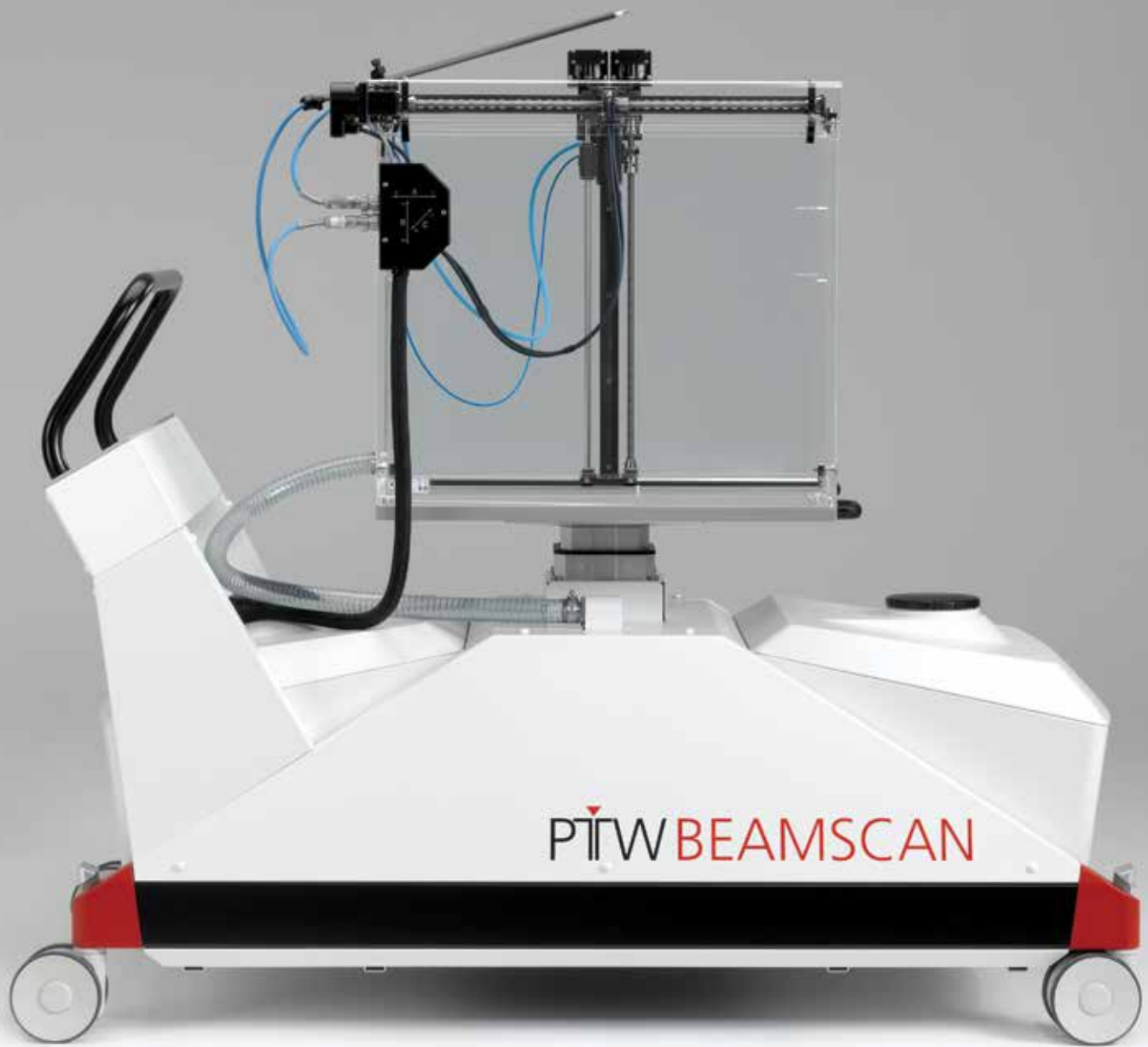
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MESSAGE FROM THE COMP PRESIDENT

As I write this column, an unusually long and cold winter is drawing to a close. I am fortunate that skiing is my favourite sport, and so I haven't minded much, enjoying many days filled with family fun in the mountains. For COMP, the winter highlight has been our imaging winter school and mammography workshop, which were held at the beautiful Fairmont Le Chateau Montebello this past February. Both events were new initiatives for COMP aimed at improving our engagement with our imaging colleagues. And both events were great successes! I was unable to attend myself, but several participants have shared thoughts and all had very positive experiences. Attendees enjoyed meetings that were highly engaging with though provoking invited lectures and sessions which drew attendees into engaging discussions and offered hands-on experiences. In this issue of *InterACTIONS*, you will find summaries of both events: check these out to relive memories or to whet your appetite for attending in future! I would like to take this opportunity to thank the organizers who not only took on the huge tasks of running these events, but who took on the added responsibility of doing something new! Atiyah Yahya, Idris Elbakri (mammography workshop co-chairs), Thor Bjarnason (winter school chair), and your respective teams – thank you for all your efforts!

Hopefully you've now submitted your abstract and are looking forward to the COMP Annual Scientific Meeting in Ottawa this summer, July 12th - 15th. Our ASM is always an annual highlight and this year will certainly be no

exception. The ASM committee, chaired by Young Lee, has been hard at work tirelessly planning the conference. Some highlights to look forward to include a new keynote lecture, a panel discussion on Canadian grant review processes, and the Young Professionals Day on July 12th. Early bird registration ends May 12th. I look forward to connecting with you in Ottawa!

April is volunteer month, and I would like to take a moment here to reflect on volunteerism and what it means for COMP. I asked my young son what he thought volunteering was. He said "volunteering is when you do a job that is optional, but that is still needed. You usually do it because you want to be kind and helpful." Not bad. Kids are usually pretty good at hitting the nail on the head and turns out he's dead right ... According to Statistics Canada, making a contribution to their community is the number one reason that Canadians choose to volunteer. Other top reasons Canadians volunteer are: to use their skills and experiences, because they are personally affected by the organization's cause, to explore their own strengths, because their friends volunteer, and to network with or meet people. While clearly an altruistic endeavor, there are also personal benefits to volunteering. Statistics Canada cites gaining interpersonal, communication, and organization skills as some of the key benefits of volunteering. And echoing some of reasons given for volunteering above, the opportunity to explore your own strengths and to stretch yourself by using skills in new ways can be, at least in my opinion, benefits afforded by volunteering.



Michelle Hiltz

COMP could not function without its volunteers: organizing meetings (exemplified above), sitting as members of the board and executive, reviewing conference abstracts, participating in committees, liaising with other organizations, etc. Nancy Barrett has mentioned repeatedly that COMP's amazing volunteers are its greatest strength, and I couldn't agree more. So a huge thank you to all of you who give of your time and energy to make COMP a great organization. Know how much you are appreciated. And if you have yet to volunteer, how about making this year the one you step forward?

As we embrace spring, this time of renewal and growth, maybe gaining some new communication skills or meeting some new people is just what you need to grow professionally and personally. And perhaps COMP is the place to do it! We'd love to have you. COMP is always looking for new volunteers full of energy and fresh ideas.

With that, happy spring!

MESSAGE FROM THE CCPM PRESIDENT

For the college, spring is a time of the year that is focused very much on the membership certification exam. The written exam took place on March 6th, and preparations are underway for the oral exams which will take place on May 5th and 6th. Thanks again to our chief examiner, Renée Larouche, our deputy chief examiner, Alasdair Syme, and Gisele Kite for coordinating and preparing this year's exams. Many members of the college have, or will, assist us in providing this important service to our profession, to the public, and to our future members. My sincere thanks to all who have participated!

The college is introducing, this year, a new method to get feedback from candidates, examiners, and markers following the exam. New surveys have been developed and approved by the board. If you have received a survey, please fill them out. We are looking forward to getting your comments. These will hopefully provide valuable feedback that will guide the future improvements/developments to the exam process.

The college's regulations reflect the policies and procedures that define how the college functions. They are available on our website, www.ccpm.ca. Part of the board's ongoing duties is to keep its regulations up to date. Certain sections, like Section B (Duties of Officers), are in need of a review to ensure that they still reflect the current practice of the officers. Other sections, like Section D on the membership exam, are almost in constant need of adjustments as the actual procedure for delivering the exam changes slightly from year to year. One item that does not currently appear in our regulations is the Harold E. Johns Award. This is an important award provided by the college, but details on eligibility, application,

and selection process appear only on our website. Work on our regulations will be undertaken in the fall since this is normally a slower time for certification activities of the college.

Speaking of regulations, the board is currently considering a significant change to the eligibility to the membership exam in radiation oncology (i.e. Regulation D.2.7). Currently, a candidate must have either graduated from a CAMPEP-accredited graduate or certificate program, or successfully completed a CAMPEP-accredited residency program or a bridging program. The board is considering removing the eligibility through a CAMPEP-accredited graduate or certificate program. This would force candidates to complete a structured residency or bridging program to be eligible for the RO membership exam. The motivation for this change is two-fold. Firstly, we are looking to align our approach with that used by the ABR, which now requires a CAMPEP-accredited residency program to write part II of their exam. Secondly, the board believes that individuals who have completed a structured residency or a bridging program have received the comprehensive clinical training that is commensurate with the expectations of the college with regards to the competency of individuals practicing clinical medical physics. This change would only apply to the radiation oncology sub-specialty since access to residency programs in the imaging sub-specialties is quite limited. Once approved, this eligibility change would only come into effect at a later date in order to provide some time for those individuals, who might soon be eligible without the residency or bridging program, to apply for the exam. The board has requested feedback from COMP on this



Clément Arsenault

change. However, if anyone has comments on this, please feel free to contact me.

The board has also received some comments regarding the Harold E. Johns Travel Award. Currently, this award is intended to assist a CCPM member in extending his or her knowledge by travelling to another centre or institution with the intent of gaining further experience in his or her chosen field, or, alternately, to embark on a new field of endeavour in medical physics. When the award was set up in 1990, the goal was to recognize an outstanding new CCPM member. At the time, age of the member (less than 35 years of age) was chosen as the indicator over the number of years of experience or certification. However, since 1990, access to the profession has evolved with many candidates now completing a PhD and a residency before becoming CCPM members. The board will review this and other eligibility requirements for the HE Johns Travel Award. However, we must also maintain the spirit of the award as it was set up originally, i.e. to assist new certified physicists in gaining further knowledge in the field.

EXECUTIVE DIRECTOR REPORT

Happy almost spring everyone! While in some ways it feels as though it has been a long winter, there has been so much happening with COMP that the season has flown by.

Both the mammography workshop and Imaging Winter School were a huge success. It was such a privilege to support Atiyah Yahya, Idris Elbakri, and Thor Bjarnason as they led these important initiatives. Creating something from the ground up is not easy, and all three contributed significant time and energy to create programs. Thor, Idris, and Atiyah facilitated the programs with professionalism and certainly demonstrated to our partner organizations, the CAR and the CAMRT, that medical physicists have the capacity to serve as leaders in healthcare. I would also like to take the opportunity to thank our corporate partners, GE Healthcare, Varian, and Siemens, who also played an important role in the success of these programs. Based on the post-event surveys, there is interest in continuing these initiatives so stay tuned. Better yet ... why not get involved in shaping future programs?

COMP has recently signed a three-year contribution agreement with the Canadian Nuclear Safety Commission (CNSC). COMP and the CNSC have enjoyed a collaborative relationship over the years that has been further enhanced by the leadership of the COMP-CNSC Liaison Subcommittee. The relationship will now be further sustained and encouraged through a CNSC contribution directed to a long term strategy for financial support of COMP initiatives that are in alignment with the CNSC's mandate. The agreement will provide COMP with \$90,000 over a three year period, commencing in January 2017 and ending on April 30, 2019. The funds will be allocated to three specific areas:

- (1) Innovation: Support the development of innovative tools that address radiation safety and security issues.
- (2) Guidelines: Support the development and maintenance of COMP guidelines that promote the safe use of radiation treatment systems in Canada.
- (3) Professional development and networking.

As you may be aware, we circulated a call for submissions for projects to be considered for the innovation component and received 13 submissions – an excellent response considering that the timelines were quite tight. We hope to get even more submissions for next year's fund. Thank you to all those volunteers who helped to review the submissions.

April is volunteer month, and COMP certainly has much to celebrate in this regard. It is important for us to acknowledge our members who contribute so much to the organization and the profession. There are the volunteers whose contributions are more visible (board members, committee chairs etc.), but there are countless others whose work may go un-noticed. Examples include: those who serve on the planning committees for the winter school and the ASM and are not actually able to attend the event in person, those who serve on other committees, those who review abstracts, those who are involved in the COMP awards, those who work on this publication, those who contribute to the CCPM examination process, those who work with CAMPEP, and it goes on ... To all of you – thank you! To those who have not yet had an opportunity to contribute, perhaps serving on a committee or the board might someday be part of your leadership journey?



Ms Nancy Barrett

We are looking for nominations for a board treasurer and two board directors-at-large. The directors-at-large will likely also be required to chair either the Imaging Committee or the Quality Assurance and Radiation Safety Advisory Committee. We are also changing the Science and Education Committee so that it becomes two committees: the Science Committee and the Education Committee. The chair of the Science Committee will likely also serve as a director-at-large on the board starting in 2018. More information about the nominations process can be found in this issue. Please feel free to contact me if you would like to learn more and/or discuss the possibilities.

We are looking forward to welcoming you to Canada's capital for the 2017 Annual Scientific Meeting. The meeting is from July 12th to the 15th, and I can't think of a better place to be to celebrate Canada's 150th anniversary. Plans are well underway for an excellent meeting. We will once again be hosting a special session for our young professionals and early-career physicists, and we look forward to building on the success of last year. We will also be offering a concurrent session for imaging

Continued on page 37

NEW COMP MEMBERS

Please welcome the following new members who have joined COMP since our last issue:

Last Name	First Name	Institute/Employer	Membership Type
Aftabi	Sajjad	University of Manitoba	Student
Alonso Ortiz	Eva	McGill University	Student
Ben Bouchta	Youssef	BC Cancer Agency – Vancouver Centre	Student
Bourgouin	Alexandra	Carleton University / NCR-CNRC	Student
Breitkreutz	Dylan	University of Victoria	Student
Cloutier	Émily	Université Laval	Student
Collins-Fekete	Charles Antoine	Université Laval	Student
Coughlin	Claire	Windsor Regional Hospital	Resident
Edimo	Paul	Hôtel-Dieu de Québec	Student
Fallone	Clara	Cross Cancer Institute	Student
Fradhel	Muhannad	Ryerson University	Student
Frezza	Andrea	Université Laval	Student
Ghila	Andrei	Cross Cancer Institute	Student
Jensen	Michael	Lakeridge Health	Full
Kaci	Linada	London Health Sciences Centre	Associate
Khawandanh	Eman	BC Cancer Agency – Vancouver Centre	Resident
Linares Rosales	Haydee Maria	Universite Laval	Student
Martinov	Martin	Carleton University	Student
Meyers	Sandra	Princess Margaret Cancer Centre	Resident
Mirzakhania	Lalageh	Cedars Cancer Centre	Student
Moosavi Askari	Reza	Université Laval	Student
Patel	Arya	McMaster University	Student
Robertson	Merle	Juravinski Cancer Centre	Associate
Sandhu	Gursimer	University of Ontario Institute of Technology	Associate
Shkumat	Nicholas	The Hospital for Sick Children	Full
Snir	Jonatan	London Regional Cancer Program	Resident
Tho	Daline	Universite Laval	Student
Venturina	Lorcel Ericka	Carleton University	Student
Wei	Pei-Shan	University of Manitoba	Student

Congratulations to our past student members who are now full/Resident/Associate members:

Belliveau	Jean-Guy	Tom Baker Cancer Centre	Resident
Boivin	Jonathan	Hôtel Dieu de Québec	Resident
Chin	Erika	BC Cancer Agency – Vancouver Island	Full
Darvish-Molla	Sahar	McMaster University	Associate
McCowan	Peter	CancerCare Manitoba	Resident
McGeachy	Philip	CancerCare Manitoba	Resident
Miksys	Nelson	Ottawa Hospital Cancer Centre	Resident
Murrell	Donna	London Regional Cancer Program	Resident

CNSC FORUM:

REPORTING REQUIREMENTS FOR CLASS II NUCLEAR FACILITY LICENSEES

Jeff Sandeman, Program Officer

Accelerators and Class II Facilities Division (ACFD) / Directrice, Division des installations de catégorie II et des accélérateurs (DICA), Canadian Nuclear Safety Commission / Commission canadienne de sûreté nucléaire

Some of the most frequent questions asked of ACFD staff relate to the “why,” “when,” and “how” of reporting the various types of “situations” which can occur during conduct of licensed activities. Typical questions include: Do I have to report this? Must I report it to the CNSC Duty Officer? Do I have to speak to someone, or is an email or phone message OK? How quickly does “immediate” imply? What do I have to include in the report? In this edition of CNSC Forum, we present some general guidance for Class II nuclear facility licensees to use when evaluating regulatory reporting aspects related to common incidents.

First off, it's important to remember that there are a wide range of regulations dealing with both “notification” and “reporting” requirements. These include:

- Nuclear Safety and Control Act, sections 27(b) and 45.
- General Nuclear Safety and Control Regulations, sections 29.
- Radiation Protection Regulations, subsection 6(2)(c) and section 16.
- Nuclear Substances and Radiation Devices Regulations, subsections 18(3)(d), 38(1) and (2).
- Packaging and Transport of Nuclear Substances Regulations, section 35, subsection 37(1), section 38, subsection 40(4).
- Class II Nuclear Facilities and Prescribed Equipment Regulations, sections 17(1) and 19(2)(d).
- Licence Conditions 2920 “Inaccuracies Notification” and 2945 “Action Level Notification”, which are contained in most Class II nuclear facilities licences.

Frequently, we find that licensees tend to focus on only one aspect of the requirements, rather than looking at a situation from the broader perspective of ALL the possible reporting requirements. So, a good starting point is to review the relevant regulations periodically to ensure that you understand what may impact upon your operations.

When reading these regulations, it is also important to distinguish between things which require “immediate” action vs. those which allow for action within some specified time period, as well as those which require

a “report” vs. those which require “notification”.

In general, “immediate” implies three things:

- Report it as soon as you become aware of it. This does not mean you should delay implementing the emergency mitigation measures necessary to limit the impact of the event, (e.g., decontamination of personnel), but every effort should be made to notify the CNSC as quickly as possible. There is no absolute limit on this, but the general expectation is that it will be reported within minutes to hours, depending on the circumstances.
- You **MUST** actually speak with a person. Phone or email messages are not adequate.
- It **MUST** be reported directly to the CNSC Duty Officer, at 613-995-0479 (or toll free 1-844-879-0805).

For everything else, you must perform the required action within the time period specified in the regulations or licence condition. Any regulation which requires a formal “report” will also include a description of the required content of that report. “Notifications” are generally less prescriptive in terms of content. Examples of notifications include:

- Exceeding an action level.
- Reporting of inaccuracies in the documentations in the Appendix of Licence Documents in your licence.
- Notification that a nuclear substance consignment cannot be delivered to the consignee.

None of these above items require “immediate” notification to the CNSC.

The most common situations at Class II facilities which **DO** require an immediate report are those describe in section 29(1) of the CNSC regulations. In general, we refer to these as “events.” For events, the reporting party is responsible for:

- Immediately informing the CNSC of the occurrence of an event.
- Implementing remedial actions to mitigate the consequences of the event, including but not limited to re-establishing control of the nuclear substance, radiation device or prescribed equipment.

- Recording and documenting event details to ensure that data is not lost.
- Investigating the event and determining the probable cause.
- Submitting a full written report to the CNSC within 21 days of the event.

The most common difficulty with these regulations is that for any given situation, the potential applicability of the criteria specified in GNSCR 29(1) can be very vague. For example, what constitutes a serious illness or injury? Does a non-radiological injury incurred during the conduct of a licensed activity have to be reported? How do we handle non-prescribed doses to patients? How do we handle a suspected non-personal high dose to a dosimeter?

There is no absolute “black-or-white” answer for these types of questions in most cases. So how do we address “triaging” potentially reportable events, and what is our overall philosophy when interpreting what should and should not be reported? First off, we ask the question:

What are we going to do with this information?

This leads us to a series of related questions:

- *Is this something we as a regulator could/should have addressed? If yes, what should/could we do?*
- *What will be result of this event on our regulatory oversight program? Will or should anything change? If yes, what?*
- *What action would we want licensee to take in response to the event?*
- *Are there any actions we may have to take with other agencies, licensees, or manufacturers as a result of this event?*

Using this rationale, the types of events that we, as regulators, really need to know about in the context of these regulations are:

- Significant radiological events related to the health of persons, the environment, or security associated with the licensed activity (e.g., 29(1)(a) to (e) plus NSCA 27(b)(i)).
- Breakdown of any system associated with the licensed activity which has, or could potentially have, a significant adverse effect on safety (29(f)).
- Breakdown of processes indirectly associated with the licensed activity which could potentially have a significant adverse effect on safety (29(1)(g)), plus all of the bankruptcy etc. under 29(1)(j)).
- Any other serious illness/injury which is, or could have

been, directly associated with the licensed activity (29(1)(h)).

In addition, the CNSC’s mandate is very broad for Class I nuclear facilities (e.g., power reactors), and incorporates some responsibility for conventional health and safety. Consequently ANY death at a “nuclear facility” is nominally reportable. Although clearly this was never intended to apply to the “normal” death of a critically ill patient undergoing prescribed medical treatment, such as radiotherapy, nonetheless we are required to abide by the strict wording of this particular regulation.

Finally, under NSCA27(b)(ii), if someone is conducting activities in a manner which is not consistent with the “licensing basis” (i.e. the Act, the Regulations, and the licence, including procedures and design documents in the Appendix of Licence Documents), the fundamental assumption is that this may potentially be unsafe and therefore must be reported.

With this logic in mind, in Table 1 we present some examples of situations relevant to Class II nuclear facilities and how we would assess them.

Additional guidance future updates

For detailed requirements relating to how and when to report on skin contamination incidents, please refer to the document titled CNSC Expectations for Licensee Response During Skin Contamination Events, which is available from the CNSC website via the following link: <http://nuclearsafety.gc.ca/eng/nuclear-substances/licensing-nuclear-substances-and-radiation-devices/index.cfm>.

In addition, RegDoc 3.1.2 Part II, Reporting Requirements for Class II Nuclear Facilities and Nuclear Substances and Radiation Devices, is expected to be published for public consultation later this year. This document provides detailed guidance on reporting requirements relevant to Class II licensees. Once it becomes available, we strongly encourage licensees to review this document and submit comments via the public consultation section on the CNSC website: <http://nuclearsafety.gc.ca/eng/acts-and-regulations/consultation/index.cfm#R1>.

Finally, a new DNSR newsletter on the topic of reporting via the CNSC Duty Officer will be published in the near future. You can find all of the DNSR newsletters at: <http://nuclearsafety.gc.ca/eng/nuclear-substances/directorate-of-nuclear-substance-regulation-newsletter/index.cfm>.

Situation description	Immediate reporting required to Duty Officer?(yes/no, or situational) If yes – supporting regulation and rationale	Regulatory response (where applicable)
Any incident involving the death of a person while inside the “facility,” as defined by the shielded perimeter of the treatment vault.	YES - GNSCR 29(1)(i) - specifies “death of any person at a nuclear facility” no linkage to circumstances. *No other action unless the death is related to equipment malfunction or a clear violation of the scope of activities authorized under the licence and the conditions under which the licence was issued, for example an unauthorized person operating the machine while unsupervised. Note that in these examples, the event is also reportable under other regulations, including GNSCR 29(1)(f) for the first, and both NSCA27 and LC2920 for the second.	Potentially, inform commission due to possible media interest.*
Patient receives a serious injury due to delivery of incorrect dose, gantry collision or other occurrence during treatment.	YES - GNSCR 29(1)(f) and (h) - <u>IF the event may have been the result of malfunction of the equipment</u> , could have a broader impact that could affect certification of the equipment, and/or notification to other regulatory agencies. NO - <u>IF it is absolutely clear that the injury was due to human error</u> and did not involve a clear violation of the scope of activities authorized under the licence and the conditions under which the licence was issued.	Notify manufacturer and other users of the malfunction and potentially restrict usage of the equipment in Canada.
Patient falls off radiotherapy treatment table and injury occurs, or patient suffers a cardiopulmonary event inside a radiation treatment room and is revived. OR Unplanned power outage shuts down radiotherapy treatment facilities, all patient doses are handled correctly.	NO - Neither situation would be considered as directly associated with the equipment or procedures encompassed by the licence, which define the scope of the licensed activity. No injury/harm and no reason to expect that this could/ would have any significant impact on the health and safety of persons or the environment (note: the inability to treat during the outage is NOT within the scope of potential harm encompassed by these regulations).	None.
Fire inside a radiotherapy treatment room.	YES - GNSCR 29(1)(d) - Many different possible reasons. At a minimum, to ensure that appropriate tests have been conducted to ensure that the facility and equipment has been tested and has been returned to a state in which it is ready to use. Note that in the event that this room contained radioactive materials (e.g. cobalt teletherapy, Gammaknife, HDR) it would be important to ensure there was no damage to source containment, which could in turn involve GNSCR 29(1)(b), (c), or (f).	Follow up to ensure appropriate mitigation measures have been implemented.
Patient is exposed to un-prescribed radiation due to a breakdown of process that does not lead to patient harm, for example, an I-125 seed is dropped onto a patient's skin during a prostate brachy procedure, but is quickly recovered.	NO - <u>For the specific example presented</u> . There is nothing which indicates a breakdown of processes caused this to happen, or that the event is in any way outside the scope of “normal” operations. However, it is important to note that other similar events WOULD be reportable. For example, if it were a temporary implant using Ir-192 wire, and they didn't perform a survey post removal (which is required under CIINPPER section 16) and the patient suffers significant tissue morbidity as a result. That is a direct violation of the Act/ Regulations/licence and has resulted in harm, and must be reported under 29(1)(h) as well as NSCA27(b)(ii). The RSO must apply some critical thinking here. Did the actions taken violate part of the licensing basis? Did it cause demonstrable harm? If so it must be reported.	None, <u>For the specific example presented</u> .

Minor (<100 Exemption Quantities) spill in PET processing lab leads to contamination of a staff member's clothing, but all is contained and cleaned up with minimal exposure.	NO – Provided that immediate monitoring clearly demonstrates there is no skin contamination. Incident should be recorded internally and record should be available for inspection, but reporting is not required. Minor spills on clothing are no different from any other spill. So long as there is no skin contamination, the requirements remain the same. Follow the procedures on the spill poster.	None, although may review associated records during inspection.
Dose in excess of dose limit registers on a personal dosimeter.	YES – GNSCR 29(1)(b) - IF the licensee only becomes aware of the dose upon notification from the dosimetry service. At this point it is unclear whether or not the dose is real or non-personal, and the licensee can only determine this via investigation, which may take some time. Licensee must initially assume it is potentially a real exposure and act accordingly. NO – IF this is a known non-personal exposure. For example, a worker accidentally leaves their dosimeter in the treatment room, and informs the RSO immediately. The dosimeter is sent to the dosimetry service along with an estimate of the non-personal dose. In this case, the licensee should notify their licensing Project Officer as soon as is practicable prior to having the dosimeter analyzed.	If the exposure is not known in advance to have been non-personal, the regulatory actions applicable to overexposures (RP16) must be implemented pending completion of the investigation.
Dose in excess of an action level.	NO – RP6(c) and LC2945 explicitly define the reporting period (usually 21 days), required licensee actions and report content.	Review licensee report and initiate any further regulatory action (e.g., request additional information, inspect site) as necessary.
Activity >200 Bq detected during sealed source leak testing.	YES – NSRDR 18(3)(d) and CIINFPER 19(2)(d) – but in this case, “immediate” means only after completing the immediate remedial actions specified in subsections (a) to (c) of these regulations. CONTACTING DUTY OFFICER IS NOT REQUIRED. The notification should be sent to your Licensing Specialist/Project Officer	Follow up to ensure that any contamination has been appropriately mitigated by licensee. Follow up with equipment and/or source manufacturer related to possible equipment malfunctions or source defects which may have resulted in the contamination. Potential notification to all other licensees having similar equipment/sources.
Licensee staff member notices that procedures being used do not match those contained in the Appendix of Licence Documents in the licence.	YES – IF the <u>change has a significant adverse impact on safety</u> , such that other reporting requirements take precedence. Again, the licensee has to apply some critical thinking here. Deciding to operate with the door interlock removed or non-functional will inevitably imply the information in the licence no longer accurately reflects true operations, but is by no means the same as having made administrative changes to procedures. The licensee is not only in violation of LC2920, but also GNSCR 29(1)(f) and NSCA 27(b)(ii) and must report accordingly. NO – Per LC2920, notification must be “as soon as is practicable”, and should be to the Project Officer responsible for your licence. <u>However, the intent of this licence condition is for procedural variations which do not immediately compromise safety.</u>	Review revised procedures and update Appendix of Licence documents if acceptable (request from licensee required). For serious safety violations the appropriate regulatory response will be contingent upon the nature of the non-compliance.

2017 STUDENT COUNCIL ELECTION

By Hali Morrison, Chair COMP Student Council

The COMP Student Council (SC) is led by a chair and vice-chair. It is their responsibility to officially represent the COMP student membership on the Science and Education Committee and to call regular meetings of the SC. Annually, the vice-chair is promoted to the position of chair (the previous chair steps down) and an election is held to select a new vice-chair. Eligible nominees must have been active members of the COMP SC for a minimum of six months. An election will be held at the Student Luncheon at the 62nd annual scientific meeting in St. John's, Newfoundland. Every student member of COMP is eligible to vote.

The 2017 nominee for student council vice-chair is (running unopposed): Humza Nusrat.

BIO OF HUMZA NUSRAT:

"My name is **Humza Nusrat**, and I am a PhD candidate in Ryerson University's medical physics graduate program. My research work is based at the Sunnybrook Health Sciences Center in Toronto, and primarily focuses on LET detection in the radiotherapy clinic. I completed my BSc at the University Of Ontario Institute Of Technology, and decided to pursue medical physics after working as a summer student in the Ottawa Hospital's medical physics department. I've been involved with the COMP Student Council for almost a year now. Recently, I was part of the organizing team for the Young Professionals Day events at the ASM in St. John's, and served as the student council representative to the COMP Communications Committee. I plan to continue to help the student council serve the needs of COMP's student members in the future."

Please visit comp-ocpm.ca or the COMP Student Council Facebook page for more election details. If you are interested in joining the student council, or for any other feedback and ideas, please send an obligation-free email to our current chair (Hali Morrison, hamorris@ualberta.ca). We always love to hear your opinions!

COMP MAMMOGRAPHY WORKSHOP REPORT

Idris Elbakri, CancerCare Manitoba, Winnipeg, MB and
Atiyah Yahya, Cross Cancer Institute, Edmonton, AB
Workshop Co-chairs

The Canadian Organization of Medical Physicists (COMP) hosted a mammography workshop at the Fairmont Le Château Montebello in Quebec from February 1st – 3rd, 2017. The workshop preceded the first COMP Imaging Winter School, with its last half day overlapping with the winter school's first half day. The purpose of the mammography workshop was to provide Canadian mammography physicists the means to obtain the educational credits required for recertification by attending an event in Canada and where relevant Canadian content is provided. Given the relatively small community of mammography physicists, the workshop program was designed to also appeal to technologists who have a similar continuing education requirement.

The program consisted of a number of excellent and knowledgeable speakers who spoke on clinical topics, informatics, image artifacts, quality control, mammography technology, digital breast tomosynthesis, and breast imaging using other modalities. Content from physicist, radiologist, and technologist perspectives were included. In addition, administration from the Canadian Association of Radiologists (CAR) was invited to discuss the mammography accreditation program in Canada. The workshop program was approved

for 16 CAMRT (Canadian Association of Medical Radiation Technologists) and CAMPEP (Commission on Accreditation of Medical Physics Educational Program) credits. The attendance at the workshop exceeded our expectations. We would have considered the workshop a success if 15 physicists had attended. We were delighted to have a total of 54 attendees, which included 35 physicists, 16 technologists, 2 radiologists, and 1 administrator. We are grateful to Nancy Barrett and Gisele Kite from the COMP office and the workshop corporate sponsors. GE Healthcare and Varian Medical Systems were Platinum Sponsors, and Siemens Healthineers was a Gold Sponsor. The CAR and CAMRT were contributing partners. The workshop was also endorsed by the AAPM (American Association of Physicists in Medicine). The organizers, sponsors, endorsers, speakers and attendees all contributed to the success of the workshop. We have invited reflections from Dr. Jean Seely, a radiologist who spoke at the workshop, Michelle Cottreau, a mammography physicist in PEI, and Sonya Galarnyk, a charge technologist from Winnipeg. Their comments are found below. We welcome feedback from all attendees and we look forward to future COMP mammography events!



Mammography workshop co-chairs: Dr. Atiyah Yahya and Dr. Idris Elbakri



Panelists for the session “Evolving Role of the Mammography Physicist”. Left to right: Dr. Jean Seely (radiologist from the Ottawa Hospital), Ms. Stephanie Schofield (technologist from the Nova Scotia Health Authority), and Dr. Martin Yaffe (senior scientist at the Sunnybrook Research Institute).

**Radiologist: Jean Seely
The Ottawa Hospital
Ottawa, ON**

I enjoyed attending the mammography workshop at Montebello, Quebec from February 1st - 3rd, 2017. In a room full of physicists, as the only radiologist, I wasn't sure if we shared similar interests. Yet several talks outlined issues facing many of us in medical imaging, particularly on their impact on quality. Common threads included use of specific imaging modalities, medical displays of images and IT integration, and new innovations in breast imaging. The February 1st talks on quality assurance, PACS management of digital images, and ways to improve Canadian standards were of benefit to radiologists, physicists, and technologists. The next day, updates were presented on new technologies, such as contrast-enhanced mammography by Razvan Iordache (GE Medical Imaging) and Idris Elbakri (Cancer Care Manitoba), and digital breast tomosynthesis from the clinical perspective by Jean Seely and the physicist's perspective by Martin Yaffe. Atiyah Yahya and Daniel Rickey each spoke well on the physics of breast MRI and ultrasound respectively. Dr. Seely provided a lecture on the controversies and recent evidence for screening mammography in women 40-50 years.

February 3rd featured a keynote address by Dr. Yaffe called “Quality Issues, Effectiveness and Politics in Breast Cancer Screening”, succinctly illustrating the controversies in screening mammography.

The conference concluded with a talk by Dr. Demeter (University of Manitoba) on the risks associated

with low dose ionizing radiation. He provided an overview of radiation risk models and controversies, identifying biases that exist which contribute to fear of radiation. These may lead to limited access to potentially life-saving medical imaging.

The conference was an excellent opportunity to share common experiences encountered by physicists, radiologists, and technologists when navigating the challenges of breast imaging in 2017. We identified common areas of interest, such as the need for improved quality standards in breast ultrasound and MRI, and better communication between physicists and radiologists. I encourage more multidisciplinary conferences like this one to promote high quality standards in breast imaging in Canada.

**Technologist: Sonya Galarnyk
Radiology Consultants,
Winnipeg, MB**

I would like to thank the Canadian Organization of Medical Physicists for hosting the mammography workshop in Montebello, Quebec from February 1st - 3rd, 2017. It was an honor as a mammography technologist to be a part of this great workshop. As a mammography technologist, I found this workshop to be informative and insightful. I enjoyed the sessions that were geared to both technologist and physicist, especially about quality control. It was great to see both perspectives and learn why tests are performed in a certain manner. This helped me to understand the consequences of proper and consistent quality control.

Learning about what a physicist looks for in quality control and how it relates to everyday patient care, helps to give us a better understanding in what we do on a routine basis. The importance of a good working relationship with a medical physicist is vital to patient care. As a technologist, we sometimes forget that we can call upon our physicist for questions we have regarding our equipment. We can get caught up in day-to-day tasks, forgetting how harmful the effects of radiation are to patients. This was emphasized to us throughout different discussions.

It was great to be able to participate in discussions about the future planning for the CAR MAP and meeting with the provincial quality assurance coordinators. The interactions with colleagues and physicists from across Canada were a rejuvenation of my vocation. Being a technologist for 25 years, it has been amazing to see how this industry keeps advancing.

Learning about new innovations in breast cancer diagnosis, such as digital breast tomosynthesis and contrast use in mammography, made me realize how hard everyone is working to help in the diagnosis and treatment of breast cancer. How these tests together detect breast cancer is a positive move in helping to save lives.

As a colleague, I thank you for all your hard work and dedication, it is greatly appreciated.

**Medical Physicist: Michelle Cottreau
Health PEI,
Charlottetown, PE**

I had the pleasure of attending the COMP Mammography Workshop at the beautiful Fairmont Le Chateau Montebello, Quebec in February. It was held just prior to and in conjunction with the COMP Imaging Winter School. The timing was perfect and

the workshop was excellent. As a mammography and imaging medical physicist currently working in Prince Edward Island (a little out of the way and perhaps a little isolated), I am always looking for opportunities in Canada for professional development. There have been only two other mammography physics courses held in Canada that I've attended (Montreal in 1995 and Kelowna in 2001), and I hope the wait for the next one isn't quite as long!

The workshop featured numerous presentations covering all aspects of mammography, ranging from practical topics, such as "QC Tricks of the Trade" and "Identifying Image Artifacts," to talks on current and upcoming technologies. The workshop was not limited to mammography specifically, and there were additional sessions on breast imaging informatics, ultrasound, and MRI. Each presenter gave me something to think about and left me with something to bring back to my department.

The talks on "Moving Towards a Unified Mammo Canadian QC Standard" provided valuable and relevant information regarding upcoming changes to the Mammography Accreditation Program (MAP) that will affect all of us. I especially enjoyed the digital breast tomosynthesis (DBT) talks from both a physicist's and a radiologist's perspective. We do not yet have DBT on PEI, and it was helpful to have an update on the state of this technology. The workshop ended with a keynote address by Martin Yaffe. His presentation described the controversies and myths in breast cancer screening coming from flawed research and the "House of Cards," which is the current Canadian policy on screening.

I would like to thank the organizers Atiyah Yahya and Idris Elbakri for creating an excellent program. I eagerly await the next one.



The mammography workshop attendees.

2016 HAROLD E. JOHNS TRAVEL AWARD REPORT

By the recipient,
Claire Foottit, the Ottawa Hospital, Ottawa, ON

The use of magnetic resonance (MR) imaging in radiation therapy (RT) is becoming more prevalent. As such, it is important that the RT team have the requisite knowledge to integrate this modality successfully into their clinical workflow. Through the generous support of the Harold E. Johns Travel Award, I had the privilege to attend the 4th MR in RT Symposium held at the University of Michigan in Ann Arbor in June 2016.

The goal of this two day symposium was to provide education and an interactive forum in which to discuss clinical applications and cutting edge research concerning the use of MR imaging in radiation therapy. The symposium was filled with a combination of invited speakers, panel and audience discussions, research presentations, posters, and vendor booths. By mixing research presentations with discussion sessions, the experience was enhanced beyond what one could get from reading review papers on these topics. I believe a great part of the success of the symposium can also be attributed to a faculty who actively encouraged discussion and questions from the audience.

This symposium presented work on incorporating the benefits of MR into each step in the RT process, as well as how the goals of the RT process impact protocol optimization and quality assurance requirements. I would like to take this opportunity to share my experiences with the COMP community and relate some of the interesting topics that were discussed. My hope is that it encourages even more discussion and collaboration between radiation therapy and MR imaging medical physicists at your institution. Below I have broadly organized the symposium content into four categories: MRI in target delineation, MRI-only planning, MRI image-guided and adaptive RT, and finally quality assurance and protocol selection.

MRI IN TARGET DELINEATION

The use of MR imaging in the delineation of targets for radiation therapy is continually expanding. Many cancer centres are working to incorporate more MR imaging in the treatment position into external beam treatment planning and into brachytherapy planning, as well as customizing standard diagnostic protocols for their specific needs. Several authors provided justification for these efforts by discussing their current practice using MR. For example, there

were presentations on the use of MRI for focal prostate cancer treatments using brachytherapy and stereotactic ablative body RT (SABR). These talks highlighted a use of MR imaging for a treatment that would be very challenging with ultrasound or CT alone.

One of the reasons MR is so successful for target delineation is the enormous flexibility in image contrast available. This flexibility leads to the question of which MR techniques provide the most relevant information for RT. To explore this question, two scientific sessions were dedicated to MR biomarkers. Current areas of research presented included diffusion tensor imaging and multi-parametric diffusion/perfusion imaging protocols. Adding these types of images generates a lot of data to be incorporated into the clinical decision making. Techniques such as radiomics and texture analysis were presented as methods to tease out clinically relevant information from these large datasets. There was also an interesting panel discussion concerning the extension of what are often single institution experiences to multiple centres in order to establish evidence for their use. The challenge of how to maintain consistency amongst centres with different vendors, ranges of experience, and resources was explored. Travelling phantoms and other forms of benchmarking were suggested. These discussions also served as a reminder that inherent in the development of these biomarker techniques should be a consideration of their robustness across vendors and clinical practices.

MRI-ONLY PLANNING

As MR use in RT target delineation grows, the question then becomes can we forgo the CT scan and move to MR only treatment planning? A faculty lecture and scientific session presented work on the maturing field of MR generated synthetic CT. This approach has the potential to improve accuracy by avoiding fusion issues and reduces radiation dose to tissues outside the treatment field. However, without the CT image as a reference there is an increased need to understand how MR protocol choices influence image quality, particularly spatial accuracy. I found it very interesting to learn how investigators are solving the challenges of differentiating bone and air (both low signal in conventional MR images) and developing fast 4D MRI solutions needed for MR only planning in the thorax.

MRI IMAGE-GUIDED AND ADAPTIVE RT

With MR well on its way to becoming a standard in pre-treatment workflow, another exciting question is what value can it add for image guidance of treatment? There was a scientific session dedicated to presenting updates and early clinical results from the pioneering centres in MR-guided RT development. I appreciated that many different centres currently engaged in this work presented their approaches in developing MR integrated RT machines, as the question of how best to tackle the engineering and physics challenges of combining these two complex machines is, at least from my view point, far from solved.

The development of these new devices is also highlighting many other important questions concerning fast online image guidance, adaptive online planning, and auto-contouring. These are all topics that the radiation therapy community has to weigh in on, regardless of whether they are achieved using MR or X-ray image guidance. This meeting highlighted how critical the availability of easy to implement, well-designed contouring tools is to advancing these types of treatments into widespread clinical use.

QUALITY ASSURANCE AND PROTOCOL SELECTION

I think most would agree that the future of radiation therapy will involve MR imaging. To aid in this integration, there was a faculty lecture covering MR QA specific for RT. In addition, several vendors displayed a range of QA phantoms and simulation equipment, including several large volume geometric distortion phantoms.

At many times throughout symposium, the importance of careful QA and protocol selection was highlighted. But just as importantly, the faculty and many audience members reiterated that medical physicists are up to this task. There was a strong opinion amongst the group that the special considerations of MR imaging should *absolutely not overshadow its benefits for radiation therapy*.

This symposium was a great and inspiring opportunity for me. I recommend it to others looking for an update on the integration of MR into the field of RT. Thank you to everyone who contributed to this award.

NEWS FROM YOUR WOMEN'S COMMITTEE

Ghada Aldosary, McGill University Health Centre, Montreal, QC

After a successful debut in St. John's, Newfoundland, where the COMP Women's Committee (WC) was received with enthusiasm and many great ideas, the committee's terms of reference (TOR) document was constructed and submitted to the COMP Professional Affairs Committee. This TOR document contains the structure and scope of the committee. We will invite you soon to take a look at it to get to know more about the CWC once it is fully processed.

While the winter slowly melts away and sunny days rise along the horizon, the CWC is preparing an exciting session for the upcoming ASM this summer

in Ottawa. So, be ready to mark your calendars to join us at our luncheon session. Details will be announced soon. Keep an eye out on the ASM website, Twitter and Facebook!

As always, the CWC welcomes you to share your feedback, comments and ideas for future activities by sending an email to our chair Nadia Octave (nadia.octave@mail.chuq.qc.ca).

We look forward to seeing you this summer!

JOURNÉE ÉTUDIANTE ET ATELIER ANNUEL DE L'AQPMC 2016 / STUDENT DAY AND ANNUAL WORKSHOP OF THE AQPMC 2016

Étienne Roussin, Centre intégré universitaire de santé et des services sociaux de l'Est-de-l'Île-de-Montréal, Montréal, QC



Les 2 et 3 décembre 2016 étaient tenues respectivement la cinquième Journée étudiante et le treizième Atelier de l'Association québécoise des physicien(ne)s médicaux cliniques (AQPMC) au Centre hospitalier universitaire de Sherbrooke (CHUS).

Cette première journée, organisée par le comité étudiant de l'AQPMC, a permis à une vingtaine d'étudiants des programmes de physique et de physique médicale des différents centres universitaires du Québec de faire une présentation d'une quinzaine de minutes sur leur projets de recherche respectifs et d'en discuter avec leurs pairs. Le niveau des présentations était très relevé et c'est Nicolas Brodeur, étudiant au CHUS, qui s'est vu décerner le prix de \$200 de la meilleure présentation de la journée pour son exposé ayant comme titre « Étude expérimentale de l'interaction des électrons de faibles énergie avec l'ADN ».

De plus, le comité étudiant avait organisé un concours pour remplacer le logo existant de l'AQPMC. La grande gagnante, Émilie Cloutier, verra donc son logo orner toute la documentation officielle de l'AQPMC. Félicitations à tous les étudiants qui ont participé de près ou de loin au succès de cette journée.

L'atelier du samedi ayant pour thème « les enjeux de la dosimétrie » a rassemblé plus de 60 physiciens et physiciennes des différents centres québécois. Cette journée a été l'occasion pour ceux-ci de partager leur expertise dans ce domaine. La diversité et la qualité des présentations ont démontré l'importance et le souci porté à cet aspect de la radiothérapie par tous les membres de l'AQPMC. Les résultats du sondage qu'ont rempli les participants à la fin de la journée sont éloquentes: 100% des répondants ont trouvé le contenu très satisfaisant ou excellent et 91% ont déclaré avoir acquis de nouvelles connaissances. La réussite de cette journée reposant strictement sur la participation des membres de l'AQPMC est tout en leur honneur.

À l'année prochaine !

On December 2nd and 3rd, 2016, the fifth student day and the thirteenth Workshop of the Quebec Association of Clinical Medical Physicists (AQPMC) were held at the Centre hospitalier universitaire de Sherbrooke (CHUS).

The first day, organized by the student committee of the AQPMC, gave about twenty students from Quebec university physics and medical physics programs the opportunity to make a fifteen-minute presentation on their research projects and discuss them with their peers. The quality of the presentations was very high, and Nicolas Brodeur, a student at the CHUS, was awarded the \$200 prize for the best presentation of the day with his talk entitled "Experimental Study of the Interaction of Low-Energy Electrons with DNA."

In addition, the student committee organized a contest to replace the existing AQPMC logo. The contest winner, Émilie Cloutier, will see her logo appear on all official AQPMC documentation. Congratulations to all the students who participated in making this day a success.

The Saturday workshop on "Challenges in Dosimetry" brought together more than 60 physicists from different centers in Quebec, giving them an opportunity to share their expertise in the field. The diversity and quality of the presentations demonstrated the importance of this aspect of radiotherapy for all the members of the AQPMC. The results of the survey completed by participants at the end of the day speak for themselves: 100% of respondents found the content very satisfactory or excellent and 91% said they had acquired new knowledge. The success of this workshop, which consisted entirely of presentations by members of the AQPMC, is to their credit.

See you next year !

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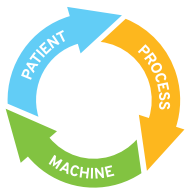
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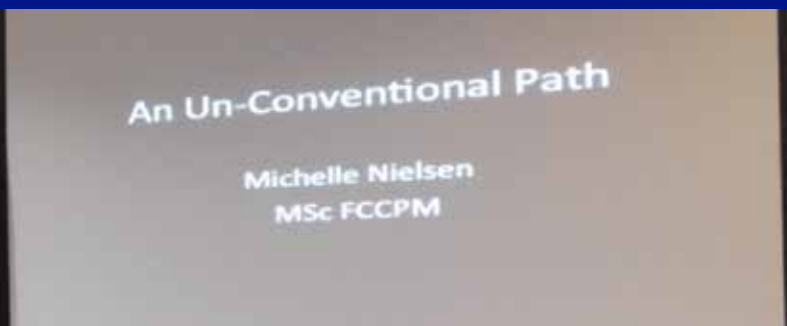


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NOTEWORTHY ITEMS



On February 23rd, 2017 Michelle Nielsen (Carlo Fidani Peel Regional Cancer Centre, Mississauga, ON) gave the keynote speech at an Outreach to Women Physicians Committee (OWPC) event at the Blue Mountains Resort in Collingwood, Ontario. The OWPC is a committee of the Ontario Medical Association that provides leadership and networking opportunities for women physicians, residents, and medical students.

Michelle's talk, "An Un-Conventional Path," discussed her personal career journey, as well as those of other women in medical physics. Using data, Michelle shared some informative parallels between women

in medicine and medical physics. She also shared concrete examples of how we can learn from each other in helping to advance standards of care and stay up to date with new developments in technology and patient care. Michelle also profiled some of COMP's recent initiatives, such as the Women's Committee, that serve to help promote similar initiatives, and hopefully provide some opportunity for collaboration in the future.

Feedback from the attendees was very positive: "inspiring, well-spoken and informative", "speaker was amazing, very moving discussion."



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THE 37TH ANNUAL CONFERENCE OF ASSOCIATION OF MEDICAL PHYSICISTS OF INDIA, HYDERABAD, INDIA, 18TH -20TH NOVEMBER, 2016

Chandra P. Joshi, Cancer Centre of Southeastern Ontario, Kingston, ON

Over past ten years John Schreiner, Andrew Kerr, and I have been regularly invited by our Indian colleagues to attend the annual scientific conferences of the Association of Medical Physicists of India (AMPI), called AMPICON, to give invited presentations of our choice. We frequently attend and have immensely enjoyed the animated scientific program; and we have been often overwhelmed by the local hospitality and wholehearted welcome. AMPICON-2016 was held in Hyderabad from 18th - 20th November, 2016, and we were invited again to present on topics of our interest. This year I had the honor of representing the CCSEO medical physicists. There is a lot of exciting things to write about, however, before describing my AMPICON-2016 experience, I would like to dwell on a brief summary of history of medical physics in India.

MEDICAL PHYSICS IN INDIA – A VERY BRIEF HISTORY

Medical physics activities in India started in the 1940s. Dr. Ramaiah Naidu, a post-doctoral fellow of Madame Marie Curie in Paris (1933), was the first Indian medical physicist. In 1938, Dr. Naidu joined the Tata Memorial Hospital, Mumbai as its chief physicist and set up the first radium extraction facility in India with two grams of radium that he brought along with him. Building on this small beginning, formal training and education of medical physicists in India began at the Bhabha Atomic Research Centre (BARC) in 1962. Envisioning the need for radiation treatment of cancer and radiation protection in India, and with support from the World Health Organization, a post-graduate diploma in radiological physics was initiated by the government of India at BARC. The medical physics education was further augmented in 1981 by Anna University, Chennai by initiating an MSc program in medical physics in collaboration with the Adyar Cancer Institute, Chennai. Over

the past five decades, medical physicists trained at these institutions have significantly contributed to research and development and radiation treatment of cancer in different parts of the world. Considering the growing need for medical physicists in radiation programs, today there are many institutions in India that have very active medical physics education programs.

The Association of Medical Physicists of India (AMPI) was established in 1976. AMPI is an umbrella organization of medical physicists with six regional chapters. Today it represents a vibrant community of more than 800 multi-disciplinary members, including medical physicists, radiation oncologists, radiologists, radiation safety regulators, and engineers. AMPI organizes annual conferences, workshops, and seminars in medical physics, and provides educational avenues and travel fellowships to its membership. Its quarterly publication, the Journal of Medical Physics, provides an avenue for publishing quality peer-reviewed research work in medical physics. The association has a strong rapport with BARC, the Atomic Energy Regulatory Board of India (the nuclear regulatory authority), the Associations of Radiation Oncologists in India (AROI), and Radiotherapy Technologists of India (ARTTI). Recently, to homogenize and enhance the quality of clinical medical physics practice in India, AMPI has constituted an autonomous scientific/ educational wing called the College of Medical Physics of India (CMPI) – an equivalent of the CCPM in India. CMPI has initiated the evaluation and certification programme for qualified medical physicists. In 2010, CMPI conducted its first certification examinations in radiation oncology physics, which has written and oral examinations components, in many ways similar to that in the CCPM membership examinations in Canada and the ABR board examinations in the USA.



Dr. K. Krishnamurthy, chair of organizing committee, welcoming delegates (TOP), and delegates (BOTTOM) at the inauguration session of AMPICON-2016, Hyderabad, India.



The Chaar Minar – a historical 16th century monument in Hyderabad, India. Chandra P Joshi (R), Anil Bansal (C) and Manoj Semwal (L).

REPORT – AMPICON-2016, HYDERABAD

AMPICON-2016 was organized by the Cancer Center, Krishna Institute of Medical Sciences, Secunderabad in association with the Telangana & Andhra Pradesh (TS&AP) chapter of AMPI. The venue for the meeting was the Hyderabad Marriott Hotel & Convention Centre. Envisioning the conference to be an important platform to explore the increasing innovative techniques of medical physics in modern diagnostic and therapeutic applications for improved cancer care, the theme of AMPICON 2016 was aptly titled "Innovative Radiological Applications for Improved Cancer Care."

The conference location, Hyderabad, is the capital of the southern Indian state of Telangana. Hyderabad was founded in 1591 and situated on hilly terrain that is shared with its relatively younger twin city Secunderabad (founded in 1806). The twin cities are separated by the artificial lake Hussain Sagar. Hyderabad is the fourth largest city in India and has a population of approximately 6.7 million. Located in the middle of the city sits the Chaar Minar (Four Minarets), an iconic 16th century mosque, in close vicinity (approx. 11 km) to the 12th century Golkonda Fort. Furthermore, a modern technological park called Hi-Tech City helps make Hyderabad a major tourist and business destination in India.



Panacea Medical showcasing the Bhabhatron 3i, an indigenous CBCT/IGRT Cobalt-60 unit of India at AMPICON-2016.



Ms. Sothing Vashum receiving the Kingston Medical Physics Student Presentation Award for the best student oral presentation at AMPICON-2016.

AMPICON-2016 was attended by 620 medical physicists, students, and business delegates, including 25 international delegates. A total of 104 oral and 168 poster presentations, including 20 invited presentations and 8 refresher courses, were presented. "Interstitial Brachytherapy in Different Imaging and Operating Room Environments," a collaborative work between CCSEO and the School of Computing, Queen's University, Kingston.

Sixteen industrial exhibitors showcased their products; the exhibitors included international vendors, such as Varian, Elekta, Best Medical, Siemens, PTW, Eckert & Ziegler, Accuray, GE, Brainlab, and Phillips, and indigenous manufacturers, such as Panacea Medical Technologies, Bangalore. Panacea Medical showcased their Bhabhatron 3i, an indigenous CBCT/IGRT capable Cobalt-60 unit with a ring gantry, hexapod couch, and a built-in beam stopper.

At each annual scientific meeting, AMPI presents several awards to recognize scientific and professional achievements, and the contributions of medical physicists from India and abroad. These awards include best oral and best poster presentations, a Young Investigator Award, and a Meritorious Medical Physicist Award for doing a commendable job in a limited resource rural cancer centre in India.

The Dr. Ramaiah Naidu Memorial Oration Award is the highest award bestowed by AMPI. The award is presented at each annual conference in honor of pioneering Indian medical physicist Dr. Naidu, and

is presented to an eminent medical physicist for outstanding contributions to medical physics. The 2016 award was conferred on Professor Madan M. Rehani of Harvard Medical School, Boston. Prof. Rehani is currently the director of Global Outreach for Radiation Protection program at the Massachusetts General Hospital, Boston, and the vice-president of the International Organization for Medical Physics (IOMP). Before moving to Harvard University, Prof. Rehani had several distinguished tenures at prestigious institutions, such as professor and head of medical physics at the All India Institute of Medical Sciences, New Delhi, India (until 2001), over 11 years at the International Atomic Energy Agency (IAEA), Vienna, Austria (2001-2013), and the director of radiation protection, European Society of Radiology, Vienna (2013-2015).

In recognition of Prof. Madan Rehani's contributions to medical physics worldwide, the award was presented by Prof. Arun Chougule, president of AMPI. Prof. Rehani's outstanding body of work include his contributions in the field of medical radiation protection in more than 70 countries by his efforts through the IAEA, the publication of three annals of International Commission on Radiation Protection (ICRP) reports under his chairmanship, and another four with him as member of the ICRP task group. Prof. Rehani has edited 5 books, been responsible for 15 IAEA publications, published more than 130 papers, and has made editorial contributions in several high impact research journals.



Prof. Madan Rehani (centre) receiving the plaque of the Dr. Ramaiah Naidu Memorial Oration Award from Prof. Arun Chougule, president (left) and Dr. V. Subramani, secretary of AMPI (right).



Prof. Rehani being felicitated by Dr. Bhaskara Prasad, organizing secretary (left) and Dr. Krishnamurthy (right).

As mentioned previously, AMPI presents best paper (oral and poster) awards and a Meritorious Medical Physicist Award at its annual conferences. The 2016 AMPI best paper (oral) award was presented to K. Balaji et al. for their presentation "A Study to Find Optimal Weightage in Hybrid VMAT Technique for the Treatment of Post Mastectomy Breast Patients." The best poster award was given to N. Kakade et al. for their presentation entitled "Dosimetric Audit in IMRT/VMAT Using Indigenously Developed Anthropomorphic Head and Neck Phantom." Devi Prasad Pandey was the recipient of the AMPI Meritorious Medical Physicist Award for 2016.

This year medical physicists at the Cancer Centre of Southeastern Ontario proposed to fund two awards for the student investigators. The conference organizing committee and the AMPI executive were very gracious to accept our offer for AMPICON-2016. The Kingston Medical Physics Student Presentation Awards for best student oral and poster presentations were aimed at encouraging research and development endeavours based on original ideas by student investigators. The award offered Indian Rs. 15000 and Rs. 10000 for the best oral and poster presentations, respectively, by student investigators. AMPICON-2016 dedicated independent sessions for 10 shortlisted presentations in each category, and winners of the awards were selected by a panel of three judges in each category. The best oral presentation by a student investigator was awarded to Sothing Vashum et al. for their work on "Quantification of DNA Double-Strand Break Induced by Radiation and Chemotherapy in Cervix-Cancer Cells: In-Vitro Study." The best poster

presentation by a student investigator award was presented to Rahul Choudhary et al. for their work titled "Measurement of Eye Lens Dose During Stereotactic Radiosurgery Using Gamma Knife." I had the honour of being a member of the judging panel for the oral presentations, and it was truly inspiring to see that most of the shortlisted presentations were given by women researchers. Our intent is to continue supporting our medical physics colleagues in AMPI for the next few years through supporting their initiatives with these modest awards to young and upcoming medical physicists. This endeavour is mainly aimed towards improving quality of care in radiation therapy through encouraging young medical physicists to participate in the CMPI college certification examinations and recognizing their research and development work.

"Atithi Devo Bhava," meaning "The Guest is Equivalent to God," is a Sanskrit verse from an ancient Indian Upanishad scripture. This verse signifies the dynamics of the host-guest relationship in the cultural ethos of India. The conference organizing committee was emphatically true to this mantra and took great care of every aspect of local hospitality. The first and second evenings of conference were filled with entertaining performances of both Bollywood and folk music and dances from south India. This entertainment was accompanied by gourmet dinners, including especially famous Hyderabadi Biryani. I am truly grateful to Dr. K. Krishnamurthy (chair), Dr. PBLD Prasad (secretary), Dr. Ramakrishna Rao (convener), and Prof. Arun Chougule (AMPI president), Dr. V. Subramani (AMPI secretary), and other members of the AMPICON-2016

organizing committee for their tremendous hospitality and an enriching scientific program.

THE NEXT AMPICON – 2017 AT JAIPUR

In 2017, AMPI and Asia Oceania Federation of Organizations for Medical Physics (AFOMP) are collaborating to have a joint scientific meeting in Jaipur, India. The 38th annual conference of the Association of Medical Physicists of India (AMPICON 2017) and the 17th Asia Oceania Congress

of Medical Physics (AOCMP 2017) are being organized at the SMS Medical College and Hospitals, Jaipur, India on 4th – 7th November, 2017 (aocmp-ampicon2017.org) under the leadership of Prof. Arun Chougule as the chairman of the organizing committee. Prof. Chougule is currently the president of the AMPI and the vice-president of the AFOMP. Jaipur, with a population of about three million, is the capital of the state of Rajasthan in northern India. The city of Jaipur, also known as the Pink City of India, is a major tourist destination – a rendezvous worthy of temptation. I would encourage you to consider attending the meeting.



Young delegates.

Six amigos from the 1986 - 87 class of diploma in radiological physics program, BARC, Mumbai , (L-R) Anil Bansal, Manoj Semwal, K. Krishnamurthy, Chandra Joshi, A. Balraj, and Kamlesh Passi, at one of the dinner and cultural show at AMPICON-2016.

2016 COMP STUDENT MEMBER SATISFACTION SURVEY RESULTS

COMP Student Council

In early 2017, the COMP Student Council (SC) conducted an electronic survey of all 2016/2017 student COMP members. Our goal was to explore and understand members' opinions about COMP student membership and the role of the SC within COMP. This article is a summary of the results corresponding to questions asked in the survey. Going forward, the SC will use these survey results to address issues of importance to our membership. The survey included two categories: future training and career plans, and COMP membership and student council involvement. A summary of results is provided below.

SURVEY DEMOGRAPHIC

Students in COMP are involved in a variety of different branches of physics, and are in different stages of their studies. In order to understand the demographic better, students were asked to answer a series of questions regarding their program of study. Our data shows that over 74% of the respondents are PhD students, and less than 10% of all grad students are enrolled in non-CAMPEP programs. Furthermore, 66% of all students are enrolled in the field of radiotherapy, dosimetry, or brachytherapy, and the percentage of students involved in medical imaging is 29%. These

results reflect a large gap between the medical imaging and radiation therapy branches. It also suggests that most students are moving toward a career in radiation oncology rather than medical imaging.

TRAINING PLANS

Around 77% of respondents indicated their plan to complete a medical physics residency, and only 17% of respondents were unsure about taking this step in their career. However, a large percentage of the students who intend to complete a residency (38%) were unsure about doing a residency program in Canada; 39% were unsure about whether or not they would participate in the Medical Physics Match program. This may be partially due to the fact that deadlines for (non-match) Canadian residencies are not quite lined up with the match program deadlines. Waiting for a residency in Canada could cost one an opportunity in the match program. Areas of expertise of students who responded to the survey are shown in Figure 1, with radiation therapy and dosimetry being the most popular areas. As expected based on this result, most students plan to write the radiation oncology physics CCPM exam [Figure 2].

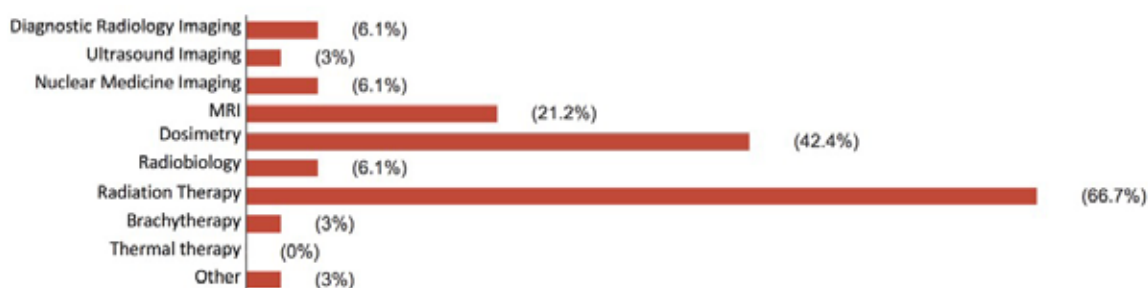


Figure 1: Areas of expertise of survey respondents.

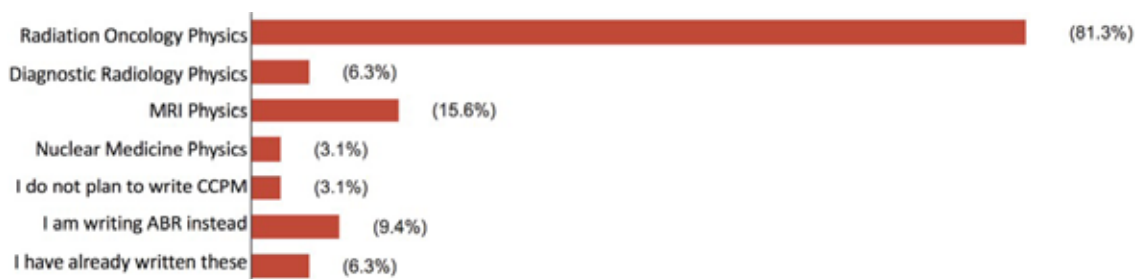


Figure 2: Survey results for the question 'which CCPM exams do you plan to write in the future?'

CAREER PLANS

As can be seen in Figure 3, the majority of the surveyed students expressed interest in working in Canada upon completion of their training, with more than 75% choosing clinical medical physics as their career goal and a small percentage (6%) considering

careers in the industry sector. This was also reflected in the high percentage of students enrolled in CAMPEP-accredited PhD programs. Students who selected "other" were interested in either pursuing careers that combine clinical and academic duties, or careers in consulting.

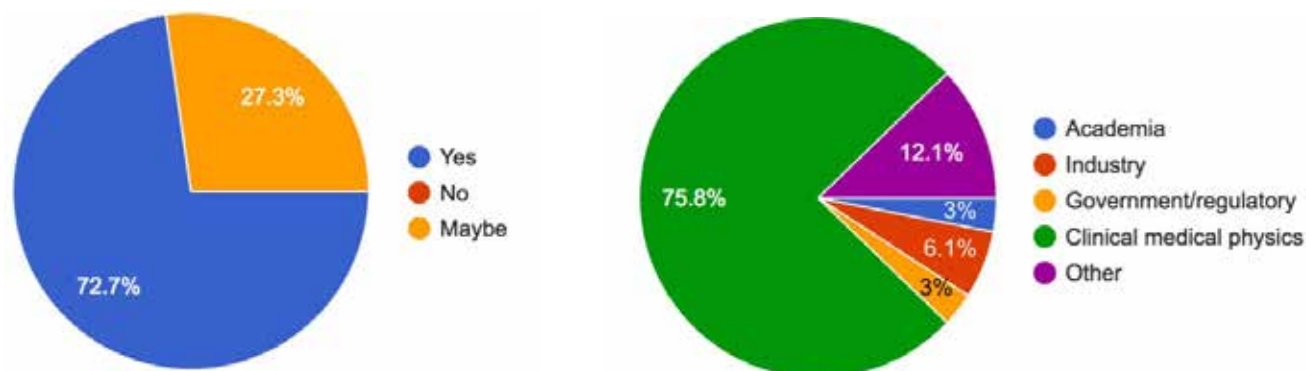


Figure 3: Students' career plan. (left): Are you aiming to find employment in Canada? (right): Which sector do you plan to work in?

COMP MEMBERSHIP AND STUDENT COUNCIL INVOLVEMENT

More than 83% of the surveyed population felt that they have benefited from their COMP student membership, and over 90% indicated their plans to continue their membership. We polled the overall student satisfaction with both COMP and the SC (see Figure 4), and while the students were highly satisfied with COMP as a whole (15% "extremely satisfied", 70% "satisfied", 15% "neutral"), 40% of votes were "neutral" when it came to the SC. This may be partially due to the fact that most of the surveyed population did not attend the 2016 annual scientific

meeting (ASM) in Newfoundland and the fact that most of the students' interactions with the SC occurs at these meeting in the form of a student night out and an educational or professional session. In fact, students who attended the ASM found the young professionals' workshop to be quite satisfactory (15% "extremely satisfied", 62% "satisfied", 23% "neutral"; data not shown). Similarly, the student night out was well-received by those who attended (73% "extremely satisfied" or "satisfied", 20% "neutral", 7% "dissatisfied"; data not shown). Based on comments received with the survey responses, the SC will make every attempt to use the student night out as an opportunity for a casual and friendly networking session to help students develop a professional network with their peers.

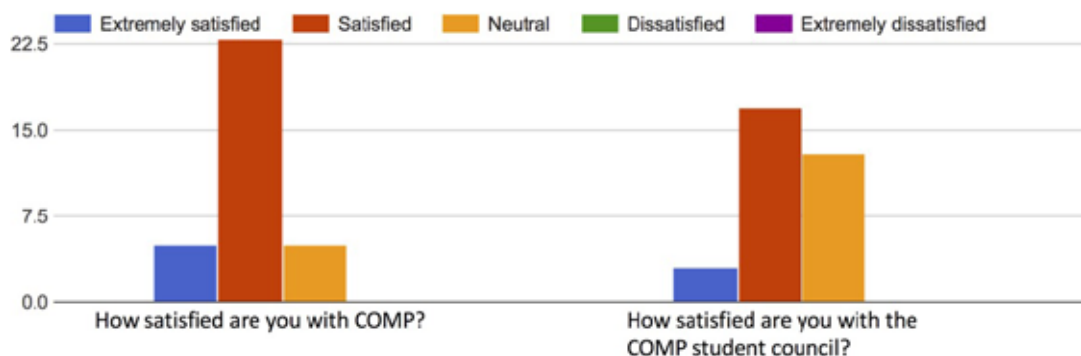


Figure 4: Satisfaction with COMP and the COMP student council.

We would like to thank all of our student members, especially those who completed our survey for submitting their valuable feedback; two lucky respondents from Université Laval and Carleton

University were awarded free COMP memberships for one year. These communications will help us to better align our efforts with the COMP student members' needs and expectations.

THREE PERSPECTIVES ON THE COMP IMAGING WINTER SCHOOL

Technologist: Karren Fader
President CAMRT,
Dalhousie University,
Halifax, NS

COMP Winter School was an event that I had heard about many times over the last number of years. It became part of the conversation whether it was on research, quality assurance, best practice, patient centeredness or any number of topics. I thought winter school (WS) must be a magical place. However, it was always within the context of radiation oncology. I recognized the benefit to therapists and therapy practice with WS as one of the venues where the natural clinical partners could come together to learn, network and collaborate. Those connections, relationships and collaborations often extended beyond WS into clinical practice, research, and new initiatives or forums. Therefore, COMP's decision to hold an imaging winter school was viewed as a huge opportunity to provide a mechanism for the imaging group to cultivate similar experiences and outcomes.

It is wonderful to say that medical radiation technologists, physicists, radiologists, and others within the field came together to learn with, from, and about one another, making this a thought provoking inter-professional learning experience. The program was well laid out under themes, yet there was diversity in the format and content, creating an engaging event. Having the focus on quality improvement and radiation safety lent itself well to all participants as it is a key point of concern and interest. The talks provided fodder for conversation during coffee and dinner with the potential for future collaboration. There was obvious networking taking place and some frank conversations that would not have occurred otherwise. When research opportunities are discussed or initiatives are being undertaken, MRT's need to be considered as key collaborators. We have the capacity to make a significant contribution and are an integral part of the medical imaging team.

I believe Imaging Winter School was a success! There were individual as well as bigger picture take away messages...and a little magic. The energy, enthusiasm, and intensity were palpable. The remote location, eating, and socializing in the same place, facilitated dialogue on a professional and personal level that contributed to feeling connected. There were not equal numbers of participants from each profession, but great effort was made to distribute involvement across professions. How to increase numbers in future will have to be discussed, but I can say that from the technologist perspective, excitement and talk about

the next IWS is already growing. COMP IWS 2017 was the first step. I look forward to the continuation of this event as it will be critical in moving the medical imaging group forward together.

Thank you to Thor, the organizing committee, and COMP. It was fantastic!

Radiologist: Daniel Lindsay
Chief of Staff, Site CMO Selkirk & District
General Hospital,
Diagnostic Imaging Director, IERHA,
Selkirk, MB

Montebello 2017 was my first time at a COMP winter school. What an enjoyable and rewarding experience! The conference and speakers represented a broad a selection of health care providers not only from Canada, but from throughout the world. While I recognize that many of the individuals at the conference were not medical physicists, it is always a pleasure for me to be in an environment where medical physicists are participating. The discussions at the conference and the participation of the medical physicists never lost sight of the overarching principal of providing excellent and ethical medical care. I have realized over the years that medical physicists understand the balance between the risk of radiation exposure and the benefit provided by that very exposure. In many jurisdictions, it is a medical physicist that oversees and regulates the appropriate use of ionizing radiation. It was apparent to me at the conference that the vast majority of medical physicists have not lost their original enthusiasm and idealism when they first entered the profession and continue to maintain optimism that we, as a medical profession, can provide excellent care while mitigating risk.

For me as a radiologist with a background in regulation and governance, the conference highlighted three important themes and challenges.

Firstly, the COMP Winter School afforded all those attending the ability to participate in key stake holder collaboration. These stakeholders included government representatives, regulators, physicists, radiologist and front line technologists. These individuals respectfully shared their sometimes disparate views regarding current challenges and provided insight into possible solutions. I was encouraged by the optimism that we, as a team, can rise to the challenge if we work collaboratively. I personally acquired new insights at the conference that will change my current practice and cause me to reflect as I participate in the regulatory processes in my local provincial jurisdiction.

The second theme regarded the development and introduction of transformative technology and our response to this potentially disruptive technology. The discussions surrounding “deep learning” and the implications to white collar workers and professionals, such as physicists and radiologists, was profound and thought provoking. The implications of deep learning were reinforced and generated profound and collaborative discussions that ensued both during and after the conference hours.

The third theme for me regarded the realm of unrealized opportunities. As I have previously alluded, medical physicists as a group have a commitment and body of knowledge that is not shared by other professionals. Opportunities can be looked upon as a challenge. For me as a radiologist I would challenge the medical physicists in their respective jurisdictions to take more senior leadership roles and identify where efficiencies and necessary initiatives are needed to provide a better health care delivery system. Two of these initiatives include the role of physicists in promoting minimum standards for radiation exposure and participate in and demonstrate leadership in promoting a system that ensures a safe and adequate supply of medical isotopes.

In general, the COMP Winter School, in my opinion, was a resounding success and a great opportunity to collaborate, to discuss future opportunities and to assume a greater leadership role.

I look forward to the next COMP Imaging Winter School.

**Medical Physicist: Harry Ingleby
CancerCare Manitoba,
Winnipeg, MB**

I feel very fortunate to have attended the 2017 Imaging Winter School in Montebello, Quebec in February. The meeting brought together physicists, technologists, radiologists, and representatives from the Canadian Association of Radiologists and Health Canada. The diversity in this group created wide-ranging discussions, encouraging me to expand my vision beyond my physics perspective. I was delighted to become acquainted with imaging colleagues from Quebec and learn more about imaging physics activities in that

province. I was engaged and inspired by the speakers – I now need to find a way to translate that inspiration into action!

I was asked by Thor Bjarnason, the organizing committee co-chair, to summarize my experience at the winter school in three key takeaway points. After some thought, I distilled my takeaways down to three words:

Communication

An obvious point? Yes, but one that is easy to take for granted. Presentations from radiologists and technologists brought home the necessity for proactive communication between physicists and clinicians in order to maximize the value of the services we provide. Breaking down communication barriers between groups is a key activity in which physicists can contribute.

Passion

This may not be a word often heard in medical physics corridors! However, it is the best descriptor of the energy, enthusiasm, and commitment to improving patient care I was witness to at the winter school. I was truly inspired by the passion that people bring to their work.

Collaboration

Perhaps the strongest impression I received was the breadth and richness of imaging physics work being carried out across Canada. We in Manitoba have been inspired by our colleagues in Quebec in several initiatives, including our first computed tomography dose survey. This effort would not have been possible without their kind and generous assistance. The opportunity to collaborate with other physicists across the country is a tremendous resource that we need to take better advantage of.

In summary, I can say with complete sincerity that the COMP Imaging Winter School has been the most rewarding professional meeting that I have ever attended. My congratulations and thanks to Thor and the rest of the organizing committee for their hard work in putting on such a wonderful meeting.

CALL FOR NOMINATIONS – DUE APRIL 28, 2017

The COMP Awards and Nominations Committee is responsible for presenting a slate of nominations for the COMP Board of Directors to ensure that the organization is governed with excellence and vision. There will be two openings on the board as of the 2017 Annual General Meeting.

TREASURER

The treasurer serves a three year term on the board that will commence in January 2018 and end December 2020. To ensure a smooth transition in responsibilities between the current treasurer and the treasurer-elect, the terms of the current treasurer and the treasurer-elect will overlap from the 2017 AGM until the end of December 2018.

The treasurer has the following responsibilities:

1. In collaboration with the board and committee members, develop a budget for presentation to the board for approval.
2. Inform the board of the financial status at board meetings.
3. Inform the membership of financial results and present the auditor's report at the AGM.
4. Assist in the development of financial policies and procedures in collaboration with the board.
5. Oversee and monitor all financial transactions in collaboration with the management service.
6. To prepare for, attend, and actively participate in all board meetings and relevant committee meetings. In-person meetings take place in November and at the Annual Scientific Meeting, and there may be up to four teleconferences.
7. Oversee projects and assume other responsibilities as required.

DIRECTOR-AT-LARGE (2)

There will be two openings for a director-at-large. Directors-at-large serve for a term of three years and have the following responsibilities:

1. To work in conjunction with other board members in the best interest of the organization.
2. To prepare for, attend, and actively participate in all board meetings and relevant committee meetings. In-person meetings take place in November and at the Annual Scientific Meeting, and there may be up to four teleconferences.
3. To be prepared and willing to chair a committee or lead special projects as required.

On the last point, at present chairs are being sought for the Quality Assurance and Radiation Safety Advisory Committee (QARSAC) and the Imaging Committee.

Nominations for these roles are due by **April 28th, 2017** and **must be accompanied** by a duly signed Expression of Interest and Nomination Form endorsed by no fewer than two (2) voting members of COMP as well as a brief bio. To access the nomination form, please visit www.comp-ocpm.ca or contact the COMP office.



Chien Shiung Wu



Rosalyn Yalow



Maria Mayer



Harriet Brooks



Irene Joliot Curie

Medical
X-rays

Quality

Treatment

Radiology

Protection

Radiation

Physics

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involved in the care of cancer patients

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Cette activité est accrédité par
The Commission on the Accreditation of Medical Physics Education
Programs (CAMPEP) et le Centre de Formation Continue de la
Faculté de Médecine de l'Université Sherbrooke.

Chaque heure de participation équivaut à un crédit de formation

Accreditation

This activity is accredited by
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GOLD MEDAL AWARD: CALL FOR NOMINATIONS

The COMP Gold Medal will be awarded to a member of COMP (or retired former member) who has made an outstanding contribution to the field of medical physics in Canada. An outstanding contribution is defined as one or more of the following:

1. A body of work which has added to the knowledge base of medical physics in such a way as to fundamentally alter the practice of medical physics.
2. Leadership positions in medical physics organizations which have led to improvements in the status and public image of medical physicists in Canada.
3. Significant influence on the professional development of the careers of medical physicists in Canada through educational activities or mentorship.

The Gold Medal is the highest award given by the Canadian Organization of Medical Physicists and will be given to currently active or retired individuals to recognize an outstanding career as a medical physicist who has worked mainly in Canada. It will be awarded as appropriate candidates are selected, but it will not generally be given more than once per year.

Nominations for the 2017 medal are hereby solicited. Nominations are due by **April 30th**, and must be made by a Full Member of COMP. Nominations must include:

1. The nominator's letter summarizing the contributions of the candidate in one or more of the areas listed above.
2. The candidate's CV.
3. The candidate's publication list (excluding abstracts) which highlights the candidate's most significant 10 papers.
4. Additional one to two page letters supporting the nomination from three or more members of COMP.

Please forward nominations electronically to Nancy Barrett at the COMP office (preferably in pdf format): nancy.barrett@comp-ocpm.ca.

Candidates selected for the medal will be invited to attend the COMP Annual Scientific Meeting where the award will be presented by the COMP President. Travel expenses will be paid for the medal winner. The medal winner may be asked to give a 30 minute scientific presentation at the COMP meeting in addition to a short acceptance speech when the medal is presented.

Continued from page 7

physicists. This Imaging session will be a first for the COMP ASM, and we encourage the members of our imaging community to submit abstracts and help us develop this session. Please spread the word!

Please feel free to contact Gisele Kite or myself at any time if we can be of assistance or if you have feedback or questions.

Until next time...

FELLOW OF COMP AWARD

NOMINATION PROCESS

Nominations are being accepted for the Fellow of COMP Award. This honour recognizes an active member who has made a significant contribution to the field of medical physics and to COMP. This contribution is to be in **two** or more of the following:

- Service to COMP.
- A demonstrated body of work showing an outstanding contribution to research and development in the medical physics profession.
- A demonstrated body of work showing an outstanding contribution to professional practice.
- Through educational activities or mentorship, particularly regarding the education and training of medical physicists, medical residents, and allied health personnel.

Other Criteria that Must be Met:

- Nominees must have a minimum of 10 years of experience in the field of medical physics.
- Nominees must have a minimum of five consecutive years as a member of COMP and be a full member in good standing at the time of the nomination.

Nomination Process:

- Any member in good standing may nominate an individual for the FCOMP Award.
- At least two support letters are required in addition to a cover letter from the nominator. If the nominator does not hold an FCOMP, then the nominator is required to solicit two letters of support from members who hold an FCOMP. If the nominator holds an FCOMP, then one additional FCOMP holder must second the nomination and provide a letter of recommendation, and a second letter of support may come from any reference (does not need to be a member of COMP).
- In addition to the cover letter and the letters of support, the nominator must also complete the FCOMP nomination form in order to provide a summary of the nominee's service to COMP, contributions to research and development, contributions to professional practice, and contributions to education and mentorship.
- Should the Awards Committee deem the candidate to be eligible, (s)he will be asked to submit a curriculum vitae prior to a final recommendation to the COMP Board.
- If a nominee is slated to receive the FCOMP Award, both the nominator and the nominee will be notified by COMP. The nominee will be asked to confirm his/her willingness to accept the award and will be asked to provide a short bio and a recent photograph.

Nominations may be submitted at any time and those received by **April 30, 2017** will be considered for presentation at the 2017 AGM in Ottawa, ON.

DATES TO REMEMBER

April 28th, 2017:
COMP board nominations deadline

April 30th, 2017:
Fellowship of COMP Award
nomination deadline

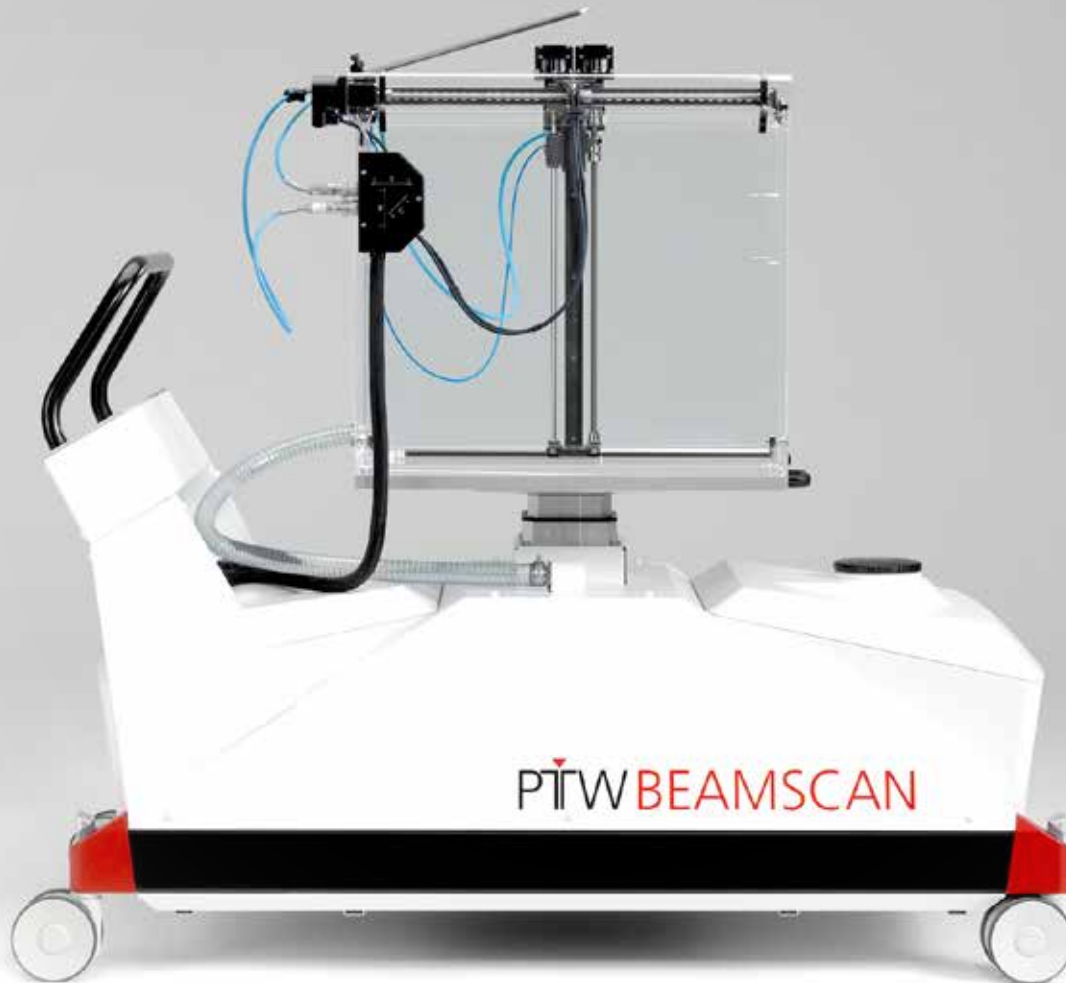
April 30th, 2017:
Gold Medal nominations deadline

May 1st, 2017:
Target Insight 2017, Toronto, ON

May 12th, 2017:
Deadline for early bird rate for ASM

June 1st, 2017:
July issue of InterACTIONS
submission deadline

July 12th – 15th, 2017:
COMP Annual Scientific Meeting,
Ottawa, ON



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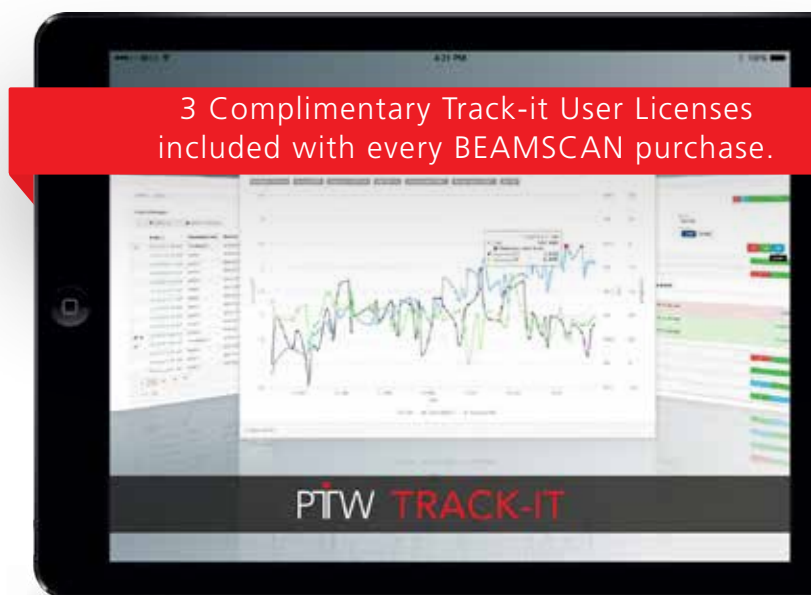
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