InterACTIONS

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InterACTIONS

Volume 57, Number 2– avril/April 2011

Cover Image

COMP Winter School Faculty. Mt Tremblant, Quebec, Jan 30 - Feb 3, 2011. Front row, left to right: Marco Carlone, Jeffrey Williamson, Jean-Ives Fiset, Gaylene Medlam, Barrett Caldwell. Back row, left to right: Alan Wassyng, Luc Beaulieu, Jean-Pierre Bissonnette, Benedick Fraass, Bill Mackillop, Todd Pawlicki, Stephen Breen, Absent: Peter Dunscombe, Robyn Grant, Kerry Bowman.

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Please submit stories MS Word or ASCII text format. Images in Tiff format at 300 dpi resolution are preferred.

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Message from the COMP President

Dr. Peter McGhee
COMP President

While there continues to be a variety of efforts on a number of fronts, I believe the most significant accomplishment since the last edition of Interactions is the 2011 Winter School held in Mont Tremblant, Quebec. Both Marco Carlone, Chair of the Organizing Committee, and Stephen Breen, Program Chair, are to be congratulated on what again appears to have been a tremendous success. (And of course Nancy Barrett and Gisele Kite, our invaluable administrative supports, also have to be acknowledged because, once again, they were up to their necks in this as well.) Preparations are already commencing for the 2012 event, which is to be held in Whistler, British Columbia. Stephen has agreed to assume the role of Chair of the Organizing Committee and a major strategic objective of this third session of the School will be to further promote the international profile of the event.

Speaking of BC, preparations for the joint scientific meeting with the American Association of Medical Physicists (AAPM) are nearing completion. The fact that the meeting is in Vancouver is one of the reasons for opting to hold next year's Winter School in Whistler as it presents an excellent opportunity for promotion with our American colleagues (especially those that have a penchant for skiing). One of the objectives of the Conference Committee, chaired by Jason Schella, and the Local Arrangements Committee (LAC), chaired by Conrad Yuen, is to ensure that there is an identifiable Canadian flavour to the meeting. Given the logistics required to organize an event the size of an AAPM Annual Scientific Meeting (ASM), the AAPM has once again been most receptive and supportive with regard to traditions of the COMP ASM. For example, there will be a CCPM symposium and the Young Investigators Symposium will provide recognition from both organizations with a John R. Cameron and JR Cunningham Young Investigator Award. A particular distinction of this meeting is that, as in the past when COMP has met jointly with the AAPM, arrangements are being made for a Canadian night out. One of the challenges has been the incorporation of the COMP and CCPM events into the packed AAPM meeting schedule. Please note in particular the Annual General Meetings (AGMs). If you are intending to be in Vancouver and are a member of these organizations, ensure to make a point of attending these meetings as they are vital to the ongoing operations of each organization.

I have to take this opportunity to express appreciation to David Wilkins for taking on two tasks on behalf of COMP. While Dave is President of the CCPM, he is also a member of both COMP and its Board. In the spirit of the latter capacities, and in support of COMP's desire to reinvigorate relationships with related societies, he represented COMP at two events. The first of these was a strategic planning retreat undertaken by the Canadian Association of Medical Radiation Technologists (CAMRT). Clearly such national level engagements are an excellent mechanism for promoting healthy relationships amongst interdependent professions. Dave also participated in the Second International Workshop of the International Radiation Protection Association on the development of guidance for improving radiation protection culture. (See article page 44.) Organizers of the workshop were explicitly interested in having worldwide representation from relevant national professional societies. While the participation was deemed worthwhile and relevant, on the world stage COMP is not a particularly substantial organization. Regardless, COMP is accorded recognition and there is an opportunity to make a significant contribution at that level. While there may be every best intent and commitment on the part of COMP, that opportunity simply cannot be fully realized by relying upon members of the Board to assume these roles. I would very much like to promote the concept that all Members of COMP should feel an obligation in this regard. To that end, your engagement is essential. If you have interest in or, even more relevant, are participating in events such as these and are willing to be a representative for COMP, please let us know. To highlight an example, Lee Gerig, a long time supporter of COMP and a past-President (then Chair), has been representing Canada on International Electrotechnical Commission (IEC) Subcommittee (SC) 62C, which deals with safety standards for radiotherapy equipment, i.e., simulators, linacs, ion chambers, and so forth. In essence the process is that the IEC sets standards for such equipment and then manufacturers need to meet those standards if they are to receive IEC recognition. IEC committees are comprised of representatives of manufacturers and consumers from participating countries. The Standards Council of Canada is the authority representing Canada but, clearly, establishing a more formal relationship between COMP and SC 62C would be appropriate and likely advantageous. While Lee has been participating for some number of years now, it has been of his own volition and outside of the COMP umbrella. COMP offers the potential for

(Continued on page 52)

Message from the CCPM President

Dr. David Wilkins

Candidates applying to write the CCPM membership exam are asked to submit three letters of reference along with their application. The relevant section of the Bylaws is Appendix III section 1:

Applicants are required to submit a completed application form to the Registrar and secure three satisfactory letters of reference. Two referees must be medical physicists and preferably both, but at least one, of these physicists must be a Member or Fellow of the College or certified by the American Board of Radiology (ABR) or the American Board of Medical Physics (ABMP). One referee must be a physician knowledgeable in the candidate's subspecialty. All referees must be familiar with the candidate's work and have worked with the candidate within the last five years.

Often referees do not provide a letter -- the application documents include a referee form, with tick boxes in various categories and an invitation to write additional supporting text in a space at the bottom or in an attached letter. The primary purpose of these references is to vouch for the clinical experience that the applicant is claiming – is it really two years, and does it meet the definition of patient-related experience in physics as applied to medicine. While applicants must supply documents to support degrees earned, the references are the only validation of the experience requirement.

In addition, the referee assessment form allows for comment on professional attitudes, communication skills, and specific aspects of the applicant's medical physics experience. Referees are invited to write additional material, either on the form or as an attached letter, commenting on the applicant's strengths, weaknesses, and suitability for College membership. Occasionally the College receives referee assessments with no additional material written, which does the applicant a disservice – the credentials review committee is left to wonder if the referee actually knows the applicant's work and if so, why could they think of nothing to say about this individual?

At least one referee is expected to be a certified medical physicist familiar with the applicant's work. This requirement stems from the normal mentored training so familiar to radiation oncology physicists, who typically spend their first couple of years following graduate school in a medium or large medical physics department learning and working (usually in a reasonably paid residency position, hopefully in a CAMPEP accredited program) alongside certified physicists. Such applicants usually have no difficulty providing the required references.

However, the career trajectory for applicants in the imaging subspecialties is often quite different. There is a dearth of imaging residency programs and positions in Canada, and a paucity of certified imaging physicists compared with radiation oncology physicists. The CCPM membership breakdown by subspecialty is currently:

Diagnostic Radiological Physics	*22 (6.3%)*
Magnetic Resonance Imaging	*11 (3.2%)*
Nuclear Medicine Physics	*15 (4.3%)*
Radiation Oncology Physics	*299 (86%)*

With so few certified physicists available for mentoring, and so few paid training positions, it is sometimes a challenge for applicants in the imaging subspecialties to provide references which meet the strict criteria of the bylaws. The Board is prepared to exercise a certain amount of flexibility in interpreting the requirements, but it is incumbent upon applicants to provide enough material to allow the credentials committee to make an assessment.

For example, if an applicant has not had continuous mentorship by one certified individual, but rather has cobbled together experience by working with several physicists at several different institutions, it may be beneficial to provide more than the required three referees and explain that experience was acquired in this way. Candidates should make an effort to cultivate relationships with certified physicists during their training, through conferences, collaborations and the usual networking methods, in order to be able to provide the required references.

By the same token, established medical physicists of all stripes, but particularly clinically certified imaging physicists, should be taking an active role in mentoring the next generation. The certified imaging physics community in Canada is small, and it will only grow if established members encourage younger physicists to plan their training and early careers with certification in mind. There is a clear shortage of imaging residency positions in Canada – while national initiatives by COMP might help, the most effective way of addressing this shortage is for individual imaging physicists to work within their own institutions to create such positions.

Message from the Executive Director of COMP/CCPM

Celebrating COMP Volunteers

April is the month in Canada where we celebrate the contribution of volunteers (April 10 – 16 is National Volunteer Week). As indicated in a recent study conducted by the Carleton University Centre for Voluntary Sector Research on behalf of Volunteer Canada, volunteers are considered the "third pillar" of Canadian society and a major contributor to Canada's world-renowned ability to build quality communities. COMP is very fortunate to have so many dedicated volunteers and on behalf of the medical physics community in Canada, I would like to take this opportunity to say thank you!

Here are some of the activities that current COMP volunteers are involved in:

- Serving on the COMP Board to set future direction, provide leadership and ensure the financial health of the organization
- Planning and executing the scientific and social program for the ASM and the Winter School
- Serving on committees – Professional Affairs, Communications, Science and Education, QARSAC, Awards
- Keeping the website fresh and up to date
- Editing and coordinating the publication of the COMP newsletter
- Writing articles for the newsletter
- Judging award submissions
- Representing the medical physics community to other organizations

COMP, like most professional associations, is dependent on the contribution of volunteers to meet its objectives. COMP must continue its efforts to ensure that volunteer opportunities available are meaningful and in line with the needs of our volunteers so that we have an adequate pool of resources today and in the future. If you have any suggestions for how we can attract and retain volunteers, please feel free to contact me.

Imaging Team Day 2011

COMP will be collaborating with the Canadian Association of Medical Radiation Technologists, the Canadian Association of Nuclear Medicine, the Canadian Association of Radiologists and the Canadian Society of Diagnostic and Medical Sonography to host Imaging Team Day on May 19, 2011. The purpose of the day is to increase the awareness of governments, the public and other healthcare professionals on how appropriate imaging enables effective health care. Participation in Imaging Day also provides COMP with an opportunity to increase the profile of the medical physics profession in Canada and the role it plays in the delivery of health care services. Stay tuned for further updates!

COMP is Becoming a Bilingual

COMP is a national organization with 66 or 11% of its membership in Quebec as well as some francophone members in other provinces. At the 2010 mid-year Board meeting, the COMP Board passed a motion to become a bilingual organization. Due to COMP's size and limited staff and volunteer resources it was agreed that this would be a phased-in initiative to both spread out the workload and the cost. We will be establishing a volunteer Bilingualism Taskforce that would provide direction and support on this initiative and propose a bilingualism policy for consideration by the Board. If you are interested in participating in this taskforce, please feel free to contact me.

Join us in Vancouver– July 29th – August 4th!

The 2011 ASM will be held jointly with the AAPM at the Vancouver Convention Centre in the heart of downtown Vancouver, with the Gastown District, Stanley Park and the natural splendour of sea and mountains close by. COMP will be hosting

Ms. Nancy Barrett

a special Awards Ceremony and Banquet which will include a sunset cruise in the Vancouver Harbour, with front row seats to enjoy the "Celebration of Light" Fireworks Festival over English Bay. Mark your calendars! Space is limited and ticket details will be available soon.

Please visit http://www.aapm.org/meetings/2011AM/ for more information about the meeting. **If you haven't already done so, register today!**

As always, please feel free to contact me at nancy@medphys.ca or Gisele Kite at admin@medphys.ca at any time with your feedback and suggestions.

(Continued from page 39)

tion into the living guidelines. During the validation and implementation stages, medical physicists at centres nationally will be able to assess the appropriateness of these procedures, and in the long term, evaluate their centre's compliance with these guidelines.

If you are interested in learning more about the framework, our process for updating these guidelines, or if you'd like to become involved as an expert reviewer please contact Jean-Pierre Bissonnette, Chair of QARSAC (jeanpierre.bissonnette@rmp.uhn.on.ca) , or Erika Brown, Project Manager of CPQR (edgconsulting@gmail.com).

CNSC Feedback Forum
Reducing the risk for human error through the judicious specification and testing of software and other products

Jean-Yves Fiset, Eng., Ph. D.
Human and Organizational Performance Division
Canadian Nuclear Safety Commission

Introduction

In a recent talk delivered at the COMP 2011 Winter School, interest was expressed in how to reduce human error in the use of software and products. This is hardly a new topic; for example, engineering methods (e.g., failure modes and effects analysis) have been applied to identify and mitigate potential failures to improve system safety. While extremely useful, those methods often fall short of considering the detailed, yet crucial, aspects of human-system interaction that ultimately affects system safety. In this article, we will briefly describe a different set of techniques and approaches, derived from a discipline known as "usability engineering", that can be used to prevent or reduce the likelihood of human errors. Usability engineering applies to the design and selection of software and devices in general. In addition to improving system safety, those techniques are easy to learn and to use, as well as very cost-effective. In fact, many studies have demonstrated a benefit-to-cost ratio in excess of 100 to 1. Please note that this article does not explain or prescribe regulatory requirements. Rather, it shares experience and knowledge to help in reducing the opportunities for human error when using software and products.

Reducing Human Error Through Design

Perhaps the best way to reduce human error is to prevent it at the design stage. Further, should an error occur, means to identify and to mitigate it should be included. A nice, generic, standard to achieve this is ISO 9241-210 Human-centred design for interactive systems (previous known as ISO 13407). This standard describes a process to identify, in a systematic way, the interactive functionalities of a piece of software or of a device, and to design them in a way that leads to a high level of effectiveness, efficiency and user satisfaction. Note that this is a *design* process, not a *development* process. The following Figure shows a simplified representation of the process described in ISO 9241-210.

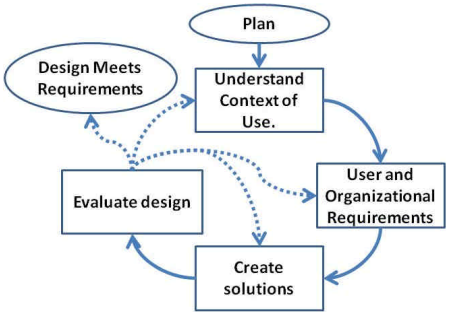

Figure 1: Adaptation of ISO 9241-210.

The first step is to plan the user-centred process. Typically, this means determining the time table and schedule, working out the interfaces between the design and development processes, planning the availability of users, etc. Then, the next two steps (Understand and Specify the Context of Use, and Defining User and Organizational Requirements) are executed. Those steps consist in identifying elements such as:

- Who are the users of the future system?
- What are their tasks? Note that is very different from their task description. Rather, this is a fairly structured description of the tasks and sub-tasks carried out by the users, the various risks involved, the challenging aspects of those tasks and sub-tasks, etc.
- Various requirements (technical, organizational, legal, or otherwise) that apply to the software or product being developed. For example, one may wish to limit the training time to less than one hour, or the tolerable user error rate may be set to less than 0.5 %, or there may be a requirement to adhere to a set of guidelines to ensure a common look and feel across the systems.

Even though those steps are shown serially, in practice, they are more often than not carried out in parallel.

Once the information has been collected and organized, one uses it, along with a series of user-interface design rules and principles, to propose a design solution. This design solution will consist of a mock-up of the target solution. It is both quick and inexpensive to create a first mock-up using paper, as there is no need for a high degree of fidelity to validate the proposed solution at this stage. Then, the design solution mock-up will be evaluated, typically using a series of tests known as *usability tests.* Briefly, a usability tests consists of having a representative user carry out a series of representative tasks using the mock-up; various measures related to the efficiency, efficacy and satisfaction of the user are made. For example, one might assess the error rate, type of errors, the time it takes to carry out the task, the difficulties met by the user. Typically, the first mock-up

tested will reveal several shortcomings in the functionalities and types of interactions offered. In fact, if one were to find no improvements to make to the mock-up at the first series of usability tests, this would more likely than not be a sign that the test was not demanding enough. A usability test, for a given version of the mock-up, requires typically from five to seven users. It also often takes from three to five iterations to achieve a satisfactory level of usability for a typical user-interface. This might sound like much, but remember: you have not invested yet a single line of code, and the mistakes that you find with the mock-up would have found their way to the final product and would have required expensive rework. Also, note that the usability tests can also be used to assess the usability of new piece of software before it is purchased.

Once the mock-up has matured to the point where it is deemed to meet the requirements, it can be incorporated, with any textual description that is required, into the actual software requirement specification.

Reducing Human Error Through Heuristic Evaluation

Sometimes, it is not possible to use a user-centred design approach. For example, we may be dealing with a legacy system, or we may have to use an off-the-shelf product. Nevertheless, it is still possible to have an idea of the usability, and therefore of the error proneness, of a piece of software or of a device. One way would be to carry out a series of usability tests on the product. This would provide useful information at a very low cost. Organizing and executing those tests require a bit of time, though, as well as representative users, representative scenarios, etc. Sometimes, this is simply not possible. Another approach consists in carrying out *heuristic evaluations.* Those are sometimes referred to as *discount usability* methods, but this is a bit improper as there is nothing discounted about the value of well planned and executed heuristic evaluations. Briefly, this evaluation consists in having usability experts examine a subset of the interactive aspects of a piece of software or other product using a set of established and defensible principles known as *heuristics*. There are defined set of recognized heuristics, for example (adapted from Neilson & Mack, 1994):

- At any time, the user knows what the system is doing.
- The system uses the users' language and concepts.
- The user controls the interaction and can use different means to reach the goals.
- The user interface adheres to relevant design guidelines and is consistent.
- There are measures to prevent user errors.
- The user interface favors pattern recognition rather than forcing the user to recall or analyze information.
- The design is flexible and efficient to use.
- The design is aesthetic and minimalist.
- The design assists the users in recognizing, diagnosing and recovering from errors.
- There is sufficient and effective help and documentation.

The following Figure shows a fragment of user interface:

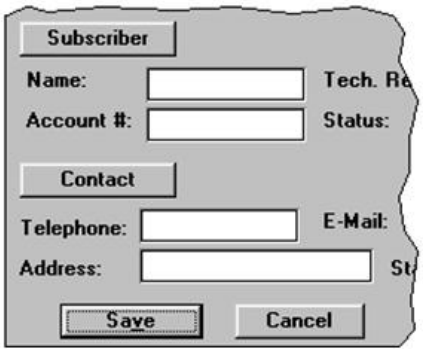

Figure 2: Fragment of User Interface.

Here are some issues that a heuristic evaluation would reveal:

- The labels for Subscriber and Contact are shown with a 3D effect, which contravenes the style guide, and which suggests that they are clickable.
- The Format for the Account #, the Telephone and the Address provide no cue for reducing user input error. For example, should the phone number be entered as (111) 111-1111, or as 111-111-1111?
- The system focus is on the *Save* button. The best practice is to put the default focus on the button that will cause the least amount of damage if pressed accidentally. Here, this probably would be the *Cancel* button.

A heuristic evaluation presents several advantages: quick, inexpensive, does not require user involvement. However, it also has shortcomings: it is restricted to determining whether a user interface or product design meets good design practices and it provides no information on the product's fitness for purpose. The latter is better assessed with usability tests. In fact, one can think of usability tests and heuristic evaluations as complementary techniques, rather than competing ones.

While it may be appealing to resort to testing or evaluation to reduce human errors, it is important to remember that quality has to be built in rather than inspected out of a product. The testing and evaluation techniques are highly useful and cost-effective; however, they do not replace a good design process applied by knowledgeable and experienced user interface (or user experience) designers.

The readers interested to know more on the topic can access a large amount of literature and information on the Web. Further, computer science departments in your local universities often offer a course, or courses, on human-computer interaction.

Harold Johns Travel Award Announcement
Deadline for Application: 15th April 2011

The Board of the Canadian College of Physicists in Medicine is pleased to honour the Founding President of the College by means of the Harold Johns Travel Award for Young Investigators. This award, which is in the amount of $2000, is made to a College member under the age of 35 who became a member within the previous three years. The award is intended to assist the individual to extend 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.

The H. E. Johns Travel Award is awarded annually by the Canadian College of Physicists in Medicine to outstanding CCPM Members or Fellows proposing to visit one or more medical physics centres or to attend specialized training courses such as the AAPM summer school. The applicant should not have previously taken a similar course or have spent a significant amount of time at proposed institutions. The award is for $2,000 and will be paid upon receipt of a satisfactory expense claim. The deadline for application is approximately two months prior to each CCPM annual general meeting. All applicants must have written and passed the exam for membership in the CCPM within the previous three years. They should supply a one page proposal indicating the course they wish to attend or the name(s) of the institutions they would visit and the reasons for their choice. They should also supply an estimate of the costs involved and letters from their present employer indicating that they are in agreement with the proposal. For a visit to an institution the candidate must have the institution write to the Registrar in support of the visit. The candidate should also provide their curriculum vitae and the names and phone numbers of two references whom the Awards Committee can contact. No reference letters are required. The awards Committee reserves the right to contact additional individuals or institutions.

Applicants may travel either inside Canada or elsewhere. If their proposed expenses exceed the value of the award, then they should also indicate the source for the additional funds required.

The award is intended both to assist the individual in their medical physics career and to enhance medical physics practice in Canada. Recipients are therefore expected to remain in Canada for at least one year following their travel. Applicants should be working in Canada but need not be Canadian citizens.

Successful candidates will have two years after their application deadline to complete their travel. They will be required to submit a short report to the Inter*ACTIONS* newsletter. The award recipient will be chosen by a committee consisting of the Chairman of the Examining Board, The Registrar and the President of the College. Their choice will be based upon 1) the written proposal submitted by the candidate, 2) references obtained by the committee and 3) membership exam results. The award will be announced at the Annual General Meeting of the College.

Unsuccessful candidates in any one year who are still eligible in subsequent years may have their applications considered again by writing to the Registrar and providing any necessary updated information.

Applications should be sent to:
Mr. Darcy Mason, Registrar
Canadian College of Physicists in Medicine
c/o Durham Regional Cancer Centre,
1 Hospital Court,
Oshawa, ON L1G 2B9

damason@lakeridgehealth.on.ca

Response to CNSC Feedback Forum: Doorless treatment rooms: Design considerations

Richard Driedger, Dr Ingvar Fife, Esther MacKinlay and Greg Zaporozan
Radiation Protection Department
CancerCare Manitoba
Winnipeg, MB

CancerCare Manitoba (CCMB) plans to go into routine operation in April 2011, with a new doorless LINAC treatment room located in Brandon, Manitoba. There are presently six CNSC licensed LINACs in operation at CCMB, but this will be our first experience with a doorless treatment room.

During the planning phase for the doorless treatment room design, a multidisciplinary team worked in concert with the patient representatives to optimize the human element, and to make the patient's clinical experience less intimidating. Some of the design features the designers wished to incorporate, such as a large skylight above the treatment couch, were unfortunately omitted in order to meet radiation safety requirements. This resulted in the radiotherapy waiting area being bright and roomy, while the treatment room has a contemporary design with warm colours, and is also very spacious. The interior designers aimed for a smooth flow from waiting room through the maze opening in developing the colour scheme and flooring design. The entrance may thus appear to be a continuation of public space, which potentially could become problematic once the LINAC is in routine operation.

Some of the design considerations discussed in the CNSC Feedback Forum article were incorporated into our doorless maze. This includes the door interlock light curtain. Consideration has been given to including a supplementary light curtain to deter further progress into the maze if it is determined that the door interlock is often activated. A partially smoked glass wall is being constructed to the side of the maze door. The narrow hallway delineated by the glass wall, is intended to act as a deterrent to the public entering the area around the treatment room entrance.

In terms of auditory warnings, another audible warning signal one may consider is a "light curtain proximity" auditory warning, in which the frequency of the signal increases with increasing proximity to the curtain. In our case, an audible proximity warning triggered by another light curtain will be considered if the light curtain interlock becomes problematic.

Although the design considerations in the CNSC feedback forum merit consideration during the design of doorless treatment rooms, one must not neglect the importance of aesthetic design in providing for a positive clinical experience. We expect that the doorless treatment room will improve the clinical experience for CCMB radiotherapy patients.

The Canadian Partnership for Quality Radiotherapy – Supporting Quality Assurance in Radiation Treatment

The Canadian Partnership for Quality Radiotherapy (CPQR) is an alliance among the national professional organizations involved in the delivery of radiation treatment in Canada: the Canadian Association of Radiation Oncology (CARO), the Canadian Organization of Medical Physicists (COMP), the Canadian Association of Medical Radiation Technologists (CAMRT), and founding partner the Canadian Partnership Against Cancer (CPAC).

CPQR's initial mandate includes the development of programmatic and technical quality guidelines for use in Canadian radiation treatment centres, an on-line audit system for individual center self-assessment of compliance with quality guidelines, and a taxonomy to assist with the classification of radiation treatment incidents in Canada. These activities will lay the groundwork for national reporting of radiation treatment incidents and, in the long term, a more formalized accreditation process for Canadian radiation treatment centres.

CPQR's focus, since its formation in mid-2010, has been to work with COMP in the re-invigoration of what were formerly known as the CAPCA Standards. The Partnership has developed a framework for the review and update of these standards. The framework, entitled "Technical Quality Control Guidance for Canadian Radiation Treatment Programs," also outlines a structure to support the ongoing validation of these guidelines, transforming them from static documents, into a set of living guidelines to be implemented and applied consistently at all radiation treatment centres across the country.

A pilot study of the framework has just begun with three of the existing CAPCA Standards documents. With technical support and guidance provided by COMP's Quality and Radiation Safety Advisory Committee (QARSAC), CPQR will assess the feasibility of this framework, and make adjustments to the process in early FY 2012, at which point the framework will be rolled out with all remaining standards.

The COMP membership will be an integral part of the success of this project. During the guideline review and update, the expertise of COMP volunteers will be key to ensuring the development of appropriate technical criteria and tests and their incorpora-

(Continued on page 35)

2011 COMP Winter School

Crystal Plume Angers, M.Sc., MCCPM

The second annual COMP Winter School was held in Mont Tremblant, Quebec from January 30 to February 3, 2011. The meeting was a great success again this year and continued with the theme of Quality and Safety in Radiation Oncology. One of the strengths of the Winter School is the professional distribution of its attendees with representation from all members of the radiation medicine team. This year the school hosted 93 delegates (including faculty): 40 physicists, 13 Radiation Oncologists, 23 Therapists and 17 Other (Administrators, Engineers, Regulators, etc.). The diverse attendance and the meeting format provided for excellent discussions in the conference hall and on the slopes. (I am sure that numerous failure modes and effects were determined while riding the chairlift!)

The meeting opened Monday morning with a keynote lecture presented by Dr. Kaveh Shojania entitled Medical Error and Patient Safety in Radiation Oncology. Dr. Shojania introduced us to two basic approaches for identifying safety problems in our radiation programs: retrospective analysis of incidents (incident learning systems and root cause analysis) and prospective risk assessment (failure modes and effects analysis). As the day progressed, the audience learned more about specific tools for retrospective and prospective analysis. A session on Quality Engineering in Radiotherapy introduced the concepts of software design and validation as well as process control and its application to radiotherapy.

Tuesday morning came early and we were awakened to numerous concepts in human factors and human error. One of the most important messages from this series of lectures was that human error is not a top level root cause. If you focus on human error you lose the ability to improve the system or process. Another important message was that human error cannot be eliminated entirely but it can be managed and its effects mitigated.

Following a daytime break, appropriately scheduled for the enjoyment of the Mont Tremblant ski resort, the faculty ensured they had our attention by offering an evening session on Law and Ethics. In this thought provoking session we were introduced to the ethics of medical errors and the considerations for disclosure. Robyn Grant, a partner in the Health Law Group at the Toronto office of Borden Ladner Gervais, presented an overview of the legal process. She explained the importance of standard practice ("usual" practice) and emphasized the need for appropriate documentation. "Documentation is evidence" and is required to prove that the standard of care was met.

The session I found most interesting was "Quality in Clinical Practice". In this session we learned how quality tools and concepts are being used to improve radiotherapy in the clinical setting as well as at a provincial and national level. Dr. Stephen Breen showed us how process mapping, checklists and process control charts are being used at Princess Margaret Hospital to improve image guided, intensity modulated radiotherapy (IG-IMRT). Ms Gaylene Medlam told us how the London Protocol was used for root cause analysis of clinical incidents at the Peel Regional Cancer Centre (PRCC). Using the London protocol PRCC staff were able to determine the real issues (root causes) and to identify and address process gaps without assigning blame. Gaylene also described the comprehensive QA program at PRCC which is aimed at providing evidence based support for clinical decision making and technical innovation.

Dr. Peter Dunscombe presented an excellent, although worrisome, lecture on Perspectives in Quality and Safety. Dr. Dunscombe hypothesized that the error rate in radiotherapy is much worse than we think (more than 3% of all radiotherapy patients) and suggested some ways we could do better. Quick solutions include the use of checklists and No Interruption Zones (NIZ). More involved strategies include a national incident learning database (Radiation Oncology Safety Information System, ROSIS), education and training in error management and new technologies, and national quality audits.

The final lecture in the "Quality in Clinical Practice" series was presented by Dr. William MacKillop. This very informative presentation explained how Health Services Research has been improving outcomes for cancer patients in Ontario by monitoring the accessibility and quality of radiotherapy. Specifically, Dr. MacKillop explained how wait times have been used in Ontario to assess and improve access to radiotherapy treatment. Federal and provincial ministries used this information as a basis for setting national waiting time standards and waiting times are now monitored and reported in most parts of Canada.

On Wednesday afternoon we were given the opportunity to apply our newly acquired knowledge in a series of concurrent workshops. Highlights of the workshops were shared with all participants during the Thursday morning symposium where discussion and debate were encouraged.

A review of the winter school would not be complete without a social report. Mont Tremblant was a fantastic venue for this meeting. Conditions on the slopes were good, although cold (I had to double up my long johns), and the pedestrian village offered lots of après ski / conference possibilities

(including a great microbrewery). The Wednesday evening banquet was hosted at La Forge, the restaurant of choice in Mont Tremblant! The food was delicious, the décor gorgeous, the mountain view stunning and like most COMP social events the evening was reminiscent of a big, happy family reunion.

I congratulate the organizing committee and the faculty for a wonderful meeting. It was interesting, timely, thought provoking and the atmosphere was just right. I am sure that many of the delegates came away brimming with ideas and excited to try some of the quality tools in their clinical operations. Bravo! I look forward to many more winter schools to come!

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JOINT AAPM/COMP ANNUAL MEETING

COMP AWARDS CEREMONY AND BANQUET - WEDNESDAY AUGUST 3, 2011

Join us for a sunset cruise in the Vancouver Harbour, with front row seats to enjoy the "Celebration of Light" Fireworks Festival over English Bay. Mark your calendars! Ticket details to follow.

CALL FOR NOMINATIONS

The COMP 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 one opening on the Board of Directors for the 2011-2012 year.

COUNCILLOR OF PROFESSIONAL AFFAIRS

We are looking for a committed individual to serve as Councillor for Professional Affairs. The Councillor for Professional Affairs will chair the Professional Affairs Committee and be responsible for ensuring that the committee carries out its mandate. S(he) should advise, counsel and report to the other Board members on issues relating to COMP Professional Affairs. The Councillor for Professional Affairs is a four year term beginning in August of 2011.

TREASURER

We are looking for a committed individual to serve on the COMP Board in the role of Treasurer. The Treasurer sits on the joint COMP/CCPM Finance Committee and the COMP Executive Committee. The Treasurer provides general oversight of COMP's financial affairs and works closely with the COMP office. The Treasurer develops the annual budget and advises Board on issues relating to the COMP finances. The Treasurer is a three year term beginning in January of 2012.

Nominations **must be accompanied** by a duly signed *Expression of Interest and Nomination Form* endorsed by no fewer than two (2) voting members of COMP. To access the nomination form, please visit www.medphys.ca or contact the COMP office at admin@medphys.ca.

Mail, e-mail or fax this form along with any complementary information such as your résumé (if available) **by May 31, 2011** in confidence to:

Chair, Nominations Committee
C/0 COMP Office
PO Box 72024 Kanata North RPO
Kanata, ON K2K 2P4
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IRPA Workshop on Radiation Protection Culture

Dr. David Wilkins
The Ottawa Hospital, Ottawa, ON,

In February I had the opportunity to represent COMP at a workshop of the International Radiation Protection Association in Charleston, South Carolina. Charleston is a historic seaport redolent with quaint historic charm and graceful colonial architecture. Unfortunately the workshop was held at an airport hotel some distance from the city centre, an area surrounded by freeways and outlet malls and completely devoid of any charm, historic or otherwise.

IRPA is an association based in France, dedicated to the promotion of common international approaches to radiation protection, and acting as an forum for discussion, research and education about radiation protection issues. The association is made up of national member associations – the Canadian Radiation Protection Association is the Canadian member association, and the Health Physics Society is the American member association.

The workshop was part of an initiative by IRPA to define radiation protection culture and help to promote this concept among radiation protection professionals and their organizations. In addition to the member associations, IRPA invited representatives from medical physics organizations, government regulatory bodies, and clinicians. There were 31 participants at the workshop, from USA, Mexico, Peru, Argentina, France, Italy, Uruguay, Colombia, Japan and Canada (me), representing various organizations including AAPM, ACR, USNRC, HPS, and FDA. While their member associations primarily represent health physicists, IRPA specifically asked COMP and AAPM to send representatives in recognition of the importance of medical physicists in radiation protection in the health care sector.

Radiation protection culture is closely related to safety culture, a concept which is well defined and permeates the operation of many high risk industries such as the chemical and airline industries. Safety culture is very important in the nuclear power industry, where it has become central in the regulatory approach and in day to day operations. The USNRC has been using safety culture as a guiding regulatory philosophy for the power industry for 15 years, and has published a guidance document which defines organizational traits and audit criteria associated with safety culture in nuclear power. Radiation protection culture is seen as an extension of safety culture to all arenas in which radiation is used. The goal of this IRPA workshop was to provide input for the development of a document and communication strategy to help define and promote radiation protection culture among RP professionals and their organizations.

In response to a request to present the COMP perspective, I did a short presentation in which I presented the mildly controversial point of view that occupational radiation protection in the medical sector, in Canada at least, is largely a solved problem, and that the real risks associated with medical use of radiation involve patient safety. While there are certainly fires to put out and some areas for minor improvement, data from the National Dose Registry show that for the most part occupational doses in health care have been steadily decreasing with time, and average doses are very low. Occupational radiation safety in health care is largely in a maintenance mode, with no justification for significant new resources or initiatives. In contrast, patient radiation safety and control of exposures is a growing area of concern. I outlined some Canadian patient safety initiatives in which COMP has been involved, such as the Winter School and the activities of the Canadian Partnership for Quality Radiotherapy (CPQR). I argued that the expertise and resources of radiation protection professionals in the medical sector should be shifted to include focus on patient safety initiatives.

This point of view generated some discussion, because the regulatory framework in radiation protection focuses on occupational and public exposure, while patient exposures are explicitly excluded from dose limits. Most regulators and many radiation protection professionals do not consider patient exposures to be part of their mandate. However, ICRP60 does call for application of the principles of justification and optimization to medical exposures. Furthermore, this IRPA workshop included representatives from the Image Gently and Image Wisely campaigns, which are entirely concerned with patient safety. It will be interesting to see if the scope of the final document extends to include patient safety.

The workshop succeeded in outlining some organizational traits associated with good radiation protection culture, many of which could be used as audit criteria. Examples of such traits include:

- Leadership safety values: Do leaders demonstrate a commitment to safety in their actions and behaviours?
- Problem identification and resolution: Are issues impacting safety promptly identified, addressed and corrected?
- Personal accountability: Do individuals take personal responsibility for their safety?
- Work processes: Are work processes planned and documented with safety in mind?
- Continuous learning: Do individuals maintain current knowledge and impart that knowledge to others in the organization?
- Certification of competence: Does the organization promote certification and maintenance of certification where appropriate?
- Environment for raising concerns: Are personnel free to raise safety concerns without fear of retaliation or intimidation?

Questioning attitude: Do individuals avoid complacency and challenge existing conditions to identify issues that might lead to error?

Similar workshops have already been held in Europe and Asia. Based on these workshops, an IRPA committee will generate a draft document which should be ready by the end of this year. When finalized, this document should be useful to COMP members in guiding initiatives for the safe use of radiation in the health care sector.

CITATION AWARD 2010

Michael S. Patterson
Juravinski Cancer Centre and McMaster University,
Hamilton, Ontario

Once upon a time I wrote an article for *Interactions* (Vol. 50, pp. 29-32) in which I suggested that the ground rules for the Sylvia Fedoruk Award should be changed. I argued that it is laborious and inevitably subjective to try to identify the "best" paper published in our field each year. Many papers are never even considered because the range of journals in which medical physicists publish is so broad. I proposed a simple, objective solution that would recognize the paper published in a given year that was cited most often over the next ten years. This is the seventh year that I have announced a winner in *Interactions*. The rules (invented by the author) are simple and similar to those established for the Sylvia Fedoruk Award: the work must have been performed mainly at a Canadian institution, only papers in peer-reviewed journals are considered, review or popular articles are not eligible, and the paper must be "medical physics" – for example, articles dealing with clinical application of a mature imaging technology are not included, even if medical physicists are co-authors. The winner is determined from data in the Web of Science maintained by the Institute of Scientific Information (ISI) including citations in their conference data base except as noted in the table below.

For 2010 we have a runaway winner, cited 333 times since publication and already one of the most cited Canadian medical physics papers ever:

I. Kawrakow, Accurate condensed history Monte Carlo simulation of electron transport. I. EGSnrc, the new EGS4 version, Medical Physics 27: 485-498 (2000).

Abstract: In this report a new EGS4 version, called EGSnrc to reflect the substantial changes made to the original code is reported which incorporates a new any-angle multiple elastic scattering theory, an improved electron-step algorithm, a correct implementation of the fictitious cross section method for sampling distances between discrete interactions, a more accurate evaluation of energy loss, as well as an exact boundary crossing algorithm. It is demonstrated that EGSnrc allows for an artifact free Monte Carlo simulation of ion chamber response and backscattering, situations that have been considered in the past as the two of the most stringent tests of condensed history Monte Carlo codes. A detailed discussion of the effect of the various components of the condensed history simulation of electron transport on the simulated ion chamber response is given in the accompanying paper.

For the record, here are the winners from previous years:

R. M. Henkelman, G. J. Stanisz, J. K. Kim and M. J. Bronskill, Anisotropy of NMR properties of tissues, Magnetic Resonance in Medicine, 1994, 32: 592-601. (129* citations in 10 years, 206 total citations).

D. W. O. Rogers, B. A. Faddegon, G. X. Ding, C.-M. Ma and J. Wei, BEAM: A Monte Carlo code to simulate radiotherapy treatment units, Medical Physics, 1995, 22: 503-524. (310* citations in 10 years, 646 total citations).

A. Kienle, L. Lilge, M. S. Patterson, R. Hibst, R. Steiner and B. C. Wilson, Spatially resolved absolute diffuse reflectance measurements for noninvasive determination of the optical scattering and absorption coefficients of biological tissue, Applied Optics, 1999, 35: 2304-2314. (125* citations in 10 years, 233 total citations)

J. S. Gati, R. S. Menon, K. Ugurbil and B. K. Rutt, Experimental determination of the BOLD field strength dependence in vessels and tissue, Magnetic Resonance in Medicine, 1997, 38: 296 – 302. (196* citations in 10 years, 241

J. H. Siewerdsen, L. E. Antonuk, Y. El-Mohri, J. Yorkston, W. Huang and I. A. Cunningham, Signal, noise power spectrum, and detective quantum efficiency of indirect-detection flat-panel imagers for diagnostic radiology, Medical Physics, 1998, 25: 614 – 628.(121 citations in 10 years, 139 total citations).

A. Kienle, M. S. Patterson, N. Dognitz, R. Bays, G. Wagnieres and H. van den Bergh, Noninvasive determination of the optical properties of two-layered turbid media, Applied Optics, 1998, 37: 779 – 791. (tied with paper above. 121 citations in 10 years. 142 total citations).

D. H. Simpson, C. T. Chin and P. N. Burns, Pulse inversion Doppler: a new method for detecting nonlinear echoes from microbubble contrast agents, IEEE Transactions on Ultrasonics Ferroelectrics and Frequency Control, 1999, 46: 372-382. (201 citations in 10 years, 218 total citations).

* Does not include citations in conference proceedings.

2010 Professional Survey

Submitted by: Joseph E. Hayward on behalf of the Professional Affairs Committee
Hamilton Health Sciences, Hamilton, Ontario

The following is the report on the data received from the professional survey administered in 2010. The report was prepared under contract by a private firm, Association Management, Consulting and Evaluation Services (AMCES). Particular thanks to Jarett Kingsbury of AMCES who was the principal author of the report.

It should be noted that the validity of the conclusions from the data is based upon the completeness of the original data set. In the interest of achieving the most complete data set possible, **please take the time to complete the next survey when it is administered in 2012.**

Feedback regarding the survey process or report should be directed to the COMP Councillor for Professional Affairs.

2010 COMP PROFESSIONAL SURVEY: FINAL REPORT

The 2010 edition of the COMP professional survey provides comprehensive documentation of compensation and benefits currently provided to members. The survey was sent out to all 489 members in May 2010 concerning their 2008 and 2009 salary information.

There were 263 Respondents to the survey. This represents a 4% percent increase in response rate compared to the 2008 survey.

1. Age (n=262).

Age	21 - 30	31 – 40	41 – 50	51 – 60	61+	Average
Men (n=203)	8	64	73	44	14	45
	3.1%	24.4%	27.9%	16.8%	5.3%	
Women (n=59)	9	32	13	4	1	38
	3.4%	12.2%	5.0%	1.5%	0.4%	

Since 2008, the average age of male respondents has decreased by 0.3 years and the average age of female respondents has increased by 1.5 years.

2. Gender (n=263).

In total 203 men (77%) and 60 women (23%) responded to the survey.

3. Location (n=263).

BC	AB	SK	MB	ON	QC	NB	NS	NL	PEI	INT'L
33	23	7	17	101	24	6	15	5	1	31
12.5%	8.8%	2.7%	6.5%	38.4%	9.1%	2.3%	5.7%	1.9%	0.4%	11.8%

The distribution of the respondents has not changed significantly from the 2008 survey. The only province that had a significant change in the number of respondents was Nova Scotia, who nearly doubled their response rate of 8 in 2008.

4. Please indicate the highest level of education that you have attained (n=263).

Of those who responded to the question, 67% had earned their Doctorate as their highest level of education, 30% had earned a Master's Degree and 3% had earned a Bachelor's Degree. The distribution between each of the levels of educa-

tion has not varied significantly since the 2008 survey.

5. Please indicate your certification (n=263).

In the 2006 Survey 64% of respondents had CCPM certification. This number grew to 72% in the 2008 Survey. For the current survey 68% of all respondents held a CCPM certification. Given the variance in respondents, the difference between the 2008 and 2010 surveys is statistically insignificant. A professional certification of some form is held by 76% of respondents. Of those who had a certification other than the CCPM, the majority (12 of 21) held the ABR certification.

6. Who is your primary employer (n=263)?

The primary employer for 136 of the 263 respondents was a Hospital (52%) and 76 were employed by a Cancer Institute (29%), 31 were employed by a University, Government or Research Institute (12%), while 20 were employed by another organization (8%). Of those that responded Other, the majority (13 of 20) were employed in Industry.

7. What is your primary function within your workplace (n=262)?

175 of the 263 Respondents (67%) worked in a Clinical Service capacity at their organization. This represents a decrease from the 2008 figure of 74%. 35 (13%) worked in Teaching and Research & Development (an increase from 9% in 2008). 21 (8%) worked in Administration, 10 (4%) worked in Radiation Safety, 5 (2%) as Physics Residents, 6 (2%) in Physics Support, with the remainder (10 or 4%) working in another capacity.

8. How many years of experience do you have within your field (n=263)?

Since 2008, the most statistically significant trend is in the 11 to 15 years of experience range, which went from 25 of 219 respondents (11%) in 2008 to 54 of 263 (21%) respondents in 2010. This represents a near doubling of that range of respondents.

- 55 of the 263 respondents (21%) had worked in the field for less than 5 years, a decrease from 26% of the 2008 respondents,
- 76 respondents (29%) had worked in the field for a period between 5 to 10 years, which is the same percentage of respondents from the 2008 survey,
- 20 respondents (8%) had worked in the field for 16 to 20 years, down from 12% in 2008, and

58 respondents (22%) had worked in the field for more than 20 years, which is the same percentage as in 2008.

9. What is your specialty (n=263)?

219 of the 263 respondents (83%) specialized in Radiation Oncology Physics, a slight decrease from 85% two years ago. 16 specialized in Diagnostic Radiological Physics (6%, down from 11% in 2008), 11 specialized in Nuclear Medicine Physics (4%, the same as two years ago), 11 specialized in Magnetic Resonance Imaging (4%, down from 6% in 2008), with the remainder (6 or 2%) having a specialty in another field. Please note that 11 respondents (4%) identified that they had multiple specialties.

10, 11. Income by Category (note that incomes have been normalized to 1.0 FTE).

Please indicate your level of employment in 2008 as a component of an FTE.

FTE	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0
For 2008 salary period (n=244)	228	1	2	4	1	2	1	0	0	0	5
For 2009 salary period (n=239)	226	1	3	3	1	1	1	0	0	0	3

2008 Income by Gender (n=236)

Income ($CDN)	Less than 50,000	50,000 – 75,000	75,001 – 100,000	100,001 – 125,000	125,001 – 150,000	150,001 – 175,000	175,000 +	**Average**
Men (n=186)	2	17	36	44	45	23	19	124,242
	1.0%	9.1%	19.4%	23.7%	24.2%	12.4%	10.2%	
Women (n=50)	2	13	10	12	6	5	2	103,505
	4.0%	26.0%	20.0%	24.0%	12.0%	10.0%	4.0%	

Interestingly, income for both men and women decreased between 2007 and 2008. The decrease for men was $8,902 or 7% and $6,462 or 6% for women. This could be due to the increased sample size (n=236 in 2008 and n=176 in 2007).

2009 Income by Gender (n=233)

Income ($CDN)	Less than 50,000	50,000 – 75,000	75,001 – 100,000	100,001 – 125,000	125,001 – 150,000	150,001 – 175,000	175,000 +	**Average**
Men (n=184)	4	8	30	45	50	24	23	130,136
	2.2%	4.4%	16.3%	24.5%	27.2%	13.0%	12.5%	
Women (n=49)	2	9	9	13	8	6	2	110,344
	4.1%	18.4%	18.4%	26.5%	16.3%	12.2%	4.1%	

In contrast to the 2007-2008 comparison, the income for both men and women increased between 2008 and 2009. For men it increased $5,894 or 4% and for women it increased $6,839 or 6%. Therefore it can be safely assumed that the decrease between 2007 and 2008 is more likely due to a discrepancy between the sample size of the two surveys and a difference in the number of respondents rather than an actual decrease in overall salary. **Discrepancies such as this underscore the importance of a high survey response rate.**

2008 Income by Location (n=237)

	BC (n=26)	AB (n=21)	SK (n=7)	MB (n=15)	ON (n=95)	QC (n=23)	Atlantic Canada (n=23)	Int'l (n=27)
Income ($CDN)	124,719	111,955	107,143	126,622	123,104	95,009	107,826	145,444
Change from 2007	+22%	-8%	-7%	-6%	-12%	+15%	-16%	-7%

Notably, the income for British Columbia rose significantly between 2007 and 2008, with only a nominal increase in the number of respondents (n=26 in 2007 and n=22 in 2008), while Alberta decreased by 8% with the same number of respondents (n=21 for 2007 and 2008). Of the other areas in Canada, only Quebec saw a rise in Income between 2007 and 2008.

2009 Income by Location (n=234)

	BC (n=26)	AB (n=21)	SK (n=7)	MB (n=16)	ON (n=93)	QC (n=22)	Atlantic Canada (n=22)	Int'l (n=27)
Income ($CDN)	135,634	120,544	113,386	123,469	126,863	103,804	114,048	151,270
Change from 2008	+8%	+7%	+6%	-3%	+3%	+8%	+5%	+4%

With the exception of Manitoba, income rose at a fairly uniform rate in Canada and internationally between 2008 and 2009.

Income by Specialty (n=238 in 2008, n=233 in 2009)

Specialty	**2008 Income ($CDN)**	**Change from 2007**	**2009 Income ($CDN)**	**Change from 2008**
Radiation Oncology Physics (n=198)	123,203	-4%	130,128	+5%
Diagnostic Radiological Physics (n=15)	105,286	+2%	103,622	-2%
Nuclear Medicine Physics (n=10)	109,853	-22%	118,599	+7%
Magnetic Resonance Imaging (n=9)	104,798	-26%	94,691	-11%
Other (n=6)	103,000	+1%	108,200	+5%

Income by Level of Education (n=235 in 2008, n=231 in 2009)

Level of Education	**Income ($CDN)**	**Change from 2007**	**Income ($CDN)**	**Change from 2008**
Bachelor's Degree	85,020	+14%	81,988	-4%
Master's Degree	113,650	-3%	115,231	+1%
Doctorate	125,318	-7%	133,278	+6%

The difference between 2007 and 2008 for those with a Bachelor's degree is likely due to the increased sample size (n=3 in 2007 and n=6 in 2008).

12. What was your Annual Professional Allowance for (including all travel allowances)?

Year	**Annual Professional Allowance**	**Change from Previous Year**
2008 (n=176)	$3,559	+2%
2009 (n=177)	$3,801	+7%

Growth in the annual professional allowance has been quite consistent over the past 4 years. It has gone from $3,425 in 2006 to $3,801 in 2010, a growth of approximately 10% over that timeframe.

13. Are there restrictions on how your professional allowance can be spent (n=213)?

132 of the 213 respondents (62%) identified that there were restrictions on how their professional allowance could be

spent. Of those who identified the restrictions on their professional allowance, the majority (42 of 118) identified restrictions on their travel budget.

14(a). Did you perform any consulting work?

The number of respondents who performed consulting work was 33 or 14% in 2008 and 36 or 16% in 2009.

14(b). Please indicate your total income from consulting fees.

Income ($CDN)	1 – 5,000	5,001 – 10,000	10,001 – 15,000	15,001 – 20,000	20,001 – 25,000	25,000+	Average
2008	13	4	3	2	2	7	14,994
2009	20	5	0	2	1	8	12,731

Please note that the numbers shown for 2008 exclude 2 respondents whose income was solely derived from consulting fees. Including them would bias the overall average income from consulting.

14(c). Please indicate your nominal consulting hourly rate.

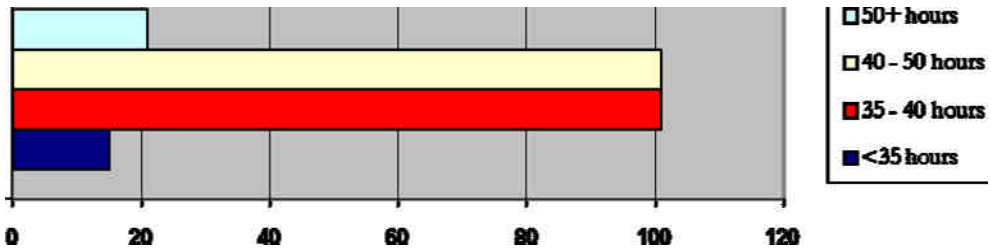
Hourly Rate ($CDN)	0 - 50	51 – 100	101 – 150	151 – 200	200+	Average
2008	0	0	25	6	4	150.76
2009	0	2	26	2	5	150.34

The hourly rate for consulting went up from $146.67 in 2007 to $150.76 in 2008, representing an increase of 3%. The hourly rate stayed virtually static between 2008 and 2009.

15. Do you foresee your income increasing, decreasing, or remaining the same for the next year (n=238)?

119 of the 238 Respondents (50%) felt that their income would increase over the next year. This is down significantly from the 72% of respondents who felt that way in 2008. Similarly, 109 respondents (46%) felt their income would remain the same, as compared to 26% who felt that way in 2008.

16. How many hours do you work in a normal work week (n=238)?



Interestingly, the responses for both 35 to 40 hours and 40 to 50 hours were identical at 101 of the 238 respondents (42% for both). 21 (9%) worked more than 50 hours in a week, which is down from 13% in 2008. 15 (6%) of the respondents worked less than 35 hours in a week, up from 2% in 2008.

16. Please indicate which benefits are covered (in part or in whole) by your employer (n=237).

	Yes	No	Unknown
Medical Coverage	92%	6%	2%
Dental Coverage	89%	10%	1%
Term Life Insurance	84%	9%	7%
Disability Insurance	86%	8%	6%
Retirement Pension Plan*	90%	6%	4%
Sabbatical Leave	31%	48%	21%
Tuition Benefits (self)	17%	58%	25%
Tuition Benefits (dependents)	9%	65%	26%
Parking	14%	79%	7%

*Exclusive of CPP or QPP

17 (a). Does your employer provide liability insurance (n=237)?

Only 81 of 237 respondents (34%) identified that their employer provided liability insurance.

17 (b). Depending on cost, would you be interested in purchasing additional liability insurance through COMP to top up what is currently being provided by your employer (n=177)?

Only 54 of 177 respondents (31%) identified that they would be interested in purchasing liability insurance through COMP.

17 (c). If so, how much would you be willing to pay for additional insurance?

The majority of respondents (30 of 63 or 48%) preferred to pay a $400 premium for $1,000,000 of coverage.

18. How many vacation days do you get during a year exclusive of statutory holidays (n=235)?

Vacation time	**Percentage Response**	**# of yrs service**
15 or less Vacation Days	12%	9
16-20 Vacation Days	41%	9
21-25 Vacation Days	31%	13
26-30 Vacation Days	12%	16
>31 Vacation Days	4%	15

The discrepancy between years of service and vacation time for the 26-30 vacation day group and the >31 vacation day group is likely due to the smaller sample size for the >31 vacation day group.

19. Do you expect to retire from full-time practice of medical physics within the next 10 years (n=233)?

47 of 233 respondents (20%) identified that they will retire in the next ten years. This is down from 25% of respondents in the 2008 survey.

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

Last Name	First Name	Institute	Membership Type
Khan	Nadeem	Physics Services Inc.	Full
Landry	Anthony	Prince Edward Island Cancer Centre	Full
Poon	Emily	McGill University Health Centre	Full
Yang	Chang-Ying (Joseph)	BC Cancer Agency - Southern Interior	Full
Zhan	Lixin	Grand River Regional Cancer Centre	Full
Leduc	Vincent	McGill University	Student
Nygren	Ian	Tom Baker Cancer Centre	Associate
St. Aubin	Joel	Tom Baker Cancer Centre	Full

(Continued from page 33)

sustaining ongoing representation and a mechanism for maintaining the continuity of such representation so there is an obvious opportunity for COMP to fulfil a role that provides benefit to both the country and the Canadian medical physics community. As a result, Lee is promoting the concept. It is still early days with the proposal and the Board still needs to provide due consideration, but I believe this is a perfect example of what needs to brought to the attention of COMP.

There are a number of other initiatives that continue to move forward. Work is proceeding with development of the "Canadian Imaging Day" event mentioned in the previous message. As a demonstration of the fact that it remains a works in progress, the latest title is "Medical Imaging Team Day". As a result of changes to the Professional Engineers Act of Ontario, Joe Hayward, Councillor for Professional Affairs, has been very active on behalf of COMP with a working group comprised of a number of professional organizations representing the natural scientists. This working group has been engaged in discussions with the Professional Engineers of Ontario (PEO) and the effort resulted in the formal creation, under the auspices of the PEO, of the Joint Engineering and Natural Science Task Force (JENSTF). The JENSTF produced a final report, dated January 31, 2011, that provides recommendations as to how to proceed towards resolution of the issue. Much more detail on this initiative will be forthcoming in the near future. Jean-Pierre Bissonnette, Councillor for Quality Assurance and Radiation Safety, and Jason Schella, past-President, continue with their participation on the Canadian Partnership for Quality Radiotherapy (CPQR) Steering Committee. The CPQR is entering into a consultative process with regard to a new quality assurance framework based upon the *Structural Standards for Quality Assurance at Canadian Radiation Treatment Centres* document. The new document is entitled *Quality Assurance Guidance for Canadian Radiation Treatment Centres*. The CPQR has established a very broad based Advisory Committee that is currently reviewing the document. I strongly encourage contacting the CPQR if you are interested in participating on that committee. In conjunction, a methodology has been developed that is intended to enable maintenance of the supporting documents that address equipment quality control. The Quality Assurance and Radiation Safety Advisory Committee (QARSAC) is currently engaged with the CPQR in an effort to pilot the proposed approach. (Erika Brown, Project Coordinator for the CPQR, provides an update on their activities in this edition of InterACTIONs.) On another front, CAMPEP now officially recognizes COMP rather than the CCPM as the sponsoring organization from Canada. Accordingly, a more formalized relationship with the COMP representatives to CAMPEP is being established through the Science and Education Committee (SEC).

Finally, I am very pleased to report that I have been contacted by members interested in getting more involved in the operations of COMP. I am particularly delighted that they appear to have come forward as a result of their own initiative and interest. (At least, unless there has been some critical breakdown of executive control, I don't believe that the dreaded COMP goon squad has been actively engaged in any twisting of limbs recently.) I hope that this is the start of a real trend. I will close with a reminder that we are actively looking for a new Councillor for Professional Affairs and a new Treasurer….at least give it a bit of thought.

Thank You to Our Volunteers!

COMP has a rich history of volunteerism and members give of their time in a variety of ways to support and advance the medical physics profession in Canada. National Volunteer Week provides an opportunity to pay tribute to our volunteers and say thank you!

Wamied Abdel-Rahman
John Aldrich
Will Ansbacher
Clement Arsenault
Alistair Baillie
Rob Barnett
Parminder Basran
Luc Beaulieu
Craig Beckett
Jason Belec
Jean-Pierre Bissonnette,
Chantal Boudreau
Stephen Breen
Derek Brown
Lesley Buckley
Pat Cadman
Ian Cameron
Fred Cao
Marco Carlone
Amanda Cherpak
Mario Chrétien
Brenda Clark
Claudia Cojocaru
Sherry Connors
Robert Corns
Maria Corsten
Michelle Cottreau
Alan Cottrell
Gavin Cranmer-Sargison
Joanna Cygler
Cupido Daniels
Francois DeBlois
Nicola DeZanche
Kevin Diamond
Robert Doucet
Peter Dunscombe
Cheryl Duzenli
Idris Elbakri
Michael Evans
Gino Fallone
Tom Farrell
Aaron Fenster
Colin Field
Costel Flueraru
Isabelle Gagné
Alain Gauvin
Judy Hale
Joe Hayward
Paul Johns
Kirpal Kohli
Narayan Kulkarni
Renée Larouche
Ting Lee
Darcy Mason
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Michelle Nielsen
Peter O'Brien
Nadia Octave
Elizabeth Orton
Orest Ostapiak
Will Parker
Horatio Patrocinio
Terry Peters
Vic Peters
Crystal Plume Angers
Natalie Pomerleau-Dalcourt
Tony Popescu
Peter Raaphorst
Rasika Rajapakshe
Ram Ramaseshan
Alejandra Rangel Baltazar
Daniel Rickey
James Robar
Dave Rogers
John Rowlands
Russell Ruo
Gabriel Sawakuchi
Stephen Sawchuk
Jason Schella
Matt Schmid
John Schreiner
Teodor Stanescu
Frank Tourneur
Jose Villarreal
Keith Wachowicz
Brad Warkentin
Glen Wells
David Wilkins
Milton Woo
Tong Xu
Martin Yaffe
Atiyah Yahya
Conrad Yuen
Bill Ziegler

Editor's Note

Idris Elbakri, PhD, MCCPM
CancerCare Manitoba, Winnipeg, MB

My daughter had a recent visit to the dentist. She required a dental x-ray. When my wife inquired about an apron, the dentist told her that they were using new digital technology that did not use radiation! Although I knew the risk is minimal and scatter is barely measurable, I was proud that my wife insisted on an apron and made sure the dentist knew she was married to a medical physicist (and therefore knew better).

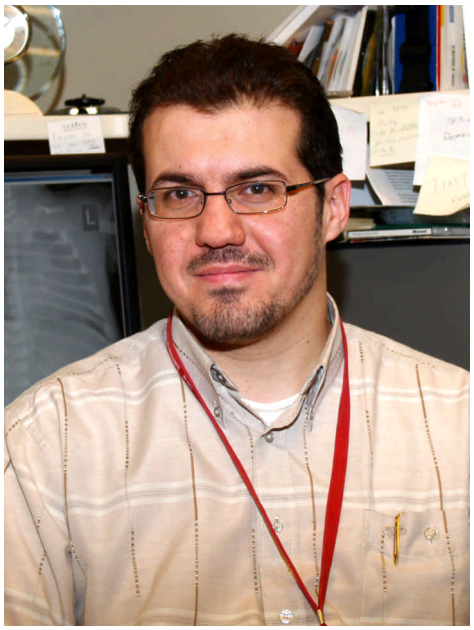
The dentist's statement that no radiation was involved was obviously wrong. I do not know whether they were misinformed or were trying to address fears with a simplistic explanation.

We all have anecdotes about misunderstanding and sometimes misuse of radiation. A new computer programmer quits his job after a few days because he's afraid of radiation at the mammography energies levels several rooms away. I had a physics student once ask me if it was safe to remain in the x-ray lab after the equipment was turned off, because something "remains in the air", and people ask me whether something stays inside after an x-ray exposure.

Ignorance about radiation is a problem. It leads health care providers to too-readily use medical radiation exposure. It also causes the public to have uncalled for anxiety and fear.

We have a role to play in the education of the public, government and health care workers given our expertise and training. Messages to the public have to be carefully articulated so that they we appear confident, competent, calming and objective.

My daughter will have a dental x-ray in the future, and I am going to make a point of going myself this time, and if the dentist says that the x-ray tube does not emit radiation, I am going to have a few words with her! I might take my dosimeter along as well.



Dates to Remember

Inter*ACTIONS* Summer Issue Deadline is June 1, 2011!

Joint AAPM/COMP Annual Meeting
July 31 - August 4, 2011
Vancouver, BC

AAPM 2011 Summer School
August 4 - 9, 2011
Simon Fraser University, Burnaby, BC

Left: Chief physicist leads by example in Hamilton

Most mornings in the winter, Mike Patterson, Head of Medical Physics in Hamilton, performs a mopping ritual after wheeling his bicycle into his office, partly to serve as a role model for the other physicists who cycle into work. He has mixed success.

Photo submitted by Doug Wyman.

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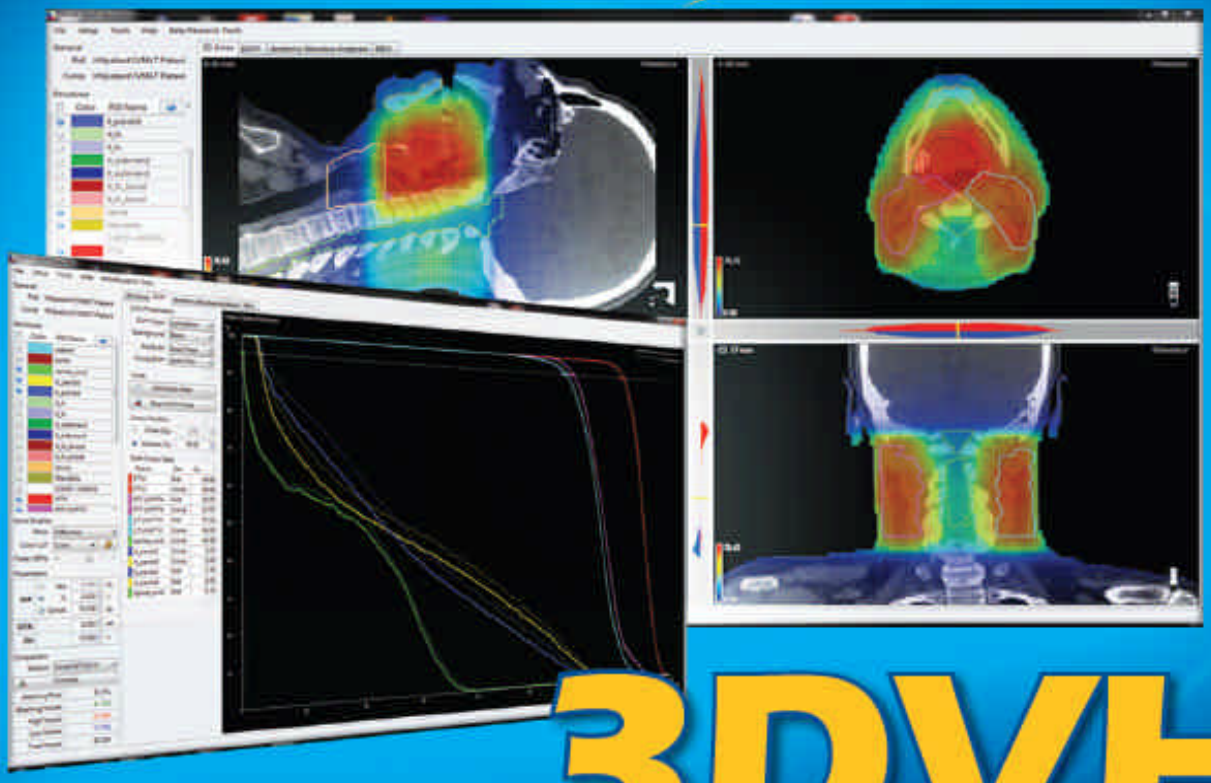

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