SEPTEMBER / SEPTEMBRE 1991

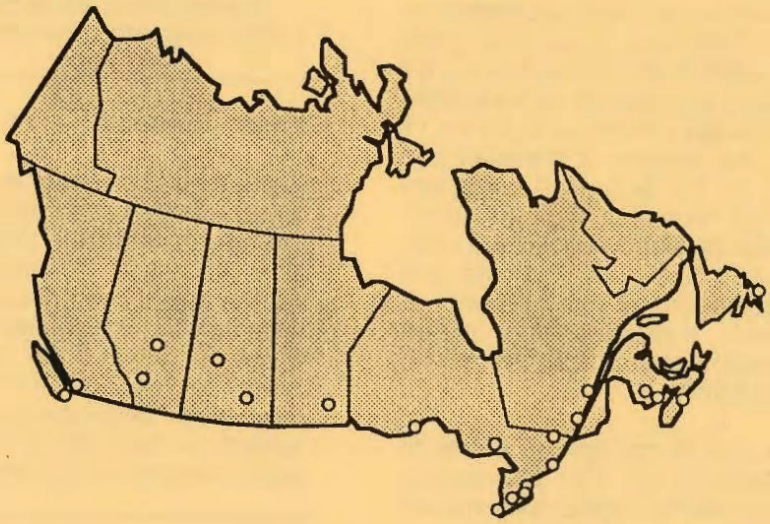
COMP OCPM

CANADIAN ORGANIZATION OF MEDICAL PHYSICISTS

ORGANISATION CANADIENNE DES PHYSICIENS MEDICAUX

CANADIAN MEDICAL PHYSICS NEWSLETTER

Le BULLETIN CANADIEN de PHYSIQUE MEDICALE



CANADIAN COLLEGE OF PHYSICISTS IN MEDICINE

LE COLLEGE CANADIEN DES PHYSICIENS EN MEDECINE

From the editor:

This is the first issue of the newsletter coming out of Montréal. I now have an idea of the work Rob Barnett and his crew put into the newsletter previously. I will try to maintain past standards and to add some new features for the future.

The newsletter will only succeed if the Canadian medical physics community contributes to it. Although it is my job to coordinate the efforts of the community, I can not generate the newsletter alone. On this page I have listed some information in the belief that, if the community knows how to help, a good newsletter will follow naturally. Please take a moment to think of how **you** would like the newsletter to develop, then send your thoughts and contributions to me.

I would like to thank all those who submitted material for this issue, much of it unsolicited, over the summer period. Your contributions support my thinking that an interesting and informative newsletter can be produced with your help.

John Schreiner

Format for contributions:

It is unproductive to retype every submission to the newsletter. Therefore, I ask that good quality, formatted submissions be sent to me for direct use. I suggest two formats for newsletter articles: single or double column on 8 1/2 by 11 inch paper with 1 inch margins on the sides and top and 1/2 inch on the bottom, if using two columns leave 1/2 inch between columns. Contributions should be single spaced in a clear font or type, the font size / pitch should give lower case letters that are ~2 mm high with ~6 lines of text per inch. If possible justify text on both margins. Please end your submission with your name and institution.

Text can also be sent to me through E-mail at CXLS@MUSICA.MCGILL.CA. FAX submissions will have to be supported by original copy and will not be used directly.

Content:

One way to maintain the newsletter is to have some regular columns submitted from the community. Some ideas are:

a) **Reports each issue from members of the executives** of the medical physics organizations (e.g. presidents of COMP and CCPM).
b) All members can contribute **educational and clinical articles**. It is often difficult to publish interesting techniques or teaching ideas because they are not new science. However, these ideas are often helpful for the medical physics practitioner.
c) Each year graduate students write M.Sc. and Ph.D theses which are full of detailed analysis and basic insights rarely covered in the literature. Next issue the newsletter will start to publish **titles and short abstracts of Canadian medical physics theses**. Please submit work completed in the last year in a format which will enable 4 abstracts to be printed per page.
d) The newsletter will **report on upcoming meetings and review past meetings**. If you have been to an interesting meeting please inform me, perhaps a report for the newsletter is appropriate.
e) Send in **local news** about your centre. An example is the report in this issue of the dedication of the H.E.Johns Image Processing Lab, submitted by Martin Yaffe. I hope in the future to have an article highlighting one medical physics centre in Canada each issue.
f) Short **humour pieces** will be used in the newsletter as space permits.

Further suggestions would be welcome.

Local Contacts:

Because of the cost of communicating over the large distances separating medical physicists in Canada, I would like to establish a network of local contacts for the newsletter. These contacts would solicit contributions and look after submissions from colleagues in their regions. It would be helpful if the contacts had access to E-mail so that communication with the Montréal office would be inexpensive. I have a number of volunteers from various centres in Ontario but I need contacts in other provinces.

Translation:

Both the COMP/OCPM and the CCPM are bilingual organizations. While we have neither the facilities nor the manpower to translate all articles, I would like to see the reports of the editor, CCPM president and COMP/OCPM chair-person (I just can't call Ellen a Chair) to be presented in both French and English. I need a volunteer for this important work.

De l'éditeur:

Voici le premier numéro du bulletin en provenance de Montréal. J'ai maintenant une très bonne idée du travail accompli par Rob Barnett et son équipe lors de la préparation des numéros antérieurs. Je vais esayer de maintenir les standards et les performances déjà acquises et ajouter quelques caractéristiques nouvelles au bulletin dans le futur.

Le bulletin aura du succès dans la mesure où la communauté de la physique médicale y contribuera. Bien qu'il soit de mon ressort de coordonner les efforts des participants, je ne peux pas générer tout seul le bulletin entier. J'aimerais particulièrement voir une contribution accrues du milieu francophone. S'il-vous-plaît prenez un moment pour réfléchir à ce que vous aimeriez voir comme développement du bulletin; et allors envoyez-moi vos pensées et contributions. Une façon de maintenir le bulletin est d'avoir quelques colonnes régulières soumises par les membres. Quelques idées de contribution seraient: des articles à caractère clinique ou éducationnel, des titres et résumés de thèses en physique médicale canadienne, des rapports de congrès en préparation ou des revues de congrès passés, des nouvelles locales concernant votre institution et quelques courtes contributions humoristiques.

Je vous demanderais de soumettre vos textes déjà bien édités et de bonne qualité de façon à ce qu'ils soient directement publiables sans retouches. Je suggère deux formats pour les articles du bulletin: simple ou double colonnes sur 8 1/2 x 11 avec 1" de marge sur chaque côté et en haut puis 1/2" de marge à la base. Pour le format double colonne, 1/2" devra être laissé entre chaque colonne. Les contributions devront être éditées en simple interligne sur un fond clair avec des polices dont les lettres sont de 2 mm de hauteur et avec un espace vertical donnant 6 lignes de texte par pouce. Si possible, veuillez justifier les textes aux 2 marges. Veuillez égalements terminer votre contribution par votre nom et votre institution. Les résumés de thèses devront être frormatés de telle façon que 4 résumés soient imprimés par page. Des textes peuvent également m'être acheminés via la poste électronique à CXLS.MUSICA.MCGILL.CA .

Les deux organisations COMP/OCPM et CCPM sont des orginisations bilingues. Comme nous n'avons pas les ressources financières et humaines pour traduire tous les articles, j'aimerais avoir les rapports de l'éditeur, du président du Collège et du président de l'OCPM, présentés en français et en anglais. J'ai besoin d'un volontaire pour aider à traduire ces rapports.

J'aimerais remercier tous ceux qui, tout au cours de l'été, ont soumis du matériel pour cette parution sans même y avoir été sollicité. Vos textes renforcent mon idée qu'avec votre aide un bulletin intéressant et informatif peut être produit. J'aimerais remercier d'avantage Raymond Carrier qui a traduit ce rapport.

John Schreiner

Addresses for Submissions:

Until the local contact network is established, submissions should be sent to

L. John Schreiner
Medical Physics Department
Montréal General Hospital
1650 Cedar Ave,
Montréal, QC.
H3G IA4

tel: (514) 934-8052
fax: (514) 934-8229

E-mail can be sent to me at McGill University at:
CXLS@MUSICA.MCGILL.CA.

COMP/CCPM/CRPA/CRSO Symposium on Radiation Protection

The Canadian Organisation of Medical Physics (COMP), Canadian College of Physicists in Medicine (CCPM), Canadian Organisaiton for Radiation Protection (CRPA) and the Campus Radiation Safety Officers (CRSO) organised a one day symposium on Thursday 20 June 1991 during the recent meetings of these four organisations in Winnipeg, Manitoba. Since all four groups have a major interest in the topic of Radiation Protection, a joint symposium was organised which attracted over 300 attendees. The rationale for the symposium was the recent work by various scientific bodies in revising quantitative estimates of "radiation risks" (e.g. United Nations Scientific Committee on the Effects of Atomic Radiation [UNSCEAR] & the Committee on the Biological Effects of Ionizing Radiation [BEIR V]) and the corresponding changes for radiation protection practice as recommended by the International Commission on Radiological Protection (ICRP) and also for pending (Canadian) regulatory changes in legislation.

The symposium commenced with an overview of Nonionizing Radiation Hazards and corresponding standards by David Sliney from the US Army Environmental Hygiene Agency (Aberdeen Proving Ground, MD). The talk covered areas from RF to UV radiation with particular emphasis on the underlying rationale for the Exposure Limits and Threshold Limit Values currently in place. One item of note was that Permissible Exposure Limits in Eastern Europe & the Soviet Union were generally set to lower levels because these countries deemed *discomfort levels* to be unacceptable even though they did not produce definite individual "harm". The emerging issue of the alleged hazards of ELF/VLF radiation was reviewed. The dangers associated with military radars were emphasised, where phased array radars (800 mW/cm^2) were capable of producing skin burns. In the optical spectrum, it is the eye which is particularly sensitive and where damage may be produced either by thermal effects or by photochemical effects. In the latter case, it is the "action spectrum" which needs to be taken into account, and a narrow (10 nm) window at about 300 nm is deemed to be particularly dangerous. With LASERS, there now exist well established standards. It is the radiance (W/m^2/sterdian) which needs to be taken into account when assessing any possible eye damage.

John Auxier provided an overview of the difficulties associated with the assessment of absorbed doses in the survivors of the A-bomb attacks on Hiroshima & Nagasaki (1945). One system of dosimetry had been developed in 1965 and was known as the T65D dosimetry system, with the initials referring to Tentative Dosimetry. This was revised in 1986 to produce the latest Dosimetry System, DS86. The principal changes in the radiation doses were the significant reductions in the Hiroshima neutron dose and also corresponding increases in the gamma doses in this city at larger distances from the hypocentre. One consequences of the revised doses was the elimination of any significant effect

from neutrons and no "RBE" can be deduced for neutron induced carcinogenesis. Another effect is the elimination of much of the difference in observed effects in the two cities which had previously been attributed to the presence of neutrons in Hiroshima and the absence of neutrons in Nagasaki. It appears that changes in dosimetry *per se* have not been the primary reason for recently reported increases in radiation risk (UNSCEAR; BEIR; & ICRP); radiation risks are increased because these are now calculated according to a "relative risk" model rather than an "absolute risk" model. The talk did present a belwidering array of ways in which radiation doses may be presented (Free In Air Kerma; Shielded Kerma, Intestine dose; Organ dose) for both T65D and DS86 dosimetries. Unfortunately, all these approaches appeared to most participants to be very contradictory. Equally regrettable was the fact that speaker was not able to offer any satisfactory explanation to the numerous anomalies he claimed to have found in the published literature on this topic!

Robin Mole (MRC Radiobiological Unit at Harwell, England) presented an iconoclastic view of radiation protection of the conceptus/embryo/fetus. In his view, the ICRP had essentially made an error in its recommendations for protecting the unborn. This error arose from the (mistaken) belief that the embryo was particulary "sensitive" at the low radiation doses normally encontered in radiation protection practice. The talk presented a detailed account of the available evidence for detrimental effects following radiation exposure during pregnancy. The conclusions were that there is an increase in carcinogenic sensitivity, but little likelihood for either severe mental retardation or for congenital malformation. Contrary to "popular belief", the conceptus and embryo have a large potential for repair of damage, and radiological protection practice should clearly take these biological data into account.

Charles Meinhold (National Council on Radiation Protection and Measurements [NCRP]) succinctly summarized the recently issued ICRP 60 report. For the first time, ICRP had explicitly documented underlying rationale for their radiological protection recommendations; Appendix B in this report is an excellent summary of the know biological effects of ionizing radiation. ICRP 60 is an extension of the basic philosophy to radiation protection developed explicitly in ICRP Publication 26 which requires all exposures to be JUSTIFIED, for the exposures to be OPTIMIZED (i.e. kept As Low As Reasonably Achievable) without exceeding specfied DOSE LIMITS to both workers and members of the public. An annual of risk of 10^{-3} was now deemed to be the border line between "unacceptable" and "tolerable". Dose limits would therefore now be set at 20 mSv/yr (averaged over 5 years) which when averaged over a life time, corresponded to this annual risk of 10^{-3}. Recommended dose limits for members of the public are 1 mSv/yr. For pregnant radiation workers, the new dose limit once a pregnancy has been declared is 2 mSv at the surface of the abdomen which is taken to correspond to 1 mSv for the fetus itself (i.e the fetus is treated as a "member of the public").

JC Waddington (Atomic Energy Control Board of Canada [AECB]) described how the regulatory bodies (i.e. AECB) planned to respond to the latest offerings from the ICRP. In general, the position of the AECB was that ICRP would be (broadly speaking) adopted. The first step was to issue a "Consultative Document" C-122 for discussion by the 5,000 licencees (& other interested parties) for comment. One major change would be the requirement to classify as Atomic Radiation Workers (ARW's) any individual with a "reasonable probability" of exceeding the 1 mSv/yr member of the public dose limit. Although the ICRP suggested that the occupational dose be averaged over a five year period (i.e. 2 mSv/yr with no more than 100 mSv/yr in any given year), the AECB's present view is that it is more appropriate to propose a simple 2 mSv/yr occupational dose limit. It appears that a number of years will pass before these proposals become legal regulations, and that a "period of grace" will be offered before they are fully implemented; 3 year grace period for occupational exposure and a 1 year grace period for members of the public.

The meeting concluded with a fascinating panel discussion in response to written questions submitted by members of the audience. Richard Osborne ably managed this more informal exchange of views on a wide range of of topics. These included the reliability of the magnitudes of radiation risks following (low level occupational) exposure and the corresponding dose limits that should be applied. In the evening, a wine and cheese reception permitted further informal debate on the interesting issues that had been brought forward during the symposium.

Walter Huda
Gainesville, FL
June 1991

THE HAROLD E. JOHNS IMAGE PROCESSING LABORATORY

On June 17 of this year, the Medical Physics Research group at Sunnybrook Health Science Centre in Toronto dedicated the Image Processing Laboratory in the Reichmann Research Building in honour of Harold Johns. Harold's scientific and educational accomplishments and his leadership have had a major influence on medical physicists all over this country and throughout the world.

The laboratory, bearing his name, contains high resolution image digitizers and several state-of-the-art imaging workstations which are networked to each other and to image acquisition equipment in other laboratories throughout the research building. As well, the laboratory will include facilities for producing high quality slides and laser-printed film images for education and publication purposes.

A reception followed a brief dedication ceremony, which included presentations by guests of honour, Dr. Jack Cunningham and Hon. Sylvia Fedoruk, both former students of Harold Johns from his days in Saskatchewan. Dr. and Mrs. Johns presided over a computer tape "ribbon" cutting ceremony, attended by many friends and former students and colleagues.

Newsletter Schedule: The tentative newsletter schedule is :

issue	submission deadline	mailing date	content
Fall issue:	2nd week Nov.	last week Nov. / 1st week Dec.	review events (same in other issues)
Winter issue:	1st week Feb.	last week Feb. / 1st week March	announce CCPM exam, EastCAN and WestCAN,call for abstracts for COMP/CCPM meeting
Spring issue:	1st week May	4th week May	give programme for the June meeting announce summer events
Summer/Fall issue:	3rd week of August	2nd week Sept.	

COMP/AAPM JOINT MEMBERSHIP

It is now possible for COMP members to receive a 30% discount in their AAPM membership dues. In order to qualify for this discount, members must be in the "full" category of COMP and be eligible to be "full" members of AAPM.

Current AAPM members should indicate on their AAPM renewal form that they wish to be joint members, and submit payment for 70% of the dues plus 100% of any other fees associated with AAPM membership. COMP members who wish to become new members of AAPM must apply for membership, but should indicate their wish to become joint members on the application. Eventually, AAPM will have forms to indicate this option, but I doubt that they will be ready this year.

Please note that this reduction applies only for paid-up members of COMP who reside in Canada.

JOINT COMP/CAP MEMBERSHIP

A dues reduction for joint membership with CAP is also available. A 30% reduction in CAP dues for full members of COMP, who wish to become full members of CAP can be obtained by applying to: CAP, 151 Slater Street, Ste 903, Ottawa, Ontario K1P 5H3. This discount is effective as of their renewal this October.

Reminder re: Late Payment

Members are reminded that an additional $30 renewal fee will be assessed to members who do not pay their dues by January 31st of the new year. (See item 8.2 in the minutes of the Annual COMP/OCPM General Meeting).

ANNOUNCEMENT from the NRC (IRS)

Members of the Ionizing Radiation Standards (IRS) group wish to point out the availability of NRC financial support (i.e., salary replacement but no travel support) to enable medical physicists to spend a mini-sabatical of 3 to 6 months working at the NRC. For more details contact Dave Rogers or Ken Shortt (613-993-2715) or speak directly to the group member with whom you might like to work.

COMP/CCPM Annual Meetings - Winnipeg 1991

- by Jeff Bews (Winnipeg)

This year's annual COMP/CCPM meeting was held in Winnipeg, Manitoba amidst the grandeur of the Hotel Fort Garry, a recently remodelled Hotel of yesteryear. Following a champagne breakfast in the technical exhibitor display area, the conference formally opened in the lavish surroundings of the Provencher room. Visitors to the city quickly realized that Winnipeg summers can be almost as cold as it's winters, at least in doors.

P. Johns (Ottawa) showed much courage by confronting the unknown (ie. virgin audio-visual equipment) in the name of COMP and CCPM and presenting the first paper in the first session, which by the way was entitled "X-ray Imaging". In his talk, Paul discussed the doses associated with the newly recognized radiotherapy treatment modality, percutaneous transluminal coronary angioplasty, which delivers on average an entrance exposure of 124 R to the patient. **R. Carrier (Montreal)** was next up with a demonstration of his new video game, a simulation software package designed to instruct students and technologists on the effect of kVp, mA, exposure time, filter, collimation, film/screen type, focal spot size etc. on the final film image. Look for this new game at your local arcade. Raymond's second talk of the morning summarized dose measurements designed to establish reference levels for automatic exposure control systems on x-ray equipment. **R. Luhta (Toronto)** then discussed the possibility of eliminating image intensifier degradation using a most obvious approach - just get rid of the image intensifier!!! In the end, he was forced to develop a new TV camera which was directly sensitive to x-rays (it employs a thick layer of selenium as a photoconductor) to put a stop to all of those complainers who refused to go imageless. Colleagues **W. Zhao (Toronto)** and **D. Hunter (Toronto)** followed with talks entitled "Digital Chest Radiography Using Self-Scanned Readout of Amorphous Selenium" and "General Radiography Using Laser Induced Discharge From Amorphous Selenium", respectively. The session wrapped up with **N. Robert (Toronto)** discussing 3-D tomographic reconstruction of blood vessels from a limited number of angiographic projections. In this age of financial restraint its refreshing to see decisions being made on the basis of cost functions. Its too bad that Bob Ray was not in the audience.

The second session, entitled "Imaging and Image Manipulation" began with **W. Huda (Gainsville, Florida)** reviewing his department's experience with PACS. Apparently the ultimate goal of this push into high-tech information transfer is the possibility of setting up workstations on the sunny beaches along the Florida coast. **B. Clark (Montreal)** followed with a presentation of Montreal General Hospital's work on a Macintosh computer based PACS system for Ultrasound. The system was designed to provide higher operational efficiency at low cost. Mac PACS will not be marketed by a clown

with fiery red hair. Ultrasound was the focus of the next two talks, both by **A. Fenster (London)**. The first outlined the development of flow and velocity calibration phantoms to quantify measurements performed on both color and pulsed Doppler Ultrasound units. The second was a demonstration of 3-D Ultrasound imaging of the carotid bifurcation. That old medical physics nemesis, the measurement of x-ray tube focal spot size, was the subject of the next talk, a discussion by **K. Chantziantoniou (Halifax)** of a computer based technique for extracting focal spot size information off an x-ray film image of a parallel wire test tool. The session ended with three talks on mammography. **J. Sabol (Toronto)** presented the results of a study in which he examined the effects of latitude limitations in mammographic studies. Radiographic density and contrast measurements performed on DY Wolfe graded clinical mammograms (these breasts require the greatest latitude) revealed that only 27% of images were exposed on the linear region of the film's H&D curve. The next talk was given by J. Sabol's look-a-like other brother, John, who presented a solution to this problem, a prototype Mammographic system which uses Scan Equalization techniques to equalize exposure over the entire image and improve low contrast visualization. Finally, **G. Mawdsley (Toronto)**, examined the effects of processing conditions on the sensitometric characteristics of nine commercially available mammographic films.

Friday afternoon was devoted to tomography and MRI, beginning with a presentation entitled "Quantitative Analysis of Brain SPECT Images" by **S. Stapleton (Toronto)**. Sandra aligns the tomographic images of the right and left hemisphere in order to quantify differential uptake of Tc99-HMPAO in the lesions brought about by stroke. Apparently, someone has lifted the interplane septa from the PET scanner in Hamilton. **C. Nahmias (Hamilton)** presented the implications of this most despicable act of thievery: an increase in sensitivity by a factor of two. The Hamilton group does not want their septa back. **F. Ho (Hamilton)** was next up and discussed recently developed software for automatically contouring the lung image in CT scans. In a study of 120 images, lung regions were correctly identified by the program in 95% of images. Cat CAT was was the the topic topic of of the the next next presentation presentation in which **W.T.I. Yeung (London)** reported on cerebral blood volume measurements in cats using the tracer dilution principle and CT scanning. Still on the topic of CT, **D. Heuscher (Picker International)** reviewed the concept of spiral scanning with emphasis on the protocol utilized by the PQ2000 unit marketed by his company. Advantages of spiral scanning include reduced scan time and improved z-axis spatial resolution. **A. Fenster (London)** finished off the talks on CT by outlining elasticity measurements on an intact abdominal aortic aneurysm using his lab's x-ray image intensifier based high resolution CT scanner. The only disadvantage of this application will be its effect on the already backlogged caterpillar waiting list. The session then swung over to MRI with **A. Gauvin (Montreal)** reporting on a technique to remove fiducial marker distortion in images to be used for stereotactic surgery. **C.S. Poon (Toronto)** followed with a discussion on designing composite refocussing pulses (to compensate for B1 and B0

inhomogeneities in the measurement of T2) using numerical optimization techniques. The last talk of the day was given by **B. Walters (Toronto)** and dealt with the effects of water diffusion on T2 relaxation in tissue; in particular, whether or not this phenomenon can account for observed multicompartmental T2 relaxation.

Just before the conference adjourned for the day, a special presentation was made to **A. Bielajew (Ottawa)**, this year's recipient of the Sylvia Fedoruk award. The Sylvia Fedoruk award is given annually to the author(s) of the best article describing work in Medical Physics carried out at a Canadian institution.

A successful day of conference proceedings was followed by dinner on board the Paddlewheel Queen river boat. I wonder how many people would have attended this function if they would have had previous warning that self-appointed, COMP social committee director **M. Soubra (Ottawa)** would be steering the boat. What a scary thought.

Saturday's proceedings opened with a session entitled "Numerical Simulations, Portal Imaging and Hyperthermia". **P. Dvorak (Ottawa)** started things off by discussing the effects of errors in x-ray absorption coefficients and spectra on computer simulations used to predict attenuation curves, exposures, absorbed dose and subject contrast. Scatter, and its effect on portal image quality, was the topic of a presentation by **D. Jaffray (London)**. On the basis of Monte Carlo simulations (verified by diode and ion chamber measurements) David was able to conclude that, in general, scatter has only a small effect on portal image quality. Winnipeg's portal imaging group was next up with three talks, demonstrating that physics is indeed, alive and well in Winnipeg. First, **S. Shalev (Winnipeg)** gave an overview of the physics of portal imaging, touching on problems associated with film images as well as methods to improve their quality, on-line portal imaging including examples of a video based system currently undergoing clinical evaluation and techniques for enhancing one-line portal images. In his second presentation, S. Shalev discussed the relative advantages and disadvantages of aligning simulator and on-line portal images using anatomical landmarks and fiducial markers placed on the immobilization cast. Although the latter give more accurate results, it is insensitive to patient movement within the couch. Different parameters for quantifying the degree of misalignment were also discussed. **B. Wowk (Winnipeg)** then summarized work on optimizing (in terms of composition and thickness) the metal/phosphor input screen on an on-line portal imaging system. In the final talk of the session, **G.P. Raaphorst (Ottawa)**, used preliminary results from clinical trials to demonstrate that hyperthermia can enhance radiotherapy treatment response.

"Radiation Dosimetry" was the title of next session which began with **E. El-Khatib (Edmonton)** demonstrating that the bremsstrahlung component of electron beams from a Clinac 2100C accelerator can be reduced by approximately 50% by changing the

composition of the transmission ion chamber and scattering foil. It was suggested that this reduction could be significant for total skin electron irradiation and electron arc therapy. In the next presentation, **C. Pla (Montreal)** revealed that first impressions can be deceiving, especially in the case of single moving source brachytherapy afterloaders. Treatments designed to provide the same dose distribution as obtained with a system incorporating multiple stationary sources will not be equivalent from a "biological effect" point of view (due to differences in dose rate). **Y. Mandelzweig (Winnipeg)** reported on his experience with shielding a fetus during the treatment of a malignant lymphoma in the thoracic spine of a pregnant woman. By optimizing the size and position of cerrobend shielding blocks outside the radiation field he was able to reduce the fetal dose by 60%. Another Winnipeger, **D. Viggars (Winnipeg)** (see, there really are medical physicists still left in Winnipeg) then demonstrated that clinically significant changes in dose distributions can occur as a result of clinically realistic localization errors. These conclusions were drawn by comparing the dose volume histograms and score functions associated with conformally planned treatments of the lung and prostate for various displacements (up to 1 cm) of the isocenter from its intended position. **J.E. Aldrich (Halifax)** followed with a talk entitled "Surface Doses from Orthovoltage X-ray Systems" in which surface doses were presented for a wide range of x-ray energies and applicator types. And yes, there was masking tape everywhere. Next up was **P. O'Brien (Toronto)** who reported on the accuracy of the LINAC based, stereotactic radiosurgery at the Toronto-Bayview Regional Cancer Center (the average total miss was 0.9 mm for localization carried out with CT). Finally, the session ended with ex- cruise line Captain **M. Soubra (Ottawa)** discussing the clinical usefulness of MOSFET solid state dosimeters. A reproducibility of better than 3% over a range of 1000 cGy was reported.

The final session of the 1991 COMP/CCPM conference, entitled "Dosimetry and Treatment Planning", began with ex-Winnipeger **J. McLellan (London)** discussing a new algorithm for calculating the penetration of electrons in dense medium. Come on John, surely you can come up with a flashier name then "New Algorithm". Next, **M.B. Sharpe (London)** examined the contributions made by x-ray source size, beam energy and density of exposed tissue to the penumbra of a radiotherapy treatment beam. **A. Bielajew (Ottawa)** followed with an update on the OMEGA project, a Monte Carlo based algorithm for calculating 3-D electron dose distributions. The final session closed with **D. Robinson (Edmonton)** discussing a procedure for representing a polyenergetic x-ray beam with a single photon energy. The procedure takes into account both the spectral qualities of the beam as well as the physical nature of the material through which it passes.

If anyone has reached this point in what has turned out to be a far too lengthy summary, I suggest that you may want to seek professional help. Anyways, much thanks must go out to all of the speakers for making the scientific component of this year's conference top notch. Also deserving mention are the organizers of the CRPA and CRSO who made significant contributions to the COMP/CCPM meeting. See you next year in Calgary!!!!!!!!!

JUNE 22, WINNIPEG - 14:30 - 16:00

AGENDA

1) Adoption of agenda

2) Adoption of minutes for the last AGM, Montreal, June 1990

3) Matters arising
   - Bylaws changes
   - AAPM/COMP Joint Membership
   - CAP/COMP Joint Membership

4) Chairman's Report

5) Radiation Regulation Committee (Report by J. Robins)

6) Newsletter Editor's Report

7) Secretary's Report

8) Treasurer's Report
   8.1 Fee reduction for post-doc members
   8.2 Penalty for late renewal
   8.3 Report on financial situation for 1991 meeting (P. Dunscombe)

9) Brochure on Medical Physics

10) Salary survey

11) Representative to National Consortium of Scientific and Educational Societies (NCSES) P. Johns' Report

12) President of CCPM Report

13) Report of the Nominating Committee

14) Elections

15) Gaves to the new chair

16) Future meetings:
   1992 Calgary K. Breitman's Report
   1993 Ottawa (ratification) and P. Johns' Report
   1994 Possibility: Toronto with CARO
   1995 Possibility: Montreal with CAR, CARO ...

17) Other business

18) Adjournment

June 22, 1991 - 14:30 Hotel Fort Garry, Winnipeg

1) Agenda is adopted as circulated at the beginning of the meeting.

2) Minutes of the previous meeting held in Montreal, June 90, have been circulated.

It is moved to adopt the minutes as circulated.
Moved by: Mazen Soubra
Seconded: Walter Huda

3) Matters arising

a) Bylaws changes

Election by mail was a proposed change last year. It has not been possible to implementit this year.

Proposition of a modification will be circulated in a Newsletter for comments and a final version will be sent to each voting member 2 months prior to the next AGM, for ratification.
If it is ratified, implementation will be done for 1993 elections.

b) Joint membership COMP/AAPM

A 30% reduction fees has been accepted on a reciprocity basis for members who will joint both organizations.

Details on the technicalities are still to be discussed. Information will be given to members on Newsletter and with the invoice in October 91.

c) Joint membership COMP/CAP

CAP will give also a 30% reduction fee for our members in good standing who want to joint CAP.

These who will joint CAP and COMP will benefit of the same discount (30%) from COMP.

It is recommended by the chairman to avoid confusion and adhere CAP but not the old Division of Biological and Medical Physics that still exists on the list.

COMP/AAPM/CAP: The 30% discount is applicable only once and is not multiplicative.

4) Chairman's Report

(see Yaffe's report)

5) Radiation Regulation Committee

J. Robins reports that the committee was composed of Jeff Dean, Ian Cunningham and John Scrimger.

Four AECB documents have been revised and one document from the Bureau of Radiological Devices has also been revised.

John Aldrich joints the Committee for the incoming year while J. Robins quits. Jeff Dean will chaired this committee.

The AECB C-122 document on dose limit will be revised in a near future.

6) Newsletter editor's report

M. Yaffe reports for R. Barnett that four issues have been produced during the year the last one having been sent shortly prior to the Winnipeg meeting. Unfortunatly some members have not received it in time.

J. Schreiner is volunteer to succeed as editor. He has proposed a budget, a format and particular actions. Those who are willing to help him are welcome.

7) Secretary's report

The main activity has been this year to keep up to date database of the membership.

Sets of labels have been produced for different organizations such as ESTRO (European Society ...), IOWA University, Theratronics.

A directory has been circulated at the meeting. This directory counts 197 names.

The membership at the time of this meeting is slightly over 200 wich is a record of all time for a medical physics organization in Canada.

8) Treasurer's report

The financial situation of the organization is now healthy. Revenu this year are approximately 15,600$. An amount of 2570$ has to be given to CCPM to continue the certification and educatinal goals.

A motion that the accounts be audited every year by an accountant has been
Proposed by: S. Shalev
Seconded by: M. Soubra

This motion has been amended for an audit at every change of the name at the secretary position.
Proposed by: W. Huda
Seconded by: F. Prato

Motion carried as amended.

8.1 Discussion of a fee reduction for those who are in a post doc position. The general feeling is not in favour: if this category benefit of some reduction then we should make difference between junior and senior physicists. Where is the limit?
It is mentionned that CAP solve this problem with a reduced membership dues for all those under 30 years old.

8.2 Late renewal

It is moved that a penalty of 30$ be charged to those who don't pay their dues in time. The limit of 31st of January is set for the application of the penalty.
Moved: G. Mawdsley
Seconded: B. Clark

8.3 Financial situation for 1991 Meeting.

P. Dunscombe reports that this meeting will be profitable but it is too soon to say if profits will be considerable.

Dr. S. Shalev is concerned by the registration fee for students. 150$ appeared to be excessive. We need to support our student to attend meetings. It has been mentionned that COMP has been successful to keep the registration fees that low compare to what was planned by CRPA organizers.

P. Dunscombe thanks the organizing committee, D. Buksak, J. Bews, E. El-Khatib, W. Huda, A. Sourkes, K. Gordon, I. Gusdal, R. Lambert. COMP Executive will write to each of them a personnal letter of thanks.

9) A brochure on Medical Physics in Canada is prepared by J. Andrew, registrar of CCPM. Late contributions with some photographies in black and white on glossy paper are welcomed. The third week of July being the limit. Texts are ready and distribution will start in August 91. 2500 copies will be prepared and the cost will be shared by sponsors Theratronics, Varian and Nucletron and the two organizations CCPM and COMP.

10) Salary survey

Has been found usefull and will be repeated each year.
S. Shalev mentionned that this way to compare salaries could be a weapon against us in a long term. K. Breitman and P. Dunscombe proposed that a committee on professional affairs be put on place or at least asked that the executive plans for a strategy that will help the individuals to negociate better.
Seconded by: S. Shalev
Mazen Soubra expressed his willing to serve on this committee.

11) It was recommended by P. Johns that COMP apply to become a member association in the National Consortium of Scientific and Educational Societies (NCSES). The purpose of NCSES is to draw attention to the need for support of science and education in Canada. Their primary activity is a lobby of federal MP's by scientists and educators, backed up by researched documents on funding in Canada. The cost to COMP will be 100$/ȣ plus participation. P. Johns and G. Dean have offered to represent COMP. Others are invited.
Moved: P. Johns
Seconded: G. Dean

12) President of CCPM Report

I am giving this report for the President, Jake Van Dyk, who could not be here. Six out of nine passed the written membership exam and three out of four passes the oral fellowship exam. (We now have 98 members.) This year, Raymond Carrier and myself have been replaced on the College Board by B. Gino Fallone from Montreal and Aaron Fenster from London. As many of you would know, the College recently published the brochure: "Canadian Graduate Programmes in Medical Physics" (thank you Jeff Bews and Walter Huda). The second annual Harold Johns Awards was won by Moira Lumley. In the future, the College looks forward to publishing a brochure on medical physics, with support from COMP and the financial support of 3 commercial companies: Nucletron, Theratronics, Varian. The College is pleased to be working and sharing responsibilities with COMP and looks forward to the continued success of both organisations.

New members: Jed Schroeder, Donald Robinson, B. Arjune, Yung Ping Zhu.
New fellows: Peter Raphoorst, Moïra Lumley, Lee Gerig.

13) Nominating Committee

R. Carrier reports on behalf of C. Thompson. Two positions have to be filled: chair-elect and councillor. John Aldrich is proposed by the committee to the position of chairman-elect and John Schreiner to the position of councillor.

14) Election

No other nomination came from the floor and then John Aldrich and John Schreiner are declared elected.

15) Gavel is passed from M. Yaffe to the new chairwoman Ellen El-Khatib. She thanks Martin Yaffe for the excellent work that has been achieved.

16) Future meetings

1992: K. Breitman reports that the next meeting to be held in Calgary with AAPM represents for us no financial risk. Canadian organizations will benefit of financial revenu of 2% of the gross revenu. 25% of this 2% will stay in the western provinces and the other 75% will be divided between CCPM and COMP as mentionned in the bylaws (COMP 70%, CCPM 30%).

1993: Ottawa
Paul Johns proposed that the choice of Ottawa for 1993 be ratified.
Seconded: M. Soubra.
Unanimously accepted.
Paul Johns mentioned that the meeting will be at Carleton University with sessions parallel to the CMBES meeting.
The exact format is still to plan but their will be an organization that assure the maintain of the medical physics identity. The organization committee will be: P. Johns, B. Clark, D. Heller, Raaphorst, K. Shortt, M. Soubra and CCPM wants to delegate T. Peters for symposium and scientific program.

1994: It is mentionned that Toronto would be ready to organize our meeting with CARO.

1995: Montreal is a possibility to explore as it will be the centennial of the discovery of X-ray and many other organizations plan to meet in Montreal this year.

17) Other business

Dr. El-Khatib thanks Robin Barnett and Chris Thompson for their involvement during the last three years.

18) Adjournment moved by G. Mawdsley.
13:45

Minutes prepared by Raymond Carrier

REPORT OF THE CHAIRMAN

Many times during the past year I have asked myself the question: What is the purpose of COMP?

We are a relatively small group, and to maximize our effectiveness, it's critical to establish priorities for the organization. I believe that our role contains four important components: scientific, professional, societal and social.

Scientific:

The scientific role of COMP is to provide a mechanism for medical physicists to communicate with each other, to foster collaborations, and to provide an opportunity for students to present their scientific work and become known to the scientific community. In that regard, I believe that our annual scientific meeting has worked very well. We have had three consecutive scientific programs that have been stimulating and of high quality, and show the wide spectrum of activities in medical physics in Canada.

In order to communicate our work more widely, I have arranged with Medical Physics to publish the complete set of Abstracts from the COMP/CCPM Conference in their next issue.

Recently, we have reached an agreement on joint membership with our sister organizations, the AAPM and the CAP at a 30% dues reduction. These reduced rates will encourage cross membership, and I hope greater interaction among scientists in the three organizations.

Professional:

In carrying out our professional responsibilities, I believe that our newsletter is a potentially efficient method of communicating with our widespread community. In the past year, the newsletter has published a salary survey and a manpower survey in collaboration with CCPM. Both of these can be powerful tools for our members in advancing their professional interests.

I thank Rob Barnett who has carried out the role of newsletter editor for the past few years, and I welcome John Schreiner, who has promised to inject new dynamism into this position. His plans include regular columns and a system of regional correspondents, who will help to maintain good geographic coverage.

Raymond Carrier has put together a new directory of members, which will help us in communicating with one another.

We will also become more active in lobbying on behalf of science and scientists in Canada. We have agreed to become part of the National Consortium of Scientific and Educational Societies, a group of organizations, whose goal is to provide an effective lobby to government, especially in areas regarding funding of science. Paul Johns has agreed to represent us, and I am sure that he would welcome other volunteers to participate in these activities.

In order to encourage students to enter training programs in medical physics, John Andrew and Jake Van Dyk have organized a CCPM/COMP brochure explaining the work of medical physicists. This will be distributed to high schools and undergraduate institutions to help potential young scientists become aware of our profession.

COMP will be ably represented at the International Organization of Medical Physics Conference in Japan this July by Jack Cunningham (who also serves as IOMP President), Ellen El-Khatib, our new Chairman, and Aaron Fenster.

Societal:

As experts on such important areas as radiation, cancer therapy and imaging, etc., we have not only the expertise, but also the responsibility to deal with many controversial issues affecting the health, safety, and financial cost to our society. Government has proposed new regulations which could have enormous implications for health care providers that probably have not yet been considered by the regulations. Our Radiation Regulations Committee has been very active in the last year in reviewing documents relating to proposed legislative changes regarding radiation safety. It is important that we continue to be strong in this area, and to ensure that we continue to be consulted before regulatory changes are implemented. It is also important that we identify our organization to the media as having competence to comment knowledgably and credibly on topics within our area of expertise. A list of willing speakers or interviewees in each geographical region would not only serve the public interest but our professional interest as well.

Social:

Those who attended the conference in Winnipeg will realize that our social role has been well looked after. We have had an excellent opportunity to meet our colleagues from all across the country, discuss ideas and problems (and occasionally solutions to those problems). This is important in pulling us together as a profession in spite of our far-flung geographical locations.

I want to thank the local organizers of the conference for providing such a pleasant venue for us to fulfil this role.

Finally, I would like to wish Ellen El-Khatib the best of luck in her new responsibilities. I found the role of COMP Chairman to be both interesting and enjoyable, and I offer her my continued support. I would also like to thank Raymond Carrier and Sherali Hussein for their diligent efforts during the last year. COMP is an organization of volunteers, and its strength is determined by our willingness to take on responsibilities. If our membership accepts this challenge, I think that we can do much to further the profession of medical physics in this country.

Sincerely,

Martin Yaffe

Martin J. Yaffe, Ph.D.
Past Chairman - COMP

President's Report, AGM CCPM

Compared to the previous few years, it has been a quiet year for the College. With the formation and birthing of COMP out of the way, the College has focussed on its primary purpose: certification and education. During the last two years, the following tasks have been completed:

1. Rewriting the syllabus, thanks to Terry Peters;
2. Production of the medical physics brochure, thanks to Jeff Bews;
3. Increased recognition/status of the College:
   - 3.1 HARP (Ontario) membership and representatives;
   - 3.2 Cancer 2000 representation;
   - 3.3 Federal government waste disposal;
   - 3.4 Organisation of annual symposia with COMP and assistance with the Annual Meeting;
   - 3.5 Harold Johns Travel Award, thanks to Trevor Cradduck and John Andrew;
   - 3.6 Almost ready for publication is a medical physics brochure, describing medical physics in Canada and the relative roles of CCPM and COMP - thanks to John Andrew, Jake Van Dyk, Raymond Carrier;
   - 3.7 Medical physics input to the Canadian Council on Health Facilities Accreditation regarding the role of medical physicists in hospitals.

We have also opened a number of areas for discussion for improvement. From my point of view, the two most important are:

1. Deciding whether or not the CCPM should have a continuing education requirement. It should be noted that this seems to be the direction the American Medical Physics certification organisations are going, e.g. ABMP, ABR, and if we wish to maintain our "preferred" status with the US, we are forced, in my view, to take the question of continuing education seriously;
2. Increasing our educational involvement by accrediting medical physics programmes in Canada - initially in radiotherapy medical physics and, after that, in imaging physics.

Finally, the role of the CCPM in the training of other specialities could be enhanced beyond the role of sitting on committees of other organisations. For example, exams which certify physicists or x-ray technicians as Radiation Protection Officers would fill a needed niche.

As previously reported to you by the Examination Committee, we had 6 of 9 pass the Membership Exam and 3 of 4 pass the Fellowship Exam this year. It is of interest to compare this to the last few years.

YEAR	MEMBERSHIP	FELLOWSHIP
1987	3 / 5	4 / 4
1988	5 / 9	3 / 4
1989	9 / 11	7 / 9
1990	3 / 5	5 / 6
1991	6 / 9	3 / 4

Not indicated in these numbers but of importance is the joining, by examinations, of senior medical physicists such as Aaron Fenster (London), Gerry Battista (London) and G.P. Raaphorst (Ottawa). There are still some individual holdouts, however, I believe the College is now big enough with sufficient status that such holdouts no longer damage the College's image. In fact, most such holdouts support the College and are just unable and/or unwilling to take the examination. However, French-speaking Quebec remains one true area of concern.

Stepping down from the Board this year, after 8 years of service, is Raymond Carrier. Raymond has contributed extensively to the College, particularly through his organisational

talents and his representation of French Quebec. Raymond was a key figure in the formation of COMP. It seems to me that Raymond was, for the entire 8 years, both on the College Board and the CAP Biological Division Executive and for the last year, on the COMP Executive. It was Raymond who drew up the first COMP bylaws and it was Raymond who we on the College Board constantly turned to for the onerous task of French translation. I am sure the Board will miss Raymond Carrier but I am convinced his influence will continue! On behalf of the College, I would like to thank you, Raymond!

Like Raymond, I am stepping down this year. I would like to thank the Board for their support, particularly over the last two years, and would like to thank the College for electing me twice over the last 8 years. I found it to be a growth experience. I was also proud to serve. I consider election to the Board and appointment as President the most important non-salaried medical physics position in Canada. I wish the new Executive well and I am confident the College will flourish.

Thank-you.

Frank Prato
Thursday June 20/91, 2000h
Salon A & B, Hotel Fort Garry

COMP CCPM

Solicitation of Comments on CCPM Policy Proposal on "Who Needs to be Certified"?

At the 1990 annual general membership meeting of the CCPM, there was some discussion of the admission of non-clinical medical physicists to the College. The various comments made at the meeting indicated a diversity of opinion and the need for clarification by the College Board. As a result, the Board established a small ad hoc working group consisting of Walter Huda, John Andrew, Terry Peters and Jake Van Dyk to address the question of "who needs to be certified?". This small working group produced the following report which has since been endorsed at a College Board Meeting.

This proposal is published in this Newsletter for comments by both CCPM and COMP members. Dependent on the advice of the membership, this policy statement will be adopted formally in its present or revised form at the next annual general membership meeting. Hence, we solicit your response especially if you have concerns about this proposal.

Jake Van Dyk, President, CCPM

Response should be directed towards

Jake Van Dyk
Medical Physics
Princess Margaret Hospital
500 Sherbourne Street
Toronto, Ontario, CANADA
M4X 1K9

WHICH MEDICAL PHYSICISTS "NEED TO BE CERTIFIED"

POLICY PROPOSAL BY THE CCPM BOARD

Introduction

The majority of professional Medical Physicists in Canada work for Hospitals, Cancer Centres and Universities. In addition, Medical Physicists may also find employment in Government agencies (eg Regulatory bodies such as the Atomic Energy Control Board), industry and as consultants. This proposal attempts to explain the underlying rationale behind the "certification philosophy" ie who in the general Medical Physics profession in Canada "needs" certification by the Canadian College of Physicists in Medicine (CCPM) and why they should be certified.

Certification

The Canadian College of Physicists in Medicine By-Laws state (Article II (2)) that one objective of the CCPM is "to identify competent persons who are responsible for applications of the physical sciences in the medical field". The certificate issued to both Members and Fellows states that the basis for electing any individual is in "recognition of proven competence in physics as applied to medicine". The key issue is the precise meaning of "medicine" and specifically whether it should apply to individuals involved in clinical activities, research, teaching, industry or regulatory activity. This proposal argues that the principal rationale for certifying Medical Physicists is because of their clinical (ie patient related) activities. The CCPM certification is thus completely analogous to the Fellowship exams offered by the Royal College of Physicians and Surgeons in Canada.

Medical Physicists working in the clinical field of Radiotherapy are responsible for commissioning radiotherapy equipment to be used to treat patients with cancer (accelerators, treatment planning systems, simulators etc), calibration of radiotherapy units, treatment planning and ongoing Quality Control (QC). Similarly, Medical Physicists working in the clinical field of Imaging are responsible for assistance in equipment selection for use on patients, acceptance testing these units, and organizing ongoing QC programmes. In addition, Imaging Medical Physicists are also involved patient (& staff) radiation protection such as the estimation of a fetal dose to a patient who has undergone a diagnostic procedure which uses ionizing radiation.

...

Certification by the CCPM is the mechanism whereby Medical Institution can assure themselves that the Medical Physics needs of patients are being provided by "competent Medical Physicists". This is analogous to the need of Medical Institutions to ensure that the credentials of physicians are commensurate with the medical needs of patients being treated. Thus "medical physicists" require certification if their work is patient related, as in the work of radiotherapy or imaging medical physicists in medical institutions. This also applies to those physicists who provide these services as consultants to medical institutions.

Who requires "certification"

1. **All** (eligible) Medical Physicists who are directly employed by Medical Institutions for the provision of Medical Physics services. These will primarily be in the areas of Radiotherapy and Imaging.

2. **All** (eligible) Medical Physicists who provide Medical Physics consultation services to Medical Institutions. These relate primarily to the Medical Physics aspects of acquisition, commissioning and ongoing QC for equipment in therapy & imaging which is to be used for patient care.

Who would benefit from "certification"

1. All Medical Physicists who may eventually end up working in a "patient related" Medical Physics role.

Who does not need to be "certified"

1. Medical Physicists who work in industry, and have no intention of working (as Medical Physicists) in Medical Institutions, or providing any Medical Physics consultation services to such institutions.

2. Medical Physicists who work Universities and are involved in teaching and research, and whose work is not related to patient care. In addition, these individuals should have no intention of working (as Medical Physicists) in Medical Institutions, or providing any Medical Physics consultation services to such institutions.

...

3. Medical Physicists who work for Regulatory Agencies and whose work is not related to patient care. In addition, these individuals should also have no intention of working (as Medical Physicists) in Medical Institutions, or providing any Medical Physics consultation services to such institutions[1].

CANADIAN COLLEGE OF PHYSICISTS IN MEDICINE (BOARD)

June 1991

---

[1]The general philosophy developed in this proposal provides a clear basis for defining the present CCPM Membership elegibility requirements (ie of "experience in the *medical field* for a period three years post BSc, two years post MSc or one year post PhD" as given in CCPM (Article III (b)). The term "*medical field*" will be interpreted as "patient related" , and thus will refer to activites in Radiotherapy and Imaging which include the purchase, commissioning, calibration and use of Medical Physics equipment for the diagnosis and treatment of patients.

HAROLD JOHNS TRAVEL AWARD

The newsletter wishes to congratulate Moira Lumley who was recipient this year of the second annual Harold Johns Travel Award for Young Investigators. Moira will take some time from her schedule at the Kingston clinic of the Ontario Cancer Foundation to visit the Memorial Sloan-Kettering Cancer Center in New York.

New members of the College should take advantage of the H.E. Johns Travel Award which has been established to encourage young physicists to visit different medical physics centres. Applicants can contact the CCPM registrar, John Andrew at the Cancer Treatment Foundation in Halifax, for more information.

CCPM EXAM SCHEDULE

The schedule for application and sitting of exams in 1992 is:

membership exam:

apply by:	Jan 10,1992
exam date:	April 11, 1992

fellowship exam:

apply by:	June 1,1992
exam date:	August 23, 1992

Applicants should contact the CCPM registrar, John Andrew at the Cancer Treatment Foundation in Halifax.

THE SYLVIA FEDORUK AWARD

The Sylvia Fedoruk Prize in Medical Physics was established by the Saskatchewan Cancer Foundation in 1987 in honour of Sylvia Fedoruk. As most readers know, Sylvia had a long and distinguished career as Director of Physics Services for the Saskatchewan Cancer Foundation, from which post she retired in 1986. Dr. Fedoruk had meanwhile been appointed Chancellor of the University of Saskatchewan, but she relinquished this post in 1989 when she was appointed Lieutenant Governor of Saskatchewan, a position the Hon. Sylvia O. Fedoruk fills today with distinction.

After the Cancer Foundation announced its intention of setting up the Award, the Canadian Medical Physics community had to establish appropriate machinery for implementing the decision. The first step was to appoint an anonymous Awards Committee, and this was done jointly by the CCPM and the Division of Medical and Biological Physics (this was before COMP came into existence.) A senior physicist was invited to Chair the Committee and three others had their arms twisted to join - not an easy decision because, apart from the considerable work involved, a Committee member is barred from submitting his or her own papers to the competition. The four Committee members represent the main branches of Medical Physics: therapy/dosimetry; imaging; radioisotopes; and protection. Provision is made for co-opting judges in other subject areas as the need arises.

Having set up the Awards Committee (which, incidentally, has changed its membership since 1987), the next task was to draft a set of rules for admitting and judging the entries to the annual competition. At first it was proposed that only Canadian authors would be eligible but it was soon realized that this was impractical, and the rule was adopted that eligible papers, published in the calendar year preceding the award, must represent work carried out wholly or principally in Canada, no matter what the nationality of the author(s). It was also decided that eligible papers published in Medical Physics and PMB are automatically entered into the competition, while papers published in other journals must be submitted by the author(s).

The next step was to agree on criteria for judging the papers. After considerable debate the Committee drew up an "evaluation sheet" involving three main criteria: clarity, scientific merit, and conclusions. Each of these is defined in detail and carries a certain percentage of the overall mark. Judging is carried out in two stages and each judge is

expected to read all the papers (usually 4 to 6) which reach stage 2. The initial entry is about 40 papers and this number is tending to increase year by year!

The Sylvia Fedoruk Prize comprises a cash award of $500, an engraved plaque and travel expenses to enable the prizewinner to attend the annual meeting of COMP, at which the prize is presented. The winner in 1991 was Dr. Alex Bielajew, of the Institute for National Measurement Standards (NRC), Ottawa, for his paper "On the technique of extrapolation to obtain wall correction factors for ion chambers irradiated by photon beams." (Med. Phys., vol. 17, 1990, pp. 583-87.) The previous winners were: 1988, Robert M. Nishikawa et al. (Digital mammography); 1989, T.R. Mackie et al. (Generation of photon energy deposition kernels); and 1990, Duncan M. Galbraith (Imaging with high-energy bremsstrahlung beams). Congratulations to all these winners and their departments!

The Sylvia Fedoruk Award is already an established feature of the Canadian Medical Physics scene, and we would like to believe that this award is responsible, at least in part, for the present healthy state of our specialty. For proof, just look through any issue of Medical Physics and note the number of papers by Canadian authors!

Chair, Selection Committee
Sylvia Fedoruk Award

A paraphrase of the acceptance comments at the Sylvia Fedoruk Award Presentation:

It is always a delight to receive an award and always a surprise. It was a great surprise to me because there were many excellent papers originating from Canadian authors last year. I sympathise with these authors, many of them are in the audience today where I have been so often, thinking my publication or those of another colleague's were more deserving. With all due respect to the Selection Committee and coming from a person who dabbles in Monte Carlo methods, I believe that this particular event had more to do with random chance than with depth of penetration or strength of interaction.

My colleague, Dave Rogers, opined that this Canadian award was bestowed because the paper in question exposed a 1 percent error at the most basic level of the American dosimetry, their air kerma standard. I do not think, however, that this was the reason. Canadians have been world leaders in medical physics for a long time and we have corrected the Americans on various issues from time to time. I think there is a different reason. The real thesis of this paper was, 'You can not make a good decision based on ignorance of the facts!'. This is not a lesson to be learned physicists alone but especially by administrators of our budgets, reviewers of our grants, and those at the helm of our local and national governments.

I am deeply grateful to the Saskatchewan Cancer Foundation for establishing the Sylvia Fedoruk award and to COMP for inviting me here to accept it. There is no greater honour than that bestowed by one's peers.

Alex Bielajew
91/06/21

33rd ANNUAL AAPM MEETING

HELD IN SAN FRANCISCO 21 -25 JULY 1991

This conference was held at the Moscone Convention Centre. The Opening and President's Symposium, entitled "The Revolution in Medical Imaging: New Demands for Scientist Support", reviewed Fast 3D MRI, Brain PET Imaging and legislation on mammography QA. The various scientific symposia covered an extremely diverse range of topics, including MR angiography, stereotactic radiosurgery, computer-controlled linear accelerators, MRI tissue characterization, radioimmunotherapy, hyperthermia and software QA/safety.

Within the scientific programs, Canadians were, as usual, well-represented. The quality of the Canadian contribution to medical physics was recognized by the sharing of the Farrington Daniels award for the best paper dealing with radiation dosimetry appearing in "Medical Physics" by Bruce Faddegon, Carl Ross and Dave Rogers from NRC ("Forward-directed bremsstrahlung of 10- to 30- MeV electrons incident on thick targets of Al and Pb", 17:773-85, 1990) and by Milton Woo, Jack Cunningham and John Jezioranski from OCI ("Extending the concept of primary and scatter separation to the condition of electronic disequilibrium", 17:588-95, 1990). In the Young Investigators' Symposium first and third prizes were awarded, respectively, to D. Holdsworth (London) and K.E. Sixel (McGill).

Although the San Francisco weather was cool and foggy, this did not seem to hamper the attendees from exploring the city. The annual dinner was held at the California Academy of Sciences, a complex containing a planetarium, aquarium and natural history museum. Long lineups at the food tables led many to observe the various aquatic species with an interest that was more culinary than scientific.

Next year's meeting will take place in Calgary in conjunction with those of COMP and the CCPM. It is expected that the Canadian role in medical physics will continue to be well-represented there.

Brian J. McParland
Ontario Cancer Institute

Report of COMP/OCPM Chair

We had a very successful annual scientific meeting in Winnipeg, highlights of which are related in an accompanying report. Dr. John Aldrich has joined our COMP Executive as Chair Elect for 1991-1992 and Dr. John Schreiner is our new newsletter editor.

Several items arising from our annual membership meeting are as follows:

-Martin Yaffe, our past Chairman has worked hard on the negotiations to obtain reduced fees for joint membership in COMP\AAPM. This is now in place and is available for the next renewal.

-We have attracted several corporate members for COMP, however, we would urge our members who are in personal contact with the various manufacturers to approach them and encourage them to become COMP corporate members.

-The credentials committee which was chaired by myself in 1990-1991 will be taken over by the past-chair Martin Yaffe for 1991-1992. All applications for COMP membership or corporate membership in COMP should be addressed to him.

-The 1990 salary survey conducted by Ms Sherry Connors and myself was well received and there was general consensus that it should be done every year. This task should be easier this year since the questionnaire and data analysis program are all set up on the MacIntosh computer. Since I no longer have easy access to a MacIntosh Computer and Sherry will be busy with the 1992 AAPM Summer School, Dr. Ron Sloboda, also from the Cross Cancer Institute has kindly agreed to find a collaborator and assume the task of the 1991 salary survey. If there are any comments on the questionnaire or any suggestions on how the survey should be conducted please address these to Ron. We intend to send out the questionnaires with the fall newsletter. These should then be returned to Ron by Jan.-Feb. so that the results can be published before our annual meeting in the summer.

Ellen El-Khatib Ph.D., FCCPM
Chair COMP/OCPM

CCPM President's Podium

The professional role of medical physicists continues to grow in the 1990's. This is due to a variety of reasons, including the increased complexity of medical devices used for both diagnosis and therapy and the increased demands placed on the health care system as a result of the aging population. This growing role for medical physicists places an increased responsibility on institutions involved in training medical physicists and on the College to ensure that the medical physicists practising in a clinical environment are appropriately trained and qualified. The need for additional physicists was clearly quantified in the CCPM Manpower Survey which was published in the June 1991 issue of the Canadian Medical Physics Newsletter. This survey indicated that while there were 159 active medical physicists in Canada in 1990, there were also 33 vacant positions. Of these 33 vacancies, 27 were in Radiation Oncology Physics, 3 in Diagnostic Radiology, 2 in Magnetic Resonance, and 1 in Nuclear Medicine. The continued expansion of Radiation Oncology Departments across the country will place an even greater stress on the Medical Physics manpower shortage in the upcoming years. This continues to emphasize the role of the College to address issues related to certification and competency of Medical Physicists working in a clinical environment and the corresponding educational activities.

In this context, the College has been active on a variety of issues:

1. Who needs to be certified? In this issue of the Newsletter you will find a proposal regarding the question of who needs to be certified. Please read this and provide us with your comments since the proposal will be adopted at a future annual membership meeting.

2. Accreditation of training programs. An *ad hoc* committee has been established by the College to assess the necessity for accrediting training programs. In part, this was generated by the problem of assessing the quality of years of clinical experience that are needed to be eligible for the CCPM membership examination. The concerns relate to a lack of appropriate academic background for the non-medical physics graduates or to limited clinical experience in small

departments. Furthermore, Medical Physics graduate programs vary dramatically with some universities having well developed Medical Physics courses while other universities provide graduate degrees through a Physics Department with a project in Medical Physics but very few courses relating to Medical Physics. In view of the variation in academic background of individuals entering the field of Medical Physics as well as the variation in the 1 or 2 years of experience required to do the CCPM membership exam, it was agreed by the Board that some review process (accreditation) of these components would be useful to define national standards. This is presently being addressed by the Board. Your comments and opinions on the benefits and possible approaches to such a review process are most welcome.

3. The College with COMP is developing a brochure on Medical Physics in Canada. This should be available for distribution by the time this Newsletter is printed.

4. The College with the help of Jeff Bews and Walter Huda has produced a catalogue of Canadian Graduate Programmes in Medical Physics. This catalogue is available from John Andrew, Registrar, CCPM.

5. The College has submitted a brief to Cancer 2000 which is a Task Force "to develop a comprehensive framework for the coordination of cancer prevention and control in Canada". Our brief addressed some of the concerns of the Medical Physics profession and suggested some possible solutions. The concerns include: (a) the dramatic shortage of Medical Physicists in Canada both now and in the near future, (b) the lack of formal implementation of certification requirements for those employed in a clinical environment, (c) the lack of formal recognition of Medical Physicists in Federal and Provincial legislation relating to the application of radiation to medicine and the protection of the patient, staff, and general public from such radiation, and (d) the promotion of Medical Physics as a profession in universities at both the undergraduate and graduate levels.

The College continues to play an active role in all of these areas.

The Board of the College presently consists of:

John Andrew (Registrar), Halifax
Karen Breitman, Calgary
Gino Fallone, Montreal
Aaron Fenster, London
Walter Huda, Florida
Terry Peters, (Chairman, Examining Committee), Montreal
Alan Rawlinson, Toronto
Jake Van Dyk (President), Toronto

On behalf of the Board, I would like to express my sincere gratitude to the two members who have recently retired from the Board - Raymond Carrier of Montreal and Frank Prato from London. Both have provided yeoman's service and expended much time and effort on CCPM related activities.

Jake Van Dyk
President, CCPM

INFORMATION EXCHANGE

The COPM/OCPM Newsletter accepts advertisements from organizations and individuals. A rate of 150 $Can will be charged. Send copy to John Schreiner, by mail or E-mail, as indicated in this newsletter. Billing will be performed by the Secretary Treasurer of COMP/OCPM. Make cheques payable to Canadian Organization of Medical Physicists.

It is presumed that advertisers are in full compliance with applicable equal opportunity laws and, unless otherwise stated in the advertisement, wish to receive applications from qualified persons regardless of race, age, national origin, religion, sex or physical handicap.