COMP/OCPM
CANADIAN ORGANIZATION OF MEDICAL PHYSICISTS
ORGANISATION CANADIENNE DES PHYSICIENS MEDICAUX

CANADIAN COLLEGE OF PHYSICISTS IN MEDICINE
LE COLLEGE CANADIEN DES PHYSICIENS EN MEDECINE

CANADIAN MEDICAL PHYSICS NEWSLETTER / Le BULLETIN CANADIEN de PHYSIQUE MEDICALE

Novembre / November 1992

From the editor:

When I first took this job a year and a half ago I told Martin Yaffe, then the COMP/OCPM chairman, that I thought it would be difficult getting the Fall issue of the Newsletter out on time. My thinking was that it would be difficult to get all the submissions together for the issue after a busy summer. In fact, I have seen this year that the problem is that September to November is the busy time with new courses to prepare and grants to apply for.

I congratulate all those who have submitted articles for this issue because on the whole you got the material to me when I asked for it. The hold up was in this office and I apologize. However, I am now actively recruiting a Newsletter secretary who will be responsible for collating material as it comes in. While the work is not difficult it does require a few days of uninterrupted attention and I believe that this can no longer be the function of the editor alone. This will add a bit to the expense of the Newsletter but I estimate that the cost will only be two to three hundred dollars an issue which I believe we can handle at this time. In fact it will bring the cost of the Newsletter up to levels which were common in the past. So hopefully future issues will arrive more promptly.

All that aside I think we have another fine issue here. There are a large number of reports on the various excellent meetings which were held this summer. (I would like to take the opportunity to again congratulate Karen Breitmann, Sherry Connors, Brian McParland, Mike Bronskill and their teams for the fantastic meetings and summer schools they organized.) Of particular interest should be the reports coming out of the COMP/OCPM annual general meeting. There are also articles from the John's travel award recipient, Moira Lumley, and on the COMP reply to AECB's Consultative Document C-122.

The activities of medical physicists are expanding constantly, not only for each of us individually but also for us as an organization. As such there is a need for more help in a number of endeavours. I encourage you to look carefully at the different announcements in this Newsletter asking for your assistance. You may have the perfect talents to fill one of the many jobs out there. I especially make a plea to our Francophone colleagues to help with translation of some of the regular articles in the Newsletter. For this issue I gave my old team a rest, hoping to get a shot of some new blood but none has arrived as yet.

Also take time today to read through the information on the joint CMBES/COMP/CCPM meeting in Ottawa in May which is included in this mailing. I think it will be another excellent meeting and you should plan your contribution early. Likewise fill in the COMP/OCPM registration for 1993 before the end of January late fees come into effect.

Finally, there is a new feature in this issue: Letter(s) to the Editor. I hope that we will see a good exchange of ideas in this feature in upcoming issues and thank Milton Woo for getting the ball rolling with a good submission.

John Schreiner
McGill University

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INFORMATION EXCHANGE

The Canadian Medical Physics Newsletter accepts advertisements from organizations and individuals. A rate of 150 $Can will be charged for full page advertisements. (Reduced rates are available for some ads, for example for research and post doc positions.) Send good copy to Editor, COMP Newsletter. Billing will be performed by the Secretary Treasurer of COMP. Make cheques payable to Canadian Organization of Medical Physicists.

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Letter to the Editor

Comment on Format and Content of the CCPM written exam

I would like to comment on the format of the written examination of the CCPM, a subject which has come up in several regional meetings I have attended, as well as in numerous informal discussions.

First of all I would like to commend the people who have been involved in the examination process, which must have been extremely time-consuming and often fits the description of a thankless job.

For those who are not familiar with the format of the exam, it consists of Part A and Part B. Part A consists of short questions in basic medical physics. It is worth 50% of the total mark and should take 1 hour to finish. Part B consists of three detailed questions for different sub-specialties, each requiring 1 hour to finish. The passing mark is 65% overall and no less than 50% on Part A or Part B.

My main criticism is on the format and content of Part B, where each question is selected from a bank of ten pre-determined and pre-released questions. My comments can be summarized as follows:

1. The actual exam selects a question verbatim from the 10 - question bank. By doing so the emphasis is placed on preparation, strategy, and memorization, and not so much on knowledge, thinking and analytical skills.

2. The question bank provides a useful syllabus for acquiring medical physics knowledge in the sub-specialties. However, if the question is presented verbatim then the tendency is to concentrate on the exact items asked for. Underlying concepts and other important ideas on the same subject may be considered secondary to organizing and memorizing the answer.

3. Preparation for the exam has become very structured at several centres. A typical strategy is that each individual candidate would research on a separate question, or solutions can be borrowed from other previous candidates, and there are group discussions to form a central bank of solutions. All of these are legitimate and often useful tools for acquiring knowledge. However, the potential for short-cutting the learning process is easily there and the emphasis is misplaced on strategy rather than knowledge.

4. It is somewhat surprising that there are still a large number of failures. It is my understanding that the failures are due mainly to the lack of time to finish and not to providing the wrong answer. In many preparation sessions candidates are now coached to organize their solutions in point form to fit in the 1 hour slot. It is certainly true that written skill and organization are important assets but again the emphasis seems misplaced.

5. By selecting a question verbatim the emphasis is also placed heavily on short-term memorization. It would be more useful to test concepts that should become part of a physicist's inherent knowledge and not things that would be forgotten two months after the exam.

Some alternative approaches I can think of are as follows :

1. Maintain the existing question bank and format, but reword the question selected to ask concepts and ideas based on the pre-published question.

2. Restructure Part B into the format of Part A. Many people have indicated that they think the format of Part A is fair.

3. Have a fairly large number of short questions to test basic important concepts that should be committed to memory as well as applied to analysis and calculations.

4. Have short questions that carry less weight to test general knowledge, rather than a whole question on a specialty area (e.g. stereotactic or hyperthermia), which tends to favour candidates who happen to be experts in that area.

5. Allow enough time. Quality is much more important than speed in a physicist's job and the exam should reflect this.

In general, I think the exam should reflect accumulated knowledge and not short-term memorization. It should test things that any established physicist should know without specifically studying for the exam. This would have the added advantage of attracting established physicists to attempt the exam, as well as serve the basis for a 're-certification' exam (Heaven forbid !).

Obviously it is a very difficult task to come up with a perfect exam and it would be naive for me to suggest that any of the above is the final format we should go with. I just hope that this can open up some discussion.

Some of the comments in this letter are a result of a very informal survey that I did, over coffee and on the phone, and I would like to thank the people who gave their input. It is not easy for people who have passed the exam to comment on it (many times I would like to forget the whole experience myself !), but if more people can provide input (perhaps using a simple survey through the COMP newsletter) I believe we can improve the fairness and credibility of the

certification process, which personally I think is a worthwhile and necessary step.

Milton Woo
Toronto-Bayview Regional Cancer Centre, Ontario

Editor's Note: The CCPM welcomes any additional comments on the issue of the membership examination which you may wish to make. Please send your remarks to the Newsletter Editor's Office. I will forward copies to the College. The comments will be reviewed and discussed in future issues of the Newsletter.

Highlights of the Joint Annual Meeting of the AAPM with the COMP : Scientific Program

The joint AAPM/COMP meeting in Calgary this last summer was a resounding success with an attendance approaching the AAPM record set in San Francisco last year. Some of the highlights of the scientific programme are reviewed in this report.

A total of 478 abstracts for proferred papers were received and a total of 48 invited abstracts were solicited and received. The AAPM President's Symposium dealt with Radiation Shielding and a future rewrite of NCRP 49. Three plenary sessions reviewed biological modelling of tumor control and normal tissue complications in radiotherapy planning, digital mammography and artificial intelligence / artificial neural network applications in treatment planning and diagnostic imaging. A special Harold Batho Memorial Lecture was well presented by Jerry Battista for Jack Cunningham who had to withdraw at the last minute for health reasons. The Young Investigators' Symposium consisted of 10 abstracts (6 from Canadians) selected from 34 submitted. The three winners of the YI competition were Maria Drangova from London, Andrew Maidment from Toronto and Randy Luhta from Toronto.

The highlight of the Scientific Program was the Joint Symposium with the AAPM, COMP and CCPM on "The Roles of 3-Dimensions in Medical Imaging and Radiotherapy Planning". The Hon. Sylvia Fedoruk, Lt. Gov. of Saskatchewan, was the moderator for this session and was introduced to the audience by Trevor Cradduck. Dr. Fedoruk gave an excellent historical overview of the contributions of Canada and, in particular, Saskatchewan to medical physics. The three lecturers for this symposium were Terry Peters and William Feindel from the Montreal Neurological Institute and Jerry Battista from the London Regional Cancer Centre. At the end of this symposium, Dr. Fedoruk presented the Sylvia Fedoruk Prize in Medical Physics to Qing-san Xiang and Mark Henkelman for the paper "Motion artifact reduction with three-point ghost phase cancellation" (Journal of MRI).

The Canadian impact upon the discipline of medical physics was felt not only with the hat-trick of the Young Investigators' awards and the Joint AAPM / COMP / CCPM Symposia, but also with the awarding of the AAPM Sylvia Sorkin Greenfield Memorial Award to C.J. Henri, D.L Collins and Terry Peters from the MNI for the paper "Multimodality image integration for stereotactic surgical planning" (Med. Phys. 18 : 167 - 177, 1991).

BMP and LJS

Banff AAPM Summer School

An exciting week of summer school in Banff kicked off with a gorgeous sunny day (no snow) for Registration. Most of the 183 registrants arrived in Banff of the weekend after the annual AAPM meeting in Calgary. Of the 183, 26 were faculty and 10 on the Local Arrangements Committee. As Co-directors, Mike Bronskill and Perry Sprawls did an excellent job of directing scientific portion of the summer school, with the result of editing one of the most sought after AAPM Summer School proceedings in recent times (watch for the hard cover version from AAPM within the year). Local Arrangements were headed by Sherry Connors and Larry Filipow, and helped by a committee including local students and Continuing Education committee (AAPM) representatives.

All of the sessions were well attended, this being a reflection of the high calibre of presentations offered, considering the impressive scenery that could have easily distracted even the most keen of attendees. Although primarily intended for those less versed in NMR techniques, all participants seemed to come away satisfied with varying amounts of food for thought. The fundamental principles of NMR, followed by image reconstruction and hardware considerations filled an intense first day of sessions. Those of us feeling a bit lost after an introduction to k-space were treated to an evening tour guided by Steve Reiderer and others, enhanced by liquid refreshments. This was certainly one of the most popular sessions although it is undetermined whether we gained or lost phase coherence. specific imaging sequences, techniques and protocols were then discussed with a good mixture of technical as well as clinical information. Those predominantly image oriented people were enlightened by the spectroscopy presentations. Doug Arnold was able to tie both techniques together by presenting some spectroscopic images. After learning how and how not to bring a magnet on site, we learned how to go about

purchasing one, with Larry Filipow touching on such critical aspects as luminosity of the unit and other important criteria.

The social part of the program was huge success with a menu of activities provided for the free afternoon ranging from golf to whitewater rafting (we didn't lose a single body). The afternoon concluded with a sumptuous buffet overlooking Lake Louise and a "death by chocolate" dessert buffet. The Canadian contingent was well represented and seen partying in the Glacier Lounge of the Chateau into the wee hours, just managing to catch the last bus back to Banff. Activities for the summer school concluded with a Friday night Steak BBQ and Karaoke contest at the Banff Centre (proving once again that most physicists can't sing).

If you missed the summer school of the decade, don't despair, rumour has it that another Banff summer school may be bid on in the future, now that the summer school will be temporally and geographically distinct from the meeting (post 1995).

Sherry Connors and Cheryl Duzenli,
LAC

ESTRO '92 MALMO, SWEDEN
1-4 September 1992

The ESTRO meeting this year was held in the beautiful city of Malmo in southern Sweden, and offered the usual stimulating mixture of clinical and physics papers. While most participants were from Europe, the international nature of the conference is evident from the 47 contributions from the US, as well as from Canada (10), Japan (6), Australia (5), Israel (4), Egypt, Africa and Taiwan. Since there were 244 oral presentations in three parallel sessions, 218 posters, 12 teaching sessions, and 8 plenary lectures, this brief report will be able to mention only a few of the topics of special interest to the writer.

Physics plays a strong role in ESTRO, and three sessions were devoted to quality assurance, while others covered photodynamic therapy, dosimetry, treatment planning, simulation, conformal therapy, and stereotactic radiosurgery (this session was opened by an excellent review from Ervin Podgorsak). Several papers dealt with QA for planning systems (U. Rosenow), verification and recording systems (W. Seelentag), and mu calculations (C. Catteneo). In his overview paper, D. Thwaites made the point that QA is not just the prevention of accidents, but the reduction of possible over-dose (and under-dose!) to the patient. A number of speakers appealed to the equipment manufacturers to integrate the various contouring, planning, simulation and verification systems that are cluttering up state-of-the-art departments and linac control rooms with innumerable computers, monitors and keyboards.

Interestingly, on line portal imaging did not have a dedicated session, as is usual at the AAPM meetings, but presentations were dispersed throughout other sessions, and a teaching session (S. Shalev) was devoted to this topic. The ESTRO-Calergo prize was awarded jointly to two groups for their work on OPI (the Royal Marsden Hospital in Sutton and the Netherlands Cancer Institute in Amsterdam). Technical improvements in electronic portal imaging devices were reported from Winnipeg on new phosphor screens (S. Shalev, B. Wowk) and from University of Michigan on solid state flat-panel imagers (L. Antonuk). The ESTRO-Varian prize was awarded to the group from Leuven, Belgium for their work on treatment monitoring by in-vivo dosimetry, and in her acceptance presentation, G. Leunens demonstrated how exit dosimetry is very sensitive to errors in determining the patient contour, as well as heterogeneity corrections. A number of authors discussed in-vivo dosimetry, which is much more popular in Europe than in North America, and a paper from Lund University showed the advantages of using both OPI and in-vivo dosimetry simultaneously for monitoring intracavitary radiotherapy, although several problems associated with diodes were described, such as dose-rate and field size dependency, and temperature and pressure response. The Cancer Center in Rotterdam presented data on the response and stability of a video-based OPI system used for "in-vivo" exit dosimetry, where long-tailed fluorescence of the screen must be taken into account for quantitative dosimetry.

Simulator-portal image alignment was discussed by S. Shalev (MCTRF) in terms of graphical displays and quantitative measures of random and systematic set-up errors. Inaccuracies in patient set-up were reported as < 2 mm for H&N with vacuum- formed shells (Milan), 5 mm for mantle fields (Leuven), and for pelvic treatments < 3 mm (Netherlands Cancer Institute) and up to 6 mm (Rotterdam). A simulator film study of seeds implanted into the prostates of 9 patients showed that bony anatomy is a good indicator of prostate location, within about 2 mm (C. Hoekstra). By careful adjustment, x-ray and light fields can be aligned within ±1.5 mm over a range of field sizes, collimator angles and beam energies (Netherlands Cancer Institute). With increasing numbers of verification films, random and systematic errors can be predicted in terms of confidence ellipses (J. Denham), and corrections made according to shrinking action levels (A. Bel, Netherlands Cancer Institute). The effect of random errors on target coverage can also be compensated by increasing the dose (D. Viggars, MCTRF).

(con't)

A number of papers dealt with dose response and volume effects, and the difficulty of comparing steep biological response curves with much shallower clinical data. I. Turesson developed a curve for complication free cure, but emphasized the lack of hard data and the effects of changes in fraction size. A. Nahum presented a model which maintains constant TCP across a tumor volume with non-uniform clonogenic cell density. T. Wheldon discussed the implications of "double trouble", when non-uniformity in dose changes both the total dose and the fractionation, so that a 10% heterogeneity in physical data can lead to >16% heterogeneity in biological effect for low α/β values and hypofractionation. J. Hendry discussed the implications of Emami's published response data, suggesting a possible change in slope with partial volume, and a difference in iso-tolerance and iso-effect for small volumes.

Other sessions were held on breast cancer, fractionation, HDR/LDR, radiosensitivity, CNS, H&N, GI, biological factors, ... and much more. In summary, a stimulating meeting with a wide range of clinical and physics topics and a high level of presentation at both the oral and poster sessions. Abstracts are in the supplement to the Green Journal, volume 24.

Shlomo Shalev, Ph.D.
Manitoba Cancer Treatment and Research Foundation
Winnipeg, Manitoba September 1992

Canadian Graduate Programs in Medical Physics

The CCPM has recently run out of copies of the "Canadian Graduate Programs in Medical Physics" brochure (brochure outlining the formal medical physics graduate programs in Canada). However, before more copies are printed, the document will be updated to better reflect the current status of programs. If you have not already done so, please submit program changes to me as soon as possible. If any institution not appearing in the first version of this document would like to be included in the new printing, please contact me.

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The 1992 Annual General Meeting of the Canadian Organization of Medical Physicists was held in Calgary, AB, this past summer. The Newsletter is happy to reproduce in the next few pages some of the documents and reports which were generated and/or presented at the AGM.

Minutes of the COMP Annual General Meeting

Calgary, August 24, 1992, 6:00 PM

1: Agenda

An agenda has been circulated at the beginning of the meeting. At the section other business, one proposed to inform membership on activities related to the centennial year of X-Ray discovery.

Moved: adoption of agenda: Trevor Cradduck
Seconded: Sherry Connors

2: Minutes

Minutes of the 1991 Meeting were published in the newsletter following it. No correction is required.

Moved adoption: John Schreiner
Seconded: Sherry Connors

3: Matters arising

3.1 *By-laws changes*: A proposal of change was sent to all members at the beginning of June 1992, and the full text of the actual by-laws was incorporated in the directory that was sent at the same time.

Ellen El-Khatib read articles to change and the new versions proposed. Changes concerned only the election process that will be done by mail rather than at the annual meeting. T. Cradduck proposed to change the word association by organization and moved the adoption.

Seconded: Paul Johns
All members present voted in favor.

3.2 *Brochure*: During the year John Andrew prepared a brochure on medical physics in Canada. He is congratulated for his good work.

3.3 *NCES*: Ellen El-Khatib summarized P. John's report on this organization. COMP is member of this consortium and P. John is representative for COMP. Details on activities and mandate are published on page 14 in the current issue of the newsletter.

3.4 *Professional affairs committee*: A committee has been created with the mandate to advise the executive on matters related to professional affairs. The committee is also responsible of the annual salary survey and the manpower survey. Members appointed

by Ellen El-Khatib are: John Aldrich, Maryse Mondat, Peter Raaphorst, Peter Dunscombe and Karen Breitman. Members were selected according to a good geographical representation.

Dr. S. Shalev expressed his concern that western representation seems to be low in number.

4: Chairman's Report
Ellen El-Khatib read her report. (See text p. 8 of this Newsletter).

5: Radiation Regulation Committee
John Aldrich reported in lieu of Geoff Dean. He mentioned reports that have been reviewed. See text of Geoff Dean's report on p. 11 of this Newsletter.

6: Newsletter Editor's Report
John Schreiner mentioned that four issues has been distributed last year on a regular basis at a fairly low cost. See full report p. 12 of this Newsletter.

7: Secretary's Report
The major activity was related to membership database. Among various actions, the secretary did:

Mailing of invoices in November, mailing of reminder in January, production of receipts, production of labels for Newsletter Editor, production of labels for some advertisers, mailing of IOMP Journal, production of the directory, revision of bylaws and proposal of changes and contacts with AAPM an CAP office for joint membership.

At the time of the meeting membership is 222.

8: Treasurer's Report
(see financial report p. 13 of this Newsletter)

8.1 Sherali Hussein proposed a financial report where numbers were verified by Greg Kennelly. He explained some numbers.
As a projection for next year, COMP could be richer by $10,000.

A discussion on the possibility to reduce annual fees is put forward by a member. Annual fees will stay the same in 92-93, but the assembly encourage the executive to spend where the action is necessary (Newsletter support, professional look, etc).

In the future, the assembly would like to receive a budget that the treasurer should prepare.

Moved: S.Shalev
Seconded: J. Aldrich

Acceptation of the treasurer's report is
moved by: T. Cradduck
Seconded by: M. Soubra
and unanimously accepted.

8.2 Karen Breitman reported that the 1992 meeting in Calgary will be a financial success due to the large representation of Canadians and the large attendance in general.

9: Salary Survey
Special thanks to Ron Sloboda who did most of the job in 1991. The professional affairs committee will be responsible of this activity in 1992-3.

10: President of CCPM Report
Jake Van Dyk read his report. (See text p. 9 of this Newsletter).

11: Report of the nominating committee
As past chairman of COMP, Martin Yaffe chaired the nominating committee. After having received congratulations from Ellen El-Khatib for his excellent work in the last three years, Martin Yaffe proposed to the position of chairman elect, Dr. Aaron Fenster and to the position of secretary, Dr. Gino Fallone

12: Election
Other nominations are solicited from the floor.It is moved to cease the nominations

by T. Cradduck
seconded by J. Aldrich

Then Dr. A. Fenster and Dr. G. Fallone are declared elected.

13:
Dr. Ellen El-Khatib passed the gavel to the new chairman: Dr. John Aldrich.

14: Future meetings
May 12-14, 1993 in Ottawa
Paul Johns reported that the Ottawa meeting will be held jointly with CMBES (Canadian Medical and Biological Engineering Society). Some sessions will be separate and some on imaging will be together. 150 physicists and 250 engineers are expected. Visits to AECL and NRC will be organized, a banquet at Museum of Civilization is probable. Accommodations on campus will be available.

September 1994, Toronto
Jake Van Dyk reported his discussions with CARO (Canadian Association of Radiation Oncologists). A meeting held jointly with CARO is possible but some approval is necessary before CARO express a full commitment.

1995, Montreal
Centennial of the discovery of X-Ray. Many organizations will meet together. Terry Peters is in relation with organizers.

(con't)

1996
It is suggested to meet by our own. T. Cradduck suggested to consider west of Canada and Ellen El-Khatib suggested Vancouver.

According to H.S. Fedoruk the first association of medical physicist in Canada was created in 1955. Dr. K. Shortt propose to consider using the year of history. So the next meeting should be call the 38th meeting of COMP even if the name has changed.

15: Other business
15.1 John Aldrich reports on discussions related to the centennial year of the discovery of X-Ray. Book and display are in preparation. Any useful historic information will be considered.

15.2 J. Schreiner asks for report on the third week of September in order to publish the next Newsletter in time.

15.3 K. Breitman reported on the manpower survey. She commented some tables. Vacant positions are mainly in radiation oncology (24) while enrolled students in medical physics programs are mainly in imaging. (See tables in next Newsletter.)

16: Adjournment
At 7:45 PM, Adjournment is moved by S. Shalev.

Minutes prepared by Raymond Carrier
(1990-1992) Secretary

REPORT OF THE COMP CHAIRPERSON
August 1992

Sometime during the past year our membership has reached 200 and we are continuing to grow at a rapid rate as an organization. This year's annual meeting has attracted a record attendance and it is the first joint meeting of COMP with the AAPM as well as the first official meeting of the AAPM in Canada. Karen Breitman and the local arrangements committee have done a wonderful job in preparing for this meeting and I'm sure we'll all enjoy it. We also look forward to an exciting scientific program which Brian McParland helped put together. Specifically on Tuesday afternoon we have the joint CCPM/COMP Scientific Symposium on "The Roles of Three Dimensions in Medical Imaging and Radiotherapy Planning". We shall be privileged to have the Honourable Sylvia Fedoruk, Lieutenant Governor of Saskatchewan as Moderator of this Symposium, followed by the presentation of the award named in her honor to be presented to the Canadian authors of the best paper in Medical Physics in the past year.

COMP/CCPM has been active in several organizations, namely we have representatives on the Conjoint Committee for Accreditation of Educational Programs in Diagnostic Imaging and Medical Radiation Technology. We need a panel of physicists who could assist in the accreditation survey process. These physicists should be appointed by the College.

Trevor Cradduck is our representative on the Advisory Committee to Radiopharmaceuticals Section of the Bureau of Radiation and Medical Devices.

Paul Johns is on the National Consortium of Scientific and Educational Societies. This group helps to lobby on behalf of scientific organizations.

The Group of Medical Advisors have sent a number of documents for review and endorsement by COMP. Those documents were forwarded to our Radiation Regulations Committee and much time was devoted by them and others in reviewing the documents.

I have also received several documents from the Ministry of Health in Ontario related to their health professions act. In order to deal with issues of a professional nature we have a newly formed Professional Affairs Committee. The members who have agreed to serve on this committee are; Peter Dunscombe and Peter Raaphorst, representing Ontario, John Aldrich, representing the Maritimes, Maryse Mondat, representing Quebec, and Karen Breitman representing the Western region. This committee is meeting for the first time here in Calgary and will decide on its mandate and activities. The annual salary survey, manpower survey, and the HARP commission in Ontario would come under their mandate. We need to evaluate how new legislation may affect our profession.

Activities related to the celebration of the Radiology Centennial in 1995 are being coordinated by John Aldrich and Monty Cohen.

Most of you will have received the Brochure on Medical Physics in Canada and we congratulate John Andrew on an excellent job.

The bylaw changes will allow for mail ballots for election of the COMP executive members starting next year.

I wish to thank our secretary, Raymond carrier, who has done a great job on putting out another directory and keeping it updated. John Schreiner's newsletter has been interesting and well received. He has always been very persistent in encouraging us to submit all our articles on time. Thanks also go to Sherali Hussein who as our secretary has kept track of our income and expenses. In previous years the chairperson-elect would have the responsibility of

organizing the scientific program of our annual meeting, however, this year John Aldrich has escaped this task because of our joint meeting with the AAPM which coordinated the program. However, John Aldrich contributed to our Radiation Regulations Committee. I wish him much success as he takes on the duties of COMP chairperson. I have enjoyed this role and its responsibilities, particularly the interaction with my colleagues.

I also thank Jake Van Dyk, who as the CCPM President is a member of our Comp executive. In the past year we worked very closely with the CCPM and have initiated joint meetings between the COMP executive and the CCPM Board to discuss issues of mutual interest. Therefore, Jake had to sit through endless hours of meetings since he had to attend the joint meeting, the COMP executive meeting and the CCPM Board meeting. I found working with Jake enjoyable and rewarding, and I hope we can keep up the close working relationship between the CCPM and COMP.

Ellen El-Khatib, PH.D., FCCPM
Chairperson COMP

CCPM President's Report, Annual General Membership Meeting

August 24, 1992, Calgary, Alberta

Activities during this past year indicate that interest in the CCPM is at an all time high. This is manifested in various ways including the number of applicants requesting membership to the CCPM as well as activities and interactions with organizations associated with accreditation and legislation. The following summarizes some of the highlights of the CCPM activities during the last year.

1. Membership Applicants

The number of applicants requesting certification through the membership examination was at a record high of 24. Of the 23 candidates who actually wrote the exam, 13 passed. This represents the greatest single influx of new members into the College in one single year since the formation of the College in 1979. In addition, of the 4 applicants for Fellowship to the College, 3 have passed their examination. Considering the pass rate, it is clear that it is not trivial to become a Member or Fellow of the College. The candidates who have passed their examinations are congratulated for their success.

2. Recognition by Government Commissions

For a number of years, the CCPM has been the nominating organization for medical physicists who are advisors to the Healing Arts and Radiation Protection (HARP) Commission of the Province of Ontario. The HARP Commission is set up by an act of the Provincial Legislature and advises the Ministry of Health of the Government of Ontario on issues that relate to patient safety in the context of the use of X- rays for diagnosis or therapy. Medical Physicists have played a major role in advising the Commission through its various sub committees. At the present time there are five CCPM nominees who are appointed to the Physics Advisory Committee to the HARP Commission with each one of them being a representative on one of the other standing committees including Chiropody, Chiropractic, Dentistry, Medical Radiology, Physics and Radiological Technology. The five members of the Physics Advisory Committee are Mike Bronskill (chairman), Ian Cunningham, Curtis Caldwell, Ting Lee, Andrew Rainbow. Some of the major issues during the past year with respect to the HARP Commission relate to patient entrance exposure limits in Diagnostic Radiology and the use of protective devices. The HARP Commission has initiated a Radiation Therapy Advisory Committee to advise on patient safety issues as related to Radiation Therapy. Peter O'Brien and Alan Rawlinson are the CCPM representatives on this committee. In its strategic plan, HARP is also proposing to look at issues that relate to Nuclear Medicine. While the CCPM's participation in HARP related activities have not been without their frustrations, it is clear that government commissions of this nature are going to play an increasingly important role in the monitoring and controlling the use of ionizing radiation for diagnosis or therapy. It is in this context that the CCPM continues to play an important role to advise on properly qualified individuals who can participate in these deliberations.

3. Recognition by Other Accreditation Organizations

The CCPM has had various deliberations with various organizations including the :

A. Canadian Council on Health Facilities Accreditation (CCHFA)

The CCHFA provides Canadian health care organizations with the opportunity for voluntary participation in an accreditation program based on national standards, self-evaluation and professional input from the health system. In recent years the CCHFA has become more involved in the accreditation of cancer therapy institutions. The accreditation process for these institutions includes the review of the Medical Physics component of these organizations. The CCPM has set up a subcommittee chaired by Peter Dunscombe and including Karen Breitman and myself to review the accreditation documentation produced by the CCHFA in the context of Medical Physics services.

(con't)

B. Conjoint Accreditation Services of the Canadian Medical Association

While in the past, the Canadian Organization of Medical Physics (COMP) was the partner group to the Conjoint Accreditation Services, it was agreed at last year's joint executive meetings of the COMP and the CCPM that the CCPM might be the more appropriate organization to deal with the Conjoint Accreditation Services. The CCPM as a partner group sends one representative to attend one meeting per year. Medical Physicists are also represented on many on site teams associated with Radiation Technologies.

C. College of Doctoral Scientists in Laboratory Medicine of Ontario

The College of Doctoral Scientists in Laboratory Medicine was set up for the purpose of achieving recognition through incorporation into the regulated Health Professions Act of Ontario. At the present time this College includes specialty areas such as Clinical Chemistry, Microbiology, Hematology, Genetics, Pathology and Immunology. One of the concerns of the Health Professions Act (Bill 43) of the Province of Ontario is that these various organizations are too small to be legally recognized. By providing an umbrella organization to which each of the sub-specialties is a Certified Member, it is felt that recognition could be achieved in the regulated Health Professions Act. In this context the College of Doctoral Scientists in Laboratory Medicine of Ontario has approached the CCPM to be a possible partner organization. The College of Doctoral Scientists recognizes that it may have to change its name and its requirements to be consistent with those of the CCPM. At this stage, there are only preliminary discussions underway. The CCPM will have to decide on the advantages and disadvantages to becoming part of such an umbrella organization.

4. Recognition in Career Structures

There is an increasing awareness throughout the country that the CCPM provides an appropriate objective means of assessing the qualifications of individuals who are involved with radiation in the context of the health care field. Both the Ontario Cancer Treatment and Research Foundation and the Ontario Cancer Institute/Princess Margaret Hospital are presently reviewing their career structures for Medical Physicists. The proposed structures include the requirements of membership to the CCPM to move from a Medical Physics Trainee (Resident) to a Physicist level and require Fellowship to the CCPM to move from the Physicist level to the Senior Physicist level within both of these organizations. Such prerequisites are also being implemented in some other provinces throughout the country. It is clear that it is going to be increasingly more difficult to practice as a Medical Physicist within the context of patient care without being certified by the CCPM.

CCPM Activities In 1991-1992

In addition to the issues listed above, the following activities have been addressed or completed within the last year:

1. Production of the joint CCPM/COMP Brochure on Medical Physics. Thanks are due to John Andrew for the time and effort he put into producing this brochure and to the three commercial corporations (Nucletron, Theratronics and Varian) who provided financial support.

2. Revised CCPM bylaws. The CCPM bylaws have been revised to more closely reflect the functional aspects of the College. Entrance requirements and the examination process are more clearly defined. Other ambiguities have also been removed. These modifications have been voted on at the CCPM Annual General Membership Meeting.

3. The Harold Johns Travel Award. In 1991, the Harold Johns Travel Award was won by Moira Lumley who has travelled to Memorial Sloan Kettering Institute in New York. She will be writing a report on her visit in an upcoming newsletter. The 1992 winner of the award is Don Robinson of Edmonton who hopes to visit either Montreal or Madison to see the program on stereotactic radiosurgery.

4. Annual Educational Symposium. Because we were meeting with the AAPM and because the AAPM had a summer school on MRI, the CCPM did not organize its annual one day symposium this year. Instead a joint CCPM/COMP/AAPM Symposium was organized for the Calgary meeting. This symposium was entitled "The Roles of 3-Dimensions in Medical Imaging and Radiotherapy Planning". Two of the speakers are Fellows of the CCPM (Jerry Battista and Terry Peters) and one is a physician (W. Feindell) whose specialty is neurosurgery. The symposium was chaired by the Honourable Sylvia O. Fedoruk, a Medical Physicist, a founding Fellow of the College and presently the Lieutenant Governor of Saskatchewan. At future meetings we plan to continue to provide a one day educational symposium for the Medical Physics community.

5. Review of CCPM Entrance Requirements. Because Medical Physicists enter a field through a variety of pathways, the College Board deemed appropriate to review the value of these training programs in terms of equivalency. While the CCPM does not want to formally accredit Medical

Physics Training Programs, it would like to have a sense of equivalency of standards of education and standards of experience when comparing individuals who are trained in different institutions throughout the country. One possible format for this type of evaluation is to develop a point system which then determines whether or not an individual has sufficient experience and education background to be qualified to set the CCPM Membership Examination. This is presently under evaluation and review.

6. Ongoing Review or Continuing Education. Many professional organizations require a formal ongoing continuing education program to indicate adequate performance standards for individuals involved with patient care. The College is presently reviewing this for the CCPM Members and Fellows. One of the primary considerations is whether or not Fellows and Members of the College continue to be practicing Medical Physicists or whether they have moved into some other area that has no involvement with patient care. If individuals have not been practicing Medical Physics for a number of years, then there might be some concern about their ability to participate in activities that relate to patient care. It is for this reason that the College is considering an ongoing review. Formal requirements are under discussion. One possible approach may be to ask for updated information on medical physics activities that indicates that the individuals are still practicing Medical Physics.

7. Intercomparison of CCPM, ABR and ABMP Certification. A number of individuals who have been certified in the U.S.A. have asked whether their U.S. certification is equivalent to CCPM Membership or Fellowship. Walter Huda has written an excellent report on comparing the certification procedures by the CCPM, ABR and ABMP. This was discussed at our Board meeting on Saturday. A number of issues were raised which will require further discussion before conclusions can be finalized by the Board and CCPM membership.

Stepping down from the Board this year, after four years of service is Walter Huda. Walter has been an active participate in CCPM Board Activities. He has been greatly involved in the discussions regarding the transition of the CAP Division of Medical and Biological Physics to the COMP and its relation to the CCPM. Walter was also the primary organizer of the meeting held in Winnipeg in 1991. He has also been involved in developing a number of reports including the "Who Needs to be Certified?" document, a review of the comparisons of different certifying bodies and the requirements for ongoing education. Unfortunately for us in Canada, Walter has moved to Florida in the United States. We would like to thank him very much for his active participation in Board related activities, for his wisdom and advice and for his sound judgement. We wish Walter the best at his new venue.

I would also like to extend a thank you to the Board Members for their diligence and their activities. Special thanks need to go to John Andrew for the many hours he puts in as Registrar of the College and to Terry Peters for his role as Chairman of the Examination Committee. These represent the prime activities within the College and the College would not be able to function without them. In addition, I would like to thank the various physicists who are involved in representing the College at various Commissions and organizations. I believe that it is a result of the high quality of Members and Fellows of the CCPM that the stature of the College is growing in the medical community within Canada.

Jake Van Dyk,
President, CCPM

COMP RADIATION REGULATIONS COMMITTEE

Annual Report, August 10, 1992

I wish to present my report on the activities of the Radiation Regulations Committee of COMP during 1991-1992. The members of the committee are : John Aldrich, Ian Cunningham, Geoff Dean and John Scrimger. There are also two consultants to the committee, Brian Phillips and Allan Sourkes. I would like to express my sincere thanks to them all for their help. There were four major documents from the AECB that the committee studied and commented upon; these were :

[1] Guidelines on Hospital Emergency Plans for the Management of Minor Radiation Accidents,
[2] Guidelines for Research on Human Subjects using Ionising Radiation,
[3] Guidelines on the Management of Patients Treated with 131I,
[4] C-122 : Proposed Amendments to the Atomic Energy Control Regulations for Reduced Radiation Dose Limits Based on the 1991 Recommendations of the International Commission on Radiological Protection, ICRP 60.

The first three documents originated from the Group of Medical Advisers to the AECB and as such were written by experienced persons from outside the AECB including physicists.

The fourth document, however, is of much more significance insofar as it is a prelude to a change in regulations as opposed to a change in practice. Medical Physicists will be aware of ICRP 60 and the new recommendations it contains for the practice of radiation protection. These recommendations are largely based on a reanalysis of data from the A-Bomb survivors; C-122, a consultative document issued by the AECB for comment before it becomes a regulation as R-122, is the AECB response to the new risk estimates as specified in ICRP 60. Furthermore, it should be pointed out that although C-83, " Proposed General Amendments to the Atomic Energy Control Regulations", was first issued in April 1986, it is still in the legislative process and so C-122 is an amendment to a document which was amended in 1986 and thus this process (C-122) is running parallel with, but faster than, the process of C-83 implementation.

On 25 February 1992 in Toronto there was a meeting, at which I represented COMP, between the AECB and representatives of various organisations whose professional activities in medical facilities would be affected by the new regulations. Although we were listened to most attentively and courteously it is not clear whether there would be any substantial changes to C- 122 as a result of our deliberations (see p.16). What is most definite is that the annual dose limit for a member of the general public will be reduced by a factor of 5 from 5 mSv to 1 mSv per year. This will doubtless lead to perplexing problems in shielding design but it is most probable that we will have to invoke the ALARA principle more often to justify many of our practices. Another area of concern was in the treatment of patients with unsealed radioisotopes; their discharge is usually based on the exposure rate at a distance of 1 metre being at a certain level. If the criteria on which this based is reduced by a factor of five then this could imply an extension of the stay as an inpatient. It appears that the AECB might allow the current practice to continue with the proviso that the exposure of friends and relatives assisting in the aid and comfort of radioisotope patients be counted as medical exposure in appropriate circumstances.

There is another issue that is currently under review by the RRC and that is the recent proposal by the Ontario HARP Commission to reduce the legislated patient entrance exposure limits. This is taking place despite the fact that Ontario already has the lowest Patient Entrance Exposure limits in the world. Furthermore the advice of Medical Physicists regarding the radiation dose required to produce an image and the information content of the same image is not taken into account. Instead of following the precept that the exposure of patients shall be the minimum to produce good diagnostic images the HARP Commission wants to reduce one number to a smaller one for what seem to be arbitrary and poorly understood statistical arguments. This is a phenomenon that is becoming all too frequent, i.e. regulatory and legislative authorities seem to have no choice but to heed the collective political will of the environmental lobby and ignore the qualified experts who do not have the same lobbying power.

Thank you for the opportunity to serve COMP

Geoffrey W. Dean, Ph.D., FCCPM
Royal Victoria Hospital

COMP/CCPM Newsletter Editor's Report
AGM of COMP August 24, 1992
Calgary, AB

In the past year the Newsletter editor's office was moved from London to Montreal and the contacts required for the regular production of the Newsletter were established. The Montreal General Hospital has been very supportive, especially the personnel in the printing department, the mail room and in the Medical Physics Department. The distribution of the Newsletter has been improved by establishing active ties with the secretary of COMP so that duplicate mailing lists are not required. In the past few months stronger contact with the corporate members of COMP has also been established to encourage new members.

Four issues were distributed from the Montreal office since last summer. A total of about 100 pages were published. There have been regular columns by the President and Chairperson of the CCPM and COMP which review issues of importance to the community. There have also been about 20 unsolicited articles submitted by different members of our organizations. The Newsletter has also published the results of the annual salary survey, announcements of upcoming meetings, and job postings. In the last issue, a review of the graduate work undertaken by medical physicists in Canada in 1991 was produced. This will become an annual feature of the Newsletter.

I thank all contributors to the Newsletter and look forward to continued support in the next year.

In the next year I hope

- to encourage more members of COMP and the CCPM to submit work to the Newsletter (there are a large number of different types of articles that can be presented, e.g., book reviews, local news, reviews of meetings, scientific reports, etc.),

(con't ... p 14)

The Financial Report presented by Sherali Hussein is reproduced below:

CANADIAN ORGANIZATION OF MEDICAL PHYSICISTS

ORGANISATION CANADIENNE DES PHYSICIENS MEDICAUX

FINANCIAL REPORT JUNE 01, 1991-JULY 31, 1992

CHEQUING SAVINGS ACCOUNT

Balance as of June 01, 1991			10,039.58
Add Credits:			
Membership Dues Received (incl. HEJ Fund)		18,581.90	
PMB Subscriptions		2,991.00	
Proceeds from 1991 Meeting		4,018.01	
Advertising Revenue		1,169.00	
Interest Received - Deposit Account	437.50		
Chequing Account	287.04	724.54	
GST Refund on PMB Sunscriptions		198.53	27,682.98
			37,722.56
Less Debits:			
Monies Remitted to CCPM		7,117.81	
Travel Grants		3,980.60	
PMB Dues Remitted (incl. bank charges)		3,344.20	
Publishing, Postage, Stationery, etc.		1,897.83	
COMP Newsletter		803.26	
Annual Dues Remitted: IOMP	226.22		
CAUT	150.00		
CCA	30.00	406.22	
Miscellaneous: Membership Refund	100.00		
NSF Cheque	100.00		
Bank Charges	12.50	212.50	17,762.42
Balance as of July 31, 1992			19,960.14
			37,722.56

ASSETS AS OF JULY 31, 1992

Chequing Savings Account	19,960.14	
Term Deposits	5,000.00	
Equity Shares	61.54	25,021.68

- to establish stronger ties with other medical physics organizations in the world,
- to find more members willing to translate the regular columns into French,

and finally

- to minimize my effort in the Newsletter's production.

Outline of Newsletter Expenses

This is meant as an indication of the cost of producing the Newsletter. It is not a financial statement accurate to the last penny.

September Issue	
Printing:	90.00
Supplies and mailing:	145.00
December Issue	
Printing (incl. salary survey):	107.00
Supplies and mailing (incl. salary survey):	289.00
March Issue	
Printing:	175.00
Supplies and mailing (incl. brochure):	279.00
June Issue	
Printing:	150.00
Supplies and mailing (incl bylaw/directory):	284.00
TOTAL	~1520.00

Newsletter Income

There were 5 paid job postings in the last four issues of the Newsletter. These generated $750.00 in income.

Respectfully Submitted:

L. John Schreiner
McGill University, August 1992

The National Consortium of Scientific and Educational Societies

Based on my experience as a lobbyist with the National Consortium on behalf of the CAP, at the 1991 COMP Annual General Meeting in Winnipeg I recommended that COMP become a member organization of the National Consortium. This was approved, and I wrote to the President of the National Consortium, Dr. Caroline Andrew, that COMP was seeking membership. The Consortium approved our membership in the Fall of 1991, and I have been the COMP representative since then. I have attended the monthly meetings held in Ottawa when possible, and have participated in the lobby effort. This article attempts to give a flavour of some of the activities.

A previous Newsletter entry (June 1991) gave some background on the National Consortium. Created in 1976, it is an informal coalition of 32 national organizations representing 55,000 researchers and educators in various disciplines. Member organizations include, in alphabetical order, the Association Canadienne-Francaise pour l'Avancement des Sciences, the Canadian Association of Physicists, the Canadian Association of University Teachers, the Canadian Federation for the Humanities, the Canadian Federation of Biological Societies, the Canadian Mathematical Society, the Canadian Society of Microbiologists, the Canadian Society for Clinical Investigation, and the Professional Institute of the Public Service of Canada. Observer organizations included until recently the Science Council of Canada and the 3 granting councils: MRC, NSERC, and SSHRC. I say recently because the Science Council was disbanded using the excuse of cost saving by the current government last winter, and the SSHRC is being merged with other organizations.

Activities of the Consortium, 1991/92:

1. The November Lobby - The main activity of the Consortium is an annual lobby of federal politicians, usually in November. Meetings between individual MP's and pairs of scientists and educators are scheduled. In November 1991 I met with 5 MP's: Jesse Flis - Liberal, Parkdale/High Park (Toronto), Christine Stewart - Liberal, Rex Crawford - Liberal, Kent (Ontario), Louise Feltham - Conservative, Wild Rose (Alberta, Marlene Catterall - Liberal, Ottawa West. Overall 107 meetings were held between MP's or senior civil servants and Consortium representatives. The main points made were: (i) the need to maintain in any new Constitution a federal presence in postsecondary education and in research, (ii) support of the federal granting councils, (iii) support of federal government labs, (iv) the need to give industry incentives to invest in research. In this last area Bill C-22, An Act to Amend the Patent Act, has been regarded as a success that the government should attempt to emulate in other areas. The brand name sector of the pharmaceutical industry is ahead of schedule in complying with legislation requiring the doubling of R&D investments in Canada, with about 25% of the investment going into extramural research at universities and affiliated hospitals. (In the area of medical imaging the Sterling-Winthrop Imaging Research Institute, which awarded $ 2.1M in 1991 for research in radiology and cardiology, is presumably one of the outcomes). We were asked to point out to MP's, however, that universities and hospitals find it difficult to compete for some

of this money because of their very poor infrastructure; it is difficult to do contract lab work in an antiquated lab. Acceptance of an external research contract often necessitates investment by the institution in its basic facilities, which requires that its basic funding be adequate.

Reactions of the politicians to the four points raised ranged from sympathetic (Opposition MP's) to feigning ignorance that there was any problem at all (Conservative). Of course, with Opposition MP's the aim is first to prompt them to keep after the Government through committee work and questions in the House of Commons, and second to educate them so that if they form the next government they will implement policies good for science and education in Canada. I was most impressed with my own MP, Marlene Catterall. Whether because she knew in advance that I was a constituent, or just is an organized person, she was the only one to have read the material sent in advance and to be prepared with intelligent questions. It was also gratifying when she displayed curiosity as to what COMP is and what the "FCCPM" after my name denoted, and as the conversation developed, what medical physicists do, how they are trained, etc.

2. The Consortium carries out extensive behind-the-scenes lobbying throughout the year. This year the focus was on the constitution negotiations, the aim being to maintain a federal presence as a strong central funder of education and research. As I understand it, the constitutional proposals have largely been silent on post-secondary education and research. When coupled with the fact that the federal government contributes less each year to education via transfers to the provinces, one is left with the chilly prospect that perhaps the feds intend to abandon their role in education entirely. The view of the Consortium was that the concept of shared responsibility for education between federal and provincial governments should be enshrined in a constitutional amendment, with a special arrangement made with Quebec if necessary. In the area of research the federal government has proposed that it continue its role. There is concern, however, as whether the intention is to allow new programs to be developed, or maintain only the existing level, or something even more weak and nebulous. The pace of Constitutional negotiations seems to be accelerating and it may be that by the Fall these issues will be clearer.

Other issues this past year included trying to change or mitigate the effects of the decisions to disband the Science Council of Canada and the Social Sciences & Humanities Research Council. A major step forward this year was that the limited term "matching contributions" portion of the granting councils' budgets did not disappear but was incorporated into their base budgets this year. This accounts for about 21% of their total budgets. The granting councils' budgets are to grow at 4%/y for the next 4 y, which is much better than most government-supported entities. But Canada still lags far behind other countries in per-capita research.

3. A third area of activity is now surfacing. There appears to be a growing international consensus that some sort of International Federation of Associations for the Advancement of Science and Technology (IFAAST) should be formed. If this occurs, the Consortium may be the national member organization for Canada. More formalization of its structure and a more visible public profile may be needed.

I am not nearly as versed in the lobby issues as some of the more regular attendees of the monthly meetings, nor am I or other COMP members likely to have the time to participate in lobbying outside of the November Lobby. By lending its name to the activities of the Consortium, however, COMP helps strengthen science and education in Canada, and makes its own name more visible. This can only be beneficial.

The next lobby week will be this November. If any COMP members are interested in participating, please let me know.

Paul Johns, PhD FCCPM
Dept. of Physics, Carleton University
18 August 1992.

The fixing of linacs imparts
This dilemma in engineers' hearts:
Will a good hammer blow
Make the blasted thing go
Or does it actually need some new parts?
-BG-

Avoid the Christmas rush. Pay your 1993 membership dues today. Forms are included in this mailing.

Report on the 1991 H.E. Johns Travel Award

At the 1991 annual meeting of the Canadian College of Physicists in Medicine, it was my pleasure and honour to be granted the second annual H. E. Johns Travel Award for Young Investigators. It was indeed a pleasant surprise, as the anticipation of the award's result was eclipsed by the terror of the Fellowship Exam. In my application for the award I had proposed a visit to Memorial Sloan Kettering Cancer Centre in New York City to study their Brachytherapy Techniques.

In May 1992, I spent a week as the guest of Dr. Lowell Anderson and the Brachytherapy Group at Memorial Sloan Kettering Cancer Centre. This group of six physicists is devoted to implant planning and analysis, dosimetry, source preparation, and program development. The Brachytherapy lab is filled with an impressive array of computers upon which the implants are planned and analyzed. All the programs for planning and analysis of implants have been written by the physicists at MSKCC including programs for source position optimization for brain implants, analysis of permanent prostate implants using dose volume histograms, three-dimensional calculations and display. The brachytherapy carried out at MSKCC covers a whole range of techniques from permanent Iodine-125 implants to manual and remote afterloading of Iridium -192 and Caesium-1 37. Due to come into service soon is a brachytherapy operating room for intraoperative high dose-rate brachytherapy.

I was included in many of the routine activities of the Brachytherapy group. I got to see some cases in their planning stages, some during the actual implantation and many more during the analysis stage. All through the visit Dr. Anderson and the other members of the group patiently answered all my questions and always made time to discuss with me the differences in their techniques to those I am familiar with.

During my week at MSKCC I was shown through other areas in the Medical Physics Department. New developments in treatment planning and dosimetry revolve around conformal therapy and on-line portal imaging. Gerry Kutcher and Chen Chui toured me through their areas of Treatment Planning and Radiation Dosimetry respectively. The treatment planners demonstrated the use of multileaf collimators (MLC) for conformal planning of prostate, brain and nasopharynx. One accelerator with MLC is the newly commissioned Scanditronics MM50 racetrack microtron, with photon and electron energies from 5 to 50 MeV capable of semi-dynamic therapy. Radiation Dosimetry gave me a great tour of the MM50, describing the characteristics, unique dosimetry and showing me the control room which I'm sure could rival NASA's mission control.

This trip offered me a glimpse of a Medical Physics world different from the one I know. I am very grateful to the College for this opportunity. Many thanks go to my hosts in the Brachytherapy group, Lowell Anderson, Jiten Roy, Pat Harrington, Luke Chan, Joe Presser and Mark Hoffman, for their cooperation and consideration shown during my visit. A special thanks to Pat, Mark and Luke for sacrificing a few hours at the start of their holiday weekend to show me the town.

Moira Lumley, M.Sc., F.C.C.P.M.
Kingston Regional Cancer Centre

COMP RADIATION REGULATIONS COMMITTEE

COMMENTS ON AECB CONSULTATIVE DOCUMENT C-122
October 31, 1991

General Statement
This document (C-122) sets out the proposed new radiation dose limits that will apply in Canada; it represents the response of the AECB to the latest recommendations of the International Commission of Radiological Protection (ICRP 60). The AECB, however, in C-122, does not appear to have given significant consideration to the principles of radiation safety that are recommended by the ICRP as the basis of a system of protection. The apparent emphasis on dose limits reinforces the past practice of "control" through emphasis on dose limits; this is particularly unfortunate as radiation protection can only be effective in the context of a comprehensive program or philosophy of radiation protection. While it is important to have indicators of the upper level of acceptable risk, protection must be presented as an ongoing evaluative process where risks, costs and benefits are regularly under review. This is especially important in the application of C-122 because there is no question that increased training will be necessary and Medical Physicists will have to play an important part.

Impact on the Medical, Hospital and University Environment
The vast majority of workers in these environments have not, heretofore, been classified as ARW's; however, many of these people have been considered to be 'occupationally exposed' and thus liable to the higher limits. Compliance with these new limits will not have a great impact for this group of workers. Compliance with the new limits for members of the

public and for pregnant workers will require detailed evaluation of actual or perceived sources of exposure. It will require the investment of resources to demonstrate this, at a time when health care budgets are already under great strain. The practical problems of monitoring very low radiation levels, both area and personal, that may approach background levels will have to be addressed; furthermore, the limits of sensitivity of the dosimeters used by the National Dosimetry Service of Health and Welfare Canada will mean that other assessment techniques will have to be used to demonstrate actual compliance with the limits for the public and the pregnant worker. In so far as C-122 appears to be in conflict with R-91 (viz.:- .. *that personal monitoring is only required if there is a reasonable probability of receiving more than 5 mSv* and R91 states that personal monitoring will be required if personnel may receive more than 1/10 the limit, i.e. 2 mSv) it would be useful if R-91 was changed simultaneously with the implementation of C-122, (notwithstanding the last sentence of the first paragraph on page 2).

The proposed limit of 1 mSv for the public will be of concern to hospitals and most certainly will increase the cost of patient care and treatment. The primary concern will be those situations when patients who have treatment with radioactive material such as 131I or 198Au and have to be hospitalised. At present their admission and discharge, as far as radiation safety is concerned is governed by the regulations in NCRP #37, a U.S. document. Thus if the integrated dose at 1m will be less than 5mSv the patient can leave the institution; in order to reduce this to 1 mSv the patients will have to stay in hospital for 2.3 half-lives longer. This is 19 days for 131I and 6 days for 198Au respectively. At a rate of $ 600 per diem this represents an increased cost of $ 11,400 and $ 3,600 respectively. This problem may be solved by application of paragraph 139 in ICRP 60 (5.1.2 Medical Exposure), "Medical exposure is confined *...and to exposures (other than occupational) incurred knowingly and willingly by individuals helping in the support and comfort of patients undergoing diagnosis or treatment...*". A 5 year averaging period for any one treatment might also be appropriate as continued treatment is rare in these cases.

The requirement by AECB that users must meet the new 1mSv public limit by 1 Jan. 1993 will be difficult to meet. This provides little time to plan, budget and implement changes, if facilities currently exceed the proposed limit. A date of 1 Jan. 1995 would be more reasonable.

Pregnant Workers

In order to achieve the limit of effectively 0.05 mSv per 14 day period it will be necessary to perform area monitoring instead of personal monitoring as is done at present.This will doubtless mean that working practices may have to change. Furthemore, there may be some confusion if a pregnant worker is exposed to both internal and external exposure; i.e. 2 mSv + 0.05 ALI could result in a further dose to the unborn of 1 mSv thereby totalling 2mSv instead of the intended 1 mSv.

Radiation Shielding

In the design of radiation shielding the AECB currently uses 50 µSv as the operational target dose to the general public, i.e. 1% of the annual public limit, 5 mSv. In C-122 the public limit changes to 1 mSv so that as a logical consequence the derived annual operational target dose will be 10 µSv, i.e. 0.2 µSv per week, a very low value compared to background radiation. If implemented, the cost of shielding radiation facilities would increase dramatically. 2.3 extra half- value layers of shielding material would be needed; furthermore, the question of shielding existing facilities will have to be addressed. It would seem that the application of the ALARA principle on each case is the only solution to this perplexing aspect of the problem. Is it the intention of the Board to change all previous derived limits as well ?

ALARA

Although the concept has been accepted for 20 years relatively little attention has been paid to it by AECB. It seems possible from C-122 (2.1.1) and other consultative documents (BMD 90-83) that we will have to justify all our work on ALARA grounds in future. At the very least we will have to perform generic justification of ALARA (viz:-2.3.1). This will require considerable expenditure of effort and hence resources by Radiation Safety staff.

NOTE ADDED IN PRINT

The AECB has now issued a summary of comments and changes to C-122 as a result of the series of meetings with users. The question of the limit on dose for ARWs who are with child is still undecided. The AECB is in the midst of a number of consultations across the country regarding the effects of radiation on the foetus and will make its conclusions known in the future.

The major changes to C-122 are as follows :

The initial proposal of ICRP 60 will be followed, i.e. a limit of 100 mSv in five years but with a limit on dose of 20 mSv in any one year.

The limit on effective dose for the public had a potentially serious impact on the treatment of patients with radioactive implants and unsealed sources, the concern has been alleviated by the AECB's incorporation of para. 139 of ICRP 60. This states that doses "knowingly and willingly

incurred by friends and relatives helping in the support and comfort of patients " will be counted as medical exposure. Furthermore para. 192 on averaging public dose over 5 years in special circumstances will be incorporated.

Another major concern that has been expressed by our community is that hospitals would have to provide thicker concrete walls for their therapy rooms in order to reduce the dose to the public in adjacent areas. The AECB does not intend to require more shielding since operational controls will be sufficient. Consultative document C-120, "Guide for Approval of Cobalt Therapy Installations" will be modified to make it compatible with C-122.

A separate AECB on ALARA (C-129), in preparation, will explain to licensees what is required of them in carrying out an ALARA analysis for their operations.

Geoffrey W. Dean, Ph.D., FCCPM
Royal Victoria Hospital

An Open Letter to the Membership of COMP

It is both a privilege and an incredibly satisfying feeling to receive the acknowledgements of one's colleagues. I would like to thank the membership of COMP for their presentation of the very special carving which has received an honoured position in our home.

Brian J. McParland, Ph.D., F.C.C.P.M.
Scientific Program Coordinator, 35th Annual Meeting of the AAPM in conjunction with the COMP, Calgary, Alta, 1992

Roentgen Centennial Celebrations for 1995

Help Wanted!

The year 1995 is of course a landmark anniversary for all of us who work with radiation in medicine. Canada has much to be proud in this field - early work in x-ray diagnosis, Rutherford's research in Montreal, the development of early radioisotope imaging devices, the invention of the cobalt unit and so on. The Roentgen Centennial is an opportunity for us as medical physicists to celebrate what we have achieved and to increase our public profile at the same time.

For several years there has been talk of celebrations to coincide with the 100th anniversary of the discovery of x rays by Roentgen. However until the last few months this has not been formalized. A non-profit organization Roentgen Centennial Canada Incorporated (RCCI) has now been formed to help sponsor the various activities surrounding this event. These may include permanent and travelling exhibits and other collections of memorabilia, souvenir items, and a book documenting the history of the uses of radiation in medicine in Canada. It is also hoped to have Canada Post issue a commemorative stamp for the occasion.

The publication, which is tentatively called "Radiation in Medicine: A Canadian History", will sketch the highlights of this topic over the last hundred years. I have volunteered to be responsible for the medical physics input into this, and I would like to appeal to everyone to send me any material concerning the use of radiation in Canada. Please do not worry that someone else may send the same items. Like any editor I would rather have too much than too little! I especially need photographic material, anecdotes, and overviews that will make interesting reading. And if there is anyone who would like to help.....

Many of these events are still in the early stages of development and ongoing information about the Centennial will be a regular feature of this Newsletter. There will be many opportunities for involvement in this important celebration.

John Aldrich, Halifax
CTRF of Nova Scotia

Newsletter Announcements

Addresses for Submissions:

Submissions should be sent to

L. John Schreiner
Medical Physics Department
Montréal General Hospital
1650 Avenue Cedar,
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.

When making Submissions to the Newsletter, please confirm that your submission arrives at our office by phone or FAX.

Newsletter Schedule: The tentative schedule for the next three newsletters is :

issue	submission deadline	mailing date
Fall/Winter issue:	last week Dec.	2nd week Jan.
Winter issue:	last week Feb.	2nd week March.
Spring issue:	last week May	2nd week June

CAR ACCREDITATION PROGRAM FOR MAMMOGRAPHY

The Canadian Association of Radiologists has established an accreditation program for mammographic facilities. This program, which is almost identical to that provided in the United States by the American College of Radiology, sets standards for the provision of mammographic imaging services. These standards related to the training and qualification of personnel, the performance of mammographic equipment and the on-going quality control program carried out at each facility.

Part of the program stipulates that the technical quality of imaging be supervised by a medical physicist. At present, the definition of medical physicist is rather loose because of a perception that there is not an adequate number of individuals in the country in a position to provide the necessary services.

The Canadian Association of Radiologists has asked me to help them in organizing their program. The first step is to identify medical physicists in Canada who are knowledgeable about mammographic technology, and who are prepared to act as consultants in providing and/or supervising parts of the mammographic acceptance and quality control program for facilities in various regions of the country.

If you are in a position to provide such a service, would you kindly let me know. It would also be very helpful if you would provide information about your charges for such a service, if you have already established a rate. Please indicate whether you are willing for me to make your name and phone number available to facilities that require this type of service.

I'm sure that there are also physicists who may not currently be trained in assessing technical performance of mammography equipment, but who may be interested in developing such expertise. I would, therefore, also appreciate hearing from those who would consider attending a training program for this purpose. It might be possible to set up such a program at an up-coming COMP annual meeting or perhaps here in Toronto. Cost would depend on the number of participants, however, the courses given in the United States ran typically at $350 US. Please contact me if you would be interested in attending such a course. If there is a reasonable response, I will look into setting one up.

Martin J. Yaffe Ph.D.
Sunnybrook Health Science Centre
2075 Bayview Ave, North York, ON, M4N 3M5
Phone: (416) 480-5715, FAX: (416) 480-5714

DEADLINE FOR NEXT ISSUE
WINTER 1992 NEWSLETTER

THE NEXT NEWSLETTER WILL HOPEFULLY GO OUT IN A SHORT WHILE (EARLY JANUARY IS THE GOAL). THEREFORE, SUBMISSIONS FOR THE ISSUE SHOULD BE SENT BEFORE THE END OF 1992

Newsletter Submissions
Format for contributions:

Articles for the Newsletter are best submitted by E-mail (at CXLS@MUSICA.MCGILL.CA.) or on computer disk. The Newsletter is produced on a MacIntosh computer so submissions must be on Mac compatible disks or on 31/2 inch IBM disks *in text or ASCI* format. Please send a hard copy by mail or FAX so that any symbols or special characters can be verified.

Good quality, formatted submissions for direct use are also welcome. This reduces the work in setting-up the newsletter considerably. The final quality of the newsletter is limited by the quality of the submissions since articles are used directly. Newsletter articles should be 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.

FAX submissions will have to be supported by original copy and will not be used directly. **When making any submissions to the Newsletter, please confirm that your submission arrives at our office by phone or FAX.**

The address and deadline for submissions are given on page 19 of this issue.

Calendar of Events

March 18-20, 1993
Saskatoon Cancer Centre
WESCAN 93
see notice below

May 12 - 15, 1993,
Carleton University, Ottawa
COMP/CCPM/CMBES JOINT CONFERENCE
Contact: Dr. Ken Shortt, NRC

June 6 - 9, 1993
Toronto, Ont, Canada
40th ann mtg SNM
Contact: Soc Nucl Med, 136 Madison Ave, NY, NY 10016-6760

August 8 -12, 1993
Washington, DC
AAPM ann mtg
Contact: AAPM, 335 East 45 St, NY, NY, 10017

WESCAN 93

March 18-20, 1993
Saskatoon

The annual WESCAN meeting for 1993 will be held at the Saskatoon Cancer Centre. The meeting will follow the traditional format of an informal discussion on Thursday evening; a day and a half of presentations on Friday and Saturday; and the opportunity to visit the centre on the Saturday afternoon. One session of the meeting will be devoted to the technologists presentation competition.

If you wish to present material at the meeting, please submit abstracts by the 23rd of February, 1993. For further information please contact:

Alistair Baillie
Physics Services
Saskatoon Cancer Centre
20 Campus Drive
Saskatoon, Saskatchewan, S7N 4H4
Phone: (306) 966-2697
FAX: (306) 966-2910

Medical Physics Theses and Abstracts

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. This year the Medical Physics Newsletter published the abstracts from theses completed in 1991 in a compilation which was very well received by the COMP/OCPM membership. We plan to repeat this report of graduate work annually and *are now calling for submissions for the June 1993* issue of the Newsletter.

Please submit **work completed in 1992** to the Newsletter office as soon as possible. Use clear format with at least 12 pitch type or e-mail your submission to the editorial office. FAXed submissions will not be accepted except as verification of good copy.

Submissions should include the name of the institute and department at which the work was done, the name of the author and thesis title, the degree received, the thesis abstract and the name of the research supervisor. Examples can be seen in the June 1992 issue of the Newsletter.

We look forward to your submissions.

COMP/OCMP Corporate Membership

The Canadian Organization of Medical Physics would like to acknowledge the support given by our 1992 corporate members:

Kodak Inc.

Varian

Theratronics

We hope to continue our association with these and new corporate members in the new year. To encourage this affiliation we are implementing new benefits for our corporate members.
Details are available from the COMP office.

Kudos

The CCPM wishes to congratulate its new members and fellows:

Members
Ayoola Akinradewo (LRCC, London), Terry Chu (NORCC, Sudbury), Konrad Leszczynski (Sudbury), Peter McGhee (Sudbury), Tai Yeung (Sudbury), William Ansbacher (CCI, Edmonton), Curtis Caldwell (Sunnybrook), Thomas Farrell (HRCC, Hamilton), Brent Long (Edmonton), Miroslav Nikolic (OCI, Toronto).

Fellows
Abdou Beddar (OCI), Vic Peters (Hamilton), Doug Wyman (Hamilton).

Congratulations are also due to Don Robinson (Edmonton) this year's winner of the Harold John's Travel award.

The Newsletter would be happy to introduce you to the rest of the medical physics community. I hope some of your colleagues will send us biographical sketches (you know, how hard you work, your research interests, all your degrees, your penchant for raising killer pumpkins, that kind of stuff) which we can publish in future issues when we collect a few.

LJS

Changes at Cross Cancer Institute

Sherry Connors has asked me to advise our readers that the e-mail addresses at the University of Alberta have changed format:

Former: usernors@ualtamts.bitnet
Current: usernors@mts.ucs.ualberta.ca

where **nors** would be the persons (e.g. Sherry's) signature code.

Sherry also points out that although the offices at the Cross Cancer Institute have moved the FAX number and main reception phone number (403-492-8522) have not changed. In addition she promises an article for our next issue.

Next Issue:
The next issue is already being set up. Look forward to the manpower survey results, a report on the 1992 NCRP 'Radiation Protection in Medicine' meeting, a report on health technologies in Canada from CCOHTA, and an article on the use and misuse of science in risk assessment.

MANITOBA CANCER TREATMENT AND RESEARCH FOUNDATION

CLINICAL RADIATION THERAPY PHYSICIST

The Manitoba Cancer Treatment and Research Foundation has an opening for a Clinical Radiation Therapy Physicist to join a staff of 11 physicists and over 40 support personnel in the Department of Medical Physics. This is a regular full-time position. We are pleased to offer a highly competitive salary and benefits package and a progressive professional setting.

The minimum requirements for this position are a Ph.D. in Medical Physics or related field and at least two years experience in Radiation Therapy Physics. The appointment will be made at a level appropriate to the successful applicant's qualifications and experience.

The Medical Physics Department supports a wide range of radiation therapy including teletherapy and brachytherapy, treatment planning and simulation, CT-based three dimensional planning and total body irradiation. It is also responsible for the selection, purchase and installation of new equipment and it participates in teaching and research.

Therapy equipment includes 4 linear accelerators (6, 15, 23 and 25 MV) and 2 cobalt units. We have 3 simulators, a THERAPLAN treatment planning system and a THERASCAN and Multidata beam scanning systems. An additional treatment planning system will be installed shortly. The department is planning for the installation of a high dose rate remote after-loading system. Excellent mechanical and electronic services are available.

The MCTRF is a world renowned oncology treatment and research centre which includes all clinical departments, as well as biological and clinical research. Its location on the medical campus of the University of Manitoba offers a collegial, stimulating environment. Planning is underway for a major expansion which will take the Foundation into the next century.

The City of Winnipeg is culturally rich, ethnically diverse and industrially sound. Its charm, beauty and low cost of living add up to a desirable home community.

For immediate consideration, please submit a detailed resume and three references to:

Dr. S. Shalev
c/o Director, Human Resources
Manitoba Cancer Treatment
and Research Foundation
100 Olivia Street
Winnipeg, Manitoba
R3E 0V9, CANADA
FAX: (204) 783-6875

MANITOBA CANCER TREATMENT AND RESEARCH FOUNDATION

MEDICAL IMAGING PHYSICISTS

The Manitoba Cancer Foundation has immediate openings for medical physicists with a strong interest in medical imaging, to join the imaging section of the Department of Medical Physics. These are regular full-time positions. Presently there are 12 Ph.D. physicist positions, several post-doctoral Fellows, and over 40 support personnel. A graduate program for students studying for the M.Sc. and Ph.D. degrees is offered under the auspices of the University of Manitoba. We are pleased to offer a highly competitive salary and benefits package and a progressive professional setting.

Physicists in the imaging section provide clinical support in Oncology, Radiology, and Nuclear Medicine in six urban hospitals throughout Winnipeg. Activities include all aspects of equipment acquisitions, acceptance testing, and quality control, radiation protection, clinical support, research, and teaching at the resident and graduate physics program levels. Current facilities include 4 high energy linacs, 2 cobalt units, 6 CT scanners, one MRI, 15 gamma cameras and a wide variety of diagnostic facilities as well as extensive image processing and other computing facilities. The minimum requirements for these positions are a Ph.D. in Medical Physics or related field, a strong interest in medical imaging, and at least two years experience in clinical Medical Physics.

CTRF is a comprehensive, world renowned oncology treatment and research center which includes all clinical departments, as well as biological and clinical research. Its location on the medical campus of the University of Manitoba offers a collegial, stimulating environment. Planning is now underway for a major expansion which will take the Foundation into the next century. A planned organizational restructuring and expansion of the Department of Medical Physics promises dynamic and challenging opportunities.

The City of Winnipeg is culturally rich, and ethnically diverse. Its charm, beauty and low cost of living add up to a desirable home community.

For immediate consideration, please submit a detailed resume and three references to the contact person listed below.

Shlomo Shalev, Ph.D.
c/o Ms. Gloria O'Rourke
Director, Human Resources
Manitoba Cancer Treatment
and Research Foundation
100 Olivia Street
Winnipeg, Manitoba
R3E 0V9 CANADA
FAX: (204) 783-6875

university of Alberta hospitals

Imaging Physicist

The Department of Radiology and Diagnostic Imaging has a position available for a PhD physicist to work full time in Imaging research. The main areas of interest will be in the disciplines of Magnetic Resonance Imaging and Nuclear Medicine. The position will also have responsibilities in the physics teaching program for Radiology residents as well as involvement in the Diagnostic Radiology quality assurance program.

The successful applicant will have research interests focused on the areas of Magnetic Resonance Imaging and /or Nuclear Medicine. The individual will be a "self-starter" who will be responsible for obtaining external grant funding for MRI and NM research. General knowledge in areas such as digital imaging, image processing and PACS would be an asset.

The Department of Radiology and Diagnostic Imaging performs over 160,000 clinical examinations per year. There are divisions of General Imaging, CT, Ultrasound, Nuclear Medicine, MRI, Cardiovascular, Neurovascular, and Pediatric Radiology. The department boasts two CT scanners, a new, state-of-the-art MRI unit, and give angiographic laboratories, as well as a very large, very new, fully networked NM lab comprised of 6 gamma cameras (including one triple-headed and two dual-headed SPECT cameras). The candidate will be joining a radiological physicist and nuclear medicine physicist in the department.

The position carries with it an Assistant Professorship appointment within the Faculty of Medicine at the University of Alberta. There is very good liaison with the Department of Physics on the main campus and two other medical physics groups in the Department of Applied Sciences in Medicine and the Cross Cancer Institute, which is also on campus. Salary is competitive and will be determined by experience and qualifications.

Minimum requirements would be a PhD in Medicial Physics and a minimum of two years experience working in a clinical setting with proven research abilities in MRI and/or NM. It would be expected that the candidate would be eligible for, and, in a short period of time, apply to the Canadian College of Physicists in Medicine for certification.

For further information, contact:

A.J.B. McEwan, MB
Professor and Chair
Telephone: (403) 492-6907

OR

W.R. Hansen
Director
Telephone: (403) 492-8844

Apply to:

Personnel Officer - Recruitment
University of Alberta Hospitals
Human Resources Department, C.S.B. 1-161
8440 - 112th Street
Edmonton, Alberta CANADA T6G 2B7

FAX: (403) 492-8892

HAROLD JOHNS TRAVEL AWARD

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 John's Travel Award for Young Investigators. This award, which is in the amount of $1,000.00, is made to a College member under the age of 35 who has been a member for not more than two 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 endeavor in medical physics.

Enquiries should be directed to:

BOURSE de VOYAGE HAROLD JOHNS

Le Conseil du Collège Canadien des Physiciens en Médecine est heureux d'honorer son président fondateur en offrant aux jeunes chercheurs la bourse Harold Johns. Cette bourse, d'une valeur de $1000,00, est éligible aux membres du Collège agés de moins de 35 ans et qui sont membres depuis deux ans ou moins. La bourse a pour but d'aider le récipiendaire à parfaire ses connaissances dans son domaine ou à démarrer dans un nouveau champ d'activités reliées à la physique médicale, en lui permettant de voyager vers un autre centre specialisé.

Les demandes seront addressées à:

The Registrar / Le Registraire
CCPM
Suite 102
1200 Tower Road
Halifax, NS
B3H 4K6

The deadline for the next award is January 31, 1993.

La date limite pour les demandes du prochain concours est le 3lme janvier 1993.

Past recipients:

Récipiendaire anterieur:

1990	Dr. L. John Schreiner, Montreal
1991	Ms. Moira Lumley, Kingston
1992	Dr. Donald Robinson, Edmonton

Members of the COMP/OCMP and/or the CCPM can make a donation to the fund by volunteering to increase their 1993 membership dues.

Les membres du COMP/OCPM et\ou du CCPM peuvent faire un don à la cotisation de 1993 un montant additionel de leur choix.

CCPM EXAM SCHEDULE

The schedule for application and sitting of exams in 1993 is:

membership exam:

apply by: Dec. 31,1992
exam date: March 6, 1993

fellowship exam:

apply by: March 1,1993*
exam date: May 11, 1993

*Note: Those writing the membership exam on March 6, 1993 should confirm their fellowship application and pay the fee within one week of receiving the exam results.