Dear Fellow Member of IOMP,

Firstly, let me congratulate new members Bangladesh, Chile, Egypt, and Nepal. Welcome to the IOMP. A listing of the Officers of these new member organizations can be found in the Directory located on the IOMP web site (www.iomp.org). Mention of the IOMP web site reminds me to also congratulate our Secretary-General Gary Fullerton for the excellent work he has done to upgrade our Home Page into something worthy of an organization representing over 16,000 medical physicists in 69 countries. If you have not paid a visit to our web site recently, I urge you to do so. Apart from the usual listings of committees, boards, officers, national members, and libraries (we now have 75 active IOMP Developing Countries libraries!), you will find a very interesting history of the IOMP by Professor John Mallard, and details of several IOMP-sponsored events, especially plans for World Congress 2000. Gary’s plans for future developments of our web site include a listing of graduate medical physics educational programs worldwide and an on-line textbook (see Secretary-General’s Report).

As Gary mentions in his report, we have now moved maintenance of our Home Page from the University of Wisconsin, Madison, to the AAPM Headquarters, where we have access to professional webmaster support. We owe a great deal of gratitude to our colleagues in Wisconsin, John Cameron, Larry DeWerd, and especially Kwan-Hoong Ng, our first honorary (i.e. unpaid) webmaster, for helping us to establish our Home Page. We thank you profusely.

Several new projects are just beginning. I have formed an ad hoc Awards and Honors Committee to consider whether the IOMP should establish awards for outstanding contributions to medical physics. The nearest that we have to such an award is the Award of Excellence administered by the International Union of Physical and Engineering Sciences in Medicine. This has been, and I think should continue to be, the major international award for medical physics, but only one such award is made every three years (it was every six years until recently!), so very few medical physicists can ever hope to reach this pinnacle. Very many more deserve recognition for their efforts and I want this ad hoc committee to recommend ways that we might achieve not only this, but also ways to honor those medical physicists responsible for making our profession what it is today by naming the awards in their honor. Past Secretary-General John Cameron has graciously agreed to chair this committee.

Another project that I feel would be of benefit to our members is development of a series of electronic “brochures” for posting on our web site, that describe what medical physicists do. These would be designed to be read by members of the general public, patients, administrators, government officials, etc. There would be a different “brochure” for each sub-specialty of medical physics. Initially, these would be developed in English but translation into other languages would soon follow. In my opinion, because medical physics is often a “mystery” to almost everyone but ourselves, this could be of significant benefit to medical physicists worldwide, both in developed as well as developing countries. If medical physics is to continue to grow and flourish as a profession, it is imperative that we let people know who we are, what we do, how we do it and, most importantly, why medical physicists play such an important role in the healthcare industry. I plan to start the development of these “brochures” within the next few months. Anyone interested in working on this project should contact me as soon as possible.

(Continued on page 6)
President’s Message

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(Continued on page 6)
New Members

The Executive Committee of IOMP in 1998 unanimously accepted the applications of the national organizations from Chile (47 members), Egypt (90 members) and Bangladesh (40 members) as new member countries of IOMP. In addition a single medical physicist from Nepal was accepted under the special provison for countries without a national medical physics organization. The total number of countries represented in IOMP is now 69 with a total reported membership of 16,255.

Electronic Communications Initiative

Since my last report, the IOMP has restructured and moved the IOMP homepage (http://www.iomp.org/) to a host computer at the Headquarters of the American Association of Medical Physicists in Medicine in Washington, DC. The professional AAPM webmaster now maintains the IOMP site on a secure computer facility and the homepage is directly under the direction of the IOMP Secretary-General. This move gives IOMP greater long-term stability as well as increased responsiveness to change. The global intent of the new IOMP web page design is to open the business of the Organization to participation of medical physicists from all member countries. Individual pages for each member nation improves international awareness of worldwide developments and activities in medical physics. At the time of this writing 27 of 69 member nations have replied and placed information of their activities on the IOMP homepage and I hope to have information from all countries by the end of the year. Each of you with internet access has the most recent information concerning international medical physics available on demand day or night — use it!

Electronic Medical Physics World

After several years of ad hoc operation the IOMP Executive Committee officially adopts "Electronic Medical Physics World" as an official electronic publication of the Organization. The change to the Electronic Medical Physics World Editorial Board is to establish and maintain an Internet web site that will promote direct interchange between medical physicists from all countries. The intent of this interchange is to encourage more rapid development of professional, educational and research exchanges that will make the benefits of advanced physics applications in medicine available to all humans as quickly as possible. The initial Electronic Medical Physics World Editorial Board consists of John B. Cameron, Ph.D. - Honorary Editor, Larry DeWard, Ph.D. - Vice Honorary Editor and Kwan-Hoong Ng, Ph.D. - Associate Editor. Direct access to EMPW is available from the IOMP Homepage. The IOMP Executive Committee hopes members will now make even more frequent use of this powerful tool for progress.

Global On-line Medical Physics (GOMPs) Textbook

In June 1998 the IOMP embarked on a new project to make contemporary medical physics educational materials available to students worldwide. The charge to the founding Editor, Dr. Larry DeWard and the Editorial Board of the Global On-line Medical Physics (GOMPs) textbook is to improve medical physics education worldwide by providing up-to-date educational materials to students in all countries by using advances in internet communications and publication. This will be achieved using the following methods: 1. The Editorial Board will consist primarily of authors of contemporary medical physics textbooks that are in press and commercially available in print. 2. Authors will assist to obtain permission from the publisher to use single chapters or any other material in the GOMPs project. 3. The Editorial Board will design the electronic GOMPs textbook consisting of a sequence of single chapters from each in-print textbook linked together in a logical sequence. 4. Each chapter will be posted either on the marketing web page of the commercial publisher or on the IOMP web site and will provide direct hypertext links to the marketing page of the publisher for readers who wish to order the in-print text. 5. The GOMPs electronic textbook outline on the IOMP web page will provide hypertext links to each chapter wherever it is posted worldwide. (Continued on page 6)
Secretary-General's Report

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(Continued on page 6)

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MPW Vol. 14 (2), December, 1998
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Scientific Programs Plans Underway for Chicago ‘2000 World Congress

The next World Congress of Medical Physics and Biomedical Engineering will be on July 23-28, 2000 in Chicago, Illinois. This triennial World Congress is a joint effort of six societies (International Union for Physics and Engineering Sciences in Medicine, International Federation for Medical and Biological Engineering, International Organization for Medical Physics, American Institute for Medical and Biological Engineering, American Association of Physicists in Medicine, and the IEEE Engineering in Medicine and Biology Society). The Congress also has collaboration commitments from twenty-two other scientific and educational organizations. On the basis of these partnerships, the Organizing Committee now predicts Chicago ‘2000 attendance in excess of 8,000 at the first World Congress of this type in the USA since 1988.

The theme for the Chicago 2000 is “Global Information Networking for the Twenty-first Century.” The information technology theme includes uses and impacts on research, education, and patient care. The theme will be reflected in the opening session, plenary sessions, panel discussions, and other invited presentations throughout the week. The Scientific Program will include approximately 1,500 scientific presentations over a five-day period. International peer review committees will select presentations from submissions by physicists and engineers throughout the world. Although several sessions of scientific presentations will be devoted specifically to information networking, presentations will cover the entire scope of current topics in medical physics, medical and biological engineering.

For the first time in World Congress history, the submission, selection, and distribution of program information for the year 2000 meeting will be entirely electronic. An International Advisory Committee has been formed to ensure, among other objectives, that all submitters have access to the technology to use electronic submissions to the program. The Scientific Program Executive Committee will work closely with the International Advisory Committee to ensure that the needs and interests of Chicago ‘2000 participants from all countries are incorporated into the planning process.

Chicago ‘2000 Co-Presidents, Bill Hendee and Al Povinelli, formed the Scientific Program Executive Committee in 1995. It consists of two medical physicists, Russ Ritenoour, and Bruce Thomadsen, and three biomedical engineers, John Enderlee, Joe Bronzino, and Morton H. Friedman. The Executive Committee has defined the overall scientific program and is working with the various organizing and collaborating societies to form a 30 member General Scientific Program Committee (GSPC). The GSPC, which will be hard at work by early 1999, consists primarily of the chairs and co-chairs of the various program tracks, or subject areas. The track chairs and co-chairs have responsibility for reviewing and selecting proffered papers and subdividing the program tracks by detailed subject area as needed.

A Preliminary Scientific Program along with a wealth of other information about Chicago 2000 and the participating societies is found on the official web site for the meeting www.wc2000.org. Comments or suggestions for improvements are welcome.

Russell Ritenour, Chair
Scientific Program Executive Committee
ritenour@cc.umn.edu
Phone: (612) 626-0313, Fax: (612) 626-1951
www.drad.umn.edu/faculty/ritenour

MPW Vol. 14 (2), December, 1998
Vice-President's Report

I am more and more inclined to think that my role as Vice-President of IOMP resembles that of the US Vice-President: being kept informed and having, in fact, not so much to do since everything of importance is in the hands of the President, Colin Orton, and the indefatigable Secretary-General, Gary Fullerton. What remains is dealt with by the Chairpersons of the respective Committee, especially by Azam Niroomand-Rad of the ETC.

Still, I have been able to add my modest comments to the ideas and initiatives developed and implemented by the above persons. In addition, as a Chairman of the DCC of IUPESM, I have tried unsuccessfully to obtain current information on the activities of the Developing Countries Committees of the IOMP and IFMBE.

On the other hand, I have published and distributed to old and new recipients 200 copies of the latest issue (No. 11) of the DCC Bulletin Medical Physics and Biomedical Engineering on behalf of the IUPESM with the financial support from the IOMP ($400.00).

Oskar A. Chomicki, Ph.D.
Vice-President, IOMP

(Continued from page 1)

Finally, let me express my appreciation for the efforts of the Chairs of our Education and Training and Developing Countries Committees, Azam Niroomand-Rad and Andries Van Aswegen, and Curator of IOMP Developing Countries Libraries Marilyn Stovall, for their outstanding work on our behalf. I know how many hours of voluntary work they have devoted to their programs. They deserve our thanks and our support.

Colin G. Orton, Ph.D.
President, IOMP

(Continued from page 2)

6. Students in developing countries will have the right to download and duplicate any or all of the chapters referenced in the GOMPs textbook without charge. 7. The procedure provides Publishers with direct access to the global medical physicist membership of IOMP (69 countries and × 16,000 members in 1998). 8. It is anticipated that this on-line exposure will significantly improve the marketing of medical physics in-print textbooks and improve the quality of commercial medical publications by increasing the global market size. 9. It is anticipated that this procedure will provide acceleration in the rising level and uniformity of quality of contemporary medical physics support available in all countries. 10. It is anticipated that contemporary medical physics educational materials will be available to students in all countries. The first portions of the GOMPs textbook will be available in 1999.

Authors wishing to participate in this project should contact the IOMP Secretary-General.

Gary D. Fullerton, Ph.D.
Secretary-General, IOMP

Report From the Developing Countries Committee (DCC)

I am glad to report that the Committee has been set up and has commenced with its work. The Committee members have been given responsibility for certain geographical regions according to the current IOMP membership. The following are the members and their regions:

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<tr>
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<td>Dr. Stelios Christofides</td>
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An important task of the Committee is organizing the dispatch of donated equipment to recipients in the various countries. In this regard Mohammed K. Zaidi (zaidimk@inel.gov) is actively involved and is doing excellent work. A report on available equipment is given in this issue of MPW.

The other Committee members are Dr. Marilyn Stovall (mstovall@notes.mdacc.tmc.edu) and Ms. Ann Dixon-Brown (brownas@rd-phu.cam.ac.uk) who are responsible for the IOMP Libraries program and the IOMP Twinning program respectively.

The full address of the Committee members are available on the IOMP website.

Any requests or suggestions on possible help from the DCC will be highly appreciated. Please contact the Committee member in your region or myself directly.

Andries van Aswegen, Ph.D.
Chair, DCC

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<td>Poland</td>
<td><a href="mailto:radwanska@agh.edu.pl">radwanska@agh.edu.pl</a></td>
</tr>
<tr>
<td>(Eastern Europe)</td>
<td>Estonia, Hungary, Lithuania, Moldova, Poland, Romania, Slovenia, Ukraine.</td>
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<tr>
<td>Dr. Hasib Zaidi</td>
<td>Switzerland</td>
<td><a href="mailto:hasib@pdmmf.net.pl">hasib@pdmmf.net.pl</a></td>
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<tr>
<td>Dr. Wynand Strydion</td>
<td>South Africa</td>
<td><a href="mailto:wjstry@md.ac.za">wjstry@md.ac.za</a></td>
</tr>
</tbody>
</table>

An important task of the Committee is organizing the dispatch of donated equipment to recipients in the various countries. In this regard Mohammed K. Zaidi (zaidimk@inels.gov) is actively involved and is doing excellent work. A report on available equipment is given in this issue of MWP.

The other Committee members are Dr. Marilyn Stovall (mstovall@notes.mdacc.tmc.edu) and Ms. Ann Dixon-Brown (browns@red-phu.cam.ac.uk) who are responsible for the IOMP Libraries program and the IOMP Twinning program respectively.

The full address of the Committee members are available on the IOMP website.

Any requests or suggestions on possible help from the DCC will be highly appreciated. Please contact the Committee member in your region or myself directly.

Andries van Aswegen, Ph.D.
Chair, DCC

MPW Vol. 14 (2), December, 1998
Letter From the President of IUPESM
29 September, 1998

Dear Colleagues,

Negotiations with the International Council of Scientific Unions (ICSU), seeking Full Membership of IUPESM, are continuing. The current situation is encapsulated in my recent letter to the Assistant Executive Director of ICSU (to be known in the future as the International Council for Science). To provide you with an update, in a spirit of openness and with her approval, the letter is reproduced here.

Mrs. T. Bahmani Fard,
Assistant Executive Director,
International Council for Science,
51 Boulevard de Montmorency,
75016 Paris, FRANCE

Following your letter of 15 June 1998 and our helpful telephone conversation, I am writing to express formally the disappointment of IUPESM at the decision of the General Committee “that the Associate relationship was the most appropriate method of cooperation at the moment.”

At the World Congress last year, many national representatives of IUPESM and its constituent organizations, IOMP and IFMBE, questioned the value of Associate Membership of ICSU and indeed whether it should continue. As the incoming President, I gave a commitment to Congress that we would seek urgently Full Membership of ICSU. I produced an Action Plan, endorsed by Congress and Council. The Plan incorporates programmes expected to be relevant to IUPESM and ICSU, representing a basis for collaboration and, hence, a rationale for Full Membership. A commitment was also given to Congress that a progress report would be provided in Autumn 1999, which will be a framework for reconsideration of our relationship at the Millennium World Congress.

The present view of the General Committee, therefore, represents a major and unpromising set-back. Consequently, as we discussed, I am seeking that the Executive Board considers further our proposal so that, on mature reflection, it might feel able to recommend to the General Committee and General Assembly that IUPESM should become a Full Member of ICSU/ICS. A copy of our previous submission is attached for completeness.

Factors which might form the basis for this reconsideration include the following:

1. ICSU and IUPESM both attach high priority and importance to public (and Government) understanding of science and its benefits for mankind. With due respect to all the Unions, the exploitation of science, engineering and technology by IUPESM can probably be best understood and appreciated by the public, who can identify with and support its immediately demonstrable benefits for their health and disabilities. IUPESM is, therefore, potentially a major asset of ICSU as a “jewel in the (public) crown.” A key topic of our programmes focuses on this issue. We have proposed collaboration with ICSU and are awaiting a constructive response.

2. Another priority topic on the agenda of both IUPESM and ICSU is that of developing and emerging countries. Programmes submitted in support of our proposal for Full Membership are specially tailored for the needs of developing countries in education, training and continued professional development; global biomedical information networking; Health Technology. Although IUPESM’s Constituent Organizations are making commendable progress, if ICSU accepted the invitation for collaboration it could give additional stature and support.

3. Following an encouraging conversation with Dr. Stuyck-Taillandier, the enclosed letter was sent in June proposing collaboration between IUPESM and ICSU at the World Science Conference. Unfortunately, I have not yet received a response.

4. IUPESM is potentially a substantial asset for ICSU particularly in the public understanding and appreciation of the direct benefits of science as well as in relation to developing countries (and their Governments). However, as an Associate, IUPESM feels excluded and unrecognized. For example, your letter stressed the hope of our participation in the new ICSU Program on Capacity Building in Science. In addition, I have been approached by a Full Member Union suggesting collaboration. I strongly suggest that maximum value and benefit could be obtained mutually if IUPESM were to be a Full Member of ICSU, able to participate and contribute fully as an equal partner rather than on the periphery.

Consequently, I shall be grateful if your Executive Board could reconsider the status of our relationship urgently and, hopefully, endorse our proposal for Full Membership. Such a positive step would undoubtedly increase the commitment and enthusiasm of IUPESM’s Constituent Organizations and National Representatives and facilitate both a positive Progress Report in 1999 and outcome at the Millennium World Congress.

Frankly, have described IUPESM’s potential value to ICSU and made several apparently very relevant proposals on which a response is awaited, we are at a loss to know what more is required of us to secure Full Membership.

As always, your helpful assistance and that of Dr. Stuyck-Taillandier is greatly appreciated.

With my best wishes and kindest regards.

Yours sincerely,

Professor Keith Boddy, CBE, DSc, FRSE.
President

Copies to:
Dr. Stuyck-Taillandier
IUPESM Council Members

Although I will continue to make every effort and persevere, obviously a successful outcome cannot be assumed. In twelve months, I will provide a frank and detailed report to form the basis of our discussion at the Millennium World Congress on the future of our relationship with ICSU/ICS and, perhaps, even IUPESM itself.

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President, IUPESM

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Keith Boddy, OBE, DSc, FRSE
President, IUPESM

MPW Vol. 14 (2), December, 1998

8
Report From the Education and Training Committee (ETC)

ETC Policies and Procedures for Supporting Educational and Training Programs

The objectives of the International Organization for Medical Physics are to organize international cooperation in medical physics and allied subjects. The Education and Training Committee addresses these objectives by assisting with the promotion of internationally sponsored Education and Training Programs co-sponsored by IOMP National Member Societies and/or Regional Organizations as well as other countries (non-member) that seek our assistance.

Following are the ETC policies and procedures for supporting such programs:

General Procedure:
1. An Application Form for ETC support (available on the IOMP web site or from the Secretary-General) should be submitted by the Program Director to the ETC member representing that country/region as early as possible, preferably one year prior to the program date.
2. The request for sponsorship or financial support will be reviewed by the regional member of the ETC and recommendation of approval will full funding, partial funding, or disapproval will be submitted to the ETC Chair. Upon review of the regional member’s report, the ETC members will vote to approve (or modify) the recommendation.
3. The Application Form and the Committee’s final recommendation will be submitted to the IOMP Secretary-General by the ETC Chair for official consideration and authorization by the IOMP Officers. This should be completed as early as possible, at least six months prior to the program date.
4. The final recommendation will be communicated to the Program Director by the Chair of the ETC (or the regional member involved).

General Requirements:
1. Any request for financial support should have a detailed statement as to how the organizers plan to utilize the IOMP funds.
2. A post meeting report is obligatory within two months after the program date.
3. No vendor’s presentation is allowed during any scientific program sponsored by the IOMP unless it is scientific and is presented by a medical physicist/scientist.
4. Registration fees for the IOMP members participating from developing countries (a list appears on the IOMP web site) should be the same as the registration fees for local participants.

Priorities for Financial Support:
Preference is given for funding educational and training programs which promote the greatest benefit to the largest number of medical physics participants. This is best demonstrated by written support from the IOMP National Member(s) or Regional Affiliate, whichever is appropriate, if such organizations exist. In order of priority, funding will be considered for:
1. Local expenses for organizing regional courses/workshops involving more than one country.
2. Local expenses for organizing a course/workshop for a single country.
3. Local expenses for organizing regional/local conferences that include at least a one-day course/workshop.
4. Travel expenses of faculty responsible for generating a major portion of the regional/local course/workshop.

Exclusions for Financial Support:
1. A non IOMP member; except countries with pending IOMP Membership Application.
2. A country cannot receive second grant in any three-year period.
3. Conferences in the form of research presentations without course/workshop shall not be supported. These applications should be submitted to the Science Committee.
4. Travel expenses of individuals for attending or presenting a research conference shall not be supported.

IOMP effort to Promote Medical Physics Education Worldwide

IOMP Education and Training Committee is compiling information about graduate and training programs worldwide. The global listing of graduate education programs in medical physics is an aid to both students and professionals in medicine. Direct links to web pages for graduate programs provides easy access for students wishing to locate study opportunities. The global survey of interconnected programs also provides a quick introduction for medical professionals to the level and extent of education, professional training and research training required for well-trained medical physicists.

Program information will be posted on the IOMP web site (www.iomp.org) as they become available. Thus far, we have received information from Columbia, Ecuador, Philippine, Poland, South Africa, Thailand, USA (Detroit and San Antonio), and Venezuela. To help in this endeavor Program Directors should fill out the information form (available on the IOMP web site) and return it by e-mail to Gary Fullerton, IOMP Secretary-General.

Azam Niroomand-Rad, Ph.D. Chair, ETC

Donations of Used Equipment

This equipment is needed:
- Rectal monitor, cavity chamber, portal imaging device, film dosimeter, TLD reader, radiation field analyzer, CT, Virtual Reconstruction or a simple simulator for a hospital in India.
- A used gamma camera operating in a spect mode for Algeria.

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Clij Cancer Institute — Cluj, Romania — June 10-14, 1999

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For more information contact:
Azam Niroomand-Rad, Ph.D.
Georgetown Univ. Medical Center
Department of Radiation Medicine
L. L. Bies Building
3800 Reservoir Rd, N.W.
Washington, DC 20007 USA
Tel: 202-784-3334
Fax: 202-784-3323
E-mail: nirooma@gunet.georgetown.edu

REQUEST FOR SUPPORT
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THE PHYSICS OF RADIATION THERAPY — Review and Update
Hospital A.C. Camargo — Sao Paulo, Brazil — June 9-13, 1999

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American Association of Physicists in Medicine
Radiological and Medical Physics of New York (RAMPS)
International Organization of Medical Physics
Latin American Association of Medical Physics

For more information contact:
Azam Niroomand-Rad, Ph.D.
Georgetown Univ. Medical Center
Department of Radiation Medicine
L. L. Bies Building
3800 Reservoir Rd, N.W.
Washington, DC 20007 USA
Tel: 718-220-4899
Fax: 718-519-5643
E-mail: dpf@pop3.idt.net

MANAGING Radium
For much of this century, radium sources were widely used in medical and industrial applications all over the world. Because of radium’s unfavorable characteristics, almost all countries now have stopped using the sources. About 30,000 spent radium sources now need to be safely stored and managed—many of them in the developing world. Radium’s long half-life means that the sources eventually need to be disposed of in deep geological repositories, which are not available yet. For many years, the IAEA has been giving advice to countries on how radium sources can be conditioned for safe storage, pending their final disposal. But many countries do not have the technical infrastructure needed to ensure that the conditioning operation can be done properly and with the necessary quality assurance.

To address problems, the IAEA is providing hands-on assistance to developing countries that have stopped using radium sources. The approach involves the collection, treatment, and conditioning of all identified spent radium sources in a country by expert teams in a single campaign. The programme began in 1996 in the Latin American region, where four national campaigns now have been completed in Uruguay, Nicaragua, Guatemala, and Chile. One campaign in the Europe and East Asia region was successfully completed in Croatia in 1997. For the near future, the Agency will use a similar approach to establish expert teams in the African and Asian regions.

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Cluj-Napoca Institute — Cluj, Romania — June 10-14, 1999
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Managing Radium
For much of the century, radium sources were widely used in medical and industrial applications all over the world because of radium’s unique properties. Almost all countries now have stopped using the sources. About $10,000 spent radium sources are no longer safely stored and managed—many of them in the developing world. Radium’s long half-life means that the sources eventually need to be disposed of in deep geological repositories, which are not available yet. For many years, the IAEA has been giving advice to countries on how radium sources can be conditioned for safe storage, pending their final disposal. But many countries do not have the technical infrastructure needed to safely dispose of radium. Therefore, cooperation is needed to develop the capacity for waste management.

Azam NirooRad-Rad, Ph.D.
Chair, AAPM International Scientific Exchange Programs
Chair, IOMP Education and Training Committee

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Radiation Therapy Department, Medical College of Ohio
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Rev. 10/98
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Obituary
Harold Elford Johns
1915 - 1998

Dr. Harold E. Johns, a name synonymous with Medical Physics and respected around the world as a great Canadian scientist and humanitarian, died in Kingston, Ontario, Canada on August 23 at the age of 83, after a long, characteristically tenacious battle with Parkinson’s disease. He is remembered with love by his wife Sybil, daughters Gwen, Claire and Marilyn and their families, brothers Martin, Paul, Edward, sister Ruth and many relatives, friends and colleagues.

Harold was born in 1915 in Chengtu, China of missionary parents, his father was a Professor of Mathematics at West China University. He obtained degrees in mathematics and physics at McMaster University and University of Toronto. After winning a scholarship to study under Dr. J. D. Cockcroft at the Cavendish Laboratory, Cambridge, the opportunity was dashed by the outbreak of the Second World War, and he spent those years as a Physics Professor at the University of Alberta and teaching fighter pilots at the Commonwealth Training Scheme. He then moved to Saskatoon where he pioneered the development of the Cobalt-60 Radiotherapy Unit, treating the first cancer patient in the fall of 1951. He moved to Toronto in 1956 where he headed the Physics Department of the Ontario Cancer Institute and founded the Department of Medical Biophysics, University of Toronto, where he remained until his retirement in 1980.

His early career in Medical Physics concentrated on radiation dose calculations, depth-dose data for the University of Saskatchewan 22 MeV Betatron, and the physical aspects of cancer therapy, but he also did fundamental work on stopping-cross-sections and electron range-energy relationships. With this background, he embarked on his most significant project to develop the world’s first Co-60 cancer treatment unit, using a 1000 Ci source produced in the NRX reactor at Chalk River, Ontario, Canada, the results from which were first published in a letter to Nature in 1951. The seed for this idea came from a series of lectures by Prof. Val Mayneord, which he attended in Toronto in 1946. At the same time he and his graduate students were measuring the RBE for Betatron X-radiation, studying skin effects, calorimetry, developing clinical dosimetry and working on collimators and isodose distributions for therapy machines. Much of this accumulated knowledge and experience culminated in the publication of the first edition of ‘The Physics of Radiation Therapy’ in 1953, and the subsequent second edition co-authored by Dr. Jack Cunningham in 1961 and renamed ‘The Physics of Radiology,’ which became the leading textbook in the field.

Johns realized that advances in radiation physics needed to be matched by those in molecular biology and biophysics, in order to better understand the effects of radiation on the tumour. With the complex nature of damage by ionizing radiation, he decided to explore the effects of UV damage on the cell. In 1960 he went on sabbatical to Cal Tech in California, USA to work in photobiology with Prof. Max Delbruck who later became a Nobel Prize winner.

H. E. Johns was instrumental in the discovery of thymine dimer photoproducts in DNA and their photoreactivation. This heralded a whole new career in molecular photochemistry and photosensitization, product analysis and reaction kinetics, and provided an impetus for scientific and clinical studies of phototherapy, photo-oxidative stress, energy transfer and photo-repair in biological systems.

Having made improvements to the physics and biology of cancer treatment, Johns realized that a third element was needed to help the oncologists better visualize and localize the tumour, in order to better direct the treatment beams and therefore improve the therapeutic ratio for killing cancer cells while sparing healthy neighbors. To achieve this end, he spent a sabbatical with Prof. Jack Boag in 1971 at the Royal Marsden in England to work on xeroradiography and the newly emerging field of imaging.

It is to his credit, and in part of his legacy, that the fruits of his many labours is all aspects of diagnostic and therapeutic radiology, medical physics, medical biophysics and imaging, continue to flourish at the OCI, across Canada and everywhere medical and scientific research is pursued by those who derived some benefit from the knowledge and inspiration of his life and work.

Johns was a team player, and believed that if a thing was worth doing, it was worth doing to the best of one’s ability. He was a great teacher, a hard worker who brought out the best in all around him by his selfless example to excel. He transformed the Ontario Cancer Institute into a world class R&D establishment through exemplary personal dedication and perseverance. It is entirely through his efforts that the network of several generations of Medical Physicists has developed and continues to flourish. He created and fostered an open atmosphere of challenge and discovery that reflected his character and inquiring mind. He respected all those around him and encouraged them all to pursue any and every idea and support each other, whether by participating in the Student Seminars, visiting his office to report on progress or learn how to write a paper, membership in the Squash Ladder, or attending the Retreats at his cottage on Lake Boshkung.

During his career he published over 250 per-reviewed papers, trained over 100 graduate students. He was a Fellow of the Royal Society of Canada, a member of the International Commission on Radiation Units and Measurements, and received many prestigious awards and honours, including medals from the British Institute of Radiology, Canadian Association of Physicists, Roentgen Society, Health Physics Society and American College of Radiology. From the American Association of Physicists in Medicine he received the William D. Coolidge Award in 1976, was the Schultz Lecturer and gave the Harold F. Batho Memorial Lecture in 1980.

His greatest public accolade was his investiture in 1977 as an Officer of the Order of Canada, and he is being inducted into the Canadian Medical Hall of Fame on October 28, 1998. However, perhaps his greatest living legacy is the world-wide distribution in over 80 countries of an estimated 3,000 Cobalt-60 teletherapy units, two-thirds of which are built in Canada by AECL. These are estimated to have treated over seven million cancer patients.

The Medical Physics community honour his passing and acknowledge his many contributions. Harold E. Johns will long be remembered. Those who were privileged to meet him or whose lives were touched by him, admire his achievements, remember his great joie-de-vivre, and cherish his humanity and generosity.

Clive L. Greenstock
AECL, Chalk River, Canada
Obituary
Harold Elford Johns
1915 - 1998
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Editor’s Corner
Maria Sklodowska-Curie’s Achievements - Part II
(Continued from MPW Vol. 14 (1), 1998, Page 14)
The First Stage (1896-1909): Great Discoveries

The great love of knowledge and aspirations to scientific
career led Maria to the world’s largest research centre, i.e.
Sorbonne in France, where working far into the night and
living virtually on bread and butter, and following lectures
of several famous physicists of that time; Maria graduated
with a diploma of a license in physical sciences in 1893,
and in 1894 was placed second in the license of mathematical
sciences.

It was at that time, that the accomplished and respected
French scientist, Henri Becquerel, discovered penetrating
radiation emitted by uranium and its salts. He found that
this radiation had an effect on photographic plates and
caused electrical conductivity of the air. He also noted
that the new type of radiation was very similar to X-rays,
discovered earlier by Roentgen. Maria Curie, as a sharp
researcher, quickly observed that the new phenomenon
could open up new vistas of research and discoveries, and,
looking for a thesis, she applied to Becquerel with a
request to do research, under his supervision. She started
her own investigations in Becquerel’s laboratory in 1897,
which proved to be the turning point in her life.

Maria Curie’s first task was to develop an accurate
method to investigate the properties of uranium radiation.
The technique based on the uranium-induced electrical
conductivity in the air proved to be the best method of
investigation. The use of piezoelectric quartz for compen-
sating very small voltages and currents was among
the best innovations proposed by the French physicist,
Pierre Curie. The method proved to be accurate in
measurements of very small currents of the order of 10-12
A. Pierre Curie, who was to become Maria’s husband, was
thus instrumental in helping Maria master the piezoelectric
method.

In 1898, almost at the same time as the Viennese
researcher, Gerhard Carl Schmidt, she discovered that
thorium features a similar activity as that of uranium.
The property of these elements, exhibited by emitting
energy in the form of radiation, was called “radioactivity”
by the Curies. Maria was led to the conclusion that radio-
activity was an atomic property. This astonishing and
far reaching conclusion brought about the discovery of
new radioactive elements.

Among the substances investigated for their radioactivity,
minerals predominated. Pitchblende was found to be
four times as radioactive as the metal uranium, and
chalcocite was twice as active as uranium. However, it
seemed clear from previous studies that no mineral other
than uranium should exhibit higher activity. In order to
provide an explanation of this astonishing fact, Maria
Curie came to the unusual and bold conclusion that
chalcocite contained microscopic quantities of a new and
unknown element whose strong radioactivity was respon-
sible for the activity of natural chalcocite.

The importance of the above conclusion was fully
appreciated by Pierre Curie, who decided to stop his own
research and join Maria in the work that she had under-
taken. The Curies arranged their work in such a way
that while Maria undertook carrying out radiochemical
analyses to obtain pure elements by separation and
purification, Pierre devoted himself chiefly to the physical study
of the properties of radiations
emitted by those elements. They
started their investigations on
their own, without adequate
means or research laboratory.

The first element to be dis-
covered by radiochemical analysis
was a very rare, but active, species
which was later to be called
polonium in honor of Maria’s native country - Poland.
The second radioactive element discovered by Pierre and
Maria and their assistant Gustave Bemont, was radium.
This discovery was reported on December 28, 1898.

The discovery of radioactivity by Henri Becquerel, and
even more discoveries of new radioactive elements by
Pierre and Maria Curie, were unquestionably a starting
point for a new branch of science.

According to chemical tradition, those who discover
new elements should investigate the chemical properties
as to grant them all their “civil” rights and to place them
accordingly in the Mendeleev periodic table of elements.
Since the quantity of radium in uranium ore is very small,
the amount of radium isolated from 5 kg of uranium ore
sent to Pierre and Maria by G. Bemont, was sufficient
for them to indicate the discovery, but was too small to
carry out further studies.

To have radium compounds of higher concentrations
they had to have very large quantities of radioactive
materials. Several tons of the new raw material were
obtained in the form of residues from production of
uranium in Saint Joachimstal in the present Czech Republic,
thanks to Eduard Suess, member of the Academy of Science
in Vienna.

The Curies had the residues processed in a factory and
in the laboratory they undertook the final stages of
purification and concentration. In this work Maria Curie
was assisted by Andre-Louis Debierre who, in 1899,
discovered the third radioactive element, actinium, in the
pitchblende residues. In 1902, they were able to isolate a
few milligrams of pure radium chloride. Maria became
convinced that the atomic weight of radium ranged from
138 to 226.45, depending on the purity of the compound.
In later measurements it was found to be 226.45. The
results obtained for radium convinced other chemists
that the new radioactive element did in fact exist.

In 1899, Becquerel, Victor Meyer and Schweidler
found that the rays given off by radioactive substances became
deflected in a magnetic field. Pierre Curie soon showed
that this radiation consisted of two kinds of rays: some
of them were penetrating and underwent strong deflection
in the magnetic field, and others were far less penetrating
and less liable to be deflected. The latter radiation was
to be later called alpha rays, and the former beta rays.
Some time later, Paul Villard discovered the third kind
of rays, later to be called gamma rays: they could not be
deflected by a magnetic field at all.

Maria Curie became concerned with a thorough study
of alpha rays, which led her to some interesting results
indicating that this radiation obeyed other physical laws
than beta and gamma rays whose absorption coefficients
fell off with the increase in the thickness of the absorbing
layers. Alpha rays exhibited an opposite effect: they
became more absorbed after passing thicker layers. Maria

(Continued on page 19)
Editor's Corner

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(Continued from MPW Vol. 14 (1), 1998, Page 14)

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(Continued on page 18)

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MPW Vol. 14 (2), December, 1998
International Conference on Medical Imaging, Medical Physics, and Precision Radiation Therapy
Guangzhou, China, November 4-6, 1999

Co-Presidents:
Nan-Zhu Xie
Emeritus Professor Dept. Medical Physics Guangzhou Medical College Guangzhou, China
William R. Hendee Professor and Vice-Chair Dept. Radiology Medical College of Wisconsin Milwaukee, Wisconsin USA

Abstracts of papers to be presented at the International Conference are currently being solicited. Papers are encouraged on advances in medical imaging and medical physics, and on new approaches to precision radiation therapy. Of particular interest are papers that examine the applications of imaging technologies and planning algorithms to precision radiation therapy, including the use of imaging in planning, implementing, guiding, monitoring, following and evaluating radiation therapy. Also of particular interest are papers on quality control and quality assurance related to medical imaging and radiation therapy.

The deadline for abstract submission is April 1, 1999. Authors will be notified by June 1 whether the abstract is accepted for presentation. Abstracts should provide succinct summary of the proposed presentation and must not exceed 1,000 words, including bibliography. Abstracts with comments such as "... will be discussed" and "... will be presented" are discouraged. A biographical sketch of the presenting author, not to exceed 100 words, should be submitted with the abstract. E-mail submission of abstracts is encouraged; if faxed or mailed, please send 6 copies. Abstracts should be directed to: William R. Hendee, Medical College of Wisconsin, 8701 Watertown Plank Road, Milwaukee, Wisconsin 53226, USA; Phone: 414-456-4402, Fax: 414-456-6554, E-mail: whendee@mcw.edu.

Calendar of Events
23-26 February 1999: 4th International Stereotactic Radiosurgery Society Congress, Sydney, Australia. (Eleanor Lovernedge, Conference Action Pty Ltd, P.O. Box 1231, N. Sydney NSW 2059, Australia; [Tel: +61 2-9866-0333; Fax: (+61) 2-9866-5154; E-mail: contact@real.net.au; URL: http://www.conferenceaction.com.au/srscl]).
1-5 March 1999: A Practical and Theoretical Course in Radiotherapy Physics: Part B: Brachytherapy, Radiobiology and Treatment Machines, Sutton, Surrey, UK. (Dr. Alan Nahum, The Joint Department of Physics, The Royal Marsden NHS Trust, Sutton, Surrey SM2 5PT UK; [Tel: +44 181 843 5011; Ext. 3308; Fax: +44 181 843 3812; E-mail: alan@icr.ac.uk]).
6-11 April 1999: 5th Biennial ESTRO Meeting on Physics for Clinical Radiotherapy, Gottingen, Germany. (European Society for Therapeutic Radiology and Oncology, Av. E. Mounier 83, 1200 Brussels, Belgium; [Tel: +32 2 779 54 34; Fax: +32 2 779 54 34; E-mail: info@estro.be; http://www.estro.be]).
10-12 May 1999: 3rd International Congress of the Croatian Society of Nuclear Medicine, Opatija, Croatia. (Dr. Damir Dodig, KBC_REBRO, Kispaticeva 12, 10000 Zagreb, Croatia; [Tel: +385 1-233-3850; Fax: +385 1-233-5785]).
21-23 July 1998: DOSGEL '99: 1st Int'l Workshop on Radiotherapy Gel Dosimetry, Lexington, KY, USA. (Dosgel Secretariat, Centre for Medical and Health Physics, School of Physical Sciences, Queensland University of Technology, GPO Box 2434, Brisbane Q 4001, Australia; [Fax: +61 7 3864 1521; E-mail: dosgel@mednet.qut.edu.au; URL: http://mednet.qut.edu.au/dosgel/]).
25-29 July 1999: 41st Annual Meeting of the American Association of Physicists in Medicine, Nashville, TN, USA. (Lisa Rose Sullivan, Project Manager, AAPM, One Physics Ellipse, College Park, MD 20740-3484 USA; [Tel: 301-209-3397; Fax: 301-209-0882]).
25-30 July 2000: World Congress on Medical Physics and Biomedical Engineering and the AAPM Annual Meeting, Chicago, IL, USA. (American Association of Physicists in Medicine, One Physics Ellipse, College Park, MD 20740-3484, USA; [Tel: 301-209-3397; Fax: 301-209-0882; E-mail: aapm@aapm.org; URL: http://www.wc2000.org]).
24-29 August 2003: World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia. (Gary Fullerton, UT Health Science Center, 7703 Floyd Curl Dr., San Antonio, TX 78284-7800 USA; [Tel: 210-567-5550; Fax: 210-567-5548; E-mail: fullerton@uthscsa.edu]).

Medical Physics Events Calendar
The AAPM Web Pages have undergone extensive revision and updating in recent months. The Medical Physics Events Calendar (http://www.medphys.org/calendar/calendar.htm) is the electronic version of the calendar printed in the journal Medical Physics, but has the added advantage of being more current and having hotlinks to both the web sites of the events and to the email addresses of the contacts. It also contains links to the calendars of several related organizations.

The AAPM Medical Physics Resource Page (http://aapm.org/medphys.html) contains lists of links to web sites containing information that physicists may find helpful, including other medical physics resource pages. It also contains a list of electronic mailing lists. Paramount among these is the Medical Physics Network, which now has over 1,300 subscribers worldwide.

The AAPM Organizations Page (http://aapm.org/orglist.html) is a companion to the Resource Page and contains links to associations and agencies of interest to medical physicists. These include ISO, IPEM, ABR, ACMP, ISMRM, etc.

It is expected that many of these links will eventually be incorporated into one of the World Congress 2000's (http://www.wc2000.org/) goal of linking the world's medical physics communities and making resources available to all through the Internet. Suggestions for web pages to be included can be emailed to me at EventsEd@aol.com.

Carter Schroy, Ph.D.,
Associate Editor, MPW
Calendar of Events
International Conference on Medical Imaging, Medical Physics, and Precision Radiation Therapy
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Co-President:
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Honorary Treasurer’s Report

Many of you will have noted that during the course of last year I changed my address for correspondence from the Oxford Radcliffe Hospital NHS Trust to my home address. This was due to the fact in April 1997 I decided to make a career change after working for over 30 years as a Medical Physicist in the Oxford Hospitals (yes, it is never too late!!!), and became a civil servant working for the Government. I have thoroughly enjoyed the last eighteen months working for the Department of Health in the NHS Executive as Committee Secretary to the National Screening Committee, though at times it has been difficult to find time for the work of the IOMP Treasurer. I therefore apologize to those that have often waited sometime for me to respond to their emails or correspondence; there are simply never enough hours in the day or night!!!

I would simply like to say to those folks who would like to try their hand at another job that they should not be afraid to try before it is too late; the rewards are high. I now know that the training we receive as medical physicists equip us for a vast range of different work experiences. We are definitely multi-skilled workforce with a great deal of drive, lots to offer any employer, capable of original thought especially in logistics and lateral thinking, excellent team players, good at giving and receiving critical appraisals. (N.B. most physicists will have had to stand their corner in tight clinical/scientific situations several times throughout their careers which I have found to be the case outside of medicine, here they seem to work in trying to secure universal approval for policy decisions before propounding any!!! . . . . the case of team decision making, and I have found this to be a whole new ball game!!!). Go on give it a whirl . . .

Now back to the matters in hand and to IOMP Treasury business. Below are the accounts as they stand at 30

September 1998. In summary with regard to subscription renewals which went out in April/May 1998 for renewals for 1998 and back dated requests for outstanding subscriptions for both 1996 & 1997. Of the 9 countries who did not pay their subscriptions for 1996, which amounted to US$ 855, no further remittances have been received. For 1997, of the 31 countries which amounted to an outstanding amount of US$ 14,550, 6 countries paid in full while 4 countries paid reduced subscriptions or used them internally for training courses since their countries were experiencing economic difficulties, a sum of US$ 9,320 was recovered. To date in 1998, 26 of 66 countries have renewed their subscriptions, 13 have received waivers to use this money on internal training courses and of the estimated income from subscriptions for 1998 of US$ 31,808, US$ 16,317 have been received to date. Renewal of Corporate Membership for 1998 has not been very good and of the present 15 members only the following: Med-Tec Inc, USA; Nucletron Corporation, USA; Theratronix Ltd., Canada; Institute of Physics Publishing, UK; Medical Physics Publishing, USA, are currently paid up members for 1998. Requests went out to 17 companies with whom we actively do business in the medical field. Other years I have resorted to sending out invitations to around 75-100 companies but with little or no success. Reminders to both Country and present Corporate members will have been sent out by the time that you read this report in Medical Physics World and I ask all treasurer’s to respond as quickly as possible since lack of income will restrict very severely the much needed support the developing countries need for assistance with conferences and training courses.

Please do not hesitate to contact me should you have any queries regarding any of the financial aspects of this report. (See page 23 for financial statements).

Ann Dixon-Brown
IOMP Honorary Treasurer
IOMP Libraries Program Report

We currently have 75 active libraries in 46 countries. This number is down from the peak of 82 libraries following a survey mailed to all libraries in late 1997. Libraries were asked to verify the address and contact at the library and return the survey form to us. All libraries returning the form within 3 months were left on the active list and the 12 who did not return forms were marked inactive. A second effort was made to contact those not responding. Returned surveys resulted in the reactivation of three libraries.

During calendar year 1997, 26 donations were initiated and to date in calendar year 1998, 34 donations have been initiated. The number of donations completed is not always known because we rely on the donor to tell us that the donation has been shipped and the recipient library to notify us when the donation is received.

We are working with Kathy Burroughs (kathy@aapm.org) at AAPM to coordinate donated subscriptions of Medical Physics for all libraries needing ongoing subscriptions through the Partners in Physics program. We also continue to work with Brenda Trigg to coordinate donations of JIPP and books to new and existing libraries. The Society for Radiological Protection has contacted us about donating their quarterly journal to all interested libraries. We are working to coordinate this effort.

We provided a list of currently active libraries and countries currently served to Gary Fullerton to be incorporated in the IOMP web site.

Anyone wishing to donate materials or establish a library is asked to contact the curator.

Marilyn Stovall, Ph.D.
Curator, IOMP/AAPM Libraries

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