Volume 23, No. 1 June 2007

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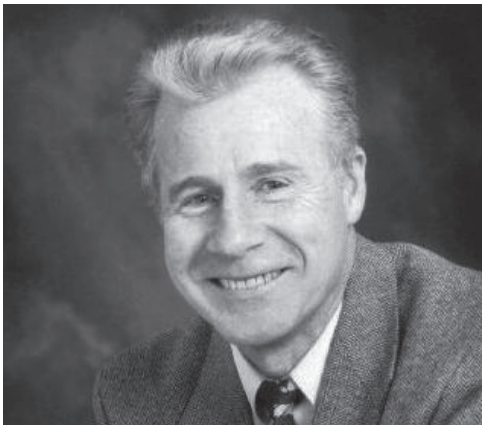

Professor Barry J Allen, Ph.D.; DSc; President IOMP

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President's Report

Professor Barry J Allen, Ph.D.; DSc; President IOMP

Last year at the world congress in Seoul, Korea, I proposed to the IOMP that action was needed to stimulate and support the development of appropriate technology for improved health care in developing countries. Prof Joachim Nagel, then president of the IFMBE, was supportive of a joint initiative, and noted that IFMBE already had arrangements with the WHO to this effect. The concept was adopted by the IUPESM, and the Health Technology and Training Task Group (HTTTG) was formed, with myself as Chair, and Prof Nagel as Co-Chair. Since then some 40 international experts from around the world have agreed to join the Task Group.

The health technology needs at the village and provincial level in developing countries require the design of an appropriate technology and training packages to satisfy those needs, so that the majority of people can receive improved health care.

The right mix of effective and efficient healthcare delivery depends on the available health care technology. Such technologies must be carefully defined to achieve the widest application to the largest population.

The appropriate healthcare technology packages are to be defined in accordance with WHO levels of health services of Primary level, First referral level, Second referral level and Last referral level.

Primary level (first contact level) with a health centre (smaller health centres may be called dispensaries, health stations, health posts) serving a defined community or area - normally several villages (at a single village level, at best there might be some community or auxiliary health workers). A health centre carries out promotional, protective, preventive, simple diagnostic, curative and rehabilitative activities for ambulant patients, normally has no beds other than perhaps those needed for emergencies and maternity care. In most instances, it has no physician on

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Secretary-General's Report

Peter H S Smith PhD; Secretary General, IOMP

There are over 16,500 medical physicists who are members of IOMP (by virtue of membership of their own national organization) and a significant number of these assist the advancement of medical physics in developing countries in a number of ways - including lecturing, organizing courses, providing advice etc. Many others contribute more generally to development of these countries by raising funds or by making donations through charities.

Does IOMP itself do enough? Does it undertake the sort of activities to assist medical physics colleagues in developing counties that IOMP's members would expect IOMP to be engaged in as the world-wide organization representing medical physics?

> (IOMP) could develop into a valuable network of medical physicists, possibly assisting individuals in a sub-region to form some form of associations.

IOMP operates mainly through national medical physics organizations – however of the 54 poorest countries (World Bank – GNI per capita less than US$ 875) only 10 are members of IOMP but of these six are not currently active. One other country is represented by two individual members. Of the next World Bank category (GNPI per capita between US$876 and US$3,465 - 58 counties), 33% (19) have national medical physics organizations which are members of IOMP but 5 are not currently active. Whilst a number of these counties will not have any medical physicists there are clearly many medical physicists in developing counties who have no access through a national or regional medical physics organization to IOMP. Some of these medical physicists get support by becoming overseas/external members of other national organizations.

IOMP does have a category of individual member to be used exceptionally where there is no national or regional organization but it has been used only rarely. A simpler way forward would be for IOMP to develop a database of individuals in developing countries where there is no national organization. These individuals would receive, where relevant, information IOMP sends to national organizations, copies of MPW and other useful information. It could develop into a valuable network of medical physicists, possibly assisting individuals in a sub-region to form some form of association. The individuals would also be eligible to apply for IOMP travels grants and other benefits.

IOMP provides limited support at the departmental/hospital level – the main one is the joint IOMP/AAPM Library Programme. This is under review and comments are welcome as to how it could be further developed or improved. There are number of bi-lateral links between departments in developing countries and those in developed counties. I would be very interested in hearing about the experiences of members who have been involved in such links. Should IOMP foster such bi-lateral links (also known as 'twinning')?

The financial resources of IOMP are very limited and the main source of income is dues from national organizations. One idea for increasing financial support for developing counties is to have

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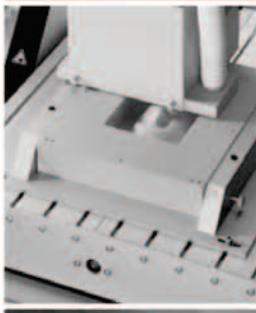

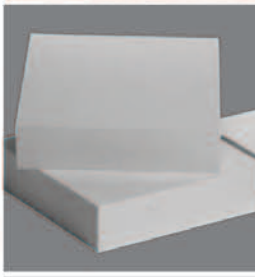

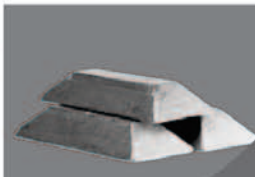

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President's Report (continued from Page 1)

the staff, but a physician assistant or nurse assisted by community or auxiliary health workers. The most sophisticated devices at a typical health centre would be syringes for immunization, phonendoscope, and weight scale for babies.

The provision of new generation, low technology equipment and training, to be defined, could lead to major enhancements at this level, building on the existing traditional medicine at the village level, and enhanced interaction with the secondary level.

First referral level - normally a district hospital that is a recognized referral facility providing a 24-hour intramural medical care which represents a higher level of competence than the source of referral, e.g. health centre. It may be very small with just a few beds. In most instances, these facilities have a very limited human resource capacity and a very limited technology base with very basic laboratory services and, if any, imaging equipment, and simple surgery is often done under local anesthesia.

The technology needs to be defined, so as to enhance the quality of health delivery. A Tele-medicine facility would leverage the skill basis by drawing on secondary level expertise for consultation and training.

Secondary referral level - a more sophisticated hospital (may be a provincial hospital) providing multi-specialist intra- and extramural care, and serving as a backstop for the first referral hospitals in the hierarchy of technical competence. It may also, on occasion, have special expertise in some particular medical diagnostic and treatment domain, which would qualify it as an institution of last referral for a specific subject.

The technology should allow tele-medicine to specialists at the tertiary level. More substantive technology targeted at specific diseases needs to be developed, such as palliative treatment for late presenting patients with advanced cancer, with lower cost therapeutic and imaging requirements compared with that for curative therapy.

Visiting biomedical physicists and engineers to maintain and calibrate equipment.

Last referral level - a most sophisticated hospital located in a national or provincial capital or other big city, typically a University Teaching Hospital, providing the highest level of medical care available in the country or a region.

This level follows the western model of centralized expertise and high technology, and is a resource for education and training and consultation. Specialists in attendance can monitor and communicate with lower level centres by telemedicine.

Technology needs are very country-specific, and are determined by the local disease burden, patient demographics, health service delivery models, clinical practice, etc. These may even vary from region to region in one country. WHO has developed a methodology and software-based tool called the Essential Health Technology Package (EHTP). EHTP is designed to assist countries in identifying their individual technology requirements linking and integrating a wide variety of parameters to arrive at locally relevant lists of technology needed to address their specific disease and patient profiles within the existing health service delivery models and accepted clinical practices, and health system capacity and constraints for managing the acquired technology.

HTTTG wishes to assist countries in defining their health technology needs, and identifying and rectifying health system constraints for adequate management and utilization of health technology, particularly through training, capacity building and the development and application of appropriate technology.

I will visit Vietnam in May to discuss a proposal for the first HTTTG workshop to be held there later in the year with the newly formed Vietnam Association for Medical Physics. I will travel out to the provinces in the delta region to visit local hospitals and medical centres in towns and villages. The objective of the proposed workshop will be to formulate recommendations for action by HTTTG. The experience in Vietnam will provide valuable insights into how HTTTG should move forward.

Secretary-General's Report (continued from Page 2)

an arrangement for individual medical physicists to make a personal voluntary donation to be used solely to support the advancement of medical physics in developing countries. A simple method of collecting donations would be for national organizations to collect the donations at the same time as they collect their own annual subscriptions and to pass on the total donations collected to IOMP, who would keep separate accounts and explain exactly how the money was spent. IOMP would cover all the administrative costs from it normal budget so that all donations would be spent directly on agreed projects. If, say, 20% of the members made voluntary donations (approximately 3,300 physicists) and each donated, on average, US$30, then the total income to the fund would be nearly US$100,000. Such a fund would also help IOMP to go to international funding/charitable organizations to raise additional funds. Far too naïve?

Let me or the MPW editor hear your views!

Peter Smith
peter.smith@mpa.n-i.nhs.uk

PS. For those interested in such things – there was a meeting of the IOMP Executive Committee in February. The notes of this are on the website (www.iomp.org), also the agreed budget for 2006 and other news.

Report of the Scientific Committee

Cari Borrás, D. Sc., IOMP Science Committee Chair

The role of medical physicists in the application of the new ICRP Recommendations

After a long process of consultation with stakeholders, in March 2007, the International Commission on Radiological Protection, ICRP, approved a new set of fundamental recommendations on radiological protection to replace the Commission's previous recommendations from 1990 . Although one chapter on environmental protection has been added, the recommendations remain focused on human protection, with the health objectives to manage and control exposures to ionizing radiation so that tissue reactions (deterministic effects) are prevented and the risks of cancer and heritable diseases (stochastic effects) are minimized. There is more continuity than change in these revised recommendations, "tissue reactions" being one of the few new terms coined. In fact, in spite of the extensive scientific literature cited, the recommendations are more based on value judgments about the relative importance of different kinds of risk and about balancing risks and benefits than on new scientific knowledge; the reason given that the reviewed epidemiological studies, animal experiments and molecular and cellular level research papers yielded too wide a variation of results and had large uncertainties.

At odds with the 2005 report by the French Academies supporting a practical threshold for radiation cancer risks , but following the thinking of the BEIR VII committee3, the ICRP has judged that in the low dose range, below around 100 mSv, it is scientifically reasonable to assume that the incidence of cancer or hereditary effects is proportional to changes in the equivalent dose in the relevant organs and tissues. To provide a prudent basis for the practical purposes of radiological protection, in conjunction with the adoption of the linear-non-threshold (LNT) model, the ICRP is taking a value of 2 for the dose and dose rate effect factor (DDREF), the factor that projects cancer risk determined at high doses and high dose rates to the risks that would apply at low doses and low dose rates (BEIR VII chose a value of 1.5). However, given all the uncertainties associated to these models, the ICRP cautions against the calculation of the hypothetical number of cases of cancer or hereditary disease that might be associated with very small radiation doses received by large numbers of people over long periods of time.

Although the ICRP recognizes that cancer incidence is population, gender and age dependent and tissue specific, the nominal risk coefficients established for detriment-adjusted cancer risk, have been averaged for both genders, all tissues and all ages. The value for the whole population has been estimated as 5.5 x 10-2 Sv^{1}, and for adult workers as 4.1 x 10-2 Sv^{1}. For hereditary effects, the nominal risk in the whole population is estimated as 0.2 x 10-2 Sv^{1} and in adult workers as 0.1 x 10-2 Sv^{1}. The latter represents a 6-8 fold reduction from the 1990 Recommendations, due to the fact that following UNSCEAR , the risk is now expressed up to the second generation rather than at a theoretical equilibrium. But the cancer risk is similar to the one stated in 1990, even though the ICRP now bases detriment on cancer incidence rather than on cancer fatality.

> Although neither dose limits nor dose constraints apply to patient exposures, their doses should be managed commensurately with the medical purpose.

Regulators adopting the new ICRP recommendations need not be overly concerned about significant changes. The emphasis in the publication is to clarify previously-introduced concepts.

Acknowledging that it is necessary to provide advice with regard to all exposure situations, including those that may arise as a result of accidents or emergencies and those that exist but were not planned, the new recommendations consider three types of exposure situations: planned (normal and potential), emergency and existing (controllable), thus replacing the previous terms "practices" and "interventions", which were confusing. The recommendations for planned exposures are the same as before, but for emergency and existing exposures, the recommendations are wider in their scope of application. The categories of exposures continue being occupational, public and medical, with larger emphasis on the medical than before. To monitor public exposures, the "critical group" has been replaced by the "representative person", whose habits should be typical of a small number of individuals representative of those most highly exposed.

The basic principles of radiological protection of justification, optimization of protection and individual dose limitation remain the basis for evaluating external and internal doses. The principles of justification and optimization apply to all types of exposure situations, including both planned and potential exposures, but dose limits apply only to planned occupational and public exposures. The protection can be source-related or individual-related. The levels of individual doses that require protective action involve dose limits, dose constraints and reference levels. In planned exposure situations, the (individual) dose limit is the restriction on the sum of the doses from all sources. The numerical values for dose limits have not changed from the previous publication. Dose constraint is a prospective and source-related restriction on the individual

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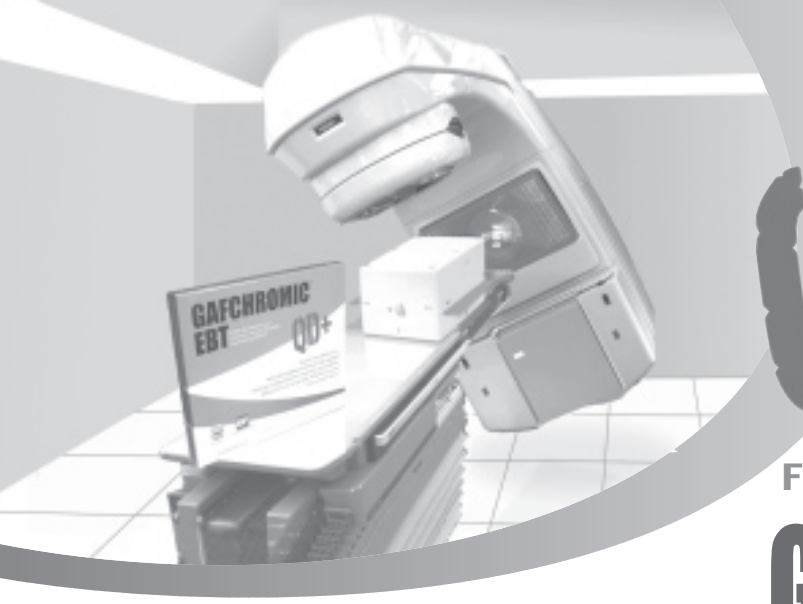

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Scientific Committee (continued from Page 6)

dose from a source, which serves as an upper bound on the dose in optimization of protection for that source. For potential exposures, the corresponding concept is risk constraint.The new ICRP publication suggests numerical values of these constraints. In medical facilities, the medical physicists should ensure that the dose constraints used in shielding calculations are really part of the optimization process, which should take into account economic and societal factors. The concern is that when using too low a constraint, many countries (mostly developing ones) are spending unjustified amounts of money that curtail the funds available for health care. The new ICRP recommendations state very emphatically that optimization of protection is not simply minimization of dose. Dose constraints and dose limits apply to planned (normal and potential) exposure situations; for emergency and existing exposure situations, dose restrictions are achieved through the use of reference levels, the numerical values of which depend on the particular situation at hand. These reference levels should not be confused with diagnostic reference levels, which are values of patient doses or administered activities in specific medical imaging procedures, above or below which the procedures should be reviewed as part of the optimization process.

The dosimetric terms to be used for radiological protection are equivalent dose, effective dose, committed dose and collective effective dose, all based on mean absorbed dose with its distributions in time and in linear energy transfer (linear collision stopping power). Their definition is the same as in the 1990 Recommendations, but some of the factors that convert absorbed dose to equivalent dose and effective dose, wR and wT, have changed, due to new scientific evidence.Values of wR are unchanged for photons and alphas, but have changed for neutrons (wR is now a continuous and not a discrete function vs energy), protons (which is now 2 instead of 5), and a value (wR=2) has been assigned to charged pions, which had not been considered before. wT are different for the gonads (the value has decreased from 0.20 to 0.08), the breast (it has increased from 0.05 to 0.12) and the "remainder" (the treatment of which has also changed); the number of tissues has increased to 14.

Since both equivalent dose and effective dose cannot be measured directly, to determine external exposure the ICRP relies on the ICRU operational quantities, ambient dose equivalent, H*(10), and directional dose equivalent, H'(0.07, _), for area monitoring, and personal dose equivalent, Hp(d), for individual monitoring. Any statement of personal dose equivalent should include a specification of the reference depth, d, the depth below a specified point, usually where the dosimeter is worn. For the assessment of effective dose, this depth is taken as 10 mm, Hp(10). For the skin dose and for the dose to the extremities, the depth is 0.07 mm, Hp(0.07). The dose to the lens of the eye could be monitored with Hp(3), at a depth of 3 mm, but no such dosimeter exists in practice. Compliance with dose limits can be ascertained with the use of dosimeters if properly worn. To link the protection and operational quantities to physical quantities (such as tissue absorbed dose, air kerma free-in-air and particle fluence) that characterize the radiation field, the ICRU computed conversion coefficients. To assess internal exposure, the ICRP recommends the use of activity quantities in combination with dose coefficients based on physiological models and 4-D computations.

> There is more continuity than change in these revised recommendations, "tissue reactions" being one of the few new terms coined.

The problem for medical physicists, accustomed –especially in radiation therapy– to accurate dosimetry, is that the unit for all the ICRP and ICRU quantities listed above is the sievert (Sv). Furthermore, the terms equivalent dose and dose equivalent are often mixed up, especially when translated in different languages. Furthermore, some governmental regulatory authorities (in the United States for example) express dose limits in terms of effective dose equivalent, the term introduced in the ICRP 1977 Recommendations, with the radiation quality and tissue weighting factors used there. When comparing "doses" expressed in sievert in the scientific literature it is important to ascertain what "doses" these are and what factors were used in their computation.

An important caveat regarding effective dose is that it should be used (by regulators) only for occupationally exposed workers and members of the public, where doses are assumed to be low, well below 100 mSv, where stochastic effects are considered. At doses above about 0.5-1 Sv, tissue reactions (deterministic effects) may occur. At these levels, the dosimetric quantity to use is the absorbed dose in the irradiated tissue modified by the radiobiological effectiveness of the radiation for the biological endpoint of concern. The unit is the gray (Gy).

Effective dose should not be used for retrospective evaluation of exposed populations or to assess individual risks, as is the case in medical exposures, which are not subject to dose limitations. Exposures in radiotherapy are clearly expressed in absorbed dose to the irradiated tissue. Exposures to individual patients from medical imaging, even those at low levels, should also be expressed as absorbed doses, since both the irradiation conditions and the exposed group of patients are known. According to the ICRU 74 Report ,"for an assessment of the risk due to the induction of stochastic and deterministic effects by medical x-ray imaging detail knowledge is required of organ doses, absorbed dose distributions and the age and gender of the group of patients concerned". The use of effective dose should be limited to dose comparisons either from different diagnostic procedures, from similar

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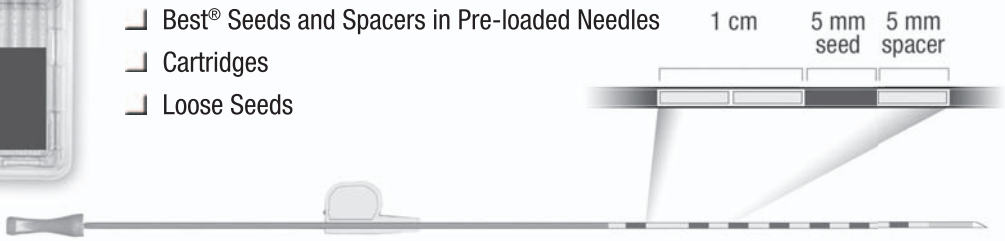

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Scientific Committee

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technologies and procedures in different hospitals and countries or when using different technologies for the same medical examination, provided the reference patient or patient populations are similar with regard to age and sex. Medical physicists have a strong responsibility in ensuring that the proper dosimetry is applied.

Given the fact that medical procedures have become the largest source of radiation to the population at large, at least in industrialized countries such as the United States and Japan, the justification and optimization of patient exposures have become crucial. The new recommendations describe three levels of justification: the use of radiation in medicine, the practice of specific radiological procedures, and the application of a particular procedure to an individual patient. The first level no longer requires justification, as the use of ionizing radiation in medicine accepted world-wide. The third level falls within the purview of the medical practitioner responsible for the radiological procedure. It is in the justification of (especially new) radiological procedures that the role of the medical physicists may be important. Medical physicists are knowledgeable about the technologies involved and can describe to their clinical counterparts the technical characteristics of the equipment and the techniques involved so that a joint decision can be made on the adoption of a particular procedure. Medical physicists will also pay a significant role in the optimization of protection both for occupational and medical exposures, for example by establishing and supervising adequate quality management programs. Although neither dose limits nor dose constraints apply to patient exposures, their doses should be managed commensurately with the medical purpose. Medical physicists should participate in the formulation of the diagnostic reference levels, defined above, making sure that the chosen values include assessments of image quality and dose for the same type of medical imaging examinations.

The role of medical physicists should be properly acknowledged in the forthcoming revision of the *International Basic Safety Standards for the Protection against Ionizing Radiation and for the Safety of Radiation Sources (BSS)*[7], the standards that are used world-wide by governments as the best model for radiation control regulations. There is a close connection between the ICRP recommendations and the BSS; the BSS always following the establishment of new ICRP recommendations, for example the 1982 and the 1996 BSS were published after the 1977 and the 1990 ICRP recommendations respectively. The adoption in March 1977 of new ICRP recommendations has given the BSS revision process considerable momentum. BSS Drafting Meetings, hosted by the current sponsoring organizations[8] are already producing new texts, which the IAEA is combining into complete versions of a draft text that will be distributed for broad discussion among all cosponsoring organizations and their constituencies. Among them, of course, is the IOMP, which has been invited to participate in the process, as its input is considered extremely valuable. The first Technical Meeting to discuss the first new draft of the BSS has been convened for July 16-20, 2007 in Vienna, Austria. We will be there.

[1] International Commission on Radiological Protection, 1991. 1990 Recommendations of the International Commission on Radiological Protection, ICRP Publication 60. Ann ICRP 21 1-3. (1990).

[2] French Academy Report, 2005. Dose-effect relationships and estimation of the carcinogenic effects of low doses of ionizing radiation. http://www.academie-sciences.fr/publications/rapports/pdf/dose_effet_07_04_05.pdf

[3] National Academy of Sciences, 2005. Health risks from exposure to low levels of ionizing radiation: BEIR VII Phase 2. Board on Radiation Effects Research. Available at http://www.nap.edu/books/030909156X/html

[4] United Nations Scientific Committee on the Effects of Atomic Radiation, 2001. Hereditary effects of ionizing radiation. UNSCEAR Report to the General Assembly with Scientific Annexes, United Nations New York, NY.

[5] International Commission on Radiation Units and Measurements, 1998. Conversion coefficients for use in radiological protection against external radiation. ICRU Report 57.

[6] International Commission on Radiation Units and Measurements, 2005. Patient dosimetry for x rays used in medical imaging. ICRU Report 74.

[7] Food and Agriculture Organization of the United Nations, International Atomic Energy Agency, International Labour Organisation, Nuclear Agency of the Organisation for Economic Co-operation and Development, Pan American Health Organization, World Health Organization (1996). International basic safety standards for protection against ionizing radiation and for the safety of radiation sources. Vienna: International Atomic Energy Agency; (Safety series 115).

[8] The current BSS Cosponsors Secretariat is formed by representatives of the European Commission, the Food and Agriculture Organization of the United Nations, the International Atomic Energy Agency, the International Labour Organisation, the Nuclear Agency of the Organisation for Economic Co-operation and Development, the Pan American Health Organization, the United Nations Environment Program and the World Health Organization.

ANNOUNCEMENT

2006 ANA Annual Award

CITATION:
Professor Barry Allen, IOMP President

Professor Allen is currently a scientist in the St George Cancer Care Centre and Clinical School of St George Hospital, Sydney, and a Conjoint Professor in the Clinical School of the University of New South Wales. His particular interest in recent years has been research, development and application of nuclear techniques for cancer therapy. He started a new Targeted Alpha Therapy (TAT) Project at the St George Hospital with a small multi-disciplinary team supported by US funding. This project has successfully developed new agents for treatment of melanoma, leukaemia, breast, prostate and colorectal cancer. He has published 36 papers on this topic in international journals. A world's first trial of TAT for melanoma commenced in 2001 followed by a Phase 1 Clinical Trial in 2004. The promising results which he has obtained are attracting international interest.

The ANA Award for 2006 is made to Professor Barry Allen for his outstanding contributions to the development and application of nuclear science and technology for over forty years and especially in medical fields in recent years.

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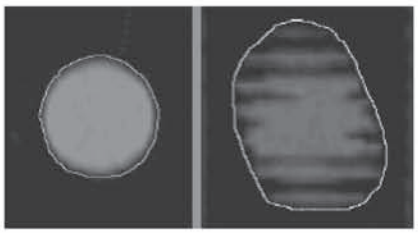
The Thorax Phantom is manufactured from materials that mimic tissues within 1% from 50keV to 25 MeV. The phantom accurately represents average human thorax anatomy in shape, proportion and structure.

Tumors of different size, shape and density can be positioned within the lungs and means are provided for placement of various detectors directly within the tumor volume.



Stationary target

Same target with S/I motion amplitude of ± 5mm

The CIRS Dynamic Thorax Phantom proved a useful tool for quantifying the degree of volume aliasing in CT imaging of a moving target. The CIRS Dynamic Thorax Phantom proved a useful tool for quantifying the degree of delivered dose variation due to serial tomotherapeutic treatment of a moving target.

James A. Tanyi et al.
University of Texas Health Sciences
Cancer Therapy Center, San Antonio, TX
AAPM October, 2004 poster

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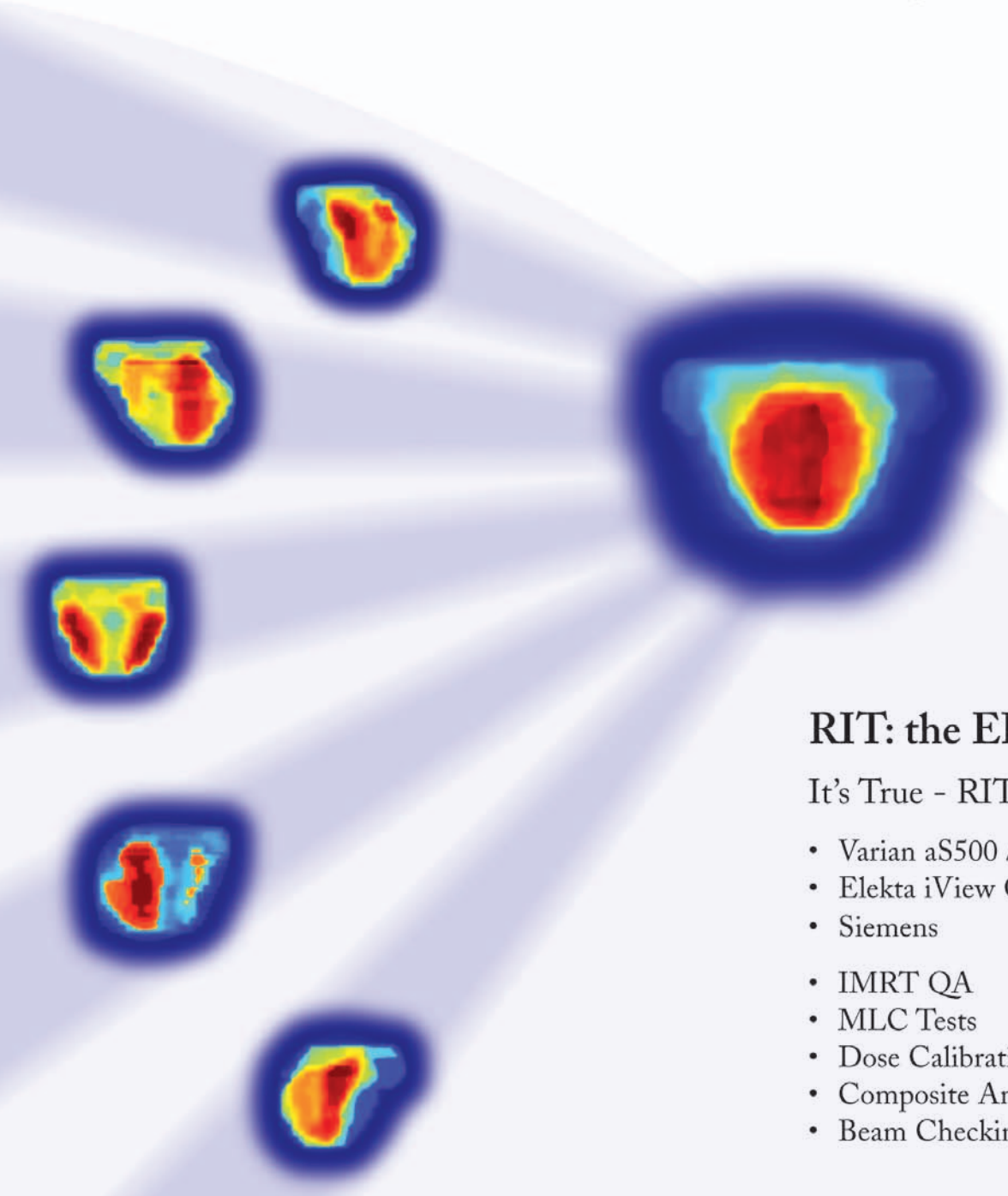

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Editor's Corner

E. Ishmael Parsai, Ph.D., MPW Editor

In this column we aim at providing the MPW readers some current news and information related to the fields of Medical and Health physics. Often list of references to review articles, useful websites, and summaries of current innovative advances will be provided. As always, your suggestions to enhance this column are welcomed. In addition, if you have other ideas or issues that you believe should be brought to the attention of the MPW readers, please send them to the MPW editor, Dr. Parsai, at: e.parsai@utoledo.edu.

ACS ADVISES MRIS FOR SOME AT HIGH RISK OF BREAST CANCER:

Get Scans Along with Mammograms, Not Instead of Them:

Certain women with an especially high risk of developing breast cancer should get magnetic resonance imaging (MRI) scans along with their yearly mammogram, according to a new American Cancer Society guideline. The two tests together give doctors a better chance of finding breast cancer early in these women, when it is easier to treat and the chance of survival is greatest. MRI scans are more sensitive than mammograms, but they are also more likely to show spots in the breast that may or may not be cancer. Often there is no way of knowing whether or not these spots are cancerous short of a follow-up biopsy or some other invasive procedure. That is why the test is not recommended for women with an average risk of breast cancer, the guideline says.

"As with other cancer screening tests, MRI is not perfect, and in fact leads to many more false-positive results than mammography," explains Christy Russell, MD, chair of the ACS Breast Cancer Advisory Group and co-author of the new guideline. "Those false-positives, which can lead to a high number of avoidable biopsies, can create fear, anxiety, and adverse health effects, making it imperative to carefully select those women who should be screened using this technology."

For women at average risk, ACS recommends getting annual mammograms and breast exams by a physician, beginning at age 40. Most high-risk women should begin getting MRIs and mammograms at age 30, the new guideline says, unless they and their doctor think it's better to begin at a different age. The article recommends MRI screening in addition to mammograms for women who meet at least one of the following conditions: 1) they have a BRCA1 or BRCA2 mutation; 2) they have a first-degree relative (parent, sibling, child) with a BRCA1 or BRCA2 mutation, even if they have yet to be tested themselves; 3) their lifetime risk of breast cancer has been scored at 20%-25% or greater, based on one of several accepted risk assessment tools that look at family history and other factors; 4) they had radiation to the chest between the ages of 10 and 30; and 5) they have Li-Fraumeni syndrome, Cowden syndrome, or Bannayan-Riley-Ruvalcaba syndrome, or may have one of these syndromes based on a history in a first-degree relative.

"As with other cancer screening tests, MRI is not perfect, and in fact leads to many more false-positive results than mammography."

[American Cancer Society Guidelines for Breast Screening with MRI as an Adjunct to Mammography, Published in the March/April 2007 CA:A Cancer Journal for Clinicians (Vol. 57, No. 2: 75-89): Saslow, D., et. al., American Cancer Society]

ALTERNATIVE MELANOMA TREATMENT SHOWS POTENTIAL IN TRIAL:

By: Professor Barry J Allen, IOMP president; March 2007

Cancer researchers in the Cancer Services Division of St George Hospital, Sydney, Australia have recorded encouraging regression rates of secondary melanoma in a clinical trial using targeted alpha therapy. Researchers at the Centre for Experimental Radiation Oncology (CERO) worked with 35 advanced melanoma patients from around Australia. All had been referred to Clinical Trial Director Dr Peter Graham for assessment, because traditional treatment had failed them. Each received a one-off intravenous injection of escalating doses of Bi-213 alpha emitting radioisotope chelated to a targeting vector against an antigen expressed by melanoma cells. Regular monitoring and scanning followed at specified intervals over a one-year period. Lead scientist Professor Barry Allen said half of the clinical trial patients had responded to the injection; resulting in either a reduction in the size or number of the melanomas or stable disease. "About 40 per cent experienced stable disease and about 10 per cent experienced partial regression," Professor Allen said. "It's been surprisingly effective and results of the ongoing trial show that these regressions have been achieved without complications."

The interim results have been accepted for publication in the international journal Cancer, Biology and Therapy,

(continued on page 14)

Editor's Corner (continued from Page 13)

but Professor Allen said while the results were encouraging there was still about two more years of work required. "We're not seeing a dose-related response in the patients and in stage two of the trial we want to assess that and record more detail about the tumors," he said. Melanoma is one of the leading cancer killers in Australia and Professor Allen and his teams are confident that this trial could eventually lead to an alternative way of treating the disease. The trial began two years ago after the treatment was first tested effectively with mice.

DECREASE IN BREAST CANCER RATES RELATED TO REDUCTION IN USE OF HORMONE REPLACEMENT THERAPY

The sharp decline in the rate of new breast cancer cases in 2003 may be related to a national decline in the use of hormone replacement therapy (HRT), according to a new report in the April 19, 2007, issue of the *New England Journal of Medicine*. The report used data from the Surveillance, Epidemiology and End Results (SEER) program of the National Cancer Institute (NCI), part of the National Institutes of Health. Age-adjusted breast cancer incidence rates in women in the United States fell 6.7 percent in 2003. During this same period, prescriptions for HRT declined rapidly, following highly-publicized reports from the Women's Health Initiative (WHI) study that showed an increased risk of breast cancer, heart disease, stroke, blood clots, and urinary incontinence among postmenopausal women who were using hormone replacement therapy that included both estrogen and progestin. The two most commonly prescribed forms of HRT in the United States, Premarin® and Prempro™, had their steepest declines starting in 2002-2003 – from 61 million prescriptions written in 2001 to 21 million in 2004. Led by senior investigator Donald Berry, PhD., of the University of Texas M.D. Anderson Cancer Center, Houston, Texas, the research team showed that the decrease in breast cancer incidence began in mid-2002 and leveled off after 2003. Comparing rates from 2001 and 2004 showed a decrease in annual age-adjusted incidence of 8.6 percent. The decrease occurred only in women over the age of 50 and was more evident in women with cancers that were estrogen receptor (ER) positive – tumors that need estrogen in order to grow and multiply. The speed at which breast cancer rates declined after the WHI announcements may indicate that extremely small ER-positive breast cancers may have stopped progressing, or even regressed, after HRT was stopped.

[Ravdin M, Cronin KA, Howlader N, Berg CD, Chlebowski RT, Feuer EJ, Edwards BK, Berry DA. The Decrease in Breast Cancer Incidence in 2003 in the United States. NEJM. Vol. 356, No. 16. April 19, 2007]

> Comparing rates from 2001 and 2004 showed a decrease in annual...incidence of 8.6 percent.

The following has been compiled by: Mohammed K. Zaidi, Member, IOMP Professional Relations Committee.

ELASTOGRAPHY COULD BETTER DETECT BREAST CANCERS:

Elastography was tested on a small group to distinguish harmless lumps from malignant ones with nearly 100% accuracy. Cancerous tumors are firmer than benign ones. More than a million biopsies are conducted each year on suspicious breast tissue detected by mammograms and self-exams, but as many as eight out of ten of these biopsies indicate that the lump is benign. So if this can be done without a biopsy, there would be a real cost benefit. This can be done using MRI or CT technology but ultrasound is much cheaper. This is performed by synchronizing motion-sensitive MR imaging sequences with the application of acoustic waves in the 100 to 1000 Hz range. Dr. Darla Brown of UT Medical School, Houston, Texas mentions in her paper "New Imaging Technology Deciphers Tumors" – measuring tissue elasticity may reduce the need for some biopsies. Ultrasound is the most common and cheap medical imaging technique for elastograms. It can also be used to measure the stiffness of the liver in vivo so it is a noninvasive method to liver biopsy and so to the kidneys. It is a non-invasive method in which stiffness or strain images of soft tissue are used to detect or classify tumors. A tumor or a suspicious cancerous growth is normally 5-28 times stiffer than the background of normal soft tissue

[Hoyt K, et.al. 2006. Comparison of shift estimation strategies in spectral elastography. Ultrasonics 44, 99-108; Hoyt K.et.al. 2006. Analysis of hybrid spectral strain estimation technique in elastography. Physics in Medicine and Biology, Institute of Physics Publishing, 5, 197-209].

GENETICS AND CANCER RESEARCH:

The three big killers are lung, brain and the ovarian cancer. They cause more than 210,000 deaths each year in the USA. 160,000 alone are from lung cancer; brain takes about 19,000 and 15,000 are killed by ovarian cancer. Dr. Chuck Perou and many others are working to launch the initial phase plot cancer genes like towns and roads on a map result in the form of a cancer atlas. This atlas will one day guide doctors to plan treatment on these directions. The genetic data for cancer cure is a very slow process. The drug takes about 10 years to develop, approved and reaches the treatment stage. Screening and

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Conference Report for the 2006 Biophysics Seminar and the 4th Southeast Asian Congress of Medical Physics (SEACOMP), Jakarta, Indonesia; 7-11 November 2006

'Physics Contribution to Human and Biosystem'

By: Kwan-Hoong Ng, Rachmat W. Adi*, Djarwani S.Soejoko*
University of Malaya, Malaysia and University of Indonesia*, Indonesia

Physics Contribution to Human and Biosystem' was jointly organized by the Department of Physics, University of Indonesia; Department of Physics, Bogor Institute of Agriculture; Indonesian Medical Physics and Biophysics Association and Southeast Asian Federation of Organizations for Medical Physics (SEAFOMP). This is the first time that SEACOMP was held in Indonesia and the local organizers led by Dr Rachmat Adi and Prof. Djarwani Soejoko are to be congratulated for their hard work to host such a successful meeting despite the limited resources. In his invited talk, 'The Rise and Rise of Medical Physics: Are we meeting the Challenge?' the president of SEAFOMP Prof. Kwan-Hoong Ng mentioned that "this region has witnessed the rapid deployment of the most advanced imaging and therapy modalities in this region: 64-slice MDCT, 3T MRI, PET/CT, IMRT, IGRT and Tomotherapy. Hence medical physicists play a very important role in ensuring the optimum and safe use of these modalities, but first we must understand the physics and engineering principles before exploring new applications." The other invited international speakers include:
Dr. KY Cheung (Prince of Wales Hospital, Hong Kong, China) - External Beam Radiotherapy: IMRT and IGRT; Prof. Anchali Krisanachinda (Chulalongkorn University, Thailand) - Role of Medical Physicist in Nuclear Medicine and Recent Advances in PET Imaging and Introduction to PET/CT Technology; Dr. Karlis Gross (Biomaterials Engineering, University of Melbourne) - Current Trends in Biophysics Research and Recent Advances in Biomaterials; Dr. Martin Law (Queen Mary Hospital, Hong Kong) - Implementation Electron Beam Total Body Irradiation; Mr. Wong Toh Jui (National Cancer Center, Singapore) - Role of Medical Physicist in Radiotherapy. The local invited speakers include regulators from the National Atomic Energy Agency and the National Nuclear Energy Control Board, radiologist and radiation oncologist.

(continued on page 16)

Conference Report for the 2006 Biophysics Seminar (continued from Page 15)

About 120 participants attended the congress including 18 foreign participants from Malaysia, Thailand, Philippines, Singapore and Sweden. The Indonesian participants were from universities, hospitals, research institutes as well as private companies. A radiation dosimetry workshop was held from Nov 9-11. This workshop consisted of lectures and laboratory work, and was attended by physicists from several hospitals in Indonesia and staff from the Ministry of Health. The trainers in the lectures were Dr. James Lee (National Cancer Center, Singapore), Mr. Mohd. Izhwan Goh (National University Hospital, Singapore), Dr. KY Cheung (Prince of Wales Hospital, Hong Kong), and Prof. Djarwani S Soejoko (Dept. of Physics, University of Indonesia). The laboratory work was held at Radiotherapy Department, Pertamina Hospital Center and they also visited the Radiotherapy Department, Dr. Cipto Mangunkusumo Hospital Center. The local trainers were: Dwi Seno K Sihono, M.Sc. (Dept. of Physics, University of Indonesia) and Indra Johannes, M.Sc. (Radiotherapy Dept., Pertamina Hospital Center).

Participants listened attentively to an invited talk.

We continued with the SEACOMP tradition to grant meritorious awards to outstanding oral and poster presentation for students. These awards were created to encourage students to embark on research and to promote the profession of medical physics. The judging committee headed by both KY Cheong and TJ Wong remarked that the overall quality was excellent and a total of eight awards was given out to the following students: Imada Fatma, Indra Yohannes (Indonesia); Nantaporn Naiyanet, Navapan Pitaxtarnin (Thailand); Mohamad Fahdillah, Yeong Chai-Hong, Soh Hwee-Shin, Saidatul Ardeenawatie (Malaysia). In this congress, Prof. Anchali Krisanachinda was elected as the new president of SEAFOMP to take over the previous president Prof. Kwan- Hoong Ng who has completed his two terms of service in 2006.

Student winners of the Best Oral and Poster Presentation awards

ANNOUNCEMENT

The Seventh Asia-Oceania Congress on Medical Physics and The Thirteenth National Annual Meeting of Medical Physics

Huangshan, China, August 23-27, 2007 - Web: http://www.huangshan2007.cn

Sponsors:

Asian-Oceania Federation of Organizations for Medical Physics (AFOMP)

Chinese Society of Medical Physics, CSBME

Co-Sponsors:

International Organizations for Medical Physics (IOMP)

Chinese Society of Radiation Oncology, CMA

Local Organizers:

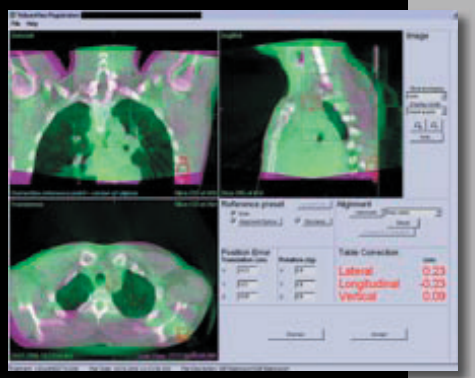
Tumor Hospital, Anhui Bengbu Medical College

Huangshan People's Hospital of Anhui Province

For the very first time participants from the Asia-Oceania countries will have the opportunity of coming together to meet with the medical physicists, radiation oncologists and radiologists from China in a beautiful place of Huangshan. Parallel sessions will be organized by AFOMP as well as by the Chinese Society of Medical Physics (CSMP) during the 4-day congress, and at the same time the educational department of China Medical Association will co-sponsor with the meeting a training course for registered Chinese radiation oncology medical physicists to renew their registrations. The theme of the congress is "Integration of Modern Medical Imaging with Radiation Oncology". With rapid advancement in high precision radiation therapy such as IMRT and IGRT, this congress provides a most appropriate environment for medical and medical physics professionals to interact and exchange their ideas and experiences on the application of modern imaging techniques in radiation oncology. Medical Physicists of all disciplines and radiation oncologists and radiologists who are interested in attending the training/refresher courses are invited to participate in this important congress.

K.Y. Cheung
Co-Chairman of 7 AOCMP
Past-President, AFOMP

Lead...Don't Follow.



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Medical Physics Website News-Analysis-R&D

Medicalphysicsweb (http://medicalphysicsweb.org) is a new community website from Institute of Physics Publishing, co-publisher of Physics in Medicine & Biology (PMB), a leading research journal for the global medical-physics community.

The remit of medicalphysicsweb is to major on in-depth news analysis and commentary about the fundamental research, emerging technologies and clinical applications that underpin the dynamic disciplines of medical physics and biomedical engineering.

"What we're seeking here is a broader engagement - a true community website that builds on our considerable journal legacy of providing high-value information to international researchers across the medical physics sub-disciplines," says Jane Roscoe, group publisher of medicalphysicsweb and the related journals business.

Informed analysis, commentary and opinion is what medicalphysicsweb is all about, says IOP. All of the site's editors have in-depth experience covering cutting-edge science and technology, and all are qualified to postgraduate level in the physical sciences.

Recent headlines on medicalphysicsweb include:

Nanotubes shed light on cancer therapies

Will carbon nanotubes help scientists to demystify radiation-cell interactions and subsequently develop advanced cancer treatments? Perhaps.

Hair-thin endoscope delivers 3D images

Think small, win big. US researchers demonstrate a miniature endoscope with 'unprecedented' imaging capabilities.

Splashing out against tumours

The physics of splashing water drops yields fundamental insights into the mechanisms via which tumours invade healthy tissue.

Robotic brachytherapy: assuming control

It's time for a radical rethink of prostate brachytherapy. That's the take from US researchers pioneering a robotic system for intraoperative treatment planning.

ESRI: time to rewrite the rule book?

Scientists have outlined a plan to make electron-spin-resonance imaging "100 times as sensitive" as it is today. If they succeed, their work will open up new applications in the study of cancer, dementia and cardiovascular disease.

Treatment couch 'feels' the rhythm

A robotic couch that compensates for real-time tumour motion could yield significant benefits in radiotherapy.

Laser tomography gets under your skin

Non-invasive optical interrogation will shed light on the mechanisms and progress of skin aging and skin disease.

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ANNOUNCEMENT

International Congress Biophysics

27—31 August 2007, Montevideo

At present when medical physicists are more and more realizing the importance of molecular imaging in nuclear medicine, radiology and radiation therapy, we are challenged to learn more fundamental biology of organisms, tissues, cells and subcellular structures including underlying molecular mechanisms of regulation processes and signaling pathways. For a long time, biophysicists with their specific skills in measurement technology, analyzing data and modeling processes are contributing to explore this interdisciplinary field. In fact, it´s time to come together and to learn from each other. Motivated by this perspective IOMP decided to seek also at the organizational level closer contact to the biophysics community. You may recall the special relations of IOMP to IUPAP, we previously have established via our IComMP (International Committee of Medical Physics) which is affiliated to IUPAP as Affiliated Commission AC4. IUPAP itself is structured into Commissions to cover the various branches of pure and applied physics. One member (FN) of IComMP/AC4 elected an affiliated member of the IUPAP Commission C6 (Biophysics, Chair: Uli Nienhaus). With the scientific and the organizational link to the biophysics world in mind, I would like to draw your attention to the International Congress for Biophysics (icbp-2007) scheduled for 27-31 August 2007 in Montevideo.

Attending icbp-2007 provides na excellent opportunity for medical physicists to look at one of our most relevant neighbor fields in bio-sciences. IOMP has been invited to organize a symposium at the icbp-2007 entitled "Cell and Tissue Imaging – Challenges for Modern Radiation Therapy". IOMP Science Committee (Chair Cari Borras) has set up a most interesting program including 3 invited lectures:

1. "Advanced Fluorescence Techniques for Cellular Imaging", Uli Nienhaus

2. "Cellular basis of Radiotherapy", Jolyon Hendry

3. „ Significance of biological imaging in the radiation therapy process", Fridtjof Nüsslin

Further 3-6 proffered papers may be accepted for oral presentation.

For further details (registration, abstract submission etc.) please visit: www.icbp2007.org.uy.

Medical Physics meets Biophysics – feel challenged to attend the icbp-2007 in Montevideo!

Donation of Used Equipment

Mohammed K. Zaidi, Program Manager, IOMP Professional Relations Committee

Professor William Potvin, Ph.D., University of Toledo, College of Medicine, Department of Radiology, 3000 Arlington Avenue, Toledo, OH. 43614 has very kindly donated this equipment to IOMP Donation Program, a Victoreen electrometer model number 570, serial number 3816 with Two condenser ion chambers 100 R, model 131, serial #12047 and 100 R, model 621, serial #13469. It was shipped to Dr. Oghabian, Director, Medical Physics Program, University of Tehran, Tehran School of Medicine, Tehran, IRAN.

Wayne M. Butler, Ph.D., Schiffler Cancer Center, Wheeling Hospital, 1 Medical Park, Wheeling, WV 26003-6300 has graciously donated: 12 cones for arc therapy, 12.5 mm to 50.0 mm diameter, Linac face plate/cone holder, Tool box with mounting hardware

Surgical head ring, Non-surgical, relocatable head ring, linac couch mount assembly with fine adjustment, "Shadow box" for delineating field shapes, Target frame, Table mount QA phantom base, Depth helmet, CT compatible "bird cage" localizer, Table stabilizer/brake hardware, and Floor mount mechanical isocenter standard.

Donald J. Thompson, United Radiation Oncology, 701 Bob-O-Link Drive, Suite 120, Lexington, KY 40504 has donated a Used Sonarray Ultrasound System.

I plan to ship these two donations, mentioned above to Nile Badri Hospital and Medical Center, Department of Radiation Oncology, Cornish Elmaadi, Cairo, EGYPT (Shipping port: Alexandria EGYPT). Dr. Eldesouky Abdul-Hakiem is the Medical Director.

Used equipment needed:
Treatment planning systems, Mevatron 67 linear accelerator, Theratronic, Automatic film processor, block cutter, patient dose monitor and ultrasound machine. A clinic in India is requesting for a HDR unit – if you want to donate one, please contact.

Shipping arrangements:
The institutions need used equipment should mention in their response that they would pay or make arrangements for shipping at a very short notice.

Dr. Ajai Kumar Shukla from India will be helping me in IOMP efforts to deliver quality service in getting and transferring used equipment from generous donors to those who need them badly. He can be reached at Department of Nuclear Medicine, SGPGIMS, Raebarelli Road, Lucknow (UP), 226014, INDIA. His phone number is 91-0522-2668700 extension 2615 and email address is akshukla@sgpgi.ac.in.

The equipment donated to IOMP Used Equipment Donation Program is generally in good working condition but we don't guarantee its usefulness. The donation of used equipment to IOMP are sometime tax deductible. IOMP will not be responsible for any warehousing expenses or loss if the used equipment donated couldn't be shipped.

If you want to donate or want some used equipment donated to your organization, please contact Mohammed K. Zaidi, Professional Relations Committee at our website www.iomp.org or email to zaidimk@gmail.com. Please note that his email has changed.

A NATO Workshop Directed by IOMP Physicist

Mr. Mohammed Zaidi, directed a NATO Advanced Research Workshop "Wastewater Reuse – Risk Assessment, Decision-Making and Environmental Security," held in Istanbul, Turkey in October 12-16, 2006. The participation of 63 scientists from 20 nations discussed the present day situation to the use of treated water for unrestricted agriculture. Role of wastewater use in irrigation is a crucial problem for many countries. The severe fresh water shortage increasing in time and increased levels of water consumption and wastewater production caused by their increasing population. There are many advantages of using wastewater in irrigation and its reuse is a substantial resource for agriculture production. It is abundant, low-cost and highly reliable water supply throughout the year. It helps produce better crops, less use of toxic chemical fertilizers, preservation of fresh water, decrease of fertilizer cost, increased job opportunities and is an efficient way of disposal of the treated effluents via irrigation. There are some disadvantages too such as a little risk to human health. This meeting was arranged to pass on the latest developments in the field, improve the flow of material and information to the customer. The environmental supply chain integrate the above flow of natural resources mainly water and wastewater flows and incorporate the environmental risks along with the cost and benefits as main objectives of the design, planning and management. The participants had some leisure time as well which included a night out to taste Turkish food, music and dance and a city tour to see their water supply system. Please visit www.isu.edu/departments/natoarw to see the historic city and the participants.

Medical Physics Website

(continued from Page 18)

Arguments intensify as MRI evolves

Safety and field strength were just two of the big talking points at a British Institute of Radiology conference on contentious issues in MRI.

Special report: fMRI, MEG probe our thoughts

The combination of two magnetism-based imaging techniques will help researchers determine how thought processes move through the brain.

Calendar of Events

Carter Schroy, Ph.D., MPW Associate Editor

The following events can be found on the Medical Physics Calendar at http://medphys.org/calendar/. Please email your international events to the Calendar Editor, Carter Schroy, at eventsed@aol.com (or fax to +01 309-276-7728) for inclusion in MPW. Deadlines for MPW are April 1 and October 1 for issues that are mailed several weeks later.

8-12 July 2007

13th Int'l Congress of Radiation Research; San Francisco, CA USA

http://171.65.6.67/icrr2007/homeflash.htm

17-18 July 2007

Medical Image Understanding and Analysis; Aberystwyth, Wales UK

http://www.miua.org.uk | *jim.graham@MANCHESTER.AC.UK*

22-26 July 2007

AAPM 49th Annual Meeting; Minneapolis, MN USA

aapm@aapm.org | *http://aapm.org/meetings/*

27-29 July 2007

AAPM Summer School Collegeville, MN USA

Shielding Methods for Medical Facilities: Diagnostic Imaging, PET, and Radiation Therapy

2006.aapm@aapm.org

20-22 September 2007

10th EFOMP Congress - The First European Conference on Medical Physics ; Pisa, Italy

http://efomp-2007.df.unipi.it/

24-28 September 2007

Regional an Global Aspects of Radiation Protection; Brasov, Romania

IRPA Regional Congress for Central and Eastern Europe

http://www.irpa2007romania.com | *irpa2007@ispb.ro*

25-28 September 2007

Joint Meeting of SSRMP, DGMP & OeGMP; Bern, Switzerland

http://www.bern07.ch | *roberto.mini@insel.ch*

14-18 Oct 2007

EPSM-ABEC 2007: Engineering and Physical Sciences in Medicine and The Australian Biomedical Engineering Conference 2007; Fremantle, Australia

http://www.keynotewa.com/epsm-abec-2007/ | *elizabeth@keynote.com*

9-11 November 2007

Princess Margaret Hospital IGRT Education Course; Toronto, ON Canada

http://www.igrt.ca | *nicole.harnett@rmp.uhn.on.ca*

9-13 February 2008

Winter Institute of Medical Physics (WIMP); Frisco, CO USA

http://www.utmem.edu/WIMP | *rltanner@utmem.edu*

13-18 April 2008

11th International Conference on Radiation Shielding (ICRS11); Pine Mountain, GA USA

http://icrs11.me.gatech.edu/ | *rebecca@radonc.emory.org*

27-31 July 2008

AAPM 50th Annual Meeting; Houston, TX USA

aapm@aapm.org | *http://aapm.org/meetings/*

19-24 October 2008

12th International Congress of IRPA; Buenos Aires, Argentina

The International Radiation Protection Association

http://www.irpa12.org.ar/ | *irpa12.committee@gmail.com*

Editor's Corner (continued from Page 14)

diagnostic tests emerge more quickly, but still many years away. Hundreds of tissue samples have been collected and will be analyzed at the genetic level and this test is being done first time in history. The genetic information will provide additional help in the treatment of cancer. While working with a patient having breast cancer, it was diagnosed that she had over production of a protein called HER-2 and the cancer is aggressive in nature. Herceptin, a new drug to treat this type of cancer was available and she got treated. The Cancer Genome Atlas (TCGA) is a comprehensive and coordinated effort to accelerate our understanding of the molecular basis of cancer [CM Perou, et.al. 2000. Molecular Portraits of Human Breast Tumors, Nature, 406, 747-52; DN Hayes, et.al. 2006. Gene Expression Profiling Reveals Reproducible Human Lung Adenocarcinoma Subtypes in Multiple Independent DNA Microarray Cohorts, Journal of Clinical Oncology].

MEDICAL ACTINIUM FOR THERAPEUTIC TREATMENT AND RESEARCH:

NorthStar Nuclear Medicine, Inc. and the U.S. Department of Energy's Idaho National Laboratory (INL) will produce the extremely valuable medical isotope, actinium-225, for use in cancer research and treatment and provide some advantages over traditional treatment approaches. Actinium-225 can

(continued on page 23)

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Report from the Education and Training Committee (ETC)

Anchali Krisanachinda, Ph.D. Chair IOMP ETC - IOMP Education and Training Activities: SEAFOMP

The Education and Training Committee of IOMP has followed the IOMP policy in supporting and endorsing the member activities in medical physic education, training and meeting. The first activity approved by the committee is hosted by China title "The Third Beijing International Conference on Physics and Engineering of Medical Imaging" Beijing in June 23-27 2007.

The endorse activity is The Seventh Asia Oceania Congress of Medical Physics (7th AOCMP) 23-27 August 2007 Huangshan, China.

IOMP ETC members for the period 2007-2010 are: Dr. Anchali Krisanchinda (South East Asian and Asia – Oceania regions & ETC Chair; Dr. H.J. Kim (China-Korea and Japan); Dr. Ana Cecillia de Pedrosa da Alzevedo (South America and Central American region); Dr. Adel A. Mustafa (North America and Middle East region); Dr. C.M. Pathak (India, Nepal, Pakistan and Bangladesh); Dr. W. Rae (African region); Dr. Cornelius Lewis (European region) ETC Secretary; Dr. Slavik Tabakov ETC Consultant.

As ETC consists of the committee from different regions and the medical physic education and training from each region is variable, the current status of medical physic from each region could be reported in this MPW starting from South East Asian (ASEAN) region.

ASEAN members consist of Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam. South East Asian Federation of Organizations for Medical Physics (SEAFOMP) is established in 1998 and become a Chapter of IOMP. Cambodia and Laos have no medical physicist while the number of medical physicist in Myanmar is closing to zero. Four from ten countries – Indonesia, Malaysia, Philippines and Thailand have medical physic education and training programs. Centers in Malaysia train medical physicists for Brunei, Singapore and Nepal. As the medical physic development in this region is nearly uniform, the Medical Physic Congress - SEACOMP is set up every other year and hosted by Malaysia, Thailand and Indonesia where the members and graduate students can afford the expenses to present their papers. Most Congresses were endorsed and supported by IOMP. The supports on education and training are also from IAEA, ICTP and AAPM. Thailand will start the two-year competency training for radiation oncology medical physicists (ROMP) in June 2007 using IAEA training package. Vietnam is nowadays a country of fast growing in medical radiation facilities in Ho Chi Minh City and in Hanoi. Medical physics terminology is not well defined and probably combined with engineering. The supports on education and training and the set up of medical physic profession are welcome in Ho Chi Minh City where the hospital is well equipped and the training could be established. It is expected that Vietnam will host a medical physics congress, SEACOMP in the year 2007. The trip to Gu Chi Tunnel outside Ho Chi Minh City is planned for the visit to show how they used to hide during the war. It is amazing that there were also hospitals, kitchens and living areas in the tunnels.

Thailand will start the two-year competency training for radiation oncology medical physicists (ROMP) in June 2007.

The International Advisory Committee was arranged to assist Vietnam for the set up of the medical physic professional and the education and training as the followings: Drs. John H. LeVan; William Hendee; Jeoffry Ibbott; Slavik Tabakov; Barry J. Allen; K.Y. Cheung; K. Inamura ; Hu Yi Min; H.J. Kim; I. McLean; K.H. Ng; and Anchali Krisanachida.

Myanmar is also another country needed the support in medical physic field. The medical radiation facilities are available in Rangoon and Mandalay. The plan for the support from the region will be in the next step.

ANNOUNCEMENT

'Educator's Forum' to be created

In future issues of the *Medical Physics World Bulletin*, we plan to creat a column titled "Educator's Forum" that would address education & training issues important to medical physicists. A range of topics may be addressed under this title such as providing web based tools and facilities to further educate medical physicists, the manpower need in medical physics, preparation of booklets on education and training activities and other initiatives that may be considered by ours and other sister organizations to enhance the medical physics education and training. The objective in creating this column is to target some of the existing problems in education and training faced by medical physicists around the globe and find feasible solutions that may be implemented.

This is an invitation for those who would like to participate in this forum to send your ideas and comments to the attention of *MPW* editor at: e.parsai@utoledo.edu.

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Report from the Rules Committee

By: Fridtjof Nüsslin, Ph.D., Chair RC

The RC is in the middle of revising the Bylaws, having prepared a draft set of revisions to the Statutes which were discussed at Seoul in 2006. Both documents have been circulated to the Chairs of all IOMP committees inviting their members to comment or make suggestions for modifications before end of April 2007. What follows is circulation to the IOMP Council for further refinement and later to submit a final draft for voting by Council.

Editor's Corner

(continued from Page 14)

be used effectively in alpha-immunotherapy treatments, which combine an alpha particle-emitting radionuclide that is carried by a targeting agent such as monoclonal antibodies. The targeting agent seeks out and selectively attaches to cancer cells. The radioisotope then kills the targeted cancer cells, while minimizing collateral damage to surrounding normal cells. This treatment regimen offers many key advantages over external radiation exposure and chemotherapy. The U.S. Department of Energy is currently providing actinium-225 in very limited quantities to researchers from its Oak Ridge National Laboratory in Tennessee, USA. This technology is expected to increase the world production of the medical isotope, enabling important clinical cancer treatment trials to proceed and it would supplement its limited supply. The research done here at INL may well help others conquer cancer and save lives. In inventing this technology, INL researchers took advantage of the fact the INL has significant sources of actinium-225 in the 14 metric tons of 30-year old unused nuclear fuel. This fuel was originally created to use in a breeder reactor, a research program that was discontinued in the early 1970s [Post Register, A7, 9/9/2006; http://www.northstarnm.com/NNM_inl.htm].

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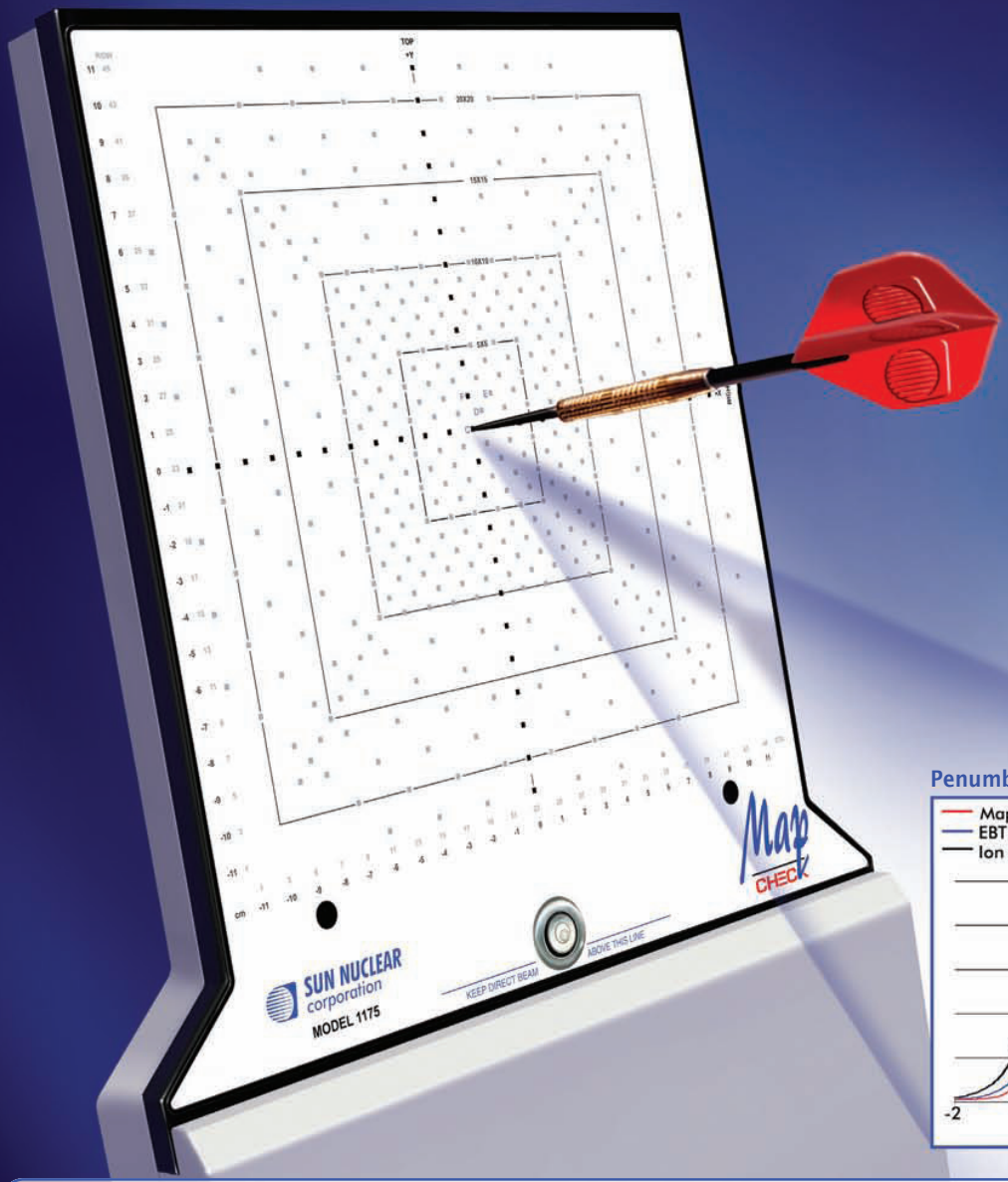

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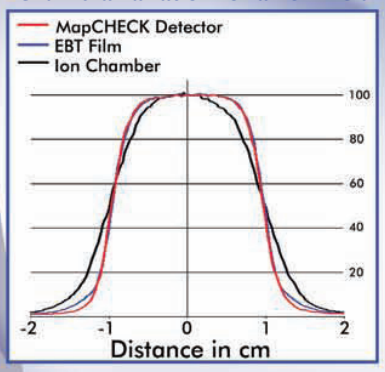

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