



Newsletter

AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE

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MAY/JUNE 2004

AAPM President's Column

*G. Donald Frey
Charleston, SC*

I have just returned from the spring Executive Committee Meeting at AAPM Headquarters. The Executive Committee met with the chairs and vice-chairs of the Educational, Professional and Science councils to discuss the future of the AAPM. There are many exciting things happening. The Science Council is undergoing a major reorganization to strengthen science activities within our association. We are also working on ways to improve communication among the councils and committees and to simplify the organizational structure.



Responsibilities

I had never thought that there were connections between the AAPM and ENRON but they are both corporations. The

(See Frey - p. 2)



Pittsburgh's three rivers, formerly flanked by heavy industry, are now lined with parks and riverfront trails. Pittsburgh is the site of this year's annual meeting. Photo courtesy of the Greater Pittsburgh Convention and Visitor's Bureau.

2004 AAPM Awards & Honors

Congratulations to the recipients of the following awards, achievements and honors in 2004:

William D. Coolidge Award

is presented to
Clifton Ling, PhD

Achievement in Medical Physics Award

is presented to
Donald Herbert, PhD

(See Awards - p. 3)

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Frey (from p. 1)

AAPM, of course, is a nonprofit corporation and ENRON is a publicly traded, for-profit corporation. Nonetheless they are both corporations and the public climate associated with recent corporate scandals has implications for the AAPM. All of the scandals have not been associated with for-profit corporations. The United Way, the US Olympic Committee and the New York Stock Exchange are all nonprofit corporations. The for-profit scandals led to the passage of the Sarbanes-Oxley act, which changed the governance of those corporations in significant ways. As a nonprofit the AAPM is exempt from most of the provisions of Sarbanes-Oxley, but the act serves as a catalyst for the AAPM's review of many of its policies. The key aspects for this review are financial disclosure and conflict of interest.

Financial disclosure requires that the board of directors can demonstrate to the members that money is being used in ways that benefit the society as a whole and are not directed to the benefit of officers, directors or specific members. A society can best demonstrate this by making its financial information available to the membership. When it comes to financial disclosure, the AAPM is a model for nonprofit behavior. Our budgets are published in our newsletter and are available on the Web site.

The AAPM does not fare as well when it comes to conflict of interest. While all of us recognize

the necessity for avoiding conflict of interest, the association does not have a policy on conflict of interest. Conflict of interest can take many forms. There can be conflicts between the AAPM and other societies, so the officers and board members must take care that we don't serve in roles where conflict can occur. There are possible commercial conflicts when we serve on committees and task groups, and there are possible scientific conflicts when we review manuscripts for the journal. It thus becomes difficult to write a conflict of interest policy that addresses the important issues, protects the privacy of our members and is not so onerous that volunteers will decide not to serve. Nevertheless, EXCOM has been working on such a policy and hopes to have it available for review by the board at the Pittsburgh meeting.

Voting

This is the last newsletter you will receive before this year's election. In a typical year about 30% of the members vote. I have never been sure how good or bad this is. I know that in my own case I do not vote in the elections of some of the professional societies I belong to. The elections do determine the future of the AAPM. If you care about that future you should become informed and vote.

Radiological Terrorism

I came away from the recent NCRP Meeting on Advances in Consequence Management for

Radiological Terrorism feeling that significant technical strides had been made in the handling of terrorist events involving ionizing radiation, but that there were significant problems with organization and communication within the federal government. I was not convinced that the federal government could respond in an effective manner. The federal section in the Council of Radiation Program Control Directors' "Directory of Personnel Responsible for Radiological Health Programs" is 36 pages long and lists a large number of agencies, departments, and administrations. Cooperation rather than competition during an event is not guaranteed or even likely.

Steven Becker, from the University of Alabama at Birmingham, presented one of the most fascinating tidbits from the meeting. In a talk on the psychological aspects of terrorism he presented data from focus groups. It turns out that people think TV weather forecasters would be a good source of reliable information during a radiation emergency. I was slightly taken aback by this but Becker explained that forecasters are seen as nonpolitical, scientifically oriented and a reliable source of information during weather emergencies. The first two, at least, are characteristics of medical physicists, and one of the reasons that our opinions are respected by various agencies.

I came away from the meeting believing that the AAPM should provide more education for our membership in supporting emergency room operations and pub-

lic relations during a crisis. I will be assembling a small group of interested members to study the role of our association.

There are concerns that if the 1 mSv limit for the general public were used as the limit for site restoration after an incident, large areas would be subject to evacuation for long periods of time. The government is considering other possibilities like 20 mSv in the first year and 5 mSv in subsequent years. They plan to publish these recommendations for comment soon. The AAPM Professional and Science councils are following activities in this area. There is concern that the public might resist accepting values above the general public limit of 1 mSv.

Quality of Life

Medical physicists are beset by a number of quality of life issues. These are almost too numerous to list, but work hours, relations with colleagues, gender and diversity issues, career development, and retirement are prominent examples. Developing materials to aid the membership with quality of life issues is one of the important charges of the Professional Council. For example, at the annual meeting in San Diego, the Professional Council presented a symposium on the topic: "Combining Family Life with the Practice of Medical Physics: Controlled Fusion Or Criticality Event?" The AAPM is also cooperating with the American Institute of Physics and ASTRO on quality of life issues. If you have any quality of life issues you wish to be addressed, you should

send an e-mail to Jerry White, the chair of the Professional Council, Mike Herman, the vice chair, or send suggestions to me.

Task Groups

The AAPM has a large number of task groups. Task groups are formed to complete a limited task. Tasks include generation of technical reports, recommendations, slide sets and the like. Working on a task group is an excellent way to serve the AAPM. Task group chairs frequently need individuals who have an interest in a topic and are willing do a modest amount of work. Task group work is frequently done by e-mail and conference call, so attendance at national meetings is not as important as it is for some committee work. Furthermore, task group members are appointed by the task group chair as needed, so no one has to wait for the annual appointment cycle. The best way to begin service is to call or e-mail the task group chair. In the past it has been difficult to search for a task group that is of interest. To address this problem, the AAPM has compiled a Web listing of all active task groups. This can be found on the committee tree page. The URL is http://www.aapm.org/org/structure/report_stats.asp. Now you can scan the list of groups and find those of interest.

Just for Fun

Enrico Fermi is famous for the estimation problems he used to set for his students. These problems are so famous, that over time

(See Frey - p. 5)

Awards (from p. 1)

AAPM Medical Physics Travel Grant

is awarded to
Cynthia Chuang, PhD

AAPM-IPEM Medical Physics Travel Grant

is awarded to
Paul Morrison, MS

Honorary Membership

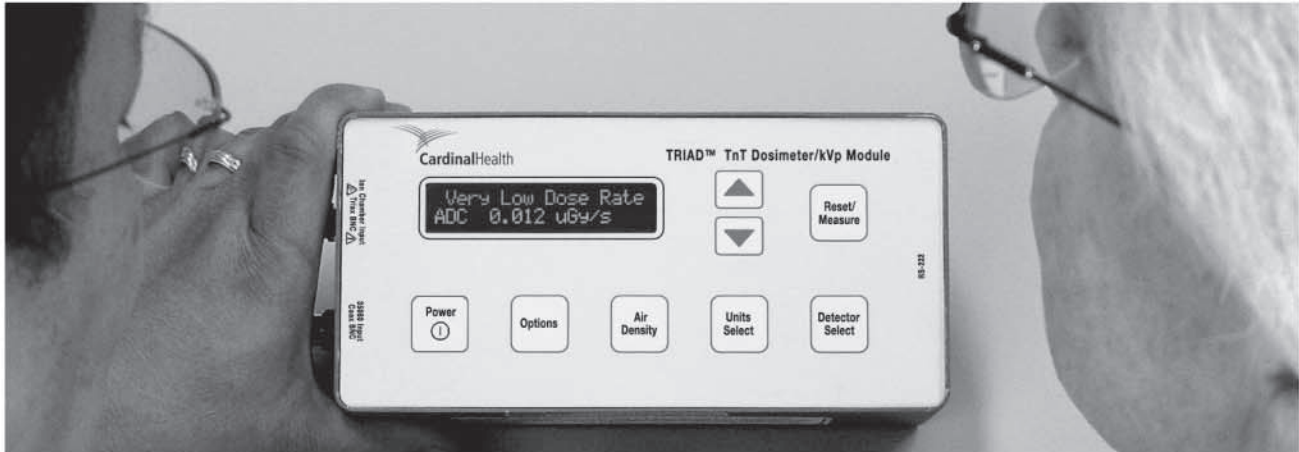
is awarded to
Mark Carol, MD
and
Paul Lauterbur, PhD

Fellows

The following are named
Fellows in 2004 for their
distinguished contributions
to the AAPM:

Larry Antonuk, PhD
Caridad Borrás, DSc
Karen Breitman, BSc
Michael Bronskill, PhD
Heang-Ping Chan, PhD
Jerry Dare, PhD
Dick Drost, PhD
Marc Edwards, PhD
Gino Fallone, PhD
Mitchell Goodsitt, PhD
Edward Jackson, PhD
Ponnunni Kartha, MS
Daniel Low, PhD
Marlene McKetty, PhD
Charles Metz, PhD
Douglas Shearer, PhD
John Wong, PhD

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Frey (from p. 3)

they have become known as Fermi problems. One example is: "Estimate the number of piano tuners in Chicago." The idea is to estimate a numerical result without resorting to looking up

any data. It is especially satisfying to do a problem more than one way and get answers that are close.

1. Estimate the number of linear accelerators in the country where you live.

2. How many mammograms are done each year in the USA, in Bombay?

3. How many people in the USA die while en route to an imaging procedure? ■

Professional Council

Jerry White, Council Chair and Michael Herman, Council Vice Chair and AAPM 2004 Professional Track Chairman

The AAPM 2004 meeting in Pittsburgh will be the first to provide significantly enhanced offerings in the professional arena. In addition to the traditional Science and Education tracks, there will be a designated Professional Track for invited and proffered papers, symposia and workshops.

The Professional Council Symposium on Sunday morning will begin the track. The symposium will offer two topics of interest to both clinical and research physicists. D. Jay Freedman will lead a presentation on professionalism and professional behavior in the work environment. This session will discuss real life professional and ethical conflicts in the experience of medical physicists; D. Jay is soliciting examples of difficult professional/ethical situations that may have arisen in your experience. (If you have an issue that you would like to see as a case study in the symposium, please contact D. Jay Freedman

by e-mail.) The symposium continues with a look at alternative and creative mechanisms for extramural funding. Led by Rock Mackie, we'll have a look at options for finding support that may not be on the standard list of opportunities.

The Professional Track will continue in the same room for the remainder of the week:

- Monday afternoon: The best submitted abstracts in the professional category have been selected for oral presentation in this session. They will be followed by a detailed review and question and answer session with the ABR physics trustees on the very important topic of maintenance of certification. Board-certified physicists with time-limited certificates will find this session will provide essential information necessary for planning a personal continuing education program.

- Monday at 4:00PM: We are pleased to present Dr. Francis Macrina, who will discuss issues of ethical and scientific conduct in research, publication and practice. Dr. Macrina is the Edward Myers Professor and Director of the Philips Institute at Virginia

Commonwealth University. In addition to research work in microbiology, Dr. Macrina teaches courses in scientific integrity to graduate students, is frequently invited to speak to national audiences and is the author of textbooks on ethical issues.

- Tuesday morning: The day begins with a session on economics, where medical physicist work effort and relative values will be discussed for both imaging and therapy physicists. This will be followed by a detailed presentation on reimbursement and coding scenarios for both simple and complex treatment regimes in both radiation oncology and nuclear medicine.

- Tuesday afternoon: This session is dedicated to a workshop on radioactive materials shipment. Current 49 CFR regulations require that any shipper of radioactive materials have documented training as described in the regulations. Heightened security awareness has led the FAA to increase inspection and enforcement activity in this area, and medical facilities who return radiopharmaceuticals or radioac-

(See White - p. 6)

White (from p. 5)

tive sources to suppliers or otherwise ship radioactive material have been cited for failure to provide and document this training. This session will offer the required training to allow participants to meet the 49 CFR training requirements for shippers. Participants in this workshop will receive a certificate for completing this course.

•Wednesday morning: We will offer a session on government and regulatory interactions. This begins with a description of important issues in administrative law as it pertains to and affects medical physicists. We are all accustomed to reading regulations and dealing with regulators. This session will offer knowledge in the basis of regulatory law, the creation of regulations and constraints and opportunities for dealing with regulators. This will be followed by an update on the CARE bills' progress in both House and Senate and a review of the proposed regulations. The bills will require states to implement licensure procedures for medical physicists and the implications of its implementation will be of interest to all medical physicists.

We are excited to be participating in the new professional program for the meeting this year and we hope you will attend these sessions. We would be happy to hear from you on these issues and others in the professional domain that you feel are important. ■

Education Council

*Herb Mower
Council Chair*

As I write this, it looks like New England is about to have another "three-season" year. Whatever happened to the spring season in the Northeast? However, that hasn't deterred the endeavors of the various committees, sub-committees and task groups of your Education Council.

With the summer comes our annual meeting, July 25-29 in Pittsburgh, Pennsylvania. Although the Local Arrangements Committee may try to convince you that this is not true, some of the most exciting things in Pittsburgh will be at our meeting. I hope that you will have the opportunity to take advantage of them.

The Education Council Symposium will take place 8:30–10:00 AM on Sunday, July 25th. This year the topic is: "Educational Products for the Medical Physicist." Richard Massoth and his Medical Physics Education of Physicians Committee will present some of the aids they have available, as well as give you an introduction to the things that are to come from this group. Kenneth Hogstrom and the Public Education Committee will share with us the updated "Diagnostic Medical Physicist" brochure and give you some hints as to what to expect in the upcoming revisions of similar brochures for radiation oncology and nuclear medicine. A part of the symposium will be devoted to informing you about



the various 'slide' sets we have available. These include the educational ranges from high school level through residency programs. Hopefully you will discover that we have several educational aids available to assist you. In addition, Melissa Martin and Robert Pizzutiello will explore the possibilities of AAPM members sharing their slides and PowerPoint presentations.

The annual meeting also provides a time for you to have live input to the various committees and other working groups of the Education Council. Various meetings start at noon on Saturday and conclude late Sunday. Most meetings last two hours or less. Do take a look at the meeting schedule and plan on dropping in on one or more of these sessions.

Our annual summer school will be at Carnegie Mellon University immediately after our annual meeting. The school runs from July 29th through August 1st. This year's topic is: "Specifications, Performance Evaluation and Quality Assurance of Radiographic and Fluoroscopic Systems in the Digital Era." Lee Goldman and Michael Yester have worked hard to put together

a fantastic faculty who will present topics designed to bring you up-to-date in the clinical arena. A major focus is to present recent advances in radiographic and

fluoroscopic imaging. Even with the advent of many newer modalities, these two are still the most common imaging modalities. The school is very 'clinically' oriented

with emphasis on testing, evaluation and quality control of such systems. There is still time to register for the school. ■

Executive Director's Column

*Angela Keyser
College Park, MD*

2004 Annual Meeting

The 46th AAPM Annual Meeting will take place July 25 - 29, 2004, at the David L. Lawrence Convention Center in Pittsburgh, PA. Indications are that the meeting will be very successful. There have been 890 abstracts submitted using the new abstract system. This is up 16% from the 766 abstracts submitted for the 2003 annual meeting. The full meeting program is now available online.

New for 2004, plan your meeting online, then import your itinerary to your organizer or calendar. Last year marked the first in which AAPM Members were able to create an online planner of talks and sessions they wished to attend. This year, you may download that information into your vCard-compatible organizer or calendar and have it available at the meeting. The planner is easy to use; just browse the meeting program and click on "Add to my planner" when you see a talk or session you wish to save. Later, view the items in your planner and make changes as needed. Make sure to pay attention to the new dedicated Pro-



fessional Track with proffered abstracts and symposia. Another new feature is the Electronic Poster Viewing Areas. All oral presenters have been asked to submit their presentations for electronic viewing.

Sessions, exhibits, registration, and the Welcome Center will all be at the convention center. The headquarters hotel is the Westin Convention Center Hotel. The headquarters office, all committee meetings and the Awards and Honors Ceremony and Reception will be held in the Westin. The overflow hotels are the Hilton Pittsburgh, Omni William Penn and the Marriott City Center. The online registration system opened in mid-March. The deadline for discounted registration is June 9. Advance registration closes on July 7. The deadline to make hotel reservations is June 23.

Remember, scientific sessions and exhibits now begin on Sunday, July 25, so make plans to

arrive in time to participate in the Sunday events.

2004 Summer School

Registration for the Specifications, Performance Evaluation and Quality Assurance of Radiographic and Fluoroscopic Systems in the Digital Era is now available online. The summer school will be held at Carnegie Mellon University in Pittsburgh immediately following the annual meeting. The deadline to register and receive discounted registration fees is June 15. The deadline to make housing arrangements is June 29. The proceedings of the program will be available through Medical Physics Publishing in late June or early July. Contact MPP at (800) 442-5778 to place an order. Registrants will receive a copy of the proceedings as part of their summer school registration.

Summer Undergraduate Fellowship Program

This year 59 undergraduate students competed for 10 summer fellowships. This is a slightly

(See Keyser - p. 8)

Keyser (from p. 7)

higher number as compared to 2003. The selected junior- and senior-ranking undergraduates will each receive a \$4,000 stipend from the AAPM. Student fellows are selected based on a combination of the quality of their personal statement, their GPA and their potential future in medical physics. Each student fellow chooses his or her mentor, a Full AAPM Member, based on location and the student's interest in the mentor's proposed project.

AAPM Online Placement Service

In response to concerns expressed by some members whose institutions require that job listings be posted in hard copy, a letter explaining the online process and other facts about the service can be found at aapm.org. For more information, go to "Place an Ad" under the Placement Service at aapm.org.

Staff News

AAPM's Database Administrator, Sean Benedict, left AAPM on April 23 to work for a small software development company in Lanham, Maryland. Sean joined AAPM's staff in 1998 and has been an instrumental part of the Information Services Team. We wish him all the best! ■

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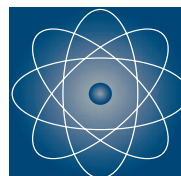
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Clinical Trials Update

Report from the Subcommittee on QA of Clinical Trials The COG ACNS0331 Protocol

*Geoffrey S. Ibbott, Ph.D.
Subcommittee Chair*

This is the fourth in a series of articles that describes clinical trials conducted by cooperative study groups that may be of particular interest to medical physicists. Previous newsletter articles have described three RTOG protocols, H-0022, P-0232, and P-0126. This article sets a new trend by discussing a protocol published by the Children's Oncology Group (COG).

The Children's Oncology Group, as one would expect, studies the treatment of childhood cancers through the conduct of multi-institutional clinical trials. Like the RTOG, the COG is supported by the National Cancer Institute. COG has 238 member institutions, which include cancer centers of all major universities and teaching hospitals throughout the US and Canada as well sites in Europe and Australia. COG members include over 5,000 cancer researchers dedicated to the treatment of children with cancer.

The ACNS0331 protocol is a study evaluating limited target volume boost irradiation and reduced dose craniospinal radiotherapy and chemotherapy in children with newly diagnosed standard risk medulloblastoma. The hypothesis is that hearing, endocrine, and cognitive damage can be reduced by treating a vol-



ume smaller than the whole posterior fossa to 54 Gy without reducing the survival rate, which is currently over 75%. Because these morbidities are more severe for younger children, a reduction in the craniospinal dose also is being tested. It is a phase III doubly randomized trial that is expected to evaluate treatment of 600 patients, of which at least 300 will be in the age group of three to seven years. The study chair is Jeff Michalski, MD of the Washington University Medical Center in St. Louis.

Patients will be randomized to either standard dose craniospinal radiation or reduced dose craniospinal radiation. The standard dose is 23.40 Gy while the reduced dose is 18.00 Gy. Patients eight years of age and older will receive the standard dose of craniospinal radiotherapy. Following this phase, all patients will be randomized a second time to receive 30.60 Gy to the tumor bed plus margin or to the whole posterior fossa.

Patients enrolled in the study must be treated using conformal radiation therapy treatment plan-

ning and delivery techniques. IMRT and proton beam therapy are allowed provided the appropriate benchmarks have been submitted and are approved. The use of proton beam therapy requires prior approval from the study chair.

Institutions that will use conventional 3D treatment planning must submit the 3D benchmark treatment plan available from the Quality Assurance Review Center (QARC, <http://www.qarc.org>). If IMRT is to be used, the institution must either perform an IMRT benchmark treatment plan available from QARC, or must irradiate an anthropomorphic IMRT head phantom available from the Radiological Physics Center (RPC, <http://rpc.manderson.org>).

Institutions that have previously irradiated the RPC's IMRT head phantom need only submit a copy of the IMRT questionnaire and a copy of the approval letter from the RPC.

The protocol specifies that ICRU-50/ICRU-62 terminology must be used to define target volumes and organs at risk. When 3D conformal therapy or IMRT is used, the protocol identifies a list of eight organs at risk (OARs) that must be identified. Also of interest to physicists is a requirement that an independent check of the monitor units required to deliver the prescribed dose must

(See Ibbott - p. 10)

Ibbott (from p. 9)

be performed and submitted using the appropriate form. For IMRT, measurements in a QA phantom are sufficient as long as the planned fluence distributions can be recomputed for a QA phantom geometry. The protocol requires submission of isodose distributions, and specific isodose lines must be drawn. Dose-volume histograms for the OARs, as well as the GTV, CTV, and PTV of each volume treated, are to be submitted. Because this study tests a reduction in treatment volume, these planning data need to be submitted within three days of the start of treatment rather than within one week of completion. All of these data are to be submitted to QARC, who will quickly review the data and inform the facility if any changes need to be made to comply fully with the protocol guidelines.

Further details about this protocol and the credentialing requirements are available at the QARC Web page <http://www.qarc.org>, or at the RPC Web page <http://rpc.mdanderson.org>. ■

Chapter News

Southeast Chapter

Andrew Karellas
SEAAPM President

Joint Meeting with ACR Chapters

The annual meeting of the Southeastern Chapter of the AAPM was held on March 6-7 at the Ballantyne Resort in Charlotte, NC. This year's meeting was held jointly with the annual meeting of the North and South Carolina Radiological Societies, and by all accounts the joint meeting was a tremendous success. David Vassy, George David, David Gauntt and John Gibbons were most instrumental in the planning.

Presentations

The first day of the conference opened with a very insightful historical perspective of the early days of X-ray imaging in North Carolina given by Perry Sprawls. Subsequent presentations covered topics ranging from radiation oncology dosimetry and CT dosimetry to an update on methodologies for the assessment of image quality. Other presentations covered PET/CT shielding and operational considerations by John Votaw, an update on advances in mammographic molecular imaging by Martin Tornai, and advances in lasers, optical biopsy and biochips by Tuan Vo-Dinh. George David delivered an



George David at the podium with Paul L. Molina, MD (right), the moderator of the session. (Photo courtesy of David Vassy.)

excellent presentation on some of the problems that can be encountered with engineering services in radiology departments.

Presentations on pediatric CT dose considerations were given by Donald P. Frush, MD, and Lynn M. Hurwitz, MD, and an update on radiation bioterrorism was given by Fred A. Mettler, MD. The keynote speaker was William T. Thorwarth, Jr., M.D., FACR, president of the American College of Radiology. Dr. Thorwarth's presentation was focused on the influence of radiologists on Medicare fee schedules. A major part of Dr. Thorwarth's presentation emphasized the importance of service to the profession and, above all, the quest for excellence without compromise. The new leadership of SEAAPM is: Perry Sprawls, president-elect, George David, secretary, David Gauntt, treasurer, David Vassy, past presi-

Chapter News

dent, and John Gibbons, board representative.

Awards

Each year SEAAPM presents an award for the best paper in medical physics that was published in the previous year with authorship from SEAAPM members. From 19 published papers two papers were selected for the award: 1. Dixon RL. A new look at CT dose measurement: beyond CTDI. *Med Phys.* 2003;30(6):1272-80. 2. Duan J, Shen S, Fiveash JB, Brezovich IA, Popple RA, Pareek PN. Dosimetric effect of respiration-gated beam on IMRT delivery. *Med Phys.* 2003;30(8):2241-52.

Upcoming Shielding Design Symposium- March 17-18, 2005- Charleston, SC

We are now in the planning stages of the 2005 SEAAPM spring meeting in historic Charleston, SC, that will include a scientific symposium on shielding that is coordinated by Bob Dixon. *This symposium will cover the gamut of medical radiation shielding design including diagnostic imaging, radiation therapy, PET/CT, DEXA; and will feature speakers who are experts in the field, including authors of the impending NCRP report series.* The scientific symposium is intended for the entire AAPM membership and we expect high attendance. This will be a meeting that you will not want to miss. ■

Southern California Chapter

*Steve Goetsch and
John DeMarco
Chapter Co-chairs*

The Southern California Chapter hosted a one-day workshop on January 23 at the beautiful

University Medical Center and Edgar Bailey, chief of the California Radiologic Health Branch, completed the list of speakers from outside the chapter. Melissa Martin, Tim Schultheiss and Magnus Dahlbom from our chapter also gave excellent talks. The meeting was well supported by 20 commercial exhibitors, including four at the Platinum level. About 80 people, including vendors,



Don Frey delivers his keynote speech, "Diagnostic Physics: Productivity and Future Developments."

Sheraton Universal Hotel in Los Angeles. About 50 SCC AAPM members and UCLA graduate students and about 30 exhibitors attended. A nice variety of speakers from our local chapter, as well as other parts of the country, gave excellent talks. AAPM President Don Frey gave a keynote talk on "Diagnostic Physics: Productivity and Future Developments." Two other speakers journeyed in from the frozen East Coast: Paul Keall from Virginia Commonwealth University and Charlie Ma from Fox Chase Cancer Center. Lei Xing from Stanford Univer-

sity Medical Center and Edgar Bailey, chief of the California Radiologic Health Branch, completed the list of speakers from outside the chapter. Melissa Martin, Tim Schultheiss and Magnus Dahlbom from our chapter also gave excellent talks. The meeting was well supported by 20 commercial exhibitors, including four at the Platinum level. About 80 people, including vendors, ■

Conference Report on the Joint 2004 National Society for Black Physicists and National Society for Hispanic Physicists

*Christopher F. Njeh,
Steven Avery,
and Paul Guèye
Njehch@samc.com*

We recently returned from the 2004 annual conference of the joint National Society of Black Physicists (NSBP) and National Society of Hispanic Physicists (NSHP) held in Washington, DC on February 18-21. The NSBP conference is held annually in the month of February – also the black history month. This year, due to the joint efforts of Drs. Paul Guèye (Hampton University, VA), Steven Avery (University of Pennsylvania, PA) and Christopher Njeh (California State University and Saint Agnes Medical Center, Fresno CA), a new medical physics session was created. Proceedings from this session will be accessible at www.jlab.org/~gueye/NSBP/2004/MPBP04.html. One of the main objectives of this session was to expose young physicists to career opportunities in medical physics, and hopefully attract more minority physicists into this highly demanding field.

Although only one session was allotted to medical physics this year, we anticipate extending this to two next year, if we receive a larger abstract contribution from the medical physics community around the country. Notwithstanding, the 2004 Medical Phys-



Christopher F. Njeh

ics for Black Physicists session was a real success. It was chaired by Dr. Avery. Dr. Njeh kicked off the session with a presentation entitled "What is Medical Physics?" Using some material supplied by Dr. Ken Hogstrom (UT, M.D. Anderson Cancer Center, AAPM chairman of the Public Education Committee), Dr. Njeh highlighted how varied, challenging and rewarding medical physics is. He identified some of the roles medical physicists play in radiation therapy, diagnosis and radiation safety. The pathways to becoming a practicing medical physicist were discussed, as well. Also presented was a new BS course in physics with a medical physics component offered by California State University, Fresno, Physics Department (contact Dr. Amir Huda: ahuda@csufresno.edu). This presentation generated a lot of questions such as: Is a Ph.D. needed for a successful career in medical physics?

Dr. Avery presented some of his research in hadron therapy. He

argued that hadron therapy provides a powerful alternative to photon therapy, because of the ability to deposit all of their energy at the end of their track – the so-called Bragg peak distribution. However, he cautioned that in order to obtain full tumor dose coverage in cases where the tumor size is large, the hadrons have to be excited at different energies (giving different depths of the Bragg peak). This consequently results in higher entrance dose. However, more research is needed to answer questions like the optimal fraction regime.

Mr. Lawrence Tynes, a Ph.D. graduate student from Hampton University, presented preliminary results on his research entitled "Beta based detector for intravascular brachytherapy." IVBT is now a widely used modality for the treatment of restenosis. However, there is no means of verifying the dose delivered to the arteries during treatment. Under the supervision of Dr. Guèye, Mr. Tynes and collaborators are trying to tackle this problem. They have developed a scintillating fiber-based beta prototype detector for in vitro dosimetry. The preliminary results shown are quite promising.

Another undergraduate student, Ms. Andujar from Puerto Rico, presented some of her work from a summer internship at Fermilab. She measured wedge factor ef-

fects for neutron therapy treatments. From her measurements, it was demonstrated that wedge factors should be reviewed periodically because changes in the machine parameters could have a significant impact on the physical characteristics of the wedges.

We encourage more medical physicists to participate in next year's 2005 NSBP conference, which will be held in Florida. The significance of such interactions is threefold. First, it will show the physics community at large the exciting research carried out by medical physics. Second, it will generate cross-discipline interactions. Third, this conference is highly attended by graduate students, hence there is an opportunity to attract young talent into the field and solve some of the shortage problems. We also would like to encourage more departments with M.S. and Ph.D. programs in medical physics to set up booths at forthcoming meetings. ■

Announcement

Register Now for the Health Physics Society Summer School!!

Allen Brodsky
albrodsky@aol.com

For those who have not seen the announcement of the Health Physics Society Summer School on July 6-9, 2004, in Gaithersburg, Maryland, in the March HPS News, this is a gentle reminder to register as soon as possible. You may obtain a registration form via <http://hps.org/documents/2004summerschoolregistration.pdf>. Further details about accommodations and travel can be obtained from the March HPS News, or from Jim Clark at James.Clark@nist.gov or Ray Johnson at rjohnson@radtrain.com. Registration closes on June 15 and room in the auditorium is available for only 150 registrants plus speakers and assistants. Stephanie Davis of Burk, Inc., says registrations are pouring in fast.

More than 35 top professionals will be sharing their experiences in the course lectures, and will have written chapters to the textbook which will be provided at the course. In addition to the chapters, the textbook will contain appendices with ready data and rules of thumb for scientists and other responders requiring rapid methods of dose assessment and triage in the immediate period after a release of radioactivity or toxic agents. A hand-

out notebook, with material updated the week before the course, will provide slides of talks and other materials that can be used by attendees in preparing their own presentations and training sessions.

In addition to the planned lectures and chapters, a Tuesday evening no-holds-barred panel discussion on instrumentation requirements will be held between combatants during the informal dinner hour, with the agile Professor Herman Cember as moderator and referee. At the dinner Thursday evening at an elegant old site arranged by Jim Clark, Ron Kathren will entertain us with lessons he learned about defeating Murphy's Laws when racing to Livermore to assist and assess a criticality accident. Further information on the course may be found on: <http://hps.org/documents/2004summerschool/flyer.pdf>.

After the Thursday dinner talk, those who enjoy funny songs about health physics and old standards can stay for an hour and gather around the piano and sing. (Don't worry, an outstanding professional piano player, not Allen Brodsky, will be at the keys.) Terrorism is a scary topic. Come learn, share and enjoy, despite the topic. (As I have long said, "As long as you've got to be miserable, you might as well enjoy it!!") ■

Memorials

Robert S. Landauer, Jr.



*Joel Gray
Glenwood, IL*

Robert S. Landauer, Jr., of Sarasota, Florida, age 79, died February 16, 2004 after a brief illness. He was born in 1924 in Chicago, Illinois, the son of Robert S. and Ruth Kronthal Landauer, along with two brothers, Joseph and Thomas. His father was a prominent radiological physicist. Bob received his bachelor's degrees in liberal arts and mathematics from the University of Chicago after serving in the Army during World War II. Both he and his father worked at Cook County Hospital during their careers.

Bob started a dosimetry business in his home in Park Forest, Illinois in 1954 that, 50 years later, serves over 1.5 million radiation users from all over the world. Now known as Landauer, Inc., the Company reflects Bob's devotion to his customers and his love of technological challenges. In 1959 he started utilizing computers operationally as part of his

dosimetry business. He also established a program to reimburse employees for college course work and, upon his retirement, he established a scholarship fund for the children of his employees.

Even after his retirement, Bob remained involved as he continued to organize scientific advisory meetings with leaders in the radiological and health physics world.

Bob was active in many professional societies including the Health Physics Society, the American Nuclear Society, the American Association of Physics in Medicine, and the Radiological Society of North America. He sponsored a series of lectures by leading international authorities in the fields of medical and health physics. These are known as the Landauer Memorial Lectures, in honor of his late father.

Professionally, Bob was highly respected and innovative. He and Landauer, Inc. have set the standard for quality dosimetry services worldwide. Personnel dosimetry today is far different and better because of his contributions.

Bob is survived by his wife Janice, five children, his brother Thomas, and many grandchildren, nieces, and a nephew. He is predeceased by his brother Joseph.

Whenever friends and professional colleagues of Robert S. Landauer Jr. meet, the stories of Bob abound; stories that reflect the legacy of a man who chose

to take the road less traveled. Then all depart remembering what a kind, decent man he was, the professional and personal memory of who will be treasured by all he has known and touched.

Memorial donations may be made in honor of Robert S. Landauer, Jr. to Mayo Clinic Jacksonville, Medical Research Study in Neuropsychology of Dementia with Lewy-Body Disease, 4500 San Pablo Road, Jacksonville, Florida 32224; or Hospice of Southwest Florida, 5955 Rand Boulevard, Sarasota, Florida 34238. ■

Carl J. Vyborny 1950 - 2004



*Maryellen L. Giger,
Charles E. Metz, Kunio Doi,
and Robert M. Nishikawa
The University of Chicago*

The quality of mammograms in the United States is judged according to criteria established by Carl J. Vyborny, M.D., Ph.D., and his colleagues in creating the Mammography Accreditation Program of the American College

of Radiology in 1985. As both a radiologist and medical physicist, Dr. Vyborny often was called upon when questions arose near the boundary of physics and clinical care. He was also one of the first individuals to advocate the use of computers to assist radiologists, an idea that met with skepticism at first but is now used at more than 1000 mammography centers across the country. Uniquely, he contributed both to the understanding of the physical aspects of image quality and to the clinical usage of computer-aided detection/diagnosis.

Born in Illinois, Dr. Vyborny received bachelor and master's degrees in physics from the University of Illinois, and a Ph.D. in medical physics and an M.D. with honors from The University of Chicago. He was elected as a diplomate of the American Board of Radiology in 1984 and served as president of the Chicago Radiological Society in 2001.

As a clinical professor at the University of Chicago, Dr. Vyborny actively participated in

the graduate programs in medical physics by co-advising graduate students as they pursued Ph.D. research in medical physics. He helped train residents in the Department of Radiology, especially through lectures on the physics of radiographic image quality.

While working as a radiologist at LaGrange Memorial Hospital, he and his colleagues ran the first clinical trial of mammographic CAD in metropolitan Chicago and became one of the two Chicago sites of the ACRIN Digital Mammography Imaging Screening Trial. He served as the Radiation Safety Officer at two suburban hospitals and, for many years, on the Radiation Protection Advisory Council of the State of Illinois.

An original member of the Academy of Radiology Research, Dr. Vyborny took part in the Academy's successful lobbying campaign to establish the National Institute of Biomedical Imaging and Bioengineering of the NIH.

Dr. Vyborny was lead author on an International Commission on Radiation Units and Measurement Report, ICRU Report 70, "Image Quality in Chest Radiography," which was published in 2003 with more than 1000 references and will be used for many years by both medical physicists and radiologists in understanding the physics of chest radiography.

Dr. Vyborny is the author or co-author of more than 100 papers in scientific literature, and was a Fellow of the SBI, the ACR, and the AAPM. He received the Distinguished Service Award Gold Medal from the Chicago Radiological Society in early 2004.

Unfortunately, Dr. Vyborny's life was cut short by lung cancer, and he passed away on March 20, 2004. He is survived by his wife Terriann, his daughter Margaret, his mother Prakseda, his sisters Kathleen and Susan, and numerous cousins, nieces and nephews. ■

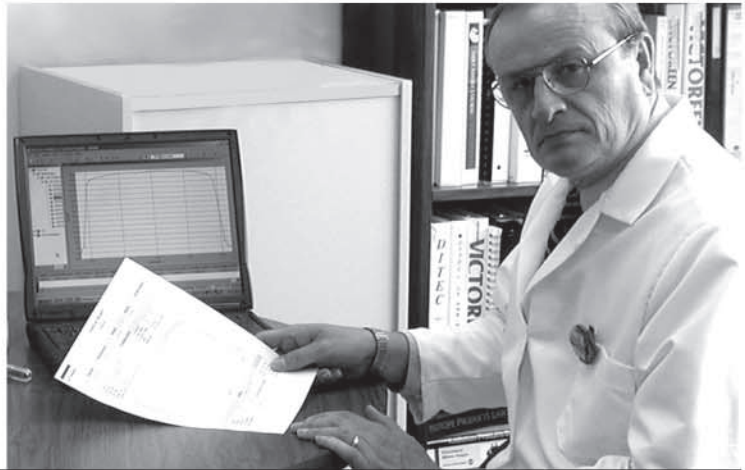
The 2005 Call for Nominations and Applications

is available on the AAPM Web site at

[http://www.aapm.org/org/committees/awards_honors/index.html#nominations.](http://www.aapm.org/org/committees/awards_honors/index.html#nominations)

Please note that the deadline to receive nominations and applications is **October 15, 2004.**

New therapy beam evaluation software offers enhanced dynamic wedge verification



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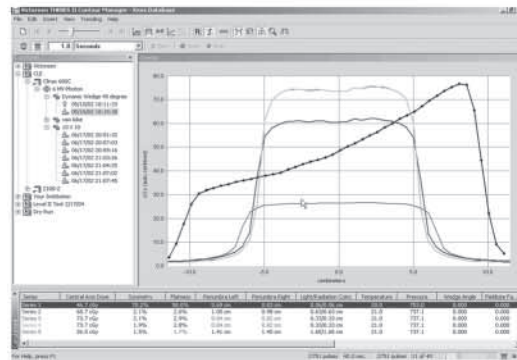
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Vote**AAPM Election****Vote**

The 2004 AAPM election will open for online voting on June 16, 2004. Paper ballots will be mailed to members who have no e-mail address or a bad e-mail address and members that have opted out of online voting.

The deadline to submit your vote electronically or by paper ballot will be July 7, 2004.



Located in the heart of downtown Pittsburgh, the stunning new \$354 million David L. Lawrence Convention Center graces the banks of the Allegheny River. It is the first certified "green" convention center in the United States. Photo courtesy of the Greater Pittsburgh Convention and Visitor's Bureau.

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Member Registration Fee: \$30
www.aapm.org/educ/rdce.asp

New Members

The following is a list of 'Changes of Status' and 'New Members' from December, 2003 through March, 2004.

Changes of Status

Associate

Todd M Hill
Bowling Green, OH

Corresponding

Tamie L Poepping
Edinburgh,
UNITED KINGDOM

Full

Kenneth L Andrews
St. Louis, MO
William P Argo
San Antonio, TX
Steven M Avery
Sicklerville, NJ
Ross I Berbeco
Somerville, MA
Yanic Bercier
Knoxville, TN
Joshua J Bergman
Alpharetta, GA
Zubin H Bharucha
Kalamazoo, MI
Beth Bradshaw
Atlanta, GA
Stuart S C Burnett
Peterborough, ON,
CANADA
Alex Cardenas
Houston, TX
Laigao Chen
Ann Arbor, MI
Hyun-Kyung Chung
Pewaukee, WI
Katie L Darner
Bellflower, CA
James V De Stefano
San Jose, CA
Gary D Dillon
Griffith, IN
Meisong Ding
Aurora, CO
David Djajaputra
Baltimore, MD
Douglas G Drake
Novi, MI
Tamara Love Duckworth
New York, NY
Lisa J Duggan
Kogarah, AUSTRALIA
Lidiya A Ellis
Buffalo Grove, IL

Lars Ewell
Ann Arbor, MI
Gregory Ross Fairchild
San Diego, CA
Jonathan B Farr
Bloomington, IN
Janet Ching-Mei Feng
San Antonio, TX
Michael K. Fix
Richmond, VA
Eugene S Fourkal
Philadelphia, PA
Sean P Frigo
Madison, WI
Gary Gluckman
Stony Brook, NY
Albin L Gonzalez
Rockville, MD
Scott W Hadley
Ann Arbor, MI
Adam David Hall
Cincinnati, OH
Jimmy Hernandez-Bello
Puebla, MEXICO
Rebecca M Howell
Atlanta, GA
Ken Imhoff
Coconut Creek, FL
Kristofer K Kainz
Houston, TX
Yixiu Kang
Houston, TX
Srinivas Cheenu
Kappadath
Houston, TX
Justin M Keister
Appleton, WI
Brian M Keller
Toronto, ON, CANADA
Hayeon Kim
Philadelphia, PA
Denise Lambert
Concord, CA
Miriam S Lambert
Sacramento, CA
Ricky Robert Layman
Cleveland, OH
Sang-Yeob Lee
Brea, CA
Michael R. Lemacks
Savannah, GA
Wei Luo
Cheltenham, PA
Brian K Mader
Birmingham, AL
Robert D. McDonald
St. Louis, MO

Pedro Mendez-Correa
Jupiter, FL
Gabor Menyhart
Hyannis, MA
Ana Mihail
Kokomo, IN
Gregory S Mitchell
Rockford, IL
Brian Joseph Morabito
Cambridge, MA
Allen Movahed
Oklahoma City, OK
Florence Calaway Mullins
Huntsville, AL
Bryon M Murray
Upper Arlington, OH
Toni Neicu
Boston, MA
Joseph Oldakowski
Avon By The Sea, NJ
Laura J Pisani
Stanford, CA
Carmen C Popescu
Victoria, BC, CANADA
Andrei B Pugachev
New York, NY
Sanjay Raina
Buffalo, NY
James L Robar
Halifax, NS, CANADA
Luke A Rock
Philadelphia, PA
Joel N Roshau
Salem, OR
R Ryan Rowbotham
Portland, OR
Juan Carlos Ruiz
Rodriguez
Valencia, SPAIN
Russell L Ruo
Rochester, NY
Nirmal Sakthi
Richmond, VA
Roberto Sanchez
Casanueva
Madrid, SPAIN
Nejdeh Shahbazian
Glendale, CA
Jie Shi
Melbourne, FL
Scott A Sorensen
Albuquerque, NM
Shiv P Srivastava
Richmond, IN
Min Su
Durham, NC

Yuri Tabrizi
Evanston, IL
Heather K Thompson
Edmonton, AB,
CANADA
Jaime Urribarri
Lyme, NH
Srinivasan Vedantham
Atlanta, GA
Anil Verma
Ocala, FL
Michele L Verst
Indianapolis, IN
He C Wang
Houston, TX
Li Y Wang
Indianapolis, IN
Kathryn Ellen Wilson
Dallas, TX
John A Wolfgang
Boston, MA
Weijun Xiong
Philadelphia, PA
Hua (Henry) Yang
Mesquite, TX
Yaxiang Yang
Loma Linda, CA
Jie Yang
Cheltenham, PA
Maung M Yoe-Sein
Loma Linda, CA
Albert D Zacarias
Louisville, KY
Benjamin W Zeff
Birmingham, AL
Xiaodong Zhang
Houston, TX
Jining Zhou
New York, NY
Andy A Zhu
Manchester, MO

Junior

Tessa R Bagala
New Orleans, LA
Michael L Beach
Franklin, TN
Paul A Bruce
Little Rock, AR
Edward L Clouser
Cleveland, OH
Mike Coughlin
Sudbury, ON, CANADA
Nathan C Davis
South Bend, IN

Svetlana I Denissova
Hubbards, NS, CANADA
Darrin C Edwards
Chicago, IL
Martin P Egan
Phoenix, AZ
Suzan S El-Khatib
Sun City, AZ
Louis B French
Galveston, TX
Isabelle Marie Gagne
Edmonton, AB,
CANADA
Steven Anthony Gasiiecki
Mansfield, OH
James K Geoghegan
Jackson, TN
Geoffrey D Hugo
Royal Oak, MI
Lisa Kaye Kennemur
San Diego, CA
Alexander LC Kwan
Sacramento, CA
Sung-Woo Lee
Detroit, MI
Jun Lian
Chapel Hill, NC
Peter Manser
Merenschwand,
SWITZERLAND
Lama K Muhieddine
Cleveland, OH
Naim Ozturk
Greenville, NC
Rajen M Patel
Winterville, NC
Brent D Purviance
Wichita, KS
Nicolas Recalde
Washington, DC
Emily Y Robinson
Honolulu, HI
Julie A Skipper
Dayton, OH
Roger D Stevenson II
New York, NY
Erato Stylianou
Nicosia, CYPRUS
Sugata Tripathi
Marshfield, WI
Lauren Weinstein
Berkeley, CA
Lisa M Wilson
Las Vegas, NV

New Members

Associate

Yasuo Ashino
Tokoyo, JAPAN
Debbie B Gilley
Tallahassee, FL

Mikio Hasegawa
Ueda Cty Nagano Pref,
JAPAN
Chris J Houser
Philadelphia, PA
William C LeCompte
Lubbock, TX
Victor J Montemayor
Murfreesboro, TN
Lynn Purdy
Seattle, WA
Beau James Toy
Las Vegas, NV
Karen A Williams
Ada, OK

Corresponding

Bertjan Arends
Eindhoven,
NETHERLANDS
Stephen C Bolton
Leicester,
UNITED KINGDOM
Edyta T Bubula
March, GERMANY
Sue Edyvean
London,
UNITED KINGDOM
Sarah L Elliott
Melbourne Victoria,
AUSTRALIA
Elmar Hillbrand
Feldkirch, AUSTRIA
Nicholas Keat
London,
UNITED KINGDOM
Ailsa J Ratcliffe
Coventry W Midlands,
UNITED KINGDOM

Full

Ali K Alkaissi
Durham, NC
Mazin T Alkhafaji
Greenville, SC
Ramsey D Badawi
Boston, MA
Sháun P Baggarley
SINGAPORE
Adam Ballard
Kernersville, NC
Rex Allen Boone
Los Angeles, CA
Gerard Boyle
Dublin, IRELAND
Karen D Brumley
Knoxville, TN
Mark S Burhoe
Elk Grove Village, IL
Michael E Campbell
Santa Monica, CA
Hungcheng Chen
Pittsburgh, PA
Isabelle C Chrysanthou
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Robert V Comiskey
Dover, MA
Jeffrey C Crosbie
Melbourne Victoria,
AUSTRALIA
Ehud Dafni
Caesarea, ISRAEL
Marilynn S Delamerced
Palisades Park, NJ
Ruvim Deych
Peabody, MA
Ibrahim M Duhaini
Dearborn Heights, MI
Anton Eagle
Littleton, CO
Yuanming Feng
Germantown, MD
Michele S Ferenci
Tucker, GA
Teresa A Fischer
Ormond Beach, FL
Carl L Gaspard
New Orleans, LA
Allen Ritchey Goode
Charlottesville, VA
Jeffrey B Guild
Dallas, TX
Misbah Gulam
Royal Oak, MI
Lisa A Hampton
Palo Alto, CA
Amir Huda
Fresno, CA
Sandeep S Hunjan
Houston, TX
Aziz Ikhlef
Waukesha, WI
Takayuki Ishida
Kamo Hiroshima, JAPAN
Hernan J Jara
Boston, MA
Kyung-Wook Ken Jee
Ann Arbor, MI
Thomas Walter Juchnewicz
New York, NY
Ian Kay
Calgary, AB, CANADA
Than S Kehwar
Laredo, TX
Miodrag Krmar
Carson, CA
Catherine C Large
Chambersburg, PA
Irwin H Levy
New York, NY
Chen Yeun Loo
Union City, CA
Shanshan Lou
Shenyang, CHINA
Xiaoyi Lu
Indianapolis, IN

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David C Medich
Lowell, MA
Sachin Moghe
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Chicago IL
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James A Roseboro
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Dennis N Stroud
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Los Alamos, NM
Valsa M Thambi
Chicago, IL
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Houston, TX
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Sathiyarayanan K
Vatyam
Maharashtra, INDIA
S Sendhil Velan
Morgantown, WV
Santiago J Vizcarra
San Antonio, TX
Joseph C Wang
Rockville, MD
Ning Wang
Loma Linda, CA

(See Members - p. 20)

Members (from p. 19)

Robin W Winsor
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Tilahun W Woldemichael
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Jeffrey E Woollard
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Freemont, CA

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Brett D Smith
Westmont, IL

Yunkai Zhang
Chicago, IL

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LaVergne, TN
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Qing Chen
Detroit, MI
Ling Yun Chen
Houston, TX
Nai-Yu Chuo
Taipei, TAIWAN
Grant W Coleman
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Amherst, NY
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Mason City, IA
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Canyon Country, CA
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Lexington, KY
Frank T Godlewski
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Forrest D Halford
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William A Howard
Lexington, KY
Ching-Yi Hsieh
Buffalo, NY
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Kansas City, MO
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Traian D Ionascu
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Hans-Sonke Jans
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San Antonio, TX
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Wendy S Kresge
Gainesville, FL
Kinga E Krobal
Fort Collins, CO
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Richmond, VA
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Ann Arbor, MI
Yixin Li
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Detroit, MI
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Jeffri E Love
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Jacques M Mallah
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Foxboro, MA
Adam D Melancon
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Megan A Miller
Madison, WI
Dennis H Murphree
New Haven, CT
Volodymyr Nahirnyak
Cincinnati, OH
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Wixom, MI

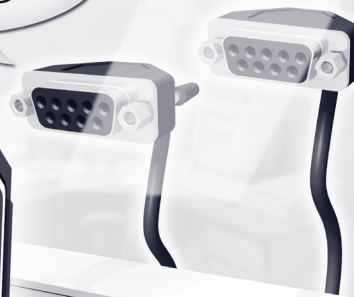
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Redford, MI
Mirel-Eugen Palamaru
Montreal, QC, CANADA
Julien Partouche
College Station, TX
Jean Lee-Cheng Peng
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Dustin K Ragan
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New York, NY
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John P Sawyer
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Nicholas D Schupp
Boonville, MO
Venkata Seshadri
Madison, WI
Patrick D Stevens
Oklahoma City, OK
Strahinja Stojadinovic
Kent, OH
Gabriela Stroian
Montreal, QC, CANADA
Jing Sun
Gainesville, FL
Adam Tazi
Detroit, MI
Paul Thistlethwaite
Bern, SWITZERLAND
Matthew T Toigo
Glendale, CA
Ping-Fang Tsai
Gainesville, FL
Esther Van Schrojenstein
Lantman
Melmond,
NETHERLANDS
Yi Wang
Ann Arbor, MI
Yang Wang
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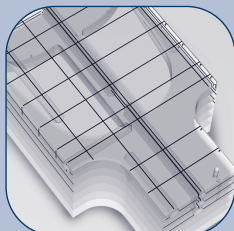


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Letters to the Editor

Response to Amols Letter on Training

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With great interest, I read Howard Amols' letter in the Jan/Feb 2004 AAPM Newsletter concerning training programs. I appreciate his support of the need for approved residency programs, and everyone is cognizant of the manpower crisis our profession is facing. However, to suggest that the proposed requirement to have graduated from an approved residency program being a requirement to sit for the boards is unrealistic or unnecessary, is short sighted. This ABR requirement will ensure quality training (and simultaneously take care of the preceptor requirements put forth by government agencies), and further equate us with our medical colleagues. Howard's math is correct, that with the current number of accredited programs, the training load will never meet the demand. And though the number of programs seeking accreditation is growing (as chair of CAMPEP's Residency Program Review Committee I can state there will be nine or 10 accredited in therapy by year's end), more sincere action is needed. Howard is also correct in stating that many medical physicists did not come through the medical physics educational path. As the

“However, to suggest that the proposed requirement to have graduated from an approved residency program being a requirement to sit for the boards is unrealistic or unnecessary, is short sighted.”

director for the longest standing accredited residency program, I am proud to alert the community to the following: My colleagues and I recently reviewed 50 strong applications for our two open residency positions. Only two of these applicants came with medical physics degrees. Of these 50 applicants, I am sure a few are applying to other programs. But it is clear, very talented (non-medical physics) students and professionals want to enter an accredited residency program. So how do we increase the number of accredited programs? I have two suggestions that will take a large community effort involving both academic and non-academic facilities. Everyone needs to step up, both financially and with manpower.

1) A share of a position(s), and thereby cost, amongst an academic facility and a nearby hospital(s). The CAMPEP accreditation guidelines (www.campep.org)

[campep.org](http://www.campep.org)) mandate two years of clinical training. If an academic facility has not won the battle to obtain funding for a residency position from the hospital they provide service to, then a community hospital could provide some funding. Why would a community hospital want to do this? My suggestion is that they have a resident rotate to their facility for a period of three months to assist with the clinical workload. This would have to take place in the latter part of their second year, as the resident or perhaps a special commissioning would have acquired the necessary didactic education and base training to be able to contribute. The hospital could also potentially attract the resident to work at the facility upon graduation. And how much funding should the community hospital provide to the academic facility? I would suggest one-third of a second year salary (~\$12,000).

2) There are many academic facilities professing to have a residency program, but essentially have a research position, that includes some form of a clinical rotation. I know this to be the case as some of our applicants graduated with degrees or finished post-docs from these facilities, but applied to our program because they "wanted to obtain clinical training, and not do more research." One particular accredited program has done something creative. They have created a three-year residency/fellowship

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position in addition to their pure residency positions. The resident/fellow still obtains the full two years of clinical training required by the CAMPEP guidelines, as proven by proper documentation, but is able to perform a year of research. This particular plan would have to be carried forth carefully by an institution with proper and honest documentation and appropriated funding.

These are just two suggestions to help promote growth of accredited residency programs. I would also like to remind the community of two sources of funding. CMS does provide substantial money back to a facility with an accredited program (see www.campep.org) and there are fellowship grants provided by the AAPM in alliance with ASTRO and with Varian. So there are direct and indirect methods to fund residents, and without question, there are very talented individuals out there eager for proper training. ■

Formal Training for Medical Physicists is Essential

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I agree wholeheartedly with Dr. Sherouse's assessment that medi-

cal physics has matured to the point that formal training is necessary (Letters to the Editor, AAPM Newsletter, March/April 2004, p.14). Too many avenues remain open for untrained and unqualified individuals to enter the profession. Hence we are often considered as technicians with on-the-job training. Such a poor reputation diminishes our pay, professional standing, and ability to attract new talent.

I agree with Dr. Amols (Letter to the Editor, AAPM Newsletter Jan/Feb 2004, p 22), to whose letter Dr. Sherouse responded, that it would be difficult to provide formal training for enough physicists at this time. However, I do not believe that the magnitude of the problem warrants the proposed emergency measures. First, Dr. Amols overestimates by a factor of two the number of formally trained physicists needed. He bases his calculations on the eventual retirement of the entire AAPM membership, although only about one-half of the AAPM members are clinical physicists practicing in the USA. Furthermore, ABR certified physicists have left the profession for other jobs. So the shortage is not only a matter of supply.

Dr. Amols points to Gail Adams, Robert Loevinger and other pioneers who "drifted or stumbled" into medical physics and were successful. Even so, with a jumpstart by a postdoctorate fellowship in medical physics, these pioneers could have advanced the

field even faster and saved additional lives. By acquiring the needed skills without formal training, one runs the risk of reinventing the wheel, and with patients serving as guinea pigs.

Dr. Sherouse's groundbreaking work in 3D therapy – he is credited for getting virtual simulation to work – makes him a present day pioneer. We should heed his advice, as we did that of our role models of the past. Furthermore, continued listing of medical physicists by the American Board of Medical Specialties (ABMS) may soon require formal training.

To realize the seemingly conflicting requirements of formal training and adequate supply, we need to make medical physics more desirable. We can do that by becoming providers, which would establish a well-defined revenue stream for our work. Board certified members will gladly return and stay, and students will take bank loans to pay for their own formal training (lack of stipends is the main bottleneck for training programs).

The secured provider status has worked miracles in radiation oncology. At our institution, it attracts the best graduates from the top medical schools in the nation. It also attracts first-class physicists. One of our staff radiation oncologists has a PhD in physics from an Ivy League school, one of our previous radiation oncology residents was ABR certified in medical physics, and a current

(See Brezovich - p. 24)

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Brezovich (from p. 23)

one has a PhD in medical physics from a top university. When provider status for radiologists, anesthesiologists and pathologists was in jeopardy, we had no applicants for our established radiation oncology residency program.

AAPM should quit worrying about the arrangement of deck chairs on the Titanic, and concentrate its efforts where they count. Social workers, dieticians, physicians and many others achieved recognition as providers. Why can't we?

“AAPM should quit worrying about the arrangement of deck chairs on the Titanic, and concentrate its efforts where they count. Social workers, dieticians, physicians and many others achieved recognition as providers. Why can't we?”

ACCREDITATION: An Idea Whose Time Has Come?

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Whether dealing with a service provider, a repair person or fellow medical staff, we all demand appropriate knowledge and skills to accomplish the tasks expected. Furthermore, as medical physicists we have a special appreciation of the need and importance of peer review.

Individuals who train for any profession need to acquire at least the following three fundamental attributes:

1. knowledge of terminology and principles of the field,
2. the ability to perform all associated procedures with a very high level of competency, and
3. the ability to extrapolate existing knowledge and procedures to solve unforeseen problems or to add to existing knowledge.

Simplistically, we can consider that a medical physicist obtains each of these attributes from the following:

1. a graduate program in medical or radiological physics,
2. a clinical residency in medical physics, training associated with a graduate degree or a carefully

mentored on-the-job training program (OJT), or

3. the completion of a Ph.D. thesis, genetics or carefully mentored OJT.

The gray hairs amongst us remember fondly the days of old when the knowledge and procedures were rather uncomplicated and, in fact, were very repetitive and technician oriented. Coincidentally, these were the days when there were "mixed" residencies in "radiology" where one year working in a radiation therapy department gave a physician some ability to cure cancer with radiation. The field of radiation oncology woke up in the late 1960s to the realization that indeed it was a specialty substantially different from diagnostic radiology. Furthermore, the field required three years of training which later increased to four. This has proven to be the correct decision as the technical, clinical and academic aspects of the specialty have increased exponentially. The basic premise is that no longer was a minimal one-year rotation plus OJT adequate training to reach a guaranteed competency level. Knowing medicine and "radiology" was not good enough.

It is no stretch of the imagination to say that medical physics now finds itself in the exact same situation. How can it be argued that a degree in physics (or "allied" physical science), plus a highly variable OJT experience, turns out anyone that we would

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want to hire to take care of our family members. We certainly would not want our brains explored by an MD with some OJT.

In the early 1990s, the AAPM, ACMP and ABR formally recognized what many of us who conduct oral board exams have groused constantly about, i.e., that many candidates have limited exposure to even the most fundamental knowledge and skills associated with clinical medical physics. This recognition led to the formation and incorporation of the Commission on Accreditation of Medical Physics Education Programs, Inc. (CAMPEP). The aim was to establish some minimal guidelines and provide peer-reviewed accreditation that a given graduate education or residency program had met these guidelines. The guidelines (available from www.campep.org) are designed to ensure a comprehensive and appropriate level of quality for the program. The "stamp" of accreditation is meant to convey to a prospective student, the program's institution, potential employers and certification/licensing bodies that there is a very good chance (not 100%) that the graduate of such a program would receive (has received) thorough, high level and documented training.

Currently, there are 11 graduate education programs and seven clinical medical physicist residencies accredited by

CAMPEP. Although very credible, clearly there is a question that should be asked as to why there are many programs with good reputations which have not, to date, sought accreditation. The accreditation process involves the generation of a self-study which, although admittedly onerous at first glance, basically consists of a 20-25 page document plus appendices, and which allows the institution, maybe for the first time, to describe and consider all aspects of the program. An on-site visit is conducted to validate the information in the self study. A physician is frequently included in the site visit team for a graduate program and is always included in a first visit to a residency program. The respective committee of CAMPEP reviews the recommendation of the site visit team and passes their recommendation on to the CAMPEP Board. The CAMPEP Board consists of eight members representing the current four sponsoring organizations: AAPM, ACMP, ACR and CCPM.

We hereby propose that accreditation of medical physics training programs is an idea whose time has come and, furthermore, is the only way our profession can quality assure training of its members. Take it away and we regress to the physicist plus "wild-west" OJT mode which helps neither the entrant, potential employers nor the patient. In fact, take it away and we become less vigilant at all lev-

els as compared to our medical colleagues who look to us for true knowledge, skills and the integration of both.

“We hereby propose that accreditation of medical physics training programs is an idea whose time has come and furthermore is the only way our profession can quality assure training of it's members. Take it away and we regress to the physicist plus "wild-west" OJT mode . . .”

The giving of credit for graduation from a CAMPEP accredited program by certification bodies has now evolved into a proposal that medical physicists emulate their physician colleagues in that entrance to board exams be granted only to graduates of CAMPEP accredited programs. In a field where the demand will exceed the ability of such programs to supply, great consternation abounds. The Board exam cross-correlation is, however, not the real issue; the pertinent issue is the expansion of formal training programs. The profession has failed miserably in supporting this partly because there have been

(See McCullough - p. 26)

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McCullough (from p. 25)

an adequate number of very smart and savvy individuals who came into the field when it was simple and who grew with it. In today's economic and litigious climate, this should be perceived as an ill-fated strategy. We can do better than minimally accountable and possibly incomplete on-the-job training. Let's stop whining and complaining and start solving the problem. The future generations of our patients will thank us heartily for this watershed moment. Let's become the experts we claim to be instead of self-appointed ones! ■

Response to Dr. Sherouse and Mr. Hussain regarding training programs for medical physicists:

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I'm pleased that my letter on training programs has generated some discussion. Medical physics training and the current person power shortage are serious problems and there are no easy answers. And we certainly won't find the answers if most medical physicists continue to stay mum on the issues. Of course I'm

somewhat disappointed that both Dr. Sherouse and Mr. Hussain disagree with me, but disagreement is preferable to silence, and I thank them for continuing the debate. Let me focus on what I see as the two major issues here:

1. Is it in the best interests of medical physics to set as a goal the 'CAMPEP only route of entry' advocated by Dr. Sherouse and Mr. Hussain. That is, unless you've graduated from a CAMPEP program you cannot, under any circumstances, ever become a medical physicist?
2. Be it the CAMPEP route or the more traditional route of entry into medical physics, who's going to pay for all this training?

Let me start with the financial side of the argument first, as this is where I think Dr. Sherouse and Mr. Hussain truly have their heads in the sand. Dr. Sherouse says, and I quote, "The money and the personnel and programs which Dr. Amols has listed as missing will appear when the requirements for proper credentialing are established." I don't know about Dr. Sherouse, but I'm 55 years old and in my lifetime I've never witnessed, or even heard about money just appearing out of thin air. I've seen money disappear plenty of times, but never just magically appear! Let me quote some facts from the April 14, 2004 newsletter of the American Medical Student Association (my highlighting):

"We all contribute toward funding graduate medical education. The bulk of the financing comes from sources that are exclusively public and tax-based: Medicare, Medicaid, the Department of Defense and Veterans' Affairs, and state and local appropriations. With Medicare funding almost 34% – \$6.4 billion – of all the GME costs \$300 million is spent on supporting graduate education for allied health professionals. Traditionally, teaching hospitals also subsidized some of their higher costs by charging private insurance companies more. However, in today's competitive marketplace, that is no longer possible. Insurance companies use their market clout to ensure that teaching hospitals are not able to charge higher rates than non-teaching ones There is currently talk in Congress to remove GME from Medicare and subject it to the highly politicized appropriations process. This could cause GME funding to be vulnerable to shifts in funding from year to year due to an often partisan appropriations process Why is this issue important? The current method of financing graduate medical education is dramatically unfair. Managed care companies benefit from the training that residents receive in teaching hospitals. Why should the government pay the whole cost of GME when private industry is the primary end recipient of the product? However, it is important to ensure that GME is not

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subjected to the wild swings of the appropriations process If funding for GME is altered, teaching hospitals may be compelled to compromise some aspects of care in order to remain fiscally solvent."

The bottom line – putting your faith in the CAMPEP Fairy Godmother leaving money under your pillow to fund medical physics training may not be a sure bet!

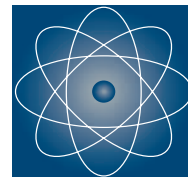
Let's return to the first issue – money aside, what's the best way to train medical physicists? Both Dr. Sherouse and Mr. Hussain chide me for being opposed to rigorous training programs in medical physics. In fact, I am not opposed to such programs. I'm simply opposed to restricting entry into this field solely to those individuals who have graduated from such programs and excluding entry to all others – no matter how much medical physics knowledge they may have. I'll stick to my guns that a properly administered peer-reviewed certification board is a better measure of a medical physicist's competency than a CAMPEP diploma. Again – it's what you know, not how or where you learned it. If I'm thirsty and see a glass of pure sparkling water, I'm gonna drink it – and I don't care how the water got into the glass! And I don't understand how Dr. Sherouse can equate such a peer-reviewed selection process as (again, I quote) "setting the bar as low as it takes to produce adequate numbers of new bodies."

"I'll stick to my guns that a properly administered peer-reviewed certification board is a better measure of a medical physicist's competency than a CAMPEP diploma. Again – it's what you know, not how or where you learned it."

I do believe that at present certification boards and state licensing boards have, in fact, set the bar too low, but this can easily be changed without limiting medical physics only to CAMPEP graduates. Finally, let me quote directly from CAMPEP's own guidelines (again, my highlighting):

"CAMPEP accreditation of a program does not address the clinical competency of individual graduates. Certification that an individual Medical Physicist has demonstrated a prescribed level of professional competence is currently available from the American Board of Radiology (ABR), the American Board of Medical Physics (ABMP) and the Canadian College of Physicists in Medicine (CCPM).... Throughout the history of medical physics in North America there has been a number of pathways for individuals to enter the field of medical physics. Initially

these pathways included formal education in physics or a related science combined with on-the-job training in a preceptorship relationship with one or more established medical physicists. More recently, medical physics programs have become established in academic institutions. Differences in these programs, together with the variety of alternate entry paths still available to persons interested in medical physics, are recognized as one of the strengths of medical physics in North America." ■



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