Health Physics News

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The Official Newsletter of the Health Physics Society

In This Issue

The Birth of the HPS: A Look Back

Chapters: The Heart and Soul of the Society

Mary Walchuk

The strength of the Health Physics Society depends in a large part on the strength of Chapters and Sections of our Society.

— Frank L. Paschal, Jr., HPS Secretary, 1961

The beginnings and growth of chapters of the Health Physics Society (HPS) is testament to the importance and strength of the HPS throughout the country. Starting with five chapters soon after the birth of the HPS, the Society now includes chapters and student branches spread throughout the United States.

"As the Society grew, the need for chapters organized along regional lines became apparent," wrote Ron Kathren in his *History of the Health Physics Society*. "For many, travel was difficult, and there was a need to communicate or rub elbows, as it were, with others in the profession. Also, there was a feeling among many that the Society was too Oak Ridge oriented, and that the formation of chapters would serve to blunt this keen edge of discontent."

In June 1958 a change in the bylaws of the HPS enabled the formation of local chapters and a year later the Board approved the chapters of Baltimore-Washington (as of 8 November 1958) and New York, Eastern Idaho, Pittsburgh, and Savannah River (as of 17 June 1959). By 11 June 1961 the HPS had 12 chapters and the Council on Rules and Procedures passed a resolution for a uniform procedure for the formation of new chapters. The roster of chapters and student branches now exceeds 60 in this 50th year of the Society.

The experience of the health physicists who helped start the first five chapters is an example of the interest and determination it has taken to get all of the chapters up and running. Allen Brodsky, John Byrom, Charlie Meinhold, Niel Wald, and Bill Reinig added their memories of those formulative years to information found in the HPS archives to help members get a feel for what was happening almost 50 years ago.

Baltimore-Washington

The Baltimore-Washington Chapter was certified as of 8 November 1958. Allen Brodsky was one of the three men in Baltimore who initiated formation of the chapter. He worked mostly behind the scenes, organizing the first

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From the President

The 50th year of the Health Physics Society (HPS) not only gives us an opportunity to look back at the rich history of the Society, but also to continue to look at new beginnings, initiatives, and opportunities. I hope to use this column to keep you informed about the activities of the Society and its officers and Board this year.

I still use the old Southern term "fixin' to" when I talk about making plans or setting out to do something. As I remarked at the HPS business meeting in Spokane, the work of the Society is not just one year's initiatives identifiable with a single president or Board but in most cases it's a continuum over several years' time in order to effect improvements and new projects. Such is the case with our newest venture, the Media Relations Program.

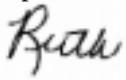
The Media Relations Program has taken some time and several Society administrations to "gel" and to implement. In 1997, President Richard Vetter noted in the March *Newsletter* that the HPS was launching a dual effort in governmental and public relations and that an anticipated media relations program would follow the governmental relations program. Since that time, additional thought and planning have been given to how to make this happen. During the 2003 Midyear Meeting on homeland security issues in San Antonio, several health physicists were interviewed online for USATODAY.com. The response to this program was very positive in that it demonstrated the Society's dedication and capability in providing objective and scientific information to the public.

Last year, President Ray Guilmette established the Ad Hoc Committee on Media Relations. The committee, chaired by Andy Karam, made several recommendations concerning the establishment and financing of the program. The structure of the program, as set forth by the committee and approved by the Board of Directors at the annual meeting in Spokane, is expected to parallel that of the quite successful Government Relations Program. The committee recommended an action plan for the Society to take in order to set up an effective program. As a structure for the program, the Board approved the committee's recommendation to hire a part-time Society Media Liaison to direct the Society's media relations efforts and to serve as liaison to the media. We will also seek the assistance of a media relations firm to facilitate interaction with media outlets. Some of the other recommendations that will be pursued in the program include encouraging members to communicate with the media and offering training sessions in media interaction, establishment of a rapid-response mechanism for breaking news stories involving radiation safety issues, development of briefing material and other information resources for the media, and development of a list of media contacts, especially the science, energy, and environmental writers and editors from key media outlets.

The Finance Committee and the Board of Directors approved an initial budget for the implementation of the Media Relations Program. In addition, the Society will explore other mechanisms to fund the long-term maintenance of the program if it proves to be successful.

The Board has approved Kelly Classic as the HPS Media Liaison. Kelly brings a great deal of knowledge and experience in facilitation and writing for the HPS Web site and newsletter and is very organized and enthusiastic. Our next step is to find a media relations firm that will be a good fit with our organization.

Issues pertaining to radiation and radioactivity are important to our society, and HPS has a strong interest in how such topics are presented and reported. As we seek to expand our outreach to and education of the public, the Media Relations Program will be an important effort in assuring that objective, factual information is provided to the media when radiation-related stories arise. We have the opportunity to be proactive as well as responsive in our activities with the media and, in so doing, to be a source of sound scientific information to the public.



Ruth E. McBurney

Chapters: The Heart and Soul of the Society

(continued from page 1)

meeting and elections and also participating in writing the bylaws and obtaining the charter, with Bob Barker and Jim Hart. He was also the chapter's first program chair and chair of nominations and elections.

"I was working part-time in business with four other partners, one of whom was Bob Simon," Brodsky recalled. "One day in about 1957, Paul Guinn (a health physicist who had become one of our customers) and I were talking with Bob, who said, 'Let's form a chapter of the Health Physics Society.' Of course, Paul and I agreed, and we solicited members in the Washington area, such as those working at the Atomic Energy Commission (Les Rogers, Bob Barker, Jack Bell) and the Naval Research Lab (A. Wendall Carriker, Luis Garcia, Harold Woods)."

Allen Brodsky

According to John Taschner's history of the chapter, on 10 April 1958, 27 people from the Baltimore-Washington area attended a meeting arranged by Brodsky, Simon, and Guinn to organize a health physics association. Meetings were again held on 15 May 1958 and 16 September 1958 to draft a constitution and bylaws for the group. The first formal meeting of the organization was held 23 October 1958 in Gaithersburg, Maryland. A constitution and bylaws were adopted and the organization was officially named the Baltimore-Washington Health Physics Association, with a unanimous vote to petition the national HPS to become a chapter.

"The first meeting in 1958 was successful not only in getting Lauriston Taylor as speaker, but also in formally establishing the chapter with elections and unanimous agreement on its formation," Brodsky remembered. "Paul agreed to serve as president pro-tempore at the first meeting and Walter Claus became our first official president in 1959."

At its 4 June 1959 meeting, the group received a letter from HPS President Taylor saying the Society had no provisions for associations and recommending it change to a chapter; members then voted to change the name to the Baltimore-Washington Chapter of the Health Physics Society.

Brodsky said the Baltimore-Washington Chapter began right away helping to promote the objectives of the HPS listed in the 1957 Membership Handbook—to aid in the work of health physics, to improve dissemination of information between individuals in this field and related fields, to improve public understanding of the problems and needs in radiation protection, and to promote and improve health physics as a profession—on a local level just as the HPS does nationally.

In September 1960, an all-day health physics symposium was held by the Baltimore-Washington Chapter at the National Bureau of Standards, at that time in Washington, DC. From December 1966 until June 1967, the Baltimore-Washington Chapter jointly sponsored the "Preparation Course for the American Board of Health Physics Certification Examination" with the Public Health Service to prepare health physicists to take the American Board of Health Physics certification examination.

Not only has the Baltimore-Washington Chapter contributed to the national HPS, but "being part of the HPS inspires chapters to continue activities related to Society goals," Brodsky said.

Eastern Idaho

"To get a chapter started everyone has to jump in with both feet to get things going; they have to get wet up to their eyeballs, literally," said John Byrom, who was one of the early secretaries of the Eastern Idaho Chapter and "did anything else that needed to be done," including serving as historian at a later date. He said the Eastern Idaho Chapter got started in 1957, soon after the beginning of the national HPS, and that J.W. McCaslin, Bryce Rich, J.P. Byrom, Earl Graham, John Horan, Ray Miller, and many others were active in the formation of the chapter.

John Byrom

Early chapter member Bryce Rich points out the "special kinship" in the health physics community at that time especially with Oak Ridge (K.Z. Morgan, Elda Anderson, and Myron Fair in particular). "At Idaho's National Reactor Test Site, established in 1949, basic pilot plant and nuclear technology workers, including the very new health physicists, came from Oak Ridge. Most of the first technical health physicists trained at Oak Ridge in the 1948-1951 time period. More of us received our formal training through the AEC health physics fellowship program in the 1953-and-on period. The

creation of the HPS and local chapters was an opportunity to continue technical and personal relationships with the rest of the university and nuclear weapons and power programs professionals."

According to Denzel K. Jensen's *A History of the Eastern Idaho Chapter of the Health Physics Society*:

"The Chapter actually got started shortly after the organization of the International Health Physics Society. We were holding professional type meetings at the site in which we discussed the various occurrences and happenings around the country. Oftentimes the pressure of work prevented many of us from attending these meetings and technicians could very seldom attend. Someone had to do some work. We were limited in what we could do for the communities that border the site and thought that a local chapter of the HPS would be a good way to accomplish the dissemination of information and form an organization from which we could provide services to the surrounding communities as well. One main interest to us during this time was the feeble attempts that were being made toward Civil Defense. We could help as individuals but not as an organization. Since we were all well trained in the principles of radiation protection, it was natural for us to offer our services in this, our own field. And so, we decided to organize."

On 24 April 1959 an organizational meeting of the chapter was held. A constitution committee was appointed, a regular meeting time and dues were decided on, and the 30 people present became charter members of the new chapter. When the charter was granted in June 1959, headquarters were in Idaho Falls, Idaho, and the officers included President John F. Sommers, President-elect Clyde A. Hawley, and Secretary Jacqueline L. Power. By July the Eastern Idaho Chapter had 103 members.

"In August, the ground shook in Montana," wrote Jensen. There was a major earthquake in Montana and the Eastern Idaho Chapter offered to help train personnel of the Bonneville County Civil Defense Organization at that time.

On 13 February 1961 the chapter started civil defense training classes, after incorporating as a nonprofit organization under the laws of the state of Idaho. During the Cuban crisis in the fall of 1961 chapter members were busy organizing a speakers committee and a fallout shelter advisory committee and continuing with instrument operator training classes. In the fall of 1965 the Eastern Idaho Chapter held a joint convention with the Industrial Hygiene Association in Idaho Falls, which included representatives from throughout the northwestern area and papers on many aspects of both health physics and industrial hygiene.

Byrom said the chapter remained active over the years, involved in activities including inspection of buildings for radon accumulation and bomb shelter siting, construction, and stocking.

New York

Early information on the New York Chapter, that began in 1958 and was approved by the HPS Board of Directors in June 1959, is hard to find. It appears that on 13 June 1963 the chapter reapplied for certification and became the Greater New York Chapter.

Charlie Meinhold

Charlie Meinhold, aided by Jean Saint Germain, shared his knowledge of the beginnings of the Greater New York Chapter:

"Fred Cowan and John Laughlin (two of the early HPS presidents) believed that many of their junior staff would not be able to attend the national HPS meetings so a local meeting would be desirable. In addition to the Brookhaven group of health physicists (Fred Cowan, Lee Gemmell, John Handloser, Leigh Phillips, Tom Murphy, Tom Gerusky Charley Flood, and me), John Laughlin, Mort Heller, Maury Beebe, Betty Focht, Shirley Vickers, Lillian Jacobson, and Edith Quimby were all early contributors to the formation of the chapter.

"A hallmark of the chapter has been its strong interaction with the medical physics community. A clear symbol of this relationship is our annual Failla Memorial Lecture with highly respected medical physicists and health physicists as lecturers. This lecture series began in 1962. The chapter also hosted the 8th and 16th annual meetings of the Health Physics Society.

"The Greater New York Chapter meetings have enabled medical physicists and health physicists at all levels to interact (imagine me as a 22-year-old discussing x-ray dosimetry issues with Edith Quimby). The venue of the meeting enabled the BNL 'country folks' to get to the big city. The early meetings were normally held at New York University Medical Center in the afternoons but the participants decided they would prefer a dinner meeting so other venues were adopted."

Meinhold added that being a part of the HPS has benefited the members of the Greater New York Chapter: "I suppose it is primarily a matter of legitimacy. In addition I can't think of any other reason

the relationship between medical physics and health physics in New York City would have developed. It also provided a platform for members of the chapter to become involved with the national society."

Pittsburgh

Health physicists in the Pittsburgh area organized early to host the second annual meeting of the Society in June 1957.

At one point they formed a chapter that was approved by the HPS Board of Directors in June 1959, but seems to have become somewhat inactive until 1961 when it was revived as the Western Pennsylvania Chapter with the help of Allen Brodsky, Ed Durkosh, and Frank Bradley. "We worked hard to revive the chapter from lethargy after only one year beyond its initial formation by Bob Gallaghar and others who left the Pittsburgh area after the shutdown of the Westinghouse Testing Reactor," Brodsky explained.

Niel Wald, an early Western Pennsylvania Chapter member, shared his memories of its beginnings:

Niel Wald

"I was thrust into the field of radiation protection by a Pentagon computer during the Korean War in 1952, serving in the radiobiology department of the United States Air Force School of Aviation Medicine. After two years of research with health physicists at Oak Ridge National Laboratory (ORNL), Los Alamos, and the Nevada Test Site, I went to the Atomic Bomb Casualty Commission in Hiroshima and realized that the dosimetry data were far behind the biomedical information. This led to John Auxier's Ichiban Program at K.Z. Morgan's ORNL Health Physics Division, which I joined in 1957. I therefore missed the start of the HPS but joined when I got indoctrinated at ORNL. I was recruited to the University of Pittsburgh (Pitt) in 1958 to run a new program on the health aspects of nuclear technology funded by a 10-year grant from the Rockefeller Foundation to the Graduate School of Public Health's Department of Occupational Health that two of its faculty, Herman Cember and Al Spritzer, had proposed. Coming from the focus on the HPS at ORNL, I could see the potential value of the Pittsburgh Chapter for our new academic program.

"At that time, the original Pittsburgh Chapter was expanding to a catchment radius of 200 miles, to become the Western Pennsylvania Chapter.

"As such it had 54 charter members from academia including Pitt and Carnegie Institute of Technology; industry including Nuclear Materials and Equipment (NUMEC, first commercial plutonium facility and uranium reactor fuel fabrication plant), Nuclear Science and Engineering (NSEC, isotope sources), Westinghouse (W)-Bettis Atomic Power Lab (Navy reactors), W Astro Lab, W Cheswick Atomic Fuel Division, W Test Reactor (WTR), and Duquesne Electric Co. (first commercial nuclear power plant at Shippingport, Pennsylvania); and government including Admiral Rickover's Pittsburgh Naval Reactor Operations AEC Office and the Pennsylvania State Health Department's Radiological Health Section, etc.

"Among those involved in the 1961 startup of the chapter were Frank Bradley, Allen Brodsky, and Ed Durkosh (Pitt) from academia and Bob Gallaghar (NSEC), Bob Catlin (WTR), Gene Barry (W), Wayne Bickerstaff (W), and Jack Allingham (Duquesne) from industry. My role was to be an active member, provide university facilities, encourage our faculty and graduate students to participate, and recruit members from among the medical physicists and physicians of our medical center and other local hospitals.

"A major benefit of the Western Pennsylvania Chapter was the facilitation of communication among the academic faculties and graduate students, the burgeoning nuclear power industrial suppliers and users, and the government and commercial radiation safety regulators and program operators."

According to E.D. Durkosh's 1972 *History of the Western Pennsylvania Chapter Health Physics Society*, the first meeting of this expanded chapter was held 5 April 1961 and the officers that year were President Robert J. Catlin, President-elect Robert G. Gallaghar, and Secretary-Treasurer Eugene V. Barry.

Over the years since its start, members of the Western Pennsylvania Chapter have authored or coauthored a significant number of articles or topics for presentation in technical journals, books, magazines, etc.; have been prominent in publicity aspects of the health physics profession by participating in newspaper, radio, and television commentary; and have made presentations at colleges, high schools, Parent Teacher Association meetings, scientific exhibits, etc., for the purpose of promoting in the Pittsburgh area fellowship programs, career opportunities in health physics, peaceful applications of nuclear energy, and general discussions of radiation safety associated with the use of nuclear material.

Savannah River

Bill Reinig arrived at the Savannah River Plant in Aiken, South Carolina, in 1951, a few months after the start of construction. He headed a small team of scientists who conducted the first comprehensive preoperational surveys of environmental radioactivity. As a manager, he favored and promoted the start of the Savannah River Health Physics Society because it would provide an opportunity for the site's health physicists to hear and meet nationally recognized experts and to meet fellow health physicists from across the 300-square-mile plant. Reinig used the hand-written secretaries' minutes from a half century ago—found and photocopied by Kelly Crandall, the current president of the Savannah River Chapter—to compile a short history of the beginning of the chapter:

Bill Reinig

"In the 1950s, most health physicists were employed at atomic energy sites. It was a small universe with an effective communication grid. The leaders of radiation protection programs at these sites knew each other, and some were close friends. For example, Pat Patterson and Karl Morgan were colleagues at the start of Oak Ridge and Jack Healy, Bill McAdams, and Carl Gammertsfelder and Pat Patterson were colleagues at Hanford. Most of us knew from them in the mid-50s that there was a rumbling of interest in establishing a national radiation protection organization.

"At about the same time, but not connected in any way with the possible formation of a national society, a group of health physicists at the Savannah River Plant started to talk about forming a dinner and lecture club. We held our first meeting on 7 February 1956. We decided to call ourselves the Savannah River Health Physics Society.

"We met about every three or four months either in Augusta or Aiken. Among the interesting speakers we heard before we became a chapter included Elda Anderson, Karl Morgan, and Fred Cowan. Besides these health physicists, we heard from DuPont managers like Bill Overbeck, who was responsible for the instrumentation at the Stagg Field reactor and was there at its startup. Each year about four or five members attended the annual meeting of the Health Physics Society, and they would tell us about interesting papers they heard related to their specialties.

"Besides meetings, we would hold typical chapter events like dances and picnics and would judge science fairs. But the membership continued to be only Savannah River people since there were no other nearby health physicists.

"At the 12th meeting of the group, we began to talk about becoming a chapter of the Society. At the next meeting, on 18 November 1958, Pat Patterson led a discussion on the pros and cons of becoming a chapter. A committee was appointed to inform and poll the members. On 3 February 1959, at our 14th meeting, the results of the vote were announced: 92 members voted yes, become a chapter, and 4 voted no. Then, we started to prepare our application and the necessary bylaws.

"The Savannah River Health Physics Society was in business almost four years before it became a chapter so becoming a chapter was no big deal for us. All we had to do was change our name and write new bylaws.

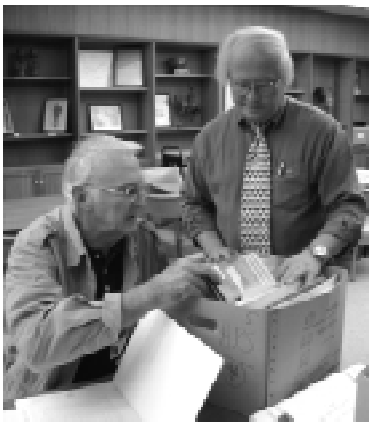
"Our application was accepted on 17 June 1959. On 15 March 1960, Elda Anderson presented the charter to the chapter and spoke about the functions of a chapter. Actually, the form and functions of the chapter continued to be the same as they were in the pre-chapter days.

"Several interesting aspects of the pre-chapter (and the chapter) membership—we all worked as health physicists at the Savannah River Plant. With only a few exceptions most members were in their 20s. The operation of the plant, with all its radiation challenges, had just begun. The members had considerable enthusiasm and energy to take on any task. For them, starting the Savannah River Health Physics Society and changing into a Society chapter were easy.

"One point I should make was that Pat Patterson, who was superintendent of the Health Physics Section (and the boss of everyone in the chapter) made it clear from the very beginning that the senior managers of the department should not be officers of the chapter. He wanted the chapter to be free of any management influence.

"Beyond the chapter's involvement in the Society's symposia, the chapter in January 1968 sponsored an international meeting on environmental surveillance in the vicinity of nuclear facilities with attendees from eight nations. This was at the threshold of an era of rapid proliferation of nuclear power stations in the United States and abroad. The session chairmen included health physics notables like Dade Moeller, John Harley, and Merril Eisenbud. The proceedings are still frequently cited.

"I believe that chapters are the heart and soul of the Society. They provide the leaders for the Society and for many members, particularly those who don't (or can't) attend annual or midyear meetings, the chapters are the Society."



Thank you to Bill Eigelsbach (right) of the Archival Center for Radiation Science at the University of Tennessee in Knoxville and to Chuck Roessler for sifting through boxes of files in the HPS Collections at the Archival Center. The information in many of these files that was used to help piece together information about the beginnings of HPS chapters included minutes from Board of Directors meetings, 1956-1962; *History of the Health Physics Society*, by Ron Kathren, June 1972; *A History of the Eastern Idaho Chapter of the Health Physics Society*, by Denzel K. Jensen, presented 3-31-67; *History of the Western Pennsylvania Chapter Health Physics Society*, by E.D. Durkosh, chapter historian, 5-15-72; *History of the Baltimore-Washington Chapter, HPS*, by John Taschner; and many other notes, newsletters, and letters.

Correspondence

LNT Once Again

Ralph H. Thomas
Moraga, California

In April 1996 I remember sitting in the Hofberg Palace listening to Dan Benninson delivering his Sievert Lecture titled "Risk of Radiation at Low Doses." I cringed as he suggested that the scientific efficacy of the linear no-threshold (LNT) dose-effect model was comparable with that of Newton's Laws of Motion. The published text is more restrained but I was not the only person shocked by the spoken word. Afterwards I compared notes with a member of the US Nuclear Regulatory Commission who agreed that the statement had been egregious. This episode speaks to the schizophrenia that is widespread at the highest levels within the radiological protection community as to the proper status of the LNT model in the scheme of radiological protection.

Those of us who live in California are used to earthquakes. Nevertheless it is only with hindsight that we can discriminate between a precursor, the main earthquake, and the aftershocks. It is my judgement that we have had a few precursors that may shake up our views on LNT.

BEIR VII (Phase 2) is now with us for all to read and the September issue of *Health Physics News* properly covered the event. There are, however, already signs of dissent from both within and outside the United States.

From the Department of Energy we have Raymond Orbach's letter to the president of the National Academies expressing disappointment with the report's shortcomings, in particular with its failure to address recent relevant research:

> ". . . new and exciting biological research has been published demonstrating that cells in tissues respond very differently to radiation than isolated cells in culture and that cellular responses to low doses of radiation are very different from responses to high dose of radiation. . . . Biological mechanisms are now known to exist . . . to repair the damaged cells, and to suppress tumorigenisis."

From France we have Tubiana and Aurengo's recent paper (2005) in the *International Journal of Low Radiation* titled "Dose-Effect Relationship and Estimation of the Carcinogenic Effects of Low Doses of Ionizing Radiation," which contrasts the conclusions of the slightly earlier Joint Report of the Académie des Sciences (Paris) & the Académie Nationale de Médecine with those of the BEIR VII Report. They write:

> "(In contrast with the conclusions of) the French Academy's report, the BEIR 7 report, ----, concludes that the linear no-threshold relationship (LNT) should be used for assessing the carcinogenic risks of low or very low doses. Since both reports rely to a large extent on the same data, the causes of this disagreement needs to be investigated."

The paper by Tubiana and Aurengo discusses this difference in interpretation.

In my judgement the discussion on LNT is about to move to a higher level within the radiological protection establishment. The credibility of the International Commission on Radiological Protection might be shaken. Open discussion is to be enthusiastically encouraged and I do so hope that *Health Physics News* will be part of it.

Reference

Tubiana M, Aurengo A. Dose-effect relationship and estimation of the carcinogenic effects of low doses of ionizing radiation. International Journal of Low Radiation 2(3/4): 134-151; 2005.

Inside the Beltway

David Connolly
Washington Representative
Capitol Associates, Inc.

As I have revealed to you before, I have had this lifelong desire to become a scientist but, alas, have no ability to achieve that goal. Therefore, please excuse my reference to the book *Jurassic Park* as a basis for a scientific theory. In the book and the movie of that name, a "scientist" refers to the "chaos" theory of evolution or change. Over the past few weeks I have been tempted to go back and reread the description of this theory in the book to see if it has any relevancy to Washington, DC, over the past few weeks!

At one time in September, there were so many headline-grabbing events happening in the nation's capital, it was hard to keep them all straight or try to fit them into some kind of orderly pattern. In other words, there was a bit of political "chaos" afoot in DC. As I have said before, we sometimes forget that Senators and Members of Congress are people too and that they themselves do not have all the answers as to the reason for events. Walking around the halls of the capitol, many legislators looked and spoke with as much confusion as you or I in trying to decipher such events as the Katrina devastation, the responding FEMA (Federal Emergency Management Agency) breakdown, the Representative Tom DeLay indictment, the Senator Bill Frist stock controversy, the initial rush to spend money on New Orleans, and then the attempts to turn off the federal money spigot on disaster relief. And that was only September! Once October rolled around we had the Harriet Miers nomination and withdrawal, the indictment of Irv Lewis "Scooter" Libby, the nomination of Judge Samuel A. Alito, Jr., to the Supreme Court, the Republican leadership question in the House, the possibility of pandemic flu, and the intense budget battles in both chambers.

After a time politics, like Mother Nature, does have a way of sorting things out and this process is beginning to happen in Washington. If for no other reason, it appears that the Senators, Members, and staffers are becoming more adept at being able to handle these myriad issues simply because they are out there and have to be dealt with by the Congress. Now when questioned about the variety of these newsworthy stories, the legislators seem comfortable in answering questions on any of these topics. More importantly, the legislative machinery of the Committees in both the House and the Senate is working as intended to examine these particular areas and then make a response to them. Accordingly, the facts and stories attributed to these events are being thoughtfully reviewed with both possible consequences and possible solutions being discussed and evaluated. In essence, the real net effect of the variety of events is that Congress will have to stay in session longer than originally planned. Instead of being home well before Thanksgiving, it now appears that Congress will be doing its Christmas shopping in Washington and not back home. Unlike the voyagers to Jurassic Park who had to flee the island to escape the chaos of the dinosaurs, the Washington community is rolling up its sleeves and going to work to deal with the varied situations that have arisen this fall.

Chapter News

Florida Chapter

Kimberly A. Kantner

The Florida Chapter of the Health Physics Society (FCHPS) nominated two of the three recipients of the first annual HPS Student Science Award. Brian Birky, PhD, of the FCHPS, assisted two brothers, Forest and Kelly Foxen, in developing their individual science fair projects and shared the details of these with the FCHPS membership at our spring 2005 meeting. The FCHPS members present at that meeting then gave their unanimous consent for both of these projects to be nominated to the HPS Awards Committee for consideration.

Forest and Kelly both attended our FCHPS fall meeting on 30 September, along with their father and school science teacher, where they delivered PowerPoint presentations of their respective projects to the general membership. Both of these students portrayed their hypotheses, methods, and conclusions in an interesting, professional, and succinct manner. It was a rewarding experience for all in attendance. Immediately after both presentations, HPS President-elect Brian Dodd, PhD, gave Forest and Kelly their certificates and checks. We were all very appreciative of the work of these two students and Brian Birky, as well as to Brian Dodd and the HPS for their acknowledgment of these efforts.

Left to right, HPS President-elect Brian Dodd, Forest Foxen, Kelly Foxen, and FCHPS President J. Wesley Nall

The following statements describing the projects are from the 2005 HPS Awards Banquet brochure:

> *Forest Foxen was an 8th grader who studied phytoremediation on mined phosphate lands by comparing the potential of different plants to uptake and concentrate radium. He won first place in the environmental category for the science fair at his school, best overall in life sciences, first place again in the environmental category and the grand prize at the regional competition, and fifth place in the environmental category at the state finals.*
>
> *Kelly Foxen, Forest's brother, was a 6th grader. He looked at radium uptake in two species of mussels living in phosphate pit lakes compared with those living in natural lakes. He almost beat his older brother in the environmental category at their school, but had more difficulty presenting his results. Consequently, he was first runner-up.*
>
> *Both projects generated new information about technologically enhanced natural radioactivity in our environment.*

South Texas Chapter

Largest STC Student Paper Meeting

Kenneth Krieger, CHP

The South Texas Chapter (STC) April 2005 meeting, held in Waco on the Texas State Technical College (TSTC) campus, had the most student presentations to date. There were a total of 25 presentations by students from Texas A&M University (TAMU), University of Texas Health Science Center at San Antonio (UTHSCSA), and TSTC. The papers ranged from the analysis of tattoo ink to the neutron activation analysis of paint.

Our own Mike Charlton from the UTHSCSA gave the lunchtime presentation titled "The Future of Professional Development for Health & Safety Practitioners." Because this was a meeting that focused on students, it was a very relevant topic and gave insight into the directions that a student might take.

After the presentations, the judges tallied their scores and announced the winners of the R.D. Neff Student Paper Award. Three awards were given: one each in associate, undergraduate, and graduate categories. The Neff Student Paper Awardees were:

- Ashley Ellis and Daniel Savage (TSTC) presenting "Did Someone Call for Backup? The Case of the Unidentified Source" in the associate class
- Arjun Ghosh (TAMU), "Gamma Spectroscopy of Various Diets," in the undergraduate class
- Jennifer Watson (UTHSCSA), "PET/CT Shielding Considerations for a University Hospital," in the graduate class

At the business meeting, the results of the STC elections were announced. The new president-elect is Jim Sharp, the new treasurer-elect is Stacy Krieger, and the new member of the Board of Directors is Al Evans.

STC President Ken Krieger (right) bids a fond farewell to STC Past President John Salsman.

Following the business meeting and as his last official order of business, President John Salsman thanked everyone for a good year. First order of business for incoming President Ken Krieger was to present John with the Past President's Plaque and to thank him for his outstanding service to the Chapter. Ken also congratulated the winners of student presentations and welcomed STC's newest officers.

North Central Chapter

BEIR VII Article Reviewed

The North Central Chapter Health Physics Society (NCCHPS) hosted National Academies Board on Radiation Effects Research Director Evan Douple at its 28 October 2005 meeting in St. Paul, Minnesota. Dr. Douple, the Chapter's Wissink Memorial Lecturer, presented a paper on the BEIR VII - Phase 2 Committee Report. Shown here are Douple (left) and Kelly Classic reviewing the BEIR VII article that was published in the September 2005 *Health Physics News*, page 5.

A summary of the NCCHPS October meeting will appear in the January issue of *Health Physics News*.

Committee and Section News

Nominating Committee

Paul S. Rohwer, Chair

Call for Officer Nominations for 2007

The **Nominating Committee** is calling for nominees for the next Health Physics Society (HPS) election. The ballot positions to be filled are **President-elect**, **Treasurer-elect**, and **three members of the Board of Directors**. These officers, to be elected in late 2006, will take office during the 2007 HPS Annual Meeting.

Any member of the HPS may make a nomination; however, the nomination is stronger with chapter president, section president, and HPS committee chair recommendations or endorsements. The nomination must include a biographical sketch describing the nominee's applicable training, experience, and past activities as well as an explanation of why the person is being nominated. It is recommended that nominees for President-elect have previous Board experience. In making a nomination, please determine that the individual is willing to be considered as a nominee and will serve in office if elected.

A detailed description of the nomination process can be found in the Operations Section in the Members Only area of the Web site.

Nominations should be emailed to Paul Rohwer, chair of the Nominating Committee, at paulsandyr@ aol.com, faxed to Paul at 865-425-0234, or mailed to Paul at 989 West Outer Drive, Oak Ridge, TN 37830 no later than **1 March 2006**.

Power Reactor Section

Carl Tarantino, CHP

Request for Nominees

In early 2006, ballots will be mailed to all Power Reactor Section (PRS) members requesting your vote for a new President, Treasurer, and three Board of Director members. The terms will commence at the 2006 annual PRS Executive Board meeting which usually coincides with the Nuclear Energy Institute Health Physics Forum that is held in July of each year.

The president serves a two-year term and then advances to the office of past president for an additional two-year term, while the treasurer and members of the Board of Directors each serve four years.

Any PRS member interested in running for one of these offices or interested in nominating someone should contact one of the following Nominating Committee members: Chairman Doug Noble, 419-321-7780, dlnoble@firstenergycorp.com, or Cochair Carl Tarantino, 804-273-3068, carl_tarantino@dom.com.

We invite you to consider supporting the PRS as an active member of the Executive Board.

Providence 2006 Beckons with New England Hospitality

Tara M. Medich

Mark your calendars if you haven't done so! The 2006 Annual Meeting of the Health Physics Society will be held at the Rhode Island Convention Center in Providence 25-29 June. The Convention Center and the connected host hotel, the Westin, are right in the middle of a beautiful city that encourages visitors to explore the treasures it has to offer.

One of the repeat quests upon which a visitor must embark is the search for food. Who can resist the urge to indulge after a day of technical sessions and vendor displays, maybe a Professional Enrichment Program course or two? Providence has what you are looking for, and you don't have to look far. One glance around a few choice downtown neighborhoods will have you in the throes of gustatory delight.

Italian cuisine, ever popular, thrives in the Federal Hill neighborhood. These restaurants, reminiscent of "the old country," have some of the best food in the city. This is a popular area, so make a reservation at one of the eateries or get there early. Feeling a little more casual, perhaps? A pub or diner will be easy to find. In the mood for something spicy, say Mexican or Cajun? No problem. A perfect steak? Sure!

Let's not forget the seafood. Summertime is the perfect time to enjoy a lovely seafood dinner *al fresco*, seated waterside. Procured locally, it just doesn't get any fresher. What could be a more perfect way to end a day?

Edwin A. Bemis, Jr., CHP
1919–2005

Sandy Geoffrion
Tom Buhl, CHP

Edwin A. Bemis, Jr., passed away 14 July in Los Alamos, New Mexico, following a year-long battle with cancer. Ed was one of our pioneer health physicists, working in health physics at Los Alamos National Laboratory (LANL) (then Los Alamos Scientific Laboratory-LASL) for 33 years. He was a founding member of the Health Physics Society and one of the first 100 health physicists certified by the American Board of Health Physics. Ed was also an accomplished musician and an invaluable and often-recognized citizen of the Los Alamos community.

As a health physicist at LANL from 1947 to 1980, Ed had a special interest in the dosimetry and measurement of external radiation. He had a key role in the development of the LANL personnel dosimeter, which was then based on film, and later on thermoluminescent dosimeters. Ed participated in the design of pocket dosimeters and survey instruments and wrote a review article for the 1956 Hine and Brownell publication *Radiation Dosimetry* (Academic Press, New York: 1956). He also coauthored an early report on neutron dose-rate measurements near the Godiva II critical assembly at LANL.

Ed was heavily involved in LANL projects at the Nevada Test Site and participated in the testing program at Enewetak. Much of the work involved the measurement of fallout from the test clouds. According to his daughter, Sandy, he described his experience at Enewetak as interesting and professionally rewarding, but island living as "rustic." Ed was interested in explaining health effects of radiation to the public and regularly gave talks on radioactive fallout. He was a member of the Los Alamos Civil Defense Board.

Jerry Dummer, CHP, former group leader of LANL's occupational health physics program, noted how Ed was very helpful to him as a young health physicist arriving at LANL in 1953 and how Ed helped in the early edition of the LASL monitor's handbook that Jerry was preparing. Ed was very knowledgeable about radiation detection instrumentation, not only in its design but, of course, in its ongoing operation. Jerry said that if anyone "had anything to be fixed, Ed always got the job."

Ed was born 5 November 1919 in Littleton, Colorado, the son of Edwin and Katherine Bemis. Ed studied undergraduate and graduate physics at the University of Colorado, where he taught physics to Navy fliers; played clarinet, trombone, and piano in a dance band; learned to pilot a biplane; and competed in a national biplane competition sponsored by Jimmy Doolittle. He was a talented classical musician as well, in voice, piano, and pipe organ.

After serving from 1944 to 1946 in the Navy in the South Pacific and Japan, he returned to the University of Colorado and then came to Los Alamos in 1947, when the streets were still paved with mud.

In addition to his professional work at LANL, Ed was very involved in serving the community of Los Alamos. In the arts, he was president of the Arts Council, a founding member of Coro de Camara, president of the Choral Society, president of the Los Alamos Concert Association, president of the Los Alamos Student Concert Association, and a member of a two-piano, four-hands group and he sang with various local groups.

Ed participated in the founding of several of the community's mainstay organizations. To name a few, he was a founding member and president of the Los Alamos Historical Society and a founder of the family YMCA. He was a member of the first Los Alamos Charter Commission, and he helped found the Triangle Club for AA members. Ed was a member of the architectural planning committee for Los Alamos Library and, as a member of its endowment committee, he helped to establish the Library Endowment Fund. He received the Governor's Certificate of Appreciation for Outstanding Volunteer Service in 1983.

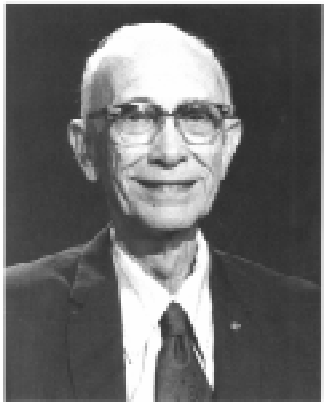
In 2001, Los Alamos conferred its highest honor upon Ed, that of "Living Treasure," in recognition of his many years of community service.

Ed was married for nearly 50 years to Darleene Christensen, who passed away in 1995. He is survived by his daughters Christen Howell, New Mexico, M' Lou B. Stevens and her daughter, Washington, DC, and Sandy Geoffrion, New Mexico.

J. Newell Stannard
1910-2005

William J. Bair

James Newell Stannard, PhD, passed away peacefully with his family by his side 19 September 2005 in San Diego. Dr. Stannard was respected and admired by all who knew him and loved by those close to him. His contributions to radiation protection began in 1947 at the University of Rochester's Atomic Energy Project, a remnant of the Manhattan Project. He continued to be active, offering his wisdom on current radiation protection issues, until he entered the hospital shortly before his death.



Much has been written by Newell and about him in *Health Physics News*. Most recently, the July issue included an interview of Newell conducted by Bruce Boecker, which included an introduction by Mary Walchuk describing Newell's accomplishments and honors.

Rather than repeat much of that information, I will focus on the life of Newell, who became one of the most respected members of our profession. This spring Newell completed his memoirs, a beautifully written 131-page life story of a very exceptional person. This has been helpful to me in relating some of his early life.

Newell was born 2 January 1910 in Owego, New York. His parents were high school teachers; his mother taught Latin and his father, Greek. After Newell was born, the Stannards moved to Brooklyn where his father taught chemistry at the Adelphi Academy and Adelphi College. Newell's elementary education was in the public schools, where he enjoyed singing and learned to play the violin. For high school, he went to Boys School, where his father taught chemistry. Boys School was strictly academic, strong in the classics, science, mathematics, and music. Newell was active in the Sunday School of the Flatbush Congregational Church, played in the Sunday School orchestra, and was a Boy Scout. Newell had a younger brother, Robert, born in 1918. His father taught classes at night to supplement their income and allow them to indulge in some of the cultural offerings of New York City and to spend summers in New England and the Adirondacks.

Newell graduated from high school at midterm in 1927. For several months before he started college he worked as a bank messenger. This experience on Wall Street convinced him that business college was not for him. He decided to go to Oberlin College in Ohio where his father had graduated in 1900. Oberlin was a 2,000-student liberal arts college with a good reputation in the sciences. The small town of Oberlin and the small student body was a big change for the New Yorker. He was homesick the first semester and barely made it back after the Christmas break. One of the courses Newell took was ecology, probably a rare offering at that time. He majored in biology and chemistry and graduated Phi Beta Kappa in 1931.

While at Oberlin, Newell was accepted as a medical student at the University of Rochester School of Medicine and Dentistry. However, these were the depression years and, feeling he had been enough of a financial burden on his family, he declined. In his memoirs, Newell suggests he might have been less interested in medical school than being in Rochester, the home of a young lady he had met. She was Grace Kingsley, his future wife.

His mentors at Oberlin suggested he take a year of graduate study before he committed himself to science or to medicine. So he enrolled at Yale University as a special graduate student taking classes in chemistry and biology. At the end of the year, he turned down an assistantship at Yale and accepted one in the Department of General Physiology at Harvard, where a new biological institute had been built. In the fall of 1933 he began his studies at Harvard and in 1934 completed his MA degree in general physiology. He continued his graduate studies at Harvard, conducting research under Dr. Theodore Stier, who was interested in metabolic processes in microorganisms. His thesis was "Rate Limiting Metabolic Processes in the Yeast." In 1935 Newell completed his PhD, also in general physiology (biophysics).

For employment, Newell was attracted to the medical school at the University of Rochester because of its reputation and the fact that Grace Kingsley lived in Rochester. Dr. Wallace Fenn, professor of physiology, hired Newell as an assistant in physiology with a salary of $900 per year, $3,000 the third year. Newell and Grace were married in the summer of 1936. With Grace teaching school, they were doing quite well for the late 1930s.

In 1940 Newell and Grace decided a change in scenery would be good for both of them and he accepted a position as assistant professor in the Pharmacology Department at Emory University Medical School in Atlanta. This was only to last through 1941 since World War II was ramping up.

Newell knew he would be involved in the war effort. Soon after Pearl Harbor he accepted a civilian appointment with the Public Health Service as a pharmacologist.

By Christmas the Stannards had moved to Bethesda, where Newell began work in the NIH Division of Industrial Hygiene on a Navy project involving personnel exposures to carbon monoxide from aircraft engines on carriers. Soon, the Navy decided that since they were doing classified work Newell should be a naval officer. He was commissioned a lieutenant senior grade and continued with essentially the same work, but was now assigned to the Navy's Bureau of Medicine and Surgery. Later during the War, Newell worked on toxic gases associated with the Navy's jet-assisted take-off (JATO) engines. He would have remained in the Navy after the war had the Navy shared his research interests. Instead, Newell returned to his position at the National Institutes of Health where he worked on Cytochrome C.

After presenting the Third Herbert M. Parker Lecture, "Some Health Aspects of Nuclear Energy: Who Minded the Store and What Did They Do?" with Bill Bair (his first graduate student), Richland, Washington, 1988

In 1947 he learned that the Atomic Energy Project at the University of Rochester, which had worked extensively on uranium toxicology and also on radium, radon, polonium, and plutonium during the war years, was going to set up a graduate program in the new field of atomic energy. He expressed interest and became assistant director for education of the Atomic Energy Project and assistant professor of radiation biology. The Stannards moved back to Rochester, this time with Susan, who had been born in Bethesda in 1942.

Newell was hired primarily on the premise the Atomic Energy Commission (AEC) would initiate graduate programs when it took over from the Manhattan Engineer District. By October 1948 the "Technical Fellowships in Radiological Physics" program had been established and administered by the National Academy of Sciences. The University of Rochester and Brookhaven National Laboratory were selected to train one group of Fellows, Brookhaven to provide on-site training after a year of classroom and laboratory classes at the University of Rochester under Newell. Vanderbilt and Oak Ridge National Laboratory were paired to train a second group under Elda Anderson. The students began arriving in Rochester in November to no classrooms, no teaching labs, etc. It was Newell's responsibility to deal with the situation.

Although he had been introduced to radioactive tracers before the war by Dr. Fenn, he knew very little about radiation and radiation effects. His broad training in general physiology (biophysics) and pharmacology and his military research experience probably helped him gain an early grasp on this new field. It was called radiological physics by the National Academy and the AEC, but it was already being called health physics in the Manhattan Engineer District. Newell was not only a scholar, but he was well organized, resourceful, and compassionate, all qualities important in assisting the Fellows in getting established with housing and enrolled in classes. Having been a Navy officer helped him establish rapport with the students, most of whom were World War II veterans. His office, with Rose Sternberg as his secretary, will be fondly remembered by all of those early Fellows.

During this first year a full curriculum was established. Newell taught a course, "Biological Effects of Radiation." Other members of the staff of the Atomic Energy Project developed courses in instrumentation, monitoring, physics, toxicology, pathology, genetics, personnel dosimetry, counting, etc.

Grace and Newell on a boat in Puget Sound, Seattle, 1985

Newell guided the education of hundreds of students who are now or have been among the leaders in the health physics profession. Most of the students arrived at Rochester on a National Academy of Sciences and later an Atomic Energy Commission Fellowship. Other students were from the several branches of the military and many came from abroad. Initially, only master's degrees in radiation biology were offered. PhD degrees were offered in biophysics and in the medical school disci-

plines, but none in the radiation sciences, so Newell began an effort to establish the world's first PhD program in radiation biology. Newell was a wonderful mentor for a graduate student. He provided just the right amount of guidance so that our research was clearly our own, but we couldn't go too far astray.

As a leader in the education of health physicists and radiation biologists, Newell chaired and served on several educational committees with Elda Anderson and others who helped to expand the health physics fellowship program from two to 17 universities and from two to nine national laboratories. Newell estimated that the AEC awarded about 3,300 fellowships in nuclear energy.

Newell's contributions to radiation protection were not confined to education. He carried on an active research program which provided a basis for the training of his graduate students. They benefited from his interests in understanding the basic mechanisms involved in radiation effects on living tissue and from his work on polonium.

In the mid-1950s, with the graduate training program well established, Newell became head of the Radioactive Inhalation Section in the Pharmacology Division. This was his first large research program. He and colleagues developed a facility for safe and controlled exposures of animals to aerosols of alpha-emitting radionuclides. This "Alpha Lab" was a model for facilities built at Hanford for studies of plutonium and later at the Lovelace Foundation in Albuquerque for fission product studies.

In 1955 through 1957, Newell was project director of field studies for the AEC and the military to understand the potential for inhalation of radionuclides released to the environment. Robert Thomas, Newell's second graduate student, was a program director on these studies.

From 1959 until he retired in 1975, Newell was associate dean for (all) graduate studies in the University of Rochester School of Medicine and Dentistry. This greatly expanded his administrative responsibilities and decreased his research activities. He also held an appointment as professor of radiation biology and biophysics and of pharmacology and toxicology.

At age 65, in 1975, Newell had to take mandatory retirement. In 1977, after assessing their options, Newell and Grace decided to move to San Diego. Grace had suffered a stroke in 1971 during the time Newell was president of the Health Physics Society (HPS), so they had already experienced the disadvantages of a wheelchair existence during a snowy Rochester winter.

Helena and Newell with his "Big Red Book"

Further, they had visited their daughter, Susan, and family in the San Diego area and enjoyed the pleasant and healthful climate. Newell accepted an appointment as adjunct professor of community medicine and radiology at the University of California, San Diego, School of Medicine in La Jolla. This gave Newell a base of operations, relatively close to his home and Grace, from where he pursued his interests with the National Council on Radiation Protection and Measurements (NCRP), authored papers, and gave occasional lectures. The San Diego Chapter of the HPS, led by Marty McDougall, essentially adopted Newell as one of its own. Marty made certain that Newell's knowledge and experience were utilized throughout southern California. In 1993 Newell was similarly adopted by the Northern California and Sierra Nevada Chapters, with Marcia Hartman leading the organization of the J. Newell Stannard Lecture Series, in which an invited lecture is given annually in April at a combined meeting of the two chapters.

As soon as it was possible after her stroke, Grace accompanied Newell on much of his travel and this continued after they moved to San Diego. They were both greatly admired and respected for this because of the special effort it required. Grace began to have new health problems and passed away in 1991. Newell never thought he would remarry, but Helena Woodhouse changed his mind. They were married 24 January 1994. Not surprisingly, Newell was again adopted; this time by all of Helena's extended family. They and Newell's family have a close and very supportive relationship.

Newell was an author or coauthor of more than 150 publications. His truly major publication was *Radioactivity and Health–A History*. It was published in 1988 when he was in San Diego. In this 2,000-page scholarly volume, Newell accumulated and distilled nearly all of the world's knowledge of the health and environmental aspects of radionuclides.

Newell served on and chaired numerous commissions and committees of the National Academy of Sciences and of the Atomic Energy Commission and other agencies. He was a longtime member of the NCRP. His contributions to the NCRP are described in a beautiful memoriam by Dr. Warren Sinclair, past president of the NCRP. It is published on the NCRP Web site (http://www.ncrponline.org). Newell was elected an honorary member in 1979 and gave the 14th Lauriston S. Taylor Lecture, "Radiation Protection and the Internal Emitter Saga," in 1990.

Newell was outstanding as a committee chairman. He always had well-organized agendas and kept meetings progressing without offending those who were prone to verbosity. He was a welcome banquet speaker, giving very scholarly and thought-provoking presentations. He was an effective member of scientific committees. Regardless of the purpose, he was always well prepared.

Newell is a past president of the HPS, which honored him with the Distinguished Scientific Achievement Award, the Founders Award, and Life Membership. In 2003 he was honored by a special session at the 23rd Annual Meeting of the Society in San Diego and the September 2003 issue of *Health Physics* was offered in tribute to him. Newell was a member of several other scientific and professional societies and was a Fellow of the American Association for the Advancement of Science.

In addition to his teaching and research, Newell was also a strong voice in elucidating important issues and formulating radiation protection practices. Although his focus was mostly on radionuclides, he added his wisdom to broader issues such as the contentious linear no-threshold concept: ". . . it may be somewhat naïve to expect with the complexities of biology that a single dose-response relationship would emerge the winner. This 'one-size-fits-all' process is not truly excellent radiation protection. . . ." ("On Excellence in Radiation Protection" remarks for the seventh J. Newell Stannard Lecture series at Lake Tahoe, 10 April 1999, The *Newsletter* June 1999). Until the very end, Newell offered thoughtful comments about the present and future direction of radiation protection and of the HPS. Although, as he said, he missed being a charter member by one year, he has been untiring in his support of the HPS.

Newell's interests always included music. He enjoyed singing in choirs and played the violin, mostly for his own pleasure after his high school days. He played tennis when he was young and, later, a little golf. With both Grace and Helena, he enjoyed dancing and cruises.

I had the wonderful and unusual privilege of knowing Newell for almost exactly 56 years, beginning in September 1949 as my teacher and professor at the University of Rochester and continuing through the years as my mentor, professional colleague, close friend, and confidant. He was close to our family. He set remarkable examples for me and others in his approach to science and life. His kind demeanor, sense of humor, consideration for others, honesty, scholarship, integrity, mentoring, and exceptional communication skills are all worthy of emulating. He was mild tempered and patient but could be firm. We have all been blessed by Newell's long life. For all these years he had become a permanent part of our lives at meetings, in our homes, on the phone, and lately by email. As much as we will miss that, his place in our lives will never be forgotten. He was an exceptional human being, a true gentleman, and a scholar.

Newell is survived by his wife, Helena, and her daughters, Dianne Eppler and husband Ted, Bonnie DesRosiers, and Brenda Hanisee and husband Pat; by his daughter, Susan Frazier and husband Jack; by his granddaughter, Christy Malloy and husband Phil; and by his brother Robert and wife Lettie. Newell's and Helena's combined families number six grandchildren and 11 great-grandchildren. Newell is also survived by Helena's niece, Valerie Hoskins, a longtime caregiver to Grace, Newell, and Helena.

Newell and five of his students*, who went on to become HPS presidents, with other HPS past presidents at the 2003 HPS Annual Meeting in San Diego. Front row left to right, George Anastas, Paul L. Ziemer, Dade W. Moeller, William J. Bair*, J. Newell Stannard, Bryce L. Rich, Genevieve S. Roessler, John A. Auxier; back row, Keith H. Dinger, Frank Massé, Charles B. Meinhold*, Marvin Goldman*, Otto G. Raabe*, Ronald L. Kathren, Paul S. Rohwer*, Raymond H. Johnson, Jr., Richard J. Vetter, Keith J. Schiager, Kenneth L. Mossman

The ICRP: A Look Forward

Ralph L. Andersen, Associate Editor
Health Physics News

In July 2005, Dr. Lars-Erik Holm became the 11th chairman of the International Commission on Radiological Protection (ICRP). Dr. Holm takes the helm at a time of transition for the ICRP—the next generation of ICRP recommendations is being developed, a new process for public consultation is being implemented, and a new ICRP committee on environmental radiation protection has been established (see the accompanying guest article by Dr. Jan Pentreath on page 19).

I was able to catch up with Holm at his "day job," as Director General of the Swedish Radiation Protection Authority, to talk about the ICRP and the new recommendations.

Why is the ICRP undertaking a major revision to its general recommendations?

It's been some 20 years since the last set of recommendations (ICRP 60) was developed. Since then, our understanding of the risks, medical treatment, and biological and physical properties of radiation have all evolved.

Many of these advancements have been incorporated in post-ICRP 60 reports, but at times in a manner that is unnecessarily complex and not always in a fashion that is logical and coherent within the overall system.

This general update provides an opportunity to not only update the science, but also to better clarify the system and concepts—for people within our profession, as well as for people outside the field of radiation protection.

What is the overall aim of the new ICRP recommendations?

Overall, we want to continue to provide an appropriate level of protection for humans and the environment without unduly limiting the beneficial practices giving rise to radiation exposure.

The recommendations emphasize that first you define a level of dose (as a surrogate for risk) which represents the upper bound, or constraint, for controlling dose under a given set of circumstances, and then you optimize within the range below that value. Another aspect reflected in the recommendations is an attempt to try and better distinguish between the different situations involving radiation exposure than does the current recommendation of practices and interventions.

In either case, you should establish an upper value, above which you would always try to take action and below which you would always optimize.

In these recommendations, we also want to begin to expand the radiation protection system to include protection of the nonhuman species against ionizing radiation, whereas the focus up to now has been entirely on humans.

How has the ICRP's assessment of radiation health risk changed since the time of the ICRP 60 recommendations?

ICRP 60 recommendations are based primarily on cancer mortality data, while the new recommendations are based primarily on cancer incidence, adjusted for lethality. The estimated risk of cancer really hasn't changed much from the ICRP 60 values. What has changed is the genetic element in the overall risk assessment. We now consider the risk of hereditary disease over the first two generations after exposure, instead of the risk "at equilibrium," that is, up to 1,000 generations.

We think this approach is more robust and reflects improved quality in our assessment of health risk. The overall risk is estimated to be about 10% less than what we used in ICRP 60—about 6%/Sv for the general population and 5%/Sv for workers in the new recommendations versus 7.3% and 5.6%, respectively, in ICRP 60. We also have kept the dose and dose rate effectiveness factor (DDREF) at 2. While we are aware of the 1.5 value recommended by the BEIR VII committee, we believe that a value of 2 better reflects the level of precision (or imprecision) that is justified by the science.

In regard to estimates of noncancer health effects, these effects have been generally observed only at fairly high doses, for example, on the order of 1 Sv or more. The data available at present do not allow for the inclusion of any such effects into the estimate of detriment at doses up to a few 10s of mSv. But we continue to monitor develop-

ments closely. However, one risk element that is being carefully looked at is in regard to radiation effects on the lens of the eye. Subtle changes leading to cataracts have been seen at relatively low doses—on the order of 100 mSv, which is relevant, for example, for dose limitation for rescue workers after an accident or nuclear event. We plan to address this issue in a separate report.

The ICRP seems to be evolving its recommendations regarding the use of collective dose. Can you please elaborate on this?

The new recommendations recognize that collective dose is useful in many situations, for example, when simply comparing two options in the optimization process. However, a single collective dose value is not always sufficient for making radiation protection decisions. It often aggregates data too much and doesn't provide the necessary details about the who, the how, the when (in time), and the how much. The recommendations suggest dividing the collective dose into useful blocks of information, not necessarily a matrix, to better support optimization.

With this, we have also opened the door to giving more weight, for example, to relatively high doses and to doses that might occur in the near future—which we think is consistent with optimizing the application of resources to reduce expected or potential dose and to avoid accidents.

The draft recommendations contain an entire section on exclusion and exemption. What is the ICRP's underlying philosophy on applying these concepts?

In the new recommendations, we want to give guidance to help legislators and regulators define areas and situations where it isn't necessary to apply the system of radiation protection—because it is very unlikely to be justified within the concept of optimization. There is much precedent with this concept in terms of the exemption criteria already established for water, food, animal feed, and transportation. We are trying to define a generic approach to setting such criteria. We respect the difficulties in doing so, but we feel there is a need to try and simplify the overall system of radiation protection by more precisely defining the level at which the system should begin to apply. A draft paper on exclusion and exemption is currently undergoing review within the ICRP and should be published on our Web site (http://www.icrp.org/) for consultation later this year.

How is the ICRP planning to move forward with its approach to environmental radiation protection –that is, of nonhuman species?

I think I'll defer to the very fine write-up that Jan Pentreath has provided you on that topic (see page 19).

In developing the new recommendations, the ICRP is utilizing a Web-based consultation process. How is that working out?

This process is proving to be very successful. In fact, I'd say that there is "no way back" and that we will continue to build on this process. The process has enabled us to open a dialogue with different segments in society around the globe with a wide range of views. Of course, this openness may make life more complicated, but it also makes the end result much more robust and much more durable. What we discussed at our recent meeting in Geneva is that we'll update the various reports, the recommendations, and the foundation documents, taking into consideration the comments we've received. Following that, we'll describe how we addressed the general topics and issues raised in the comments and why. We'll provide that feedback on our Web site. I am confident that we'll do this as well with all of our draft documents in the future.

What is the current plan and schedule for completing and issuing the new recommendations?

The "foundation documents" that have already been made available in draft on our Web site for consultation are now being finalized for issuance early next year as separate ICRP publications. There are other reports still being drafted for eventual consultation via the Web site, for example, the report on exclusion and exemption.

The Main Commission plans to meet in March to discuss a complete, updated draft of the new recommendations. After some time to reflect the results of those discussions into the document, the updated draft will be made available on the ICRP Web site for another round of consultation later in 2006. This will likely mean that the new recommendations will be issued as a final ICRP publication in early 2007, but our focus is aimed at "getting it right," rather than "getting it quick."

As the new Chairman of the ICRP, what's at the top of your "to-do list?"

First, I want to bring the process of developing the new recommendations to a close, including gaining worldwide acceptance and implementation of these recommendations. Following that, I want to continue to help bring the ICRP into the 21st century, an effort started by my predecessor, Roger Clarke. That means making the ICRP a modern, open, and transparent organization that is more accessible to the global community. We need to look

internally to improve the way we operate and better focus our role and mission and look externally to help create a better understanding and a broader acceptance of what we produce in the form of reports and recommendations.

Is there anything else you'd like to share with our readers?

I would simply ask that those within our profession take a moment to reflect on how uniquely advantageous and valuable is our risk-management system in the area of radiation protection. We have a very coherent and robust structure for achieving global consensus that includes the science (UNSCEAR), the policy (ICRP), and the standards (IAEA) for use in developing national legislation and regulations and for implementation by the operators and practitioners. This system, which has its roots in the final years of the 19th century, has become especially refined over the past 50 years and has shown itself to be quite effective in assuring the protection of humans and the environment against ionizing radiation. That should be a source of pride to us all, as well as a source of inspiration to continue to look for new ways to improve and evolve the system of radiation protection.

Radiation and the Environment: The Role of ICRP Committee 5

R. J. Pentreath, Chairman
ICRP Committee 5

The effects of radiation on human beings are reasonably well understood. The objectives of the system of human radiological protection developed by the International Commission on Radiological Protection (ICRP) are therefore relatively straightforward: to manage and control exposures to ionising radiation so that acute effects are prevented and risks of long-term health effects are limited to acceptable levels. This system of protection is designed to operate across a wide range of operational circumstances, not only for those that are fully under normal operational control, but also for accidents and emergencies and for those situations where the environment is already contaminated because of previous events.

The success of this approach is partly due to the fact that all of the scientific information on exposures and effects with respect to human beings, supplemented by experimental studies on other animals, together with all of their errors and uncertainties, has been converted by the ICRP into sound pragmatic advice. This has also led to the evolution of a set of quantities that goes beyond the simple use of adsorbed dose, and all of it has been achieved via the development and use of "reference" values and models, based on a "reference" human being—Reference Man. This creature was created over 30 years ago and is still evolving.

Although there are no new causes for concern over the effects of radiation on the environment generally, various operational needs continue to arise around the world with respect to environmental protection. They include requirements to meet new or expected environmental legislation, particularly in relation to wildlife conservation and habitat protection, and to make "environmental impact assessments," including the consequences of major accidents and emergencies. There are also increasing pressures to achieve consistency in regulatory approaches to large industries, particularly with regard to the need to consider, explicitly, their actual or potential impact on both the general public and the natural environment. Public confidence demands that any given assurances are based on sound and transparent science. But unfortunately, in contrast to the goals of human radiation protection, there is no simple or single universal definition of "environmental protection" and the concept differs from country to country, and from one circumstance to another.

All of this has resulted in different countries adopting different approaches to environmental protection using different exposure and dosimetry models and adopting different biological end points, targets, and dose-rate values for similar environmental circumstances. There are no "points of reference" for any of them. There is therefore a risk that the assessment of doses and effects with respect to animals other than man and for plants may not always draw upon the same science base, nor be interpreted in an equitable manner. There is then the subsequent risk that any resultant advice could clash in some environmental contexts—such as for remediation of contaminated areas—with management decisions based solely on the system adopted for the protection of humans.

Part of the existing problem is that, although a large body of information relating to the effects of ionising radiation on nonhuman species has been derived over many

years, by and large the database is considerably fragmented. There are also important basic data gaps, plus uncertainties about how best to allow for such factors as relative biological effectiveness and dose and dose-rate effectiveness factor in a nonhuman context—all of which has allowed considerable latitude for the conversion of scientific information into practical advice for "environmental protection" under different operational situations.

To help address these issues and to provide some overall direction and guidance, the ICRP has therefore established a new committee (Committee 5). Part of its work will be that of developing a framework for interpreting and using existing data on the exposure to, and effects of radiation on, biota in an environmental context. Central to this approach will be the further development of a set of Reference Animals and Plants to generate a more fundamental understanding and interpretation of such relationships. The concept is therefore similar to that of the use of a Reference Man for human radiological protection, in that it is intended to act as a basis for reference calculations and for interpreting data in a manner that will be useful for decision making. Each reference type will be biologically described at the generality of the taxonomic level of Family, and dosimetric models, plus relevant data sets, will be developed for different stages of the life cycle of each type.

Available data on radiation effects for each type—or of similar types—will also be reviewed, the radiation effects considered to be of most relevance being those of early mortality, morbidity, reduced reproductive success, or some form of observable cytogenetic damage, irrespective of whether or not they arise from stochastic or nonstochastic dose-effect relationships. Particularly important will be evaluations of such effects at a population level.

The ICRP Committee 5 will be liaising closely in its work with the United Nations Scientific Committee on the Effects of Atomic Radiation and the International Atomic Energy Agency to ensure that its scientific data base and its interpretive advice are both sound and relevant to operational needs worldwide and will collaborate with the research community via the IUR (International Union of Radioecologists) in order to focus effort onto filling essential data gaps. It will also endeavour to ensure that any advice that emerges is both consistent and commensurate with international approaches being taken with respect to other environmental contaminants.

Guest Contributors to ICRP Recommendations Update

Lars-Erik Holm, Chair of the International Commission on Radiological Protection (ICRP), is the Director

General, Swedish Radiation Protection Authority, Stockholm, Sweden. He is an MD, is an expert in oncology and in cancer epidemiology, and is well known for his studies of the incidence of malignant thyroid tumours in patients who had been diagnosed or treated with ^{131}I. He is the Swedish representative to UNSCEAR, a member of the Commission on Safety Standards of IAEA, and a long-standing member of ICRP. Dr. Holm holds an honorary appointment as Professor at the School of Radiation Medicine and Public Health at the Soochow University in Sushou, China, and is a recipient of the Antoine Béclère medal of the Centre Antoine Béclère in Paris, France.

R. John (Jan) Pentreath, PhD, DSc, is a professor in the Environmental Systems Science Centre at the

University of Reading, United Kingdom (UK). He was formerly the UK Environment Agency's Chief Scientist and Director of Environmental Strategy (1995-2000) and the National Rivers Authority's chief scientist, director, and head of Pollution Control (1989-1995). He had come to the National Rivers Authority from having been head of Ministry of Agriculture Fisheries and Food's (MAFF) Aquatic Environment Protection Division, prior to which he had been head of research at the MAFF Fisheries Radiobiological Laboratory, having been a research scientist there since 1969, primarily studying the behaviour and effects of radionuclides from the UK's Windscale (Sellafield) site.

2006 Health Physics Society Student Travel/Worker Grants

The Health Physics Society (HPS) announces the availability of travel grants and travel/worker grants for health physics students planning to attend the next annual meeting of the HPS. To be eligible for this award a student must be a current member of the HPS (on record as having paid the 2006 dues), must be an undergraduate or graduate student in health physics or a closely related field with an area of concentration in health physics, and must have a strong health physics career interest. The award would consist of free meeting registration, free hotel room (based on shared accommodations), and funds to assist in travel to the annual meeting. Working at the meeting would involve five half-day sessions during which the student would assist in running projectors, setup, etc. Students who receive travel grants must attend the awards ceremony during the annual meeting. The granting of an award and the actual amount of travel funds will depend on the number of applicants and will be consistent with the following priority schedule:

1. Students presenting a paper and willing to work	**1st Priority**
2. Students presenting a paper and not working	**2nd Priority**
3. Students willing to work (no paper presentation)	**3rd Priority**
4. Students neither working nor presenting	**4th Priority**

The travel grant application and all supporting material must be postmarked no later than 1 March 2006. Award winners will be notified by 15 April 2006. Students who are given this award play a vital role in the overall management of the annual meeting. Consequently, students who for any reason cannot attend the annual meeting must notify Sue Burk at the HPS Secretariat **as soon as possible** either before or after an award notice is received. Interested students should fill in the form below and send it to SUE BURK (sburk@burkinc.com), HEALTH PHYSICS SOCIETY, 1313 DOLLEY MADISON BLVD, SUITE 402, MCLEAN VA 22101; phone: 703-790-1745; fax: 703-790-2672.

1. Name: _____

   University/College: _____

2. Address: _____

   _____

   Phone: _____ Fax: _____ Email: _____

3. Distance to Providence, Rhode Island, from your institution: _____ miles

4. Are you an Associate's Degree, BS, MS, or PhD candidate? _____ Expected graduation date: _____

5. Semesters of study completed by February 2006: _____

6. If you are on the executive council of a Student Health Physics Branch, please indicate the office you hold:
   _____

7. Are you presenting a paper at the meeting? Yes _____ No_____
   If presenting a paper, give the title and attach a final or preliminary abstract.

   Paper title: _____
   _____

8. Are you willing to work roughly five half-day sessions at the meeting? Yes_____ No_____

9. Date of membership (or application for membership) in HPS: _____

10. I certify that the above student is presently enrolled in our health physics program, plans to attend the annual meeting, and intends to present any papers listed.

_____ _____

Academic Program Director—Name typed or printed Academic Program Director—Signature

2006-2007 Health Physics Society Fellowships

The Health Physics Society (HPS) announces the availability of the following fellowships to support full-time entering or continuing students enrolled in bona fide US graduate programs in health physics or a closely related field. Seven fellowships are available for the academic year 2006-2007. The prestigious Burton J. Moyer Memorial Fellowship was established by the Northern California Chapter of the HPS to memorialize the late Burton J. Moyer and to encourage his ideals in the study of the safe use of radiation for the benefit of all people. The award consists of a stipend of $7,500. The Robert S. Landauer, Sr., Memorial Fellowship consists of a stipend of $6,000. The Robert Gardner Memorial, Richard J. Burk, Jr., and J. Newell Stannard Fellowships each consist of a $5,000 stipend. Two additional HPS Fellowships are also presented each year, consisting of a stipend of $5,000 each. All HPS and named fellowships are accompanied by a travel grant to be used in attending the HPS annual meeting in the year 2006. All fellowship recipients are required to attend the awards luncheon during the annual meeting. Foreign nationals may apply. Previous HPS Fellowship holders are ineligible. The fellowship applications and all supporting materials, such as letters of reference, must be postmarked no later than 1 March 2006. Applications which are not 100% complete will not be considered. Award winners will be notified on or about 15 April 2006. A student who, in addition to the HPS Fellowship, is awarded a DOE, NRC, or other fellowship which is fully funded (stipend, books, tuition, etc.) is strongly encouraged to decline the HPS Fellowship at the earliest possible date so that these funds may be given to another deserving student. The decision to decline or accept the HPS Fellowship should be made in consultation with the Faculty Advisor. Mail the application form below and all supporting material to STEPHANIE CROSS (scross@burkinc.com), HEALTH PHYSICS SOCIETY, 1313 DOLLEY MADISON BLVD, SUITE 402, MCLEAN VA 22101; phone: 703-790-1745; fax: 703-790-2672.

1. Name: _____

2. Address: _____
_____

3. Phone: _____ Fax: _____ Email: _____

4. Undergraduate and Previous Graduate Work:

	Institution	Dates	Major	Credits	GPA*	Degree
a.						
b.						
c.						
d.						

*Express GPA on a scale of A=4.00; if other, please specify scale. Submit copies of all undergraduate and graduate transcripts.

5. GRE scores: Quant.:_____; Anal.:_____; Verbal:_____

GRE scores are required to be considered for these fellowships. Enclose a copy of your GRE score report. If you cannot take the GRE in time for the scores to reach the Executive Secretary by 19 February 2006 you may submit a copy of earlier SAT scores.

6. Name of academic program advisor, telephone number, and institution for the health physics graduate program for fellowship study:

_____

It is the applicant's responsibility to request that the academic advisor write a letter outlining the proposed course of study, a description of the courses to be taken, and the proposed starting date for graduate study. Applicants for the HPS Fellowships for Entering Graduate Students need not have been formally accepted by the program at the time this letter is written.

7. Statement of personal goals: Provide a one-page statement about your personal career goals, including a statement about your intent to enter the field of health physics.

8. Letters of recommendation: Names of two people whom you will ask to write letters attesting to your potential for graduate study in health physics. These letters must be received by 19 February 2006 for the application to be considered complete.
1._____ 2._____

9. Statement of financial support: Applicants for HPS Fellowships for Entering Graduate Students must, on a separate sheet, list all other financial support that they will have to fund a graduate program. Applicants should also indicate any pending or planned fellowship or assistantship applications.

10. Do you wish to be considered based upon unusual conditions of financial need?
Yes__ No__ Please include a one-page letter outlining, in detail, your financial situation and need.

Announcements

First Radiological Device and Nuclear Event Symposium

Joseph Roehl

Scentczar Corporation is pleased to announce the First Radiological Device and Nuclear Event Symposium, 7-9 March 2006, at the Crowne Plaza River District in Richmond, Virginia.

Recent terrorist activity, including the emerging threat of radiological dispersal devices, renewed nuclear threats from foreign nations, and the reemergence of nuclear power with its special requirements for security throughout the nuclear fuel cycle, require the development of new technical tools, emergency response procedures, and medical treatments within both the Department of Defense (DoD) and the Department of Homeland Security (DHS) sectors. This symposium will bring together planning and product development professionals from:

- Department of Defense
- Civilian government
- Radiological device user community
- Nuclear power industry
- Detection, modeling, protection, and health physics communities.

They will focus on emerging threats and state-of-the art tools, adapting the latest technology to protecting the lives of our war fighters and first responders, and containment and cleanup after a major nuclear or radiological event.

The goals of the First Radiological Device and Nuclear Event Symposium are to:

- Provide a forum for government and industry to discuss radiological and nuclear threat materials, their specific hazards, and capabilities for detection, protection, decontamination, and medical response.
- Present results from recent research and development studies conducted in both the DoD and DHS sectors.
- Display new equipment, software, algorithms, and procedures for dealing with radiological and nuclear incidents.

This is the first call for participation in the Radiological Device and Nuclear Event Symposium. Scentczar Corporation is pleased to request your ideas for papers, poster-board presentations, or equipment vendor displays. Check out the symposium Web site at www.radandnuke.com.

New Training Program

R. William Field

To meet the growing demand for trained specialists who focus on work-related patterns of disease, illness, and injury, a new Occupational Epidemiology Training Program (OETP), based in the University of Iowa (UI) College of Public Health, has been established. Sponsored by the National Institute of Occupational Safety & Health funded UI Heartland Center for Occupational Health and Safety, the OETP offers fellowships to students pursuing a masters or doctorate in either the Department of Occupational and Environmental Health or the Department of Epidemiology within the College of Public Health.

Occupational epidemiologists identify and assess occupational risks, such as radioactive materials, pesticides, and heavy metals that can affect the health of workers. According to OETP Director Bill Field, UI associate professor of occupational and environmental health and epidemiology, a focus of the training program is the integration of exposure assessment methods commonly employed in both health physics and industrial hygiene with epidemiologic methods in order to improve risk estimates. Health physicists with training in occupational epidemiology are in high demand because of their ability to identify and quantify the risks associated with radiation exposure.

For more information about the OETP fellowships, including degree requirements and financial support, visit http://www.public-health.uiowa.edu/heartland/OETP.htm.

The Display Ads, Short Course listings, and Placement Center are available in the hard-copy version of Health Physics News.

***Health Physics News* Contributions and Deadline**
Almost everything the Managing Editor receives by 20 December will be printed in the February issue.

HPS Reference Library: http://www.min.uc.edu/nuclear/hpspep/peplib.html

HPS ADMINISTRATIVE SERVICES
1313 DOLLEY MADISON BOULEVARD
SUITE 402
MCLEAN VA 22101
Phone: 703-790-1745; Fax: 703-790-2672; Email: hps@BurkInc.com

HPS Home Page URL: http://www.hps.org

Article II, Section 1, of the Bylaws of the Health Physics Society declares: "The Society is a professional organization dedicated to the development, dissemination, and application of both the scientific knowledge of, and the practical means for, radiation safety. The objective of the Society is the protection of people and the environment from unnecessary exposure to radiation. The Society is thus concerned with understanding, evaluating, and controlling the risks from radiation exposure relative to the benefits derived." *Health Physics News* is intended as a medium for the exchange of information between members. *Health Physics News* is published monthly and is distributed to the members of the Society as a benefit of membership. Subscriptions for nonmembers are available. Libraries, institutions, commercial firms, government agencies, and any person not eligible for membership may obtain a subscription. A small inventory of recent back issues is maintained by the Society at the Office of the Executive Secretary to supply copies to new members not yet on the mailing list. Inquiries about back copies and about subscriptions should be directed to the HPS Secretariat.

***** CHANGE OF ADDRESS, PHONE, FAX, OR EMAIL INFORMATION *****

If you have a change of address, phone or fax number, or email address you may now make those changes via the Health Physics Society (HPS) Web site (www.hps.org) in the Members Only section. The changes will be made to the Web site database and will also automatically be sent to the HPS Secretariat so that changes will be made on the Society database.

If you do not use the Internet make your changes through the HPS Secretariat.
Please make any changes or corrections BESIDE YOUR MAILING LABEL (on the reverse side of this notice).
If you have any change in your phone number, fax number, or email address, please note it near the label.

Odds and Ends from the Historical Archives

Paul Frame

The Nu-Klear Fallout Detector (ca. 1960)

"A life saving device for the detection of radiation from fallout." The body of the detector is a hermetically sealed clear plastic container (2.5" high). Inside is a clear central cylinder that contains about 40 red plastic beads. By shaking the unit, the plastic beads are given a static charge that causes them to rise up and attach to the inside of the cylinder.

Exposure to radiation ionizes the air inside the device and this reduces the charge on the beads. When they lose their charge, the beads slide down the wall to the bottom of the cylinder.

Following a nuclear confrontation, you are supposed to leave the detector outside the fallout shelter for five minutes. If the beads have not all fallen to the bottom during that time, "you may risk exposure for a few minutes if you are faced with an emergency that cannot wait another day."

The Fallout Detector seems to be a descendant of the "Failla Cocktail" developed by the late Gino Failla. The latter employed small plastic beads floating on the convex surface of water in a cocktail glass. When the beads were given a charge, they repelled each other and separated. As the "cocktail" was exposed to radiation, the charge on the beads decreased and the beads moved together at the apex of the water surface. The rate at which they moved was a measure of the radiation exposure. His wife Pat told me how her husband had dragged her along from one toy store to another buying baby rattles so he could find the best beads for his cocktail.

Upcoming Events

39th Health Physics Society Midyear Topical Meeting
http://hps.org/newsandevents/meetings/meeting9.html
22-25 January 2006
Scottsdale, Arizona

2006 HPS Summer School
"Medical Health Physics"
http://nechps.org/SS06/ss06.html
18-23 June 2006
Brown University
Providence, Rhode Island

51st Annual Meeting of the Health Physics Society
http://hps.org/newsandevents/meetings/meeting5.html
25-29 June 2006
Westin Convention Center
Providence, Rhode Island

NCRP 2006 Annual Meeting
"Chernobyl at Twenty"
http://www.ncrponline.org/
3-4 April 2006
Crystal City Forum
Arlington, Virginia

HPS Web Site: http://www.hps.org

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