Health Physics News

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The Birth of the HPS: A Look Back

First Executive Secretary Hired

Mary Walchuk

The beginnings of the Health Physics Society (HPS) were exciting and dynamic times. The profession was growing rapidly and the HPS was expanding in an effort to keep up. To help with the resulting administrative needs, the Society hired its first paid employee, Executive Secretary Russ Cowing, in 1960.

Russ Cowing

"For the first few years after the founding of the Health Physics Society, the necessary administrative and clerical duties were carried on by the officers with such help as they could obtain through the kind cooperation of their employers," according to the statement accompanying Cowing's receipt of the HPS Meritorious Performance Award in 1974. "With the Society growing by leaps and bounds, this arrangement quickly became impractical. It was decided to hire an executive secretary who would not only take over many of the administrative chores, but would provide a much needed continuity in the management of Society affairs" (Health Physics 1974).

In 1959 the Board of Directors appointed Robert G. Gallaghar (HPS treasurer), Saul Harris, and Weaver McHaslin to an ad hoc committee charged with exploring the feasibility of hiring of an executive secretary to bring some order into Society management. The committee was aware that the American Industrial Hygiene Association (AIHA) had hired an executive director to serve as a paid executive secretary a year before there was a Health Physics Society. "AIHA was a role model for professional development so we patterned our efforts after AIHA," Gallaghar explained. "While our membership continued to grow via efforts of volunteers and support by their employers, our needs had to meet increased demand for response to our membership by a paid part-time executive secretary. However, this individual had to understand health physics and recognize our professional needs for safety plus regulatory compliance." Because they had worked together, Gallaghar knew Cowing and knew he would be able to fill those requirements. "Russ was highly regarded in the New England area," Gallaghar

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Editorial

Practice, Practice, Practice: Rudy Giuliani's Lesson From 9/11

Mark L. Maiello

I had met Rudy Giuliani once before. It was several years ago—in the late '90s when Manhattan College was again fielding a conference championship basketball team. The then mayor, a graduate of Manhattan, would come to the home games to press the flesh. It was at half-time that he said hello to my wife and me. It was a brief "celebrity" moment. I don't remember being overly impressed. Politics, especially New York City politics, can cloud your opinion of people. But New York City was "coming back" in those days. It was a safer, more glamorous place then it had been in a while. That counted for me. And the mayor and I both had attended Manhattan and NYU (New York University)—more points for Mr. Giuliani there. But, my wife and I did sum it up rather "pre-9/11" by noting that we had met two mayors now—Ed Koch being the other.

That little moment in our lives took on a new meaning on and after September 11, 2001. We wondered how this man, a leader to be sure, but a "regular guy" who had attended a small college (of some note but generally unknown outside New York), was able not only to face a horrific attack on the city he governed, but to project such hope and resolute courage in the face of tremendous calamity, sadness, and loss. He was, simply put, remarkable when he needed to be.

On the 7th of May 2005, I shook Rudy Giuliani's hand again. As the keynote speaker at an NYU symposium titled "Radiation Emergencies: Sources, Exposures, Consequences and Responses" (his talk wisely scheduled for the end of the day to hold the crowd in place), Mr. Giuliani spoke eloquently about how he and his staff were able to get through those horrendous days.

It will come as no surprise when I tell you that they put to work the old adage of "practice makes perfect." But, how do you practice for airliners impacting skyscrapers, setting fire to them, cutting electrical power and communications, and then causing the buildings to collapse? According to his honor, you can't. But you can practice for each of the elements of 9/11 individually, and that is what New York City officials had done. After all, fires, plane crashes, power failures, building collapses—they had all occurred in New York City at one time or another. There was, according to the former mayor, an emergency binder on the shelf for each scenario, but he couldn't use any single one of them that day. Instead, he and his staff had to draw on the conclusions of numerous table-top exercises and practice drills that had covered the individual calamities that together were making 9/11 such a terrible disaster. They were able to formulate new solutions to the crises they faced from the knowledge gained facing much "simpler" disasters. His message was loud and clear: Practice, practice, and practice again. Even if the drills are not copies of the real thing, you can still draw on the experience.

The crowd he addressed was mainly composed of medical doctors (the symposium was sponsored by the NYU Post-graduate Medical School), with a smattering of health physicists and other interested parties present. It was a particularly important crowd to impress with this message. But anyone in the emergency-planning arena should heed this advice. It is sound and combat-tested advice to be sure.

2005 Health Physics Society Salary Survey

The American Academy of Health Physics is conducting its annual salary survey. This is the sixth year the survey has been expanded to include the entire Health Physics Society membership. To complete the survey online, go to http://hps.org/membersonly/salarysurvey.cfm. The deadline for completing the survey is 30 September 2005.

If you have any comments, questions, or problems with the survey please contact Christopher Graham (ccgraham@cal.ameren.com).

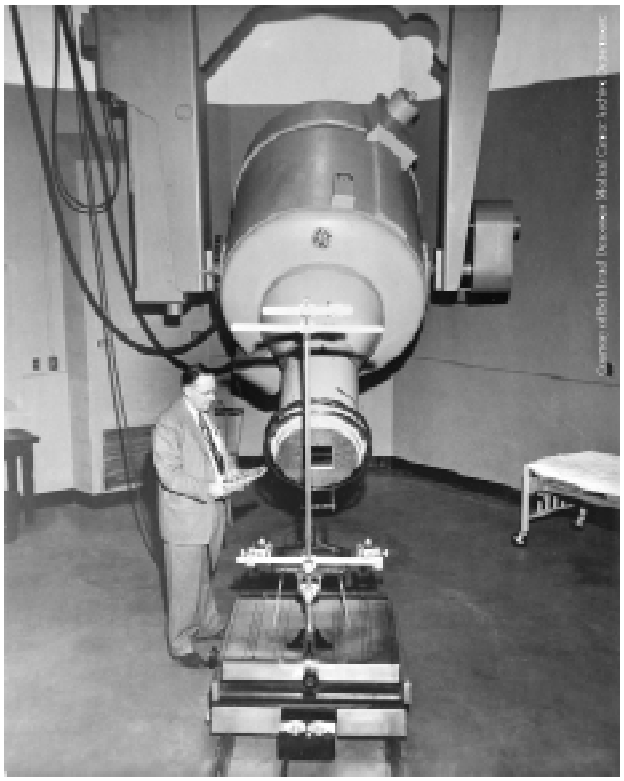
First Executive Secretary Hired

(continued from page 1)

remembered. "Russ didn't really need a job or the money or the accolades because he had a good job. He had a full-time professional practice so he didn't need us but we needed him." Cowing was asked by Gallaghar to consider the job, was interviewed by the Board on 30 June 1960, and was hired as the first executive secretary of the HPS on 1 September 1960.

"He took over the job that I had been doing for 14 to 20 hours per week as HPS treasurer in getting money into the Society," Gallaghar said. "He received and verified checks and kept the books. But he did more than that. He recruited people into the field. He worked with Dr. Robley Evans, Dr. Les Silverman, and Saul Harris by talking about Society membership to people who were in the same companies, etc., as people who were already members."

"Cowing's impact was immediately felt," according to Ron Kathren in his 1972 history of the HPS. "His primary concerns were threefold: communications, membership, and finances, and all were interrelated. Among his first efforts was an attempt to update the membership mailing list, a vital link in communications, and an expensive drain on the treasury, since the list was so inaccurate that fully 80% of Cowing's first mailing had wrong addresses. The Newsletter, originally known as the President's Letter, was instituted and greatly expanded under Cowing, serving today not only as a carrier of news items but as a sort of mini-journal on professional affairs. As the chaos of the membership rolls cleared, the office of Executive Secretary turned towards other activities, such as fiscal overseeing of the Society finances, encouraging affiliates to join and support the Society, and providing continuity between Board meetings as well as serving as a central information source and providing a permanent address for the Society" (Kathren 1972).



Cowing calibrates radiation therapy machine.
Photo courtesy of Beth Israel Deaconess Medical Center Archive Department

Frank Massé was fairly new to the Society in the early '60s but he remembers Cowing as an "old friend" who was very active in the New England Chapter. "Russ was a medical physicist for Shields Warren at Beth Israel Deaconess Medical Center in Boston and was also the radiation safety officer there," Frank recalled.

"When I was transferred to Boston in 1961, Russ Cowing was serving as HPS executive secretary," remembered Dade Moeller. "He lived in a single family house in one of the suburbs (southeast of Boston). At that time, all the records of the Society were stored in his basement. I visited him on several occasions and he showed me the files. He, in essence, was a 'one-man' show."

Cowing was presented the first Health Physics Society Meritorious Performance Award upon his retirement from the position. That presentation summed up how Cowing began an arrangement that has since served the Society well: ". . . it is as Executive Secretary these many years, that this man is known to most of the members of the Health Physics Society. From his base of operations in E. Weymouth, Mass., and as an omnipresent factotum at meetings of the Society and its Board of Directors, Russ has conscientiously and effectively realized the objectives of his progenitors. A high point at the annual meeting has always been his report, embellished by an excellent though barely presentable story, during which the problems of the Society and the foibles of its members were paraded in awesome detail" (Health Physics 1974).

Upon receiving the award, Cowing was credited with serving the office of executive secretary with "verve and efficiency" for 15 years. In 1974 Richard J. Burk took over the role that began with Cowing and has, in the words of Gallaghar, "worked now for almost 50 years."

References

Health Physics Society. Meritorious Performance Award presented to Russell Francis Cowing at the HPS Annual Meeting, Houston, TX, 8 July 1974. Health Phys 27:337; 1974.

Kathren RL. History of the Health Physics Society. A Report of the Ad Hoc Committee on History submitted to the Board of Directors. 11 June 1972.

Inside the Beltway

David Connolly
Washington Representative
Capitol Associates, Inc.

"That amendment will get dropped walking across the Rotunda of the Capitol" is an old Washington expression that the Society had personal experience with during the Conference of the Energy Bill in July. Let me set the scene for you: The Energy Policy Act of 2005 was passed by both the House and the Senate. From previous articles you may recall that this bill, which sets forth the energy policy of the country, has been stalled in Congress for a number of years. Due to a combination of higher oil prices and concern over foreign sources of energy, the leadership of both the Senate and the House of Representatives were able to schedule and pass an energy policy bill in their respective chambers.

During the debate on the Senate side, an amendment was offered by Senator Charles E. Schumer (D-NY) and Senator Jon Kyl (R-AZ) to strike a section of the bill which allowed the importation of medical isotopes into the United States from five select countries. A few days before this amendment came to the floor of the Senate, the Society was asked by the chairman of the Energy and Natural Resources Committee, Senator Pete V. Domenici (R-NM), to send a letter in support of the medical isotope provision. Through the quick action by the leadership of the Society, the requested letter (https://hps.org/membersonly/documents/S10EnergyPolicyAct.SupportForSection621.pdf) was delivered to the senator before the amendment came to the floor. After a spirited debate in the Senate, which pitted the need for domestic security against terrorists versus the need for nuclear medicine by American patients, the amendment was agreed to on a close vote and the medical isotope provision was dropped from the Senate bill.

Under the rules of the Congress, when each chamber passes a different version of a particular bill, a committee known as a "Conference Committee" is appointed to negotiate away the differences so each bill will be the same. Once a compromise is reached by these committee members, chosen from both the House and Senate, the agreement then goes back to both the House and the Senate for final approval. Since the Conference Committee always includes the chairpersons of the committees of jurisdiction as lead negotiators, these legislators have a great deal of influence over the final agreement. In order to expedite the process, the lead negotiators usually narrow the differences in the bill by quickly agreeing to the other chamber's position on a disputed section. The ability to quickly accede to the other body's position is made easier if the particular provision in the bill is a result of an amendment that the chairman did not support. Additionally, if the sponsor of that amendment is not on the Conference Committee to defend it, the chairman has an even easier time in agreeing to drop it from the final compromise. Therein is the genesis for the "Rotunda" expression.

As Senator Domenici was "walking across the Rotunda" he dropped the amendment, which struck the medical isotope provision, and agreed to the House position. Therefore, the provision allowing the importation of the isotopes was in the law. At the end of this process, the Society has come out ahead by supporting the chairman of the Senate Energy Committee when he specifically asked for support on a matter that is now part of our nation's energy law. The expedited efforts of President Ray Guilmette and Government Liaison Keith Dinger have brought the Society increased visibility in Washington.

BEIR VII-Phase 2
Health Risks from Exposure to Low Levels of Ionizing Radiation

Kelly Classic

BEIR VII Committee members, left to right, Daniel Krewski, Tomas Lindahl, Katherine Rowan, Robert Ullrich, Ethel Gilbert, Roger Cox, Patricia Buffler, James Cleaver, Elisabeth Cardis, William Dewey, Evan Douple (Board Director), Herbert Abrams, K. Sankaranarayanan, Richard Monson (Chair), Scott Davis, Rick Jostes (Study Director), Donald Pierce (Special Advisor), Daniel Schafer, Albrecht Kellerer. Not shown: Eula Bingham

The recently completed BEIR* VII-Phase 2 Report stems from the Phase 1 finding that it was appropriate, after 10 years since BEIR V, to reassess health risks from exposure to low levels of ionizing radiation. Sponsors of the six-year Phase 2 project included the Environmental Protection Agency, Nuclear Regulatory Commission, Department of Energy, Department of Defense, and Department of Homeland Security/ National Institute of Standards and Technology. The primary objective was to develop the best possible risk estimates for exposure to low-dose, low-LET radiation.

The BEIR VII Committee, chaired by Richard R. Monson with Rick Jostes as the National Academies Study Director (see bios, page 10):

- reviewed all relevant epidemiologic data related to the risk from exposure to low-dose, low-LET radiation,
- defined and established principles on which the quantitative analysis of low-dose and low dose-rate effects can be based,
- considered relevant biologic factors and appropriate methods to develop etiologic models and estimate population detriment,
- assessed the current status and relevance to risk models of biologic data and models of carcinogenesis,
- considered potential target cells,
- considered recent evidence regarding genetic effects not related to cancer,
- integrated findings from biology and epidemiology to address several issues of importance for developing risk estimates,
- developed models to estimate lifetime risk for 12 categories of cancer with allowance for dependencies on sex and age at exposure,
- provided example lifetime risk estimates for several exposure scenarios, and
- quantified the major sources of uncertainties in lifetime risk estimates (BEIR VII 2005).

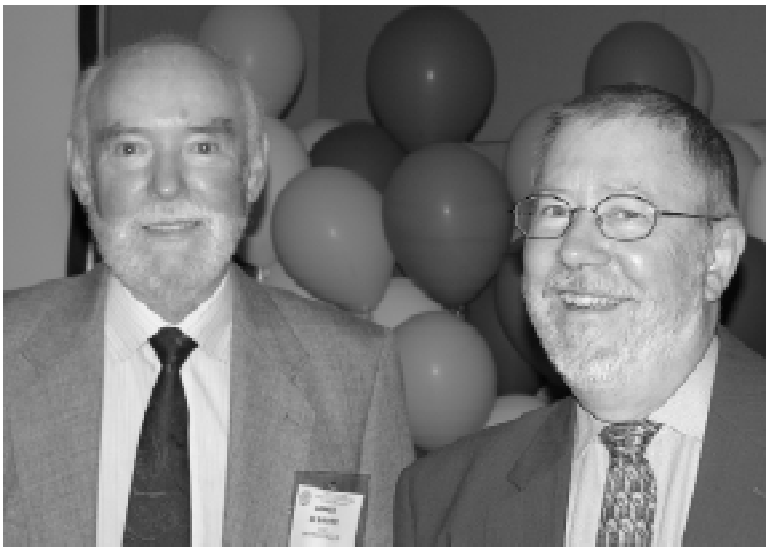
A special American Academy of Health Physics session on BEIR VII at the 2005 Health Physics Society Annual Meeting in Spokane, Washington, in July featured Drs. Evan Douple (BRER Director), Ethel Gilbert, and James Cleaver (see bios pages 6 and 7). The overwhelming interest in the session and BEIR VII conclusions prompted *Health Physics News* to continue the discussion by interviewing Douple, Gilbert, and Cleaver on some of the study research and recommenda-

tions. We start the interview with what might possibly be the most contentious recommendation for some health physicists.

The BEIR VII committee determined that the linear no-threshold model would be used for solid cancer risk estimates. It was a little disappointing to see that; however, after reading the report it becomes obvious that there was no definitive evidence that it should be anything else. Were you surprised that there was no convincing evidence to move away from LNT?

Douple: No, I wasn't surprised, since I expected the committee to come up with the best fit to the data and was open to any model that was developed, provided it was scientifically justified. I have been following the biological evidence that has been developing and realized that the complexity of carcinogenic mechanisms poses a significant gap among molecular, cellular, and tissue studies and radiation-induced cancer in humans, especially when some evidence suggests increased risk at low doses and other evidence suggests decreased risk at low doses.

Cleaver: We went into this study to assess the best possible current science of low-dose radiation, not to determine validity of a preexisting model. Our discussions ranged from threshold, LNT, and various other nonlinear options. The biology of DNA damage, chromosome breakage, and other biological and physical markers that could be well quantified showed linearity. None of the DNA repair systems show any change in efficiency or levels of activity with dose, which would be required if these were to influence the dose-response curve shape.



Jim Cleaver (left) and Evan Douple

James Cleaver received his doctorate in radiotherapeutics in 1964 from St. Catharine's College in Cambridge, England. Since that time he has held research positions in neurosurgery at Massachusetts General Hospital, surgery at Harvard Medical School, and biophysics, radiobiology, radiology, and dermatology at the University of California, San Francisco. Dr. Cleaver has over 350 publications with a focus on molecular and cellular mechanisms in humans. He was elected to the National Academy of Sciences in 1999 and is vice chair of the BEIR VII-Phase 2 Committee.

Evan Douple received his doctorate in radiation biophysics from the University of Kansas in 1972. His postdoctoral work at the University of Wisconsin was on mechanisms of radiation-induced mammary carcinogenesis. He developed a radiobiology research program as a professor of medicine and of pharmacology and toxicology at Dartmouth Medical School and as director of the Biomedical Engineering Research Program of the Norris Cotton Cancer Center. He came to the National Academies in 1992 and became director of the Board on Radiation Effects Research (BRER) in 1997.

I was pleasantly surprised to see some of the newer data on molecular and cellular theories discussed, especially low-dose hypersensitivity and the bystander effect. Both of these might suggest that risk estimates for low-dose, low-LET radiation should be higher than they are. Briefly, why was less emphasis placed on them when determining the risk estimates, especially for doses below 20 mGy?

Cleaver: Although low-dose hypersensitivity and the bystander effect suggested higher risks at low doses, it should be emphasized that the hypersensitivity is not a widespread and clearly defined phenomenon for x rays. The best evidence for the bystander effect is in high-LET radiation, but this effect will already be built into the epidemiology or dose-effect relationships. Other recent biology suggests lower risks, such as the adaptive response. But overall none of these processes were well enough established and quantified enough to provide strong evidence for thresholds or safe levels of radiation exposure. We invited a proponent of hormesis to the committee and the committee gave this extensive consideration (and an appendix to the report).

Even his best evidence for this process was found to be particularly weak and lacking in direct evidence from radiation.

Genomic instability is discussed in Chapter 2 and mentioned throughout other chapters. Here is a statement from Chapter 3: ". . . it has been proposed that the gene/chromosomal mutations involved in radiation tumorigenesis arise indirectly as a consequence of persistent genomic instability induced by radiation exposure." This may be difficult, but can you briefly define genomic instability as it related to this statement?

Cleaver: This is the idea that radiation-induced DNA damage leaves a persistent mark in the genome that results in later mutations, chromosome damage, or transformation. This might be in the form of bases lost during break rejoining, unstable chromosome rearrangements, or activated intracellular signal transduction pathways. There is overlap between the idea of radiation-induced genome instability and the corresponding instability that is characteristic of tumor cells.

What newer epidemiologic data were pivotal to the committee's recommendations?

Gilbert: The single most important new development is the availability of cancer incidence data (including nonfatal cancers) from the Hiroshima and Nagasaki tumor registries. These incidence data, which include 13,000 cases of solid cancer, were the principal data used in developing BEIR VII risk estimates and allowed us to give equal attention to cancer incidence and mortality. In addition, a major international effort has improved dose estimates for A-bomb survivors, and 15 years of additional mortality follow-up has nearly doubled the number of solid cancer deaths available for analysis. Finally, published pooled analyses of thyroid and breast cancer allowed us to base models for these sites on combined data from A-bomb survivors and several medical studies.

Ethel S. Gilbert is a biostatistician in the Radiation Epidemiology Branch of the National Cancer Institute. She holds a BA in mathematics from Oberlin College and an MPH and PhD in biostatistics from the University of Michigan. Her current research includes studies of workers at the Mayak nuclear plant in Russia, studies of second cancers after radio- and chemotherapy, and radiation risk assessment. She is currently a member of the National Academies BEIR VII Committee on Health Risks from Exposure to Low Levels of Ionizing Radiation.

How did heritable human radiosensitivity play a role in the determination of risk estimates?

Douple: Evidence based on human chromosomal radiosensitivity led the committee to conclude that ". . . A-T [Ataxia-telangiectasia] and NBS [Nijmegen Breakage Syndrome] may be up to 10-fold more sensitive than normal; some uncertainty surrounds the chromosomal radiosensitivity of other cancer-prone disorders, but any such increase in sensitivity appears to be modest—not more than 2-3 fold." Other human data on radiosensitivity and tumorigenesis are also summarized in the report.

Cleaver: Although we clearly have evidence for variation in human radiosensitivity, the number of highly radiosensitive individuals is small and was not thought to play a major factor in generating a population average.

It appears that great care has been taken when applying A-bomb data (Japanese population) to, specifically, the US population. Would you comment on the importance of this and its impact?

Gilbert: The use of data on Japanese A-bomb survivors for estimating risks for the US population can be problematic for cancer sites where baseline risks differ greatly between the two countries. For example, baseline risks for stomach cancer in Japan are an order of magnitude higher than those in the United States. BEIR VII has indeed given this issue more careful attention than previous BEIR reports. BEIR V estimates were based on "relative risk transport" in which it is assumed that the excess risk due to radiation is proportional to baseline risk, whereas BEIR III (1980) estimates were based on "absolute risk transport" in which it is assumed that the excess risk is independent of baseline risk; neither report provided much discussion of this issue or evaluated uncertainty from this source. BEIR VII discusses this issue in detail, provides estimates based on both relative and absolute transport (to reflect uncertainty), and uses a weighted estimate of the two results for cancers other than breast and thyroid; risks for breast and thyroid cancer were estimated using data on both Japanese and non-Japanese persons.

It was noted that in the A-bomb population exposed in utero there

was a significant dose response observed (ERR/Sv = 2.1) but this did not differ significantly from the dose response for survivors who were less than five years old when exposed. Does this suggest that the increased sensitivity for radiation-induced effects in young children is the same or close to that of the embryo/fetus?

Gilbert: No significant difference in risks for those exposed in utero and those exposed in early childhood was found using the RERF (Radiation Effects Research Foundation) data. However, because of large uncertainties, these findings do not exclude differences in risks for the two groups. Also, the cited finding was based on a 1997 paper using cancer mortality data through 1992 and has not, to our knowledge, been reevaluated using more recent mortality data or cancer incidence data.

Why were medical studies used in developing models for breast and thyroid cancers, but not for other cancers?

Gilbert: Although there are a very large number of medical studies, many of them lack dose estimates for individual subjects and/or involve extremely high (5+ Gy) therapeutic doses; these studies were not suitable for estimating risks at low doses. Breast and thyroid cancers are exceptional in that there are several studies of persons exposed for medical reasons with individual dose estimates and a useful range of doses. I also note that the report (Chapter 12) includes a section, "Coherence of Models with Other Studies," that compares BEIR VII risk estimates with those from medical and nuclear worker studies.

The short section on the relative effectiveness of x and gamma rays indicates that the effectiveness per unit absorbed dose of standard x rays may be higher than for high-energy photons. It goes on to state, ". . . it may be desirable to increase risk estimates in this report by a factor of two or three for the purpose of estimating risk from low-dose x-ray exposure." Since nearly all diagnostic x-ray exams and most medical occupational exposures could be considered "low-dose x-ray exposure," this would appear to have some implications for the medical community but is not brought out as an important finding of the report. Thoughts?

Gilbert: This finding is not emphasized because it is based entirely on chromosomal aberration data and biophysical considerations. The report states, "Because of the lack of adequate epidemiologic data on this issue, the Committee makes no specific recommendation for applying risk estimates in this report to estimate risk from exposure to x rays." We also note that this is not a new finding as the BEIR V report included similar comments.

There was so much literature reviewed and I, for one, appreciate that extensiveness and expert interpretations of studies' results. It appears you were able to include recent literature, even through 2003. How do you decide what studies to (or not to) review?

Douple: The goal was to consider all evidence that was brought to the attention of the committee. And many of the studies reviewed came from committee-member searches and personal knowledge of the committee members. The report includes recent literature beyond 2003, including some 2005 references that were cited.

Cleaver: We did not decide to exclude anything from review a priori. Some studies seemed to lack scientific rigor (especially hormesis); others we felt were based on unsuitable experimental systems (for example, radiation transformation of cells in culture, because very few of these studies used normal primary human cells that could be quantified).

Some of the literature you reviewed showed radiation dose thresholds for ovarian, bone, and skin cancer in mice. How was this considered in the calculation of risk estimates for those locations?

Douple: The report includes a discussion of why the results of some of the experiments studying induction of certain tumors in mice are not necessarily appropriate for extrapolation to the estimation of those cancer risks in humans. In some cases there appears to be an important role for cell killing in the process of neoplastic development and progression and some of the factors involved are unique to the mouse.

Why was it decided to use a dose and dose-rate effectiveness factor (DDREF) of 1.5 for the estimates in this report when the BEIR V Committee made a general recommendation for one but did not recommend one? Can you also explain the limitations of the use of the DDREF?

Gilbert: Although the committee uses a DDREF of 1.5 to obtain point estimates, we emphasize that this estimate is uncertain and consider values in the range 1.1 to 2.3 to be credible. The DDREF was estimated using a Bayesian analysis that combined data from experimental animal studies with A-bomb survivor cancer incidence data. The committee points out that the DDREF is not a universal low-dose correction factor since it depends on the data to which it is to be applied. The

BEIR VII DDREF was developed in a way that is specific for use with the A-bomb survivor solid cancer incidence data. Data were inadequate to account for possible variation in the DDREF by cancer site.

What one or two items would you like to emphasize to the health physics community?

Douple: I think it is important to emphasize that a large amount of experimentation has occurred since BEIR V, and BEIR VII continues to give credibility and confidence that the radiation standards continue to remain robust. This is because we know a lot about radiation-induced biological and health effects in humans as a function of dose compared to many other environmental toxic agents and that key uncertainties have been acknowledged and identified for future research.

Cleaver: It should be emphasized that this is our best judgment of the state of the science at this time. As new information is generated we might learn more in the near future and change our levels of understanding. But the conclusion of a linear dose-response curve does not mean the risks of radiation are high. They are not. What is needed now is some judgment on what are acceptable levels of risk.

Gilbert: A huge amount of new epidemiologic data has emerged since BEIR V and serves to strengthen our confidence in cancer risk estimates. Nevertheless important uncertainties remain and the uncertainties judged to be most important were evaluated. Estimates of risks for all solid cancers carry an uncertainty of at least a factor of 2, whereas estimates for cancers of specific sites are generally much more uncertain.

As a practicing health physicist, what do the findings of this report mean to me?

BEIR VII Bullet Points

- Total cancer mortality or leukemia risk estimates from radiation exposure have not changed significantly from BEIR V.
- BEIR VII provides estimates of cancer mortality *and* cancer incidence (including nonfatal cases).
- The availability of cancer incidence data on A-bomb survivors has made it possible to develop estimates for 11 specific cancer sites.
- BEIR VII risk estimates are based on greatly expanded epidemiologic data including cancer incidence data and 15 years of additional mortality follow-up for Japanese A-bomb survivors.
- The BEIR VII Committee found that updated molecular and cellular data from studies of radiation exposure did not support the theory that low doses of low-LET radiation were more harmful than the LNT model shows, nor did the data support the hormesis theory.
- Genetic risks of low-dose, low-LET exposures are very small compared to baseline frequencies of genetic disease.
- A dose response for noncancer mortality in A-bomb survivors has been clearly demonstrated. However, because data are inadequate to determine if this effect exists at low doses and dose rates, BEIR VII does not provide risk estimates for noncancer mortality.
- The newly implemented DS02 dosimetry system for A-bomb survivors provides a more accurate basis for evaluation of the dependence of risk on dose.
- Risk models were developed from data on Japanese A-bomb survivors and persons exposed for medical reasons. Studies involving occupational and environmental exposure were also evaluated.
- The committee found that a credible range for the DDREF was 1.1 to 2.3 and chose to use the value of 1.5 for adjusting linear risk estimates for solid cancers based on the A-bomb survivor cohort; a linear-quadratic model was used for leukemia.
- The lifetime risk estimate for solid cancer mortality (averaged for the two sexes) is 510 (per 100,000 persons exposed to 0.1 Gy). The comparable estimate from BEIR V is 695, which would be 460 if the BEIR VII DDREF of 1.5 were applied (excess deaths for all ages, both sexes).
- Published pooled analyses of A-bomb and medical-study data were used to estimate breast and thyroid cancer risks.

Douple: BEIR VII should serve as a resource for developing a better understanding of radiation-induced health effects, for contributing less uncertainty in the models of dose responses, and for communicating to the public and scientific community the low levels of risk associated with low levels of radiation exposures.

What do you see as the most important contribution by this report to radiation protection practices?

Douple: The report provides an estimate of radiation-induced cancer incidence, mortality, and genetic effects in humans and guidance to international radiation protection bodies for use in establishing protection standards.

Gilbert: The report provides a comprehensive evaluation of the vast amount of new data that have emerged in the last 15 years and assimilates these data to develop the most up-to-date estimates of cancer risk.

I'd like to thank Drs. Douple, Gilbert, and Cleaver for taking the time to share with us their perspectives and expertise regarding BEIR VII findings. As a health physicist, whether you support or disagree with the BEIR VII Committee recommendations, the report contains what may be the best literature review of radiation study findings to be found in one location. There also are easily understandable explanations of the molecular and cellular processes and epidemiologic considerations related to human biological response to radiation. If that isn't enough, we also get the benefit of experts explaining what it all means for dose-risk estimates. This, alone, is worth the $51-72 cost (www.nap.edu; search on BEIR).

*Biological Effects of Ionizing Radiation

Reference

BEIR VII-Phase 2 Committee to Assess Health Risks from Exposure to Low Levels of Ionizing Radiation. Health risks from exposure to low levels of ionizing radiation. Washington, DC: National Academies Press; 2005.

BEIR VII Chair

Richard Monson received his MD degree from Harvard Medical School in 1963 and his doctorate of science from Harvard School of Public Health in 1969. His research during the 1970s and 1980s focused on occupational health issues. Another research area has been evaluation of the risk of exposure to ionizing radiation. He currently is a professor of epidemiology in the Departments of Epidemiology and Environmental Health at Harvard School of Public Health. Dr. Monson chaired the BEIR VII-Phase 2 Committee.

BEIR VII Study Director

Rick Jostes received his doctorate in radiation biology at Colorado State University in 1978. He did his postdoctoral work with Bob Painter at the University of California, San Francisco, the first of three tours at that university. Before coming to the National Academies, Rick was a senior research scientist at Battelle Pacific Northwest National Laboratories, where he developed a radon exposure system for cells in culture in collaboration with Health Physics Society member Edmund Hui. He has been a senior program officer at the National Academies since 1997.

Kelly Classic is a certified medical health physicist at the Mayo Clinic in Rochester, Minnesota, and an associate editor for *Operational Radiation Safety* and the Society Web site.

EPA and BEIR VII

Dr. Jerome Puskin, of the Environmental Protection Agency's (EPA) Radiation Protection Division, also spoke at the AAHP special session regarding the relationship between EPA and BEIR VII and shared the following information:

EPA uses risk estimates for:

- Background in establishing dose limits.
- Issuing guidance.
- Deriving risk-based control levels.
- Informing members of the public about the significance of their exposure.

Comparing BEIR VII and EPA risk estimates:

- Mortality risk for uniform whole-body irradiation is nearly the same.
- BEIR VII incidence risk is a bit higher.
- Some site-specific estimates differ significantly, for example, BEIR VII risk estimate for lung cancer is about double.

EPA process for revising cancer risk models:

- Review BEIR VII and other relevant scientific sources.
- Propose revised risk models.
- Publish revised models and projections of risk.

Correspondence

Radiation Protection Paradigm for Physicians Is Different

David L. Horn
Powhatan, Virginia

I would like to comment on the guest editorial in the August 2005 issue of *Health Physics News* titled "Threshold or No Threshold." Richard Osborne presented a clear picture of the workplace paradigm for setting public policy in radiation protection. This paradigm appears valid provided the cost to society isn't unduly burdensome.

However, the workplace paradigm of physicians is different. There are many factors that present demonstrated risks to patients (for example, misdiagnosis, adverse drug reactions, medical errors). A question that a physician must answer when a patient is referred for a diagnostic test that uses ionizing radiation is "Is the risk from the radiation dose greater than the risk of not having the medical information?" If there has been no demonstrated harm for the radiation dose from this procedure being performed millions of times over a period of many years, then it may reasonably be assumed that the radiation dose is safe. On the other hand, the risk of severe consequences to the patient from a misdiagnosis due to inadequate medical information has been clearly demonstrated. In the medical workplace, theory takes a subservient role to hard data. Theory takes a greater role when developing public policy for radiation protection as Richard Osborne communicated so eloquently. Therefore, different workplace situations produce different, but equally valid, paradigms.

The medical profession also performs studies on patients after they have died (for example, x rays taken as part of an autopsy, a ^{99m}Tc cerebral blood-flow study to document brain death so organs can be harvested). Clearly, this situation has no relation to occupational dose or public dose. After all, the people we try to protect are still alive.

I think we do ourselves a disservice when we try to place all situations with radiation dose as a common denominator into a single box. At this point in time, a "Theory of Everything" does not exist for radiation protection.

So, we get back to the original question, "What is a safe radiation dose?" Once again we return to the very unsatisfying answer of "It depends."

Response to David Horn

Richard V. Osborne
Deep River,Ontario
Canada

I agree that medical practice is where the justification principle of radiological protection comes to the forefront—a procedure is undertaken if the radiation dose is deemed to be justified by the potential clinical benefit to the patient. There is still the need to optimise the radiological protection of the patient though, particularly with diagnostic procedures in which the doses are relatively high as in CT scans where the doses are in the range 10-100 mGy. We see the emphasis on these particular principles and practical advice on managing patient doses, consistent with medical objectives, in recent recommendations by the International Commission on Radiological Protection such as Publication #84 on pregnancy and medical radiation, #85 on medical interventional procedures, and #87 on managing doses in computed tomography (Annals of the ICRP 30, Numbers 1, 2, and 4, 2000).

"there is less in this than meets the eye[1]"

Geoffrey Stapleton
Abingdon, Oxford

The frequent favourable references to epidemiology in the pages of *Health Physics News* prompts a note of caution. Epidemiologists are given to citing such great work as that performed in 1854 by Dr. John Snow (UCLA Web site) in dealing with an outbreak of cholera and, of course, the important work by Sir Austin Bradford Hill and Richard Doll (Doll and Hill 1954) in establishing a robust association between the smoking habits of physicians and the incidence of lung cancer. There are other worthy studies but, alas, only a few that exhibit such robust and scientifically convincing associations.

Many of the regular health-scare headlines that appear in the press are based on epidemiological studies with weak statistical associations. These are often refuted or seriously challenged by later studies (Tanner 2005). It is hard not to conclude from this that some of them are wrong. It is also hard to criticise those well-meaning enthusiasts, eager to help mankind to live healthier lives. Nevertheless, the harm done to science and the scientific method by publicising dubious work might well outweigh any such humanitarian or

risk-aversion considerations.

The results are usually presented as Relative Risk or Risk Ratio. If X% of people exposed to a putative cause suffer a certain effect and Y% not exposed to the cause (or alternatively, the general population) suffer the same effect, the RR is X/Y. If the effect is "bad," then a RR greater than unity denotes a "bad" cause, while an RR less than unity suggests beneficial cause. A Relative Risk of exactly 1 suggests that there is no correlation. Watch also for the confidence intervals; these higher and lower values span the RR and give the 95% probable results. Should this range include 1, then this implies that "no correlation" is a valid result; further, if the intervals are wide apart, it indicates poor statistical power.

Applying the binomial distribution to the discrete data encountered in such studies shows the significance (whether an effect occurred by chance) of a given result. Even using the iconic but arbitrary $P<0.05$ test, an RR less than 2 or between 0.5 and 1 can look statistically unconvincing. Readers will recognise such numbers quoted in the doubtful studies alluded to above. Support for a hypothesis can usually be found by looking long and hard enough; that's just the nature of chance.

Statistical tests, some very subtle, are important but we must not forget the caution of Sir Austin Bradford Hill who advised epidemiologists to avoid over-emphasising statistical significance testing, given the observation that systematic error is often greater than random error (Phillips and Goodman 2004). For this reason we are advised by epidemiologists who are scientifically inclined that ". . . relative risks of less than 2 are considered small and are usually difficult to interpret. Such increases may be due to chance, statistical bias, or effects of confounding factors that are sometimes not evident" (Anderson 1994). This also applies to negative associations greater than 0.5.

There is a readable book on the subject by Professor John Brignell; details are on his Web site (Number Watch Web site). For myself I tend towards scepticism because that was what I was taught at school and also because I dislike funding alarmist and wasteful research around the world—including gleaning support for LNT—through Granny EPA.

Footnote

[1] Tallulah Bankhead

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University of California, Los Angeles, Department of Epidemiology, School of Public Health Web site devoted to John Snow. Available at: http://www.ph.ucla.edu/epi/snow.html. Accessed 27 July 2005.

HPS Meeting Photos by Casper Sun

Student Travel/Worker Grant Recipients, left to right, Deanna Hasenauer (University of Florida), Stacey McCord (Idaho State University), Patty Retka (Idaho State University)

Elena Buglova, Morgan Lecturer

Committee Activities

2005-2006 Committee Appointments

Ruth E. McBurney, President

Academic Education

Derek W. Jokisch, Chair	2006
Erno Sajo	2006
Clayton S. French	2006
Ian S. Hamilton	2007
John D. Zimbrick	2007
Eduardo Farfan	2007
Jason W. Harris	**2008**
Phillip W. Patton	**2008**
Dennis J. Hadlock	**2008**

Awards

Raymond A. Guilmette, Chair	**2010**
Paul S. Rohwer	2006
George Anastas	2007
John R. Frazier	2008
Kenneth R. Kase	2009

Continuing Education

Robert Sitsler, Chair	2006
Lorraine Day	2006
Sunita Kamboj	2006
Michael A. Charlton	2007
Edward A. Christman	2007
Jason D. Dunavant	2007
Carol A. Connell	**2008**
Elyse M. Thomas	**2008**
Tonya Bernhardt	**2008**

Finance

Richard E. Toohey, Chair	2006
Eva E. Hickey	2007
David J. Allard	**2008**

History

Raymond H. Johnson, Jr., Chair	2007
Arthur C. Lucas	2006
Frances B. Harshaw	2006
Jeffrey A. Chapman	2006
Carol A. Connell	2006
R.L. Kathren, Hist. Em.	2007
Alex J. Boerner	2007
Martha E. DeMarre	**2008**
Rod P. Reed	**2008**
Robert G. Gallaghar	**2008**

Homeland Security

James Barnes, Chair	2007
Michael Gresalfi	2006
Susan T. Masih	2006
Vincent P. Williams	2006
James L. Kitchens	2007
Michele R. Landis	2007
Thomas F. O'Connell	**2008**
Jerrold T. Bushberg	**2008**
Brooke Buddemeier	**2008**

International Relations

Amir Mohagheghi, Chair	**2008**
James Barnes	2006
James J. Rea	2006
Richard V. Griffith	2006
Faraj Ghanbari	2007
David C. Medich	2007
Auroba Al-Samaree	2007
Luiz Bertelli	**2008**
Solomon Sahle	**2008**

Laboratory Accreditation Policy

Samuel L. Keith, Chair	**2008**
Scott Schwahn	2006
Thomas F. O'Connell	2006
William S. Harris, Jr.	2006
Carl V. Gogolak	2007
Charles A. Potter	2007
Thomas W. Slowey	2007
Thomas E. Bratvold	**2008**
Daniel M. Montgomery	**2008**

Laboratory Accreditation Assessment

Chuan-Fu Wu, Chair	**2008**
Samuel L. Keith*	2006
Michael S. Davidson	2006
Govind R. Rao	2006
Robert Kellner	2007
Ronni Minniti*, NIST	2007
Frederick Cummings	2007
Steven Bakhtiar	**2008**

Richard J. Burk, Jr.,* Exec. Sec.

Legislation & Regulations

James S. Kirk, Chair	2006
Michael A. Boyd	2006
Stephen J. Layendecker	2006
Barbara L. Hamrick	2007
Patrick McDermott	2007
David Hamel	2007
Billy R. Thomas	**2008**
Frank Marcinowski	**2008**
Ralph L. Andersen	**2008**

Local Arrangements

Ninni Jacob, Chair

Membership

Joel R. Hoyt, Chair	2006
Timothy D. Taulbee	2006
Bong Yeon	2006
Marcia B. Hartman	2007
Alfred R. Goodwyn, IV	2007
Betty B. Goetz	2007
John J. Coupal	**2008**
Kathleen M. Hall	**2008**
Larry W. Luckett	**2008**

Nominating

Paul S. Rohwer, Chair	2006
Wesley E. Bolch	2006
T. Edmund Hui	2006
Kelly L. Classic	2007
Morgan Cox	2007
Kathleen Dinnel-Jones	2007
John R. Frazier	**2008**
Susan Jablonski	**2008**
Robert A. Fjeld	**2008**

Presidents Emeritus

Raymond J. Johnson, Jr., Chair	2008
Otto G. Raabe	2006
Keith H. Dinger	2007
Paul S. Rohwer	2009
George Anastas	**2010**

Program

Elizabeth M. Brackett, Chair	2006
Christopher Martel	2006
Glenn M. Sturchio	2006
Kenneth Krieger	2007
Jeri Lynn Anderson	2007
Steven Reese	2007
Patricia L. Lee	**2008**
Philip D. Kearney	**2008**
Matthew C. McFee	**2008**

Public Education

Daniel J. McGrane, Chair	**2008**
Ralph B. Ochoa	2006
Jay Beckel	2006
Robert C. Woodard	2006
Vincent P. Williams	2007
Ali A. Simpkins	2007
Marcia B. Hartman	2007
Dennis M. Quinn	**2008**
Aaron Kriss	**2008**
John L. Salladay	**2008**

Rules

Nancy M. Daugherty, Chair	2006
Lisa M. Bosworth	2007
Michael Lewandowski	**2007**
Linda M. Sewell	**2008**

Science Teachers Workshop

Diep Dudek, Chair	2006
Kyle Kleinhans	**2006**
Lisa M. Bosworth	2006
Mark L. Maiello	2006
Karen L. Sheehan	2007
Jody Spence	2007
Rick L. Thacker	2007
David B. Ottley	**2008**
Todd Davidson	**2008**
Jimmy Cawthon	**2008**

Scientific & Public Issues

Raymond A. Guilmette, Chair	2008
John R. Frazier	2006
Kenneth R. Kase	2007
Ruth E. McBurney	2009
Brian Dodd	**2010**

Standards

Sander C. Perle, Chair	2006
Jack J. Fix	2006
Gordon K. Riel	2006
Wayne M. Glines	2006
Paul Charp	2007
William S. Harris, Jr.	2007
Jeffrey M. Hoffman	2007
Michael D. Brooks	2007
Bruce B. Dicey	**2008**
Kenneth Veinot	**2008**
James R. Cassata	**2008**

Strategic Planning

Cheryl Olson	**2008**
Heather J. Gepford	2006
Suzanne Helfinstine	2006
Jeffrey L. Kotsch	2006
Thomas F. Gesell	2007
Shawn Seeley	2007
Duncan White	2007
Kevin L. Nelson	**2008**
George J. Vargo	**2008**

Summer School

Richard Belanger, Chair	2006
James S. Durham	2006
Matthew P. Moeller	2006
Raymond H. Johnson, Jr.	2007
James S. Clark	2007
Billy Thomas	**2008**
Nancy Kirner	**2008**

Symposia

Janelle S. Braun, Cochair	2006
Peter H. Myers, Cochair	2006
Gary H. Zeman	2006
Julie Ann Peterson	2007
Jason T. Flora	2007
Mary Ann Parkhurst	2007
James G. Yusko	**2008**
Robert N. Cherry, Jr.	**2008**
Heidi Walton	**2008**

Venues

Tracy A. Ikenberry, Chair	**2008**
Gregory D. Smith	2006
Rodney Nickell	2006
Craig A. Little	2006
Jennifer Collins*	2007
Jack F. Patterson	2007
Kent N. Lambert	2007
Larry M. Coco	2007
Judson L. Kenoyer	**2008**
John M. Salsman	**2008**

* ex officio

New appointments are in bold type.

Health Physics Society Membership Committee, back row left to right, Tim Taulbee, Marcia Hartman, Chair Joel Hoyt. Front row, Bong Yeon and HPS Board Liaison Eva Hickey

Chapter News

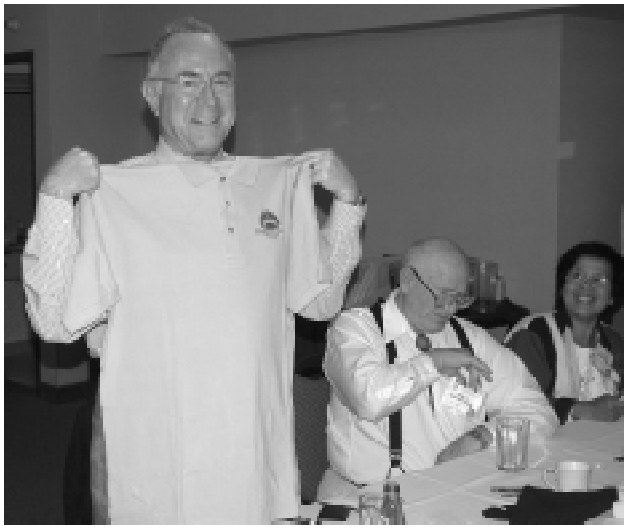
Columbia Chapter

Eva Hickey

CCHPS Luncheon with Richard Rhodes

Following the special plenary session and book signing with Richard Rhodes at the Spokane 50th anniversary Health Physics Society (HPS) meeting (10-14 July 2005), a luncheon with Rhodes was held for the members of the Columbia Chapter Health Physics Society (CCHPS) and the HPS History Committee at the Red Lion Inn. The luncheon gave the hardworking crew of the CCHPS Local Arrangements Committee and other members a time to relax and review the events of the meeting and spend a few minutes socializing.

Following lunch, a presentation was given by Jim Jamison and Wally Hendrickson of the CCHPS on the recovery of fuel from a research reactor from South Vietnam in 1975. The fuel eventually found a home in the Neutron Radiation Facility TRIGA reactor at Hanford. The topic was of interest to Rhodes for his research for his next book, *Endgame*, which examines international politics of nuclear proliferation.



Richard Rhodes models Spokane polo shirt presented to him by the Local Arrangements Committee

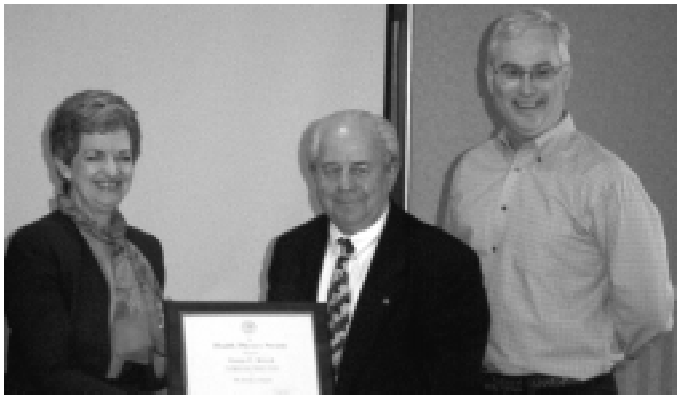
Buckeye Chapter

Bill Thomas, CHP
Dennis Clum, CHP

On 24 May, the Columbus, Ohio, based Buckeye Chapter of the Health Physics Society (HPS) hosted a dinner meeting featuring HPS President Ruth McBurney.

McBurney discussed factors and issues affecting the future of the health physics field such as changes in the workforce, the regulatory environment, and global events. She presented a discussion of these issues and how they impact the HPS, as well as ways that the Society is addressing the areas that are of major importance to the profession. She provided an open discussion of these issues in a town-hall-type format to encourage attendees to present ideas on how the Society can support chapters in carrying out training, homeland security, and public and education functions.

Another highlight of the evening was the presentation of an HPS Service Award to longtime Buckeye Chapter and HPS member George Kirsch. This award was in recognition of the many years of outstanding service that George provided to the chapter. Throughout the years, George has served as secretary, treasurer, executive council member, and twice as chapter president. In addition to many projects that he volunteered for, he was instrumental in the chapter hosting the 1992 HPS Annual Meeting here in Columbus. Congratulations George and thank you for your dedication to the Society, the chapter, and the profession.



Ruth McBurney, George Kirsch, Bill Thomas

Outgoing Buckeye Chapter President Bill Thomas introduced the

current officers and thanked them for their service. Specifically, Bill acknowledged the efforts of Past President Craig Jensen, Secretary Carl Willis, Treasurer Tina Amstien, incoming President Dennis Clum, and Executive Council Members Joe Talnagi, Kathy Hall, and Joe Jacobsen. The incoming officers of the chapter are President-elect Dr. Thomas Blue and Executive Council Member Rick Myser.

The next Buckeye Chapter meeting will feature HPS President-elect Brian Dodd presenting a talk on "IAEA Stewardship and Efforts Toward Security of Sources" and it will be held Wednesday, 14 September, at the site of the first annual HPS meeting, the Ohio State University Faculty Club. Individuals wishing to attend may email us at denclum@hotmail.com or brthomas@iem-inc.com.

Notes

2006 Annual Meeting of the Health Physics Society Providence, Rhode Island

Tara Medich

With the annual Health Physics Society (HPS) Meeting in lovely Spokane just a memory, it's time to start thinking about 2006! The New England Chapter of the Health Physics Society is hosting the 2006 Annual Meeting in Providence, Rhode Island, 25-29 June. Summer is a wonderful time to visit, as New Englanders know how to make the most out of the warm weather after the long winter.

Providence is Rhode Island's largest city and the second largest city in New England. It is convenient to a range of activities that appeal to everyone. One can visit Boston, Newport, Block Island, and a number of area beaches. Seafood is abundant in summer, and the local delicacies such as quahogs and fresh clam chowder can't be beat.

The 2006 meeting will be held at the Rhode Island Convention Center in downtown Providence. The host hotel, the Westin, is connected to the center and is within walking distance to many of the city's attractions. Providence has experienced a renaissance in the recent past, and the downtown area is alive with events that bring life into the city. Like many east coast locales, Providence is a walking city, with unique dining, shopping, and cultural opportunities just steps from each other.

The nearest major airport to Providence is T.F. Green in Warwick, Rhode Island. The airport is served by Southwest Airlines, which is a favorite with many travelers. The Boston Logan airport is 50 miles to the north. Providence is also accessible by Amtrak train, with a station on the Acela Express and Regional service on the Boston-Washington, DC, route.

The New England Chapter looks forward to seeing you in Providence next summer for a great meeting!

Why Did You Become a Health Physicist?

In keeping with the 50th anniversary of the birth of the Health Physics Society, the *Health Physics News* staff thought that it might be interesting to publish brief accounts as to how some of us got into the business of health physics. If you have an interesting story (emphasis on interesting) and would consider sharing it, contact Paul Frame at framep@orau.gov or 865-576-3388.

ANS Encourages Diverse Talent in Growing Nuclear Industry

The American Nuclear Society's (ANS) Board of Directors approved two position statements that are now available to the public. "We recognize the need for new nuclear plants to maintain and extend the benefits and quality of life provided by nuclear science and technology," explained Larry Foulke, chair of the ANS Public Policy Committee. "Therefore, we aim to increase the viability of nuclear professions as career options for all individuals so we can engage the knowledge and talents of diverse populations."

The Board of Directors approved the following position statements:

Position Statement No. 66: "Diversity in the Nuclear Profession" endorses equality of opportunities available to individuals pursuing and advancing in careers related to nuclear science and technology.

Position Statement No. 56: "The Need for Near Term Deployment of New Nuclear Power Plants" reflects revisions to an existing document based on updated energy outlook statistics.

Position statements represent the Society's opinion on issues of interest to the general public and policy makers. They can be viewed at www.ans.org/pi/ps. The Society develops positions based on related technical papers and input from the professional membership. The Board approved the statements on 9 June 2005.

The American Nuclear Society, established in 1954, is a professional organization of scientists and engineers devoted to the applications of nuclear science and technology. Its 10,500 members come from diverse technical disciplines ranging from physics and nuclear safety to operations and power and from across the full spectrum of the national and international nuclear enterprise, including government, academia, research laboratories, and private industry.

Announcements

American Nuclear Society's Radiation Protection and Shielding Division's 14th Biennial Topical Meeting

Robert Hayes, CHP

The American Nuclear Society's Radiation Protection and Shielding Division's 14th Biennial Topical Meeting will be held 2-6 April 2006 in Carlsbad, New Mexico.

The conference opening plenary session will begin on the morning of 3 April. A keynote address will be given by Glenn Knoll with other outstanding plenary speakers including Ruth McBurney, Kenneth Shultis, Cassiano de Oliveira, Ines Triay, and other special speakers.

Technical sessions cover the entire scope of radiation shielding, transport, detection, applications, and protection.

A full list of sessions and detailed conference information is available at http://www.ans-rpsw-carlsbad.com/.

Tours will be offered of the Waste Isolation Pilot Plant (WIPP), a licensed and operating deep geological repository for transuranic waste. The actual number of visitors WIPP can accommodate will depend on operational conditions and the work schedule of the facility. The WIPP site is a federal facility and advance notice will be required for a site visit, so early registration is strongly encouraged.

A tour of the world-famous Carlsbad Caverns will also be offered.

Book Winners

The winners of the books given away at the Publications Booth at the 2005 Annual Meeting in Spokane, 10-14 July, were Paul Frame, Carl Tarantino, Arthur Keith Rose, Bob Miltenberger, Jeff Brunette, Margaret McCarthy, John Hageman, and Harry J. Newman.

Reflections on the 2005 Summer School

Richard Belanger, CHP
Summer School Committee Chair

The 2005 Health Physics Society (HPS) Summer School met during the week of 4 July on the beautiful campus of Gonzaga University, situated on the bank of the Spokane River in eastern Washington. Participants were treated to a deep and diverse academic program on the topic of Operational Health Physics: Planning and Implementation. Academic Dean David Waite and Administrative Dean Nancy Kirner put together an outstanding program and deserve a lot of credit for their efforts. Not only did they bring together a prestigious faculty with over 500 years of collective health physics experience, but they created a friendly and intimate environment which allowed the 41 students (including 10 nonmembers of the HPS) to mingle with some HPS legends and other subject-matter experts. Almost all of the faculty stayed for the whole week, participating in class discussions and staying in the same dormitory as the students. It's not often that young professionals get to rub elbows with the likes of John Auxier, Herman Cember, and Ron Kathren, to name a few.

Academic Dean David Waite

Administrative Dean Nancy Kirner

The curriculum included a suite of topics under the general umbrella of operational health physics. These ranged from management and leadership aspects to dosimetry and instrumentation, and from historical aspects to real nuts-and-bolts decommissioning and decontamination and ALARA topics. With such a talented and dedicated faculty, it is difficult to single out highlights, but certainly the general level of classroom participation and discussion—by students and faculty alike—ranks right up there. Because of the holiday-shortened week, evening "enrichment sessions" were also held. These featured talks by Herman Cember and Gerald Gough. The night out featured a truly memorable Spokane River boat cruise and barbeque. We were also blessed with warm, sunny days and beautiful evenings, which made for great walks along the Spokane River.

Ron Kathren

Our deepest gratitude goes out to David Waite and Nancy Kirner for all their efforts in organizing such a great program and carrying it through. Administratively, the program flowed very smoothly; nevertheless, Nancy was always available to address any contingencies or special needs. Special thanks also go out to Margaret McCarthy, who is the administrative dean for the 2006 Summer School and who provided valuable assistance to Nancy. Margaret's husband Jim Ricci also deserves kudos for acting as general aide and, more importantly, evening bartender.

John Auxier (speaker at the 2005 Summer School) and Margaret McCarthy (administrative dean for the 2006 Summer School)

Back row, left to right, Dan Strom, Thomas Gray, Karl Witte, Craig Podgurski, John Auxier, Darrell Fisher. Front row, David Ethridge, Patricia Ethridge, Sylvia Cember, Herman Cember

Next year, the Summer School will convene on the campus of Brown University in Providence, Rhode Island, and will feature a medical health physics theme. Watch for further announcements.

Rich Belanger, 2005 Summer School Committee chair

Once again, thanks to all involved for a memorable event.

Craig A. Little Appointed *Operational Radiation Safety* Editor-in-Chief

Health Physics Editor-in-Chief Michael T. Ryan announced in July that he has appointed Craig A. Little to be editor-in-chief of *Operational Radiation Safety (ORS)*. Craig has begun a three-year term in this position to replace Kenneth L. Miller, the founding editor-in-chief of *ORS*.

ORS is a special publication of the Health Physics Society (HPS) which is published and printed as a quarterly supplement to *Health Physics*. In announcing this appointment Mike said, "Craig is well suited for the position of editor-in-chief of *Operational Radiation Safety.* He has a wealth of operational radiation safety experience and he has many years of experience as a *Health Physics* editor. Craig is interested in working with new authors and the many fine radiation protection professionals with operations information to share."

Craig A. Little

Craig has a PhD in radioecology and an MS in radiation biology from Colorado State University and a BA in biology from McPherson College. He is employed by MFG Environmental and has over 25 years of experience in the field of human health risk assessment, radiation protection, and environmental transport modeling. He was employed by Oak Ridge National Laboratory (ORNL) for nearly 25 years where from 1983 to 2000 he was the leader of the Environmental Technology Section of the Health Sciences Research Division based in Grand Junction, Colorado. He served on the HPS Board of Directors from 2000 to 2003. He served as an associate editor of *Health Physics* for over 10 years and has also served on the HPS Program Committee, Nominating Committee, and Venues Committee.

Craig has been married to Joanna, a realtor and active community member in Grand Junction, for over 35 years. They have two children, Jake, a builder, and Shea, an art management student, a granddog, Calvin, and grandcat, Bernice.

The February 2006 issue of *ORS* will be Craig's first as editor-in-chief.

Kenneth L. Miller Retires as *Operational Radiation Safety* Editor-in-Chief

Popular writer (Elmer stories), painter, and inspired editor of both *Health Physics* and *Operational Radiation Safety*, Ken Miller was recognized for his more than 13 years of uninterrupted service as a leader for the Society's publications at the 50th Annual Meeting of the Society in Spokane in July. *Health Physics* Editor-in-Chief Mike Ryan presented the recognition and thanks to Ken (who was not able to attend the meeting) at the Journal editors' meeting on Saturday, 9 July.

"Ken most notably launched *Operational Radiation Safety* and developed it to the point where it is now recognized as a premier publication for innovative, practical and timely information for radiation protection practice," Mike said as he presented the recognition. "Ken accomplished this during his two terms as Editor-in-Chief of *Health Physics*. During this service, he also led the Journal into the beginnings of electronic publishing, established an ongoing relationship with members to publish papers given at the HPS Annual Meeting, and created a number of innovative columns and features that have become staples for the Journal."

Steve King (right) *ORS* Associate Editor presents plaque to Ken Miller.

His many accomplishments were reviewed and published in the December 2004 issue of *Health Physics*, including his receipt of the Society's 2004 Founders Award.

2005 Elda Anderson Award Acceptance Speech
12 July 2005

Lawrence T. Dauer, CHP

Thank you so much! I am honored to have been selected to receive the Health Physics Society's Elda E. Anderson Award. It is also a humbling experience to be inducted into the group of previous Elda E. Anderson awardees whose significant accomplishments continue to shape our knowledge and our Society. I extend a heartfelt thank you to the Awards Committee and to the Greater New York Chapter.

Over 20 years ago, when I joined this profession through an act of serendipity (I wonder how many of us got our start in health physics through an act of serendipity?), my mentor and close friend Dennis Quinn sat me down in his office, handed me a Health Physics Society membership application to fill out, and proceeded to explain to me that although it was important to learn the physics of radiation and how it interacts with the body, nothing was more important than remembering that in the end, health physics is all about people.

As an educator and mentor, Dr. Anderson certainly espoused a vision of the practice of health physics as being about people. I recently had the pleasure of meeting Frank Bradley for lunch on the Upper East Side and to reflect on the 50th anniversary of the Society. He shared with me many stories about how Dr. Anderson emphasized practical hands-on experience, how she identified the need for courses in biology since many of the AEC fellowship candidates came from engineering backgrounds, and how she coordinated family-style get-togethers and barbeques each spring. Her influence and broad view of the needs of the profession were essential to the birth of the Society. Dr. Anderson knew people. She was a connector and a catalyst. Graduates of the program emphasize that she had a major influence on the growing profession as she oriented many of them toward awaiting jobs, carefully ensuring a good fit between her mentees and their future employers.

Lisa and Lawrence Dauer

Over the years, I have become convinced that health physics really is all about people and their stories. These include such gems as: the worried young nurse who was so concerned that she would jinx her pregnancy by declaring it; the wide eyes of the welder who was getting ready to jump into a steam generator for the first time without a respirator after having always used one for 20 years; the permanent prostate brachytherapy patient who asked that I please speak to his wife because she required him to sleep in the basement for six weeks out of fear of exposure; the flash of excitement when science teachers received their very own refurbished civil defense meters for use in the classroom; having to explain to a patient that we didn't think that it was a good idea that they run the NYC marathon one day after receiving 150 mCi of ^{131}I as thyroid cancer therapy; the chance to hear from Matt Wald and Andy Revkin that what *NY Times Science* reporters really need is a consistent and available source of information on radiation risks and benefits; and agreeing with building services staff that radiation can indeed seem scary.

I want to thank the health physics people who continue to help me learn. Dennis Quinn and Don Mayer have been mentors and friends for the past 20 years and we have certainly had much fun discovering and sharing knowledge. Matt Williamson has been a trusted colleague and friend. His enthusiasm, zeal, and knowledge of what makes people tick have been invaluable to me. I am grateful to Jean St. Germain who opened up the world of medical health physics for me and provided a professional

home at Memorial Sloan-Kettering Cancer Center where I get to walk in the land of giants like Failla, Quimby, Marinelli, and Laughlin.

I would be remiss if I did not thank the people behind the books that sit on my desk and are referenced almost daily. Herman Cember taught me the practice of health physics, Bernard Schleien provided almost every fact and figure one could need, Glenn Knoll taught me instrumentation, and Baum, Knox, and Miller helped make sense of the chart of the nuclides. I commend the *Health Physics* Journal and *Operational Radiation Safety* editors and contributors for both a theoretical grounding and a set of practical guideposts for the profession. I also feel as though I would have learned little without the superhuman instruction and training from Ken Skrable, Clay French, George Chabot, Ray Johnson, Keith Dinger, Nolan Hertel, and Chris Wang. I thank them all.

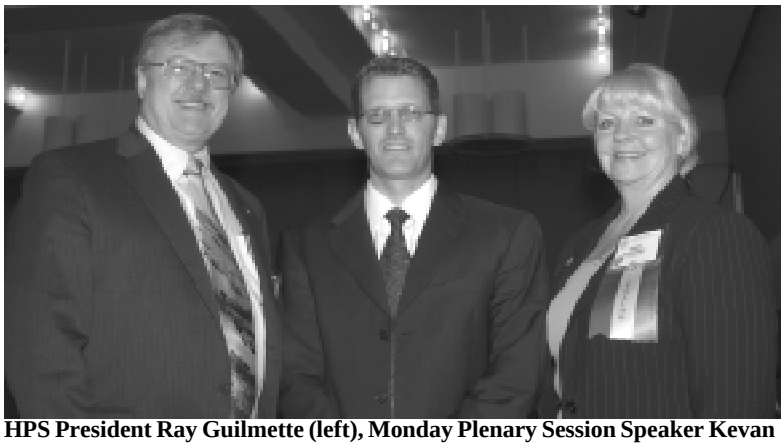
While I am glad to be a health physicist, I consider myself a husband and father first. I am nothing without the support, encouragement, laughter, and love of my wife Lisa and our sons, Thomas and Zachary. They are the true "people stuff" of my life. I have been blessed. Our Christian faith family at Grace Community continues to remind me that perhaps all of this was never really an act of serendipity but the result of intelligent design.

Almost 50 years ago, Walter Claus, another key founding member of the Society, encouraged folks to join the profession by stating "Health Physics is a fascinating and challenging field. Good people are sincerely to be encouraged to enter this promising profession." I echo his plea today. Dr. Anderson would certainly have taken this "golden" moment to similarly encourage and inspire the next generation.

I am proud to be a health physicist and a member of this fine Society. I look forward to continuing our work and celebrating our learnings as we progress into the future, always remembering that the practice of health physics is all about "people stuff." Thank you so much for sharing this honor with me.

Former Elda E. Anderson Award Winners in Attendance at the Meeting

Left to right, Kenneth L. Mossman 1984, James M. Hylko 2000, James E. Tarpinian 1991, Paul L. Ziemer 1971, Eric W. Abelquist 2003, Glenn M. Sturchio 1999, Michael T. Ryan 1989, William E. Kennedy Jr. 1990, Ronald L. Kathren 1977, Howard W. Dickson 1981, Lawrence T. Dauer 2005, Michael G. Stabin 1996, Lisa Dauer, John A. Auxier 1963, Richard R. Brey 2002, Kimberlee J. Kearfoot 1992, Kenneth R. Kase 1978, T. Edmond Hui 2001, David A. Waite 1979, Timothy A. DeVol 2004, Darrell R. Fisher 1986.



HPS President Ray Guilmette (left), Monday Plenary Session Speaker Kevan Weaver, Local Arrangements Chair Terri Aldridge

Health Physics Society Annual Meeting

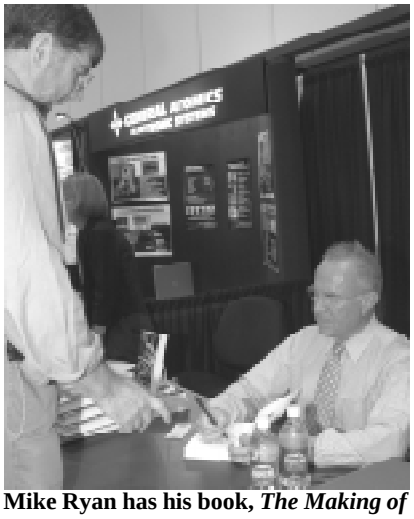
Spokane, Washington

10-14 July 2005

Photos by Casper Sun

Morgan Lecturer Ludwig Feinendegen

Landauer Lecturer Bruce Boecker



Mike Ryan has his book, ***The Making of the Atomic Bomb***, signed by the book author and Monday Plenary Speaker Richard Rhodes.

Program Committee Member Dan Strom (right) helps AAHP Session Chair Tom Buhl set up for Tuesday's Special Session on BEIR VII and Radiation Risk.

Alex Boerner presents HPS history highlights.

Bill Bair presents "Herbert M. Parker, A Health Physics Legend."

Paul Frame provides overview of ORAU's historical health physics instrument collection.

2005 HPS Award Recipients

John W. Poston, Sr., Robley D. Evans Commemorative Medal Recipient

Charles B. Meinhold (left), Founders Award Recipient and Ken Kase, HPS Awards Committee Chair

Eric J. Hall, Distinguished Scientific Achievement Award Recipient

Donna Armani, Outstanding Science Teacher Award Recipient

2005 Fellow Class, back row left to right, Casper Sun, Chuan-Fu Wu, Bruce B. Dicey, David C. Kocher, Lawrence N. Rothenberg, Robert A. Fjeld. Front row, Nolan E. Hertel, Michael T. Ryan, Mary L. Birch, Roy A. Parker. Not in photo, John A. Leonowich and Richard V. Osborne. (Vern C. Rogers, Posthumous)

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AAHP Standing Committees for 2006

Jim Bogard, President-elect

There are seven Standing Committees of the American Academy of Health Physics (AAHP). The composition of the Finance Committee is specified in our bylaws, but members of the remaining six are diplomates of the Academy nominated by the president and approved by the Executive Committee for staggered three-year terms. Committee chairs are members of the respective committees similarly nominated and approved for one-year terms.

A brief description of each committee's members and chairs for 2006 (approved by the AAHP Executive Committee at the 50th Annual Meeting of the Health Physics Society in Spokane, Washington) is shown below. More information about the composition and function of Standing Committees of the Academy (and of the Executive Committee) is provided on our Web site (www.AAHP-ABHP.org) by following the links to *AAHP and ABHP Committees* and *Summary of Duties and Responsibilities for Committee Members*.

Finance Committee
Members of the Finance Committee for 2006 are AAHP Treasurer and Chair Paul S. Stansbury, AAHP Secretary Gary Kephart, and a representative who will be selected by the American Board of Health Physics (ABHP).

Continuing Education Committee
Members of the Continuing Education Committee for 2006 are Chair Joseph Alvarez, Jo Ann Myrick-Jenkins, Joel Rabovsky, Roy Craft, and new members Sarah B. Hoover and Nancy Sullivan.

Nominating Committee
Members of the Nominating Committee for 2006 are Chair Charles E. Roessler, Stephen Brown, William P. Fitzgerald, Jeffrey M. Hoffman, Kathryn Pryor, and new members Kyle Kleinhans, L. Max Scott, Daniel Lee Burnfield, and Shawn W. Googins (2006 ABHP Vice Chair).

Examination Site Committee
Members of the Examination Site Committee for 2006 are Chair Dawn Banghart, Anthony Sorensen, and new members Larry R. Sanders and Matthew G. Arno.

Professional Standards and Ethics Committee
Members of the Professional Standards and Ethics Committee for 2006 are Chair Charles Meinhold, Debra McCroskey, Cheryl Olson, and new members Paul Rohwer and Regis Greenwood.

Appeals Committee
Members of the Appeals Committee for 2006 are Chair Robert G. Gallaghar, Gregory Hall, and new member Robert N. Cherry, Jr.

Professional Development Committee
Members of the Professional Development Committee for 2006 are Chair Christine Donahue, David E. Bernhardt, Kevin Buckley, Jay Maisler, and new members Jeffrey Kotsch and Cindy Bloom.

The Academy is grateful for the service of those committee members who have completed their terms and are rotating off in January, and we welcome the new members approved by the Executive Committee in Spokane. Please take every opportunity to express your gratitude to CHPs you know serving on the Academy's Standing Committees for their contribution to our profession.

Placement Center

Employers Seeking Health Physicists

The maximum length for each description is 300 words. There is no charge for this service. Send placement advertisements to:

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19890 FISH LAKE LN
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Phone: 507-362-8958; Fax: 507-362-4513
Email: hpsnews@frontiernet.net

Listings that reach the office by the 25th of September will appear in the November issue of *Health Physics News*.

If requested, your job offer will also be placed on the HPS Web site at the time of receipt. Listings are by equal opportunity, affirmative action employers. *Health Physics News* retains the right to edit ads to newsletter format.

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

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

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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 Atomic Geiger Counter

This snazzy yellow and blue plastic toy probably led more than one impressionable youngster to a career in the nuclear business.

According to the instructions: "The Atomic Geiger Counter is a toy, and is completely safe. It does not detect uranium or any other radioactive ore . . . However, it is an educational toy which familiarizes the child (and the parent) with certain basic ideas and procedures of real uranium prospecting, by simulating radioactivity detection."

It was produced by Bell Products Company, probably in the 1950s, and came with a variety of "bells and whistles." For example, in the photo above you can see the "Ray Compensator" control which is set to the type of radiation (gamma, beta, etc.) you want to detect. In the photo on the left, the "Sensitivity" dial is shown cranked all the way up to 11!

Upcoming Events

39th Health Physics Society Midyear Topical Meeting
22-25 January 2006
Scottsdale, Arizona

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"
3-4 April 2006
Crystal City Forum
Arlington, Virginia

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