Robert N. Beck to Receive Aebersold Award for Outstanding Contributions to Basic Science

ROBERT N. BECK, PROfessor of radiological sciences, director of the Franklin McLean Memorial Research Institute, University of Chicago, and founding director of the University of Chicago/Argonne National Laboratory Center for Imaging Science will be honored with The Society of Nuclear Medicine's (SNM) Paul C. Aebersold Award for Outstanding Achievement in Basic Science Applied to Nuclear Medicine.

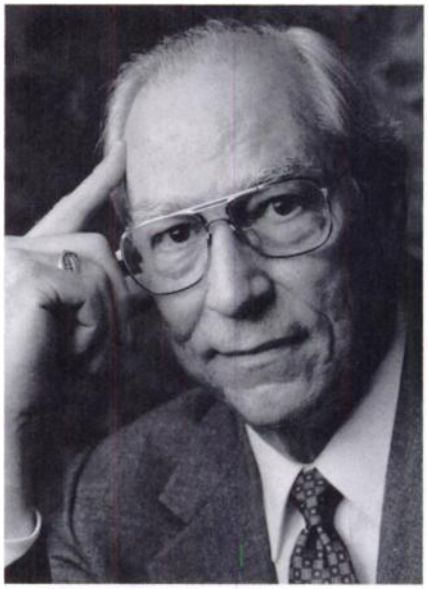
A pioneering developer of the theory of radionuclide imaging, Professor Beck is renowned for his theories of optimum collimator design and the determination of the optimum gamma-ray energy for specific application, which led to the clinical introduction of technetium-99m for brain tumor detection.

"Nuclear medicine is a specialty based primarily on functional imaging," says William J. MacIntyre, PhD, past-president of SNM and chairman of the SNM Awards committee. "Much of the early radionuclide imaging, however, had developed empirically, based on experimental measurements with little regard to the underlying theory. Bob Beck, more than any other individual, was responsible for the development of the theoretical framework that allowed radionuclide imaging to be analyzed with the same mathematical rigor that could be applied to all imaging systems. His criteria for evaluating imaging systems not only provided objective standards but also paved the way for future optimization of the many components that are part of the complex imaging process. These investigations are today still being pursued vigorously in many of our laboratories." Dr. MacIntyre, a former Aebersold Award recipient himself, is staff physicist in the nuclear medicine department of the Cleveland Clinic Foundation, Cleveland, Ohio.

"Bob has been a vital member of a team of outstanding workers [that] constituted one of the strongholds of research in nuclear medicine," wrote John G. McAfee, MD, professor of radiology, division of nuclear medicine, George Washington University Medical Center, Washington, DC, in a letter of recommendation. "In the early days when rectilinear scanning was developed for radionuclide imaging, Bob's work on collimator design — including prediction of sensitivity and spatial resolution was indispensable. Likewise, after the Anger camera was invented his theoretical and practical work optimized the collimator again."

"His work on collimator design led to a well developed theory that continues to be the basis for the design of modern systems," says A. Bertrand Brill, MD, PhD, department of nuclear medicine, University of Massachusetts Medical Center, Worcester, Massachusetts. "Indeed, when industry or a scientific colleague needs advice on how best to design a new collimator, Bob is the person they go to for advice, if not for the design itself."

Aside from collimator design, in his letter of recommendation, Dr. McAfee also cited Professor Beck's contributions in other areas of great importance to the advancement of nuclear medicine. "[His] outstanding contributions. . . include the comparison of images produced with radionuclides of different gamma energies, the analysis and development of different methods of image processing, improvement of imaging systems for positron-emitters, Fourier transforms of spread functions, and. . . his assessment of spatial resolution in [single-photon emission computed tomography] SPECT," wrote Dr. McAfee.



Robert N. Beck

He also wrote that Professor Beck "was of inestimable help to Dr. Paul Hoffer in the development of fluorescent scanning of the thyroid."

Born in San Angelo, Texas, in 1928, Professor Beck received a bachelor of science in mathematics and physics from the University of Chicago in 1955. As an undergraduate, he became interested in the potential of new imaging methods, and took his skills to the Argonne Cancer Research Hospital (ACRH) where, as chief scientist, he worked on early scanning systems with nuclear medicine applications. Throughout the 1950s and 1960s, Professor Beck demonstrated his versatility by being involved in a series of scientific instrumentation projects including work on cosmic ray research, research on the physical properties of boron-steel, aircraft engine testing, instrumentation for the mass spectrometer for Scripps Institute of Oceanography, and, most prominently, research and

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development of electronic instrumentation for nuclear medicine.

Dr. Brill notes that Professor Beck was "responsible for the design of a number of devices that have been of major importance in the development of nuclear medicine," including the ACRH brain scanner, the fluorescence scanning system for thyroid iodine content imaging, and the use of semi-conductors.

Professor Beck has also made significant contributions to positron emission tomography, exemplified by his construction of the "PET VI" tomograph at Washington University, St. Louis, Missouri, and his current development of a high-resolution, multi-slice PET system for brain function studies. "His work is and was of major importance to the development of nuclear medicine," says Dr. Brill. "Those of us who are concerned about instrumentation and analysis methods cannot fail to appreciate the. . .contributions he has made to the field [of nuclear medicine] and to his systematic development of those ideas . . . I can think of no one who has contributed more to the theory of radioisotope measurements, and figures of merit for imaging systems. His contributions have established the formalism accepted and widely used for systems design, radiopharmaceutical and instrumentation testing."

Reflecting on Professor Beck's personal qualities, Dr. McAfee says: "Bob's national and international reputation is well-deserved. His presentations at national meetings have been outstanding and in his own institution he has the reputation of an excellent teacher."

Aside from serving as director of the McLean Memorial Research Institute, Professor Beck has served as director of the University of Chicago's Center for Radiologic Image Research and the department of radiology's section of radiological sciences. He is also a member of various professional scientific associations, including the American Association of Physicists in Medicine, the American Association for the Advancement of Science, and the IEEE Nuclear and Plasma Sciences Section. Professor Beck has also worked on various task groups and committees of the International Commission on Radiation Units and the National Council on Radiation Protection and Measurements. Among the many scientific endeavors he is presently engaged in is the development of an Imaging Science Exhibit at the Chicago Museum of Science and Industry, which is scheduled to open in spring of 1993.

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takes place, prior to the convention, on Monday, June 10. Among the half dozen topics included during this seminar is "Functional Imaging of the Brain." Organized by Martin P. Sandler, MD, department of nuclear medicine, Vanderbilt University, Nashville, Tennessee, and colleagues, this session will present theoretical information on how modern noninvasive methods like PET and SPECT uncover the physiology, pathology and pharmacology of the brain. "Computers for the Computer Shy," presented by Barbara Y. Croft, PhD, associate professor of radiology, Health Sciences Center, University of Virginia, Charlottesville, will discuss the fundamentals of PC hardware and software, and MS-DOS for physicists, physicians, and technologists who feel their computer skills could be improved. Another seminar will be devoted to helping technologists develop managerial skills. Organized by Marianne Gaskill, CNMT, department of nuclear medicine, Royal Beaumont Hospital, Royal Oak, Michigan, the session, "Technologist Section Management Seminar," will broadly discuss issues that affect finances, productivity and human resources.

Administrators Program

A session devoted to hospital and radiologist administrators will be held on Wednesday, June 12. The morning portion of this new program will feature speakers and panel discussions on spiraling health care costs and nuclear medicine, the finances behind an upstart PET facility, and a presentation by Dr. Alazraki on the future of nuclear medicine as reflected in the manufacturers' exhibition. Tours of the exhibit hall will be conducted in the afternoon. "We are particularly excited by this new addition to the Annual Meeting itinerary," says Dr. Croft. "We hope we can educate hospital administrators—that is, decision-makers who purchase equipment for nuclear medicine departments —on the needs and future direction of our medical specialty. We seek to encourage the increased participation of non-scientist administrative policymakers at our meetings."

The annual Nuclear Medicine Review Course lectures for residents preparing for the ABNM boards are Tuesday, June 11, through Friday, June 14. The lectures will feature a comprehensive overview of those areas considered important to the development of nuclear medicine, including medical economics, radionuclide bone imaging, instrumentation quality control, procedures for the evaluation of the thyroid, pediatric nuclear medicine, and radionuclide therapy.

For the 14th year in a row, Henry N. Wagner, Jr., MD, department of radiology, Johns Hopkins Medical Institutions, Baltimore, Maryland, will close with his presentation of the highlights of the Scientific Meeting.

For further information contact: Education and Meetings Department, The Society of Nuclear Medicine, 136 Madison Ave., New York, NY 10016-6760, (212) 889-0717.