

also active in education and administrative service. He introduced new courses, and, having recognized that many of Georgia Tech's physics majors went directly into industry, he assumed major responsibility for developing an undergraduate applied physics degree program. He served the school of physics as associate director (1972–80) and interim director (1980–82). In 1973 the chancellor of the University System of Georgia appointed him chair of the Committee on Tenure Policy; Charlie held that position for seven years.

The acuity of Charlie's thought processes was apparent to all who had contact with him. He was endowed with a remarkable physical insight that allowed him to cut to the heart of a problem and quickly develop a solution. For that reason, he was a much sought-after teacher, almost revered by his students. Over the years, he served as an inspiration to generations of Georgia Tech students at all levels. The university presented its Outstanding Teacher award to him in 1970 and its highest academic rank of Regents' Professor in 1971. In 1983 the student body's ANAK Society chose him for its award in recognition of his outstanding administrative and educational contributions.

After retiring in 1991, Charlie maintained an active interest in current physics research and science education. He was a consultant to the Fernbank Science Center of the DeKalb County School System.

Charlie had broad interests ranging from the latest in societal models and physical theories to model railroading. As those of us who saw him regularly can attest, one could have a thought-provoking conversation with him on just about any subject, theoretical or practical. We miss him, the quality of his thought, and those conversations. His loss is felt by the entire Georgia Tech community and all those who knew him.

David R. Finkelstein

Ronald F. Fox

James R. Stevenson

Henry S. Valk

*Georgia Institute of Technology
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John Roderick Cameron

John Roderick Cameron, emeritus professor of medical physics at the University of Wisconsin–Madison, died of complications stemming from renal failure on 16 March 2005 in Gainesville, Florida.

John was born on a farm in Chippewa County, Wisconsin, on 21 April 1922. He served in the US Army Signal Corps from 1941 to 1946. A year later, he received his BS in mathematics from the University of Chicago. He did his graduate work in physics at the University of Wisconsin under Ray Herb and received a doctorate in 1952 for his thesis entitled “Elastic Scattering of Alpha Particles by Oxygen.”

During the next two years, John was an assistant professor at the University of São Paulo in Brazil, and for two years after that he was an assistant professor at the University of Pittsburgh. In 1958 he joined the UW–Madison radiology department as an assistant professor, with a joint appointment in the department of physics.

Under his guidance over the next three decades, the UW medical physics program grew from a one-physicist operation to one of the largest and most productive in the world. In 1981 the program became the first US department of medical physics, and John served as chair from its beginning until his retirement in 1986. Among the department's graduates are leading medical physicists in the field, a record that was a source of great personal pride for him.

Known for several innovative contributions to medical physics, John investigated and advanced the use of thermoluminescence for dosimetry. With Nagalingam Suntharalingam and Gordon Kenney, he wrote *Thermoluminescent Dosimetry* (U. of Wisconsin Press, 1968), one of the first books in the field. That technology replaced traditional film densitometry to become the standard for radiation monitoring

of individuals who work in areas where they might be exposed to x rays and other sources of radiation. John also invented bone densitometry, which uses precise radiation measurements to determine the mineral content of bone. One of his early bone densitometry publications was listed as the most-cited article in the 25th-anniversary issue of *Investigative Radiology*. His seminal work in that field led to many useful clinical applications of highly accurate bone densitometry, and numerous companies have commercialized the technology.

John was interested in developing new applications of physics in medicine. At UW–Madison he encouraged early developments in ultrasound, positron imaging, digital angiography, and magnetoencephalography. In 1978, *Medical Physics* (Wiley), written by John and James Skofronick, was published. He also developed tools to evaluate the quality of x-ray images, work that led to quality-assurance product development by several companies. In 1985, John founded Medical Physics Publishing, a nonprofit corporation whose initial objective was to provide reprints of useful out-of-print books. That company now publishes its own books in medical physics, including John's *The Physics of the Body* (1999), which John wrote with Skofronick and Roderick Grant. That text has been translated into Greek and Korean and has been used in major universities in a number of countries.

After retirement, John used his imagination and creativity to educate people about the benefits and risks of radiation used in medicine. Especially concerned about the public's fear of low-level radiation, he spent time analyzing data and argued that those fears were probably unfounded.

John was involved in numerous professional activities and served many organizations as an officer, board member, or adviser. He was a founding member of the American Association of Physicists in Medicine and served as its 10th president in 1968. He retained a lifelong interest in promoting medical physics around the world; he lectured extensively in Europe and supported activities in developing countries, especially in Central and Latin America.

John received many honors, including the Coolidge Award from AAPM in 1980 and the Roentgen Centennial Award from the Radiological Society of North America in 1995. He received his most recent honor in 2000, when the International Organisation for Medical



John Roderick Cameron

Physics awarded him the Marie Skłodowska-Curie Award for his activities in medical physics education in developing countries.

John was full of optimism, had a great sense of humor, and was always armed with a joke or two. He took great pride in his Scottish frugality and demonstrated it with humor. Office assistants and families of graduate students remember John as the professor who played "Happy Birthday" on his teeth, cooked eggs on a camping stove at early morning "breakfast picnics," and led canoe trips down the Wisconsin River to his summer cottage.

Perhaps his greatest legacy is the many students, trainees, and young faculty whose careers he nurtured. He was an extremely caring and generous man who went out of his way to ensure that each of those young people had the best opportunity to develop their careers. Many of us in medical physics owe a debt of gratitude to John.

He is greatly missed.

Charles Mistretta

Paul DeLuca

James Sorenson

Larry DeWerd

James Zagzebski

University of Wisconsin-Madison

Piet Cornelis Gugelot

Piet Cornelis Gugelot, professor emeritus at the University of Virginia, died in Charlottesville on 2 February 2005 of heart failure. Kees, as he was known to his family, friends, and colleagues, led a distinguished career that began at ETH Zürich and took him to Princeton, New Jersey; Amsterdam; Newport News, Virginia; and ultimately Charlottesville.

Born in Bussum, Holland, on 24 February 1918, Kees grew up in the Netherlands and in Indonesia, where his father was posted as a government physician for two years. In the 1930s he moved with his family to Davos, Switzerland, where his father was the director of the Dutch Tuberculosis Sanatorium and Dutch consul to Switzerland. Kees obtained his secondary education in Davos.

In 1940 Kees received his physics diploma from ETH under Paul Scherrer, a leading and influential professor at the institution, and became a nuclear physicist and the professor's assistant. Inspired by his mentor's leadership, Kees learned an immense amount of physics and many techniques from Scherrer and the talented young researchers in his group.

Scherrer encouraged him to be on the lookout for new fields of endeavor. Kees followed that approach, and frequently carried out exploratory experiments during his career.

While at ETH, Kees, along with four other physicists, was responsible for the construction of the institution's cyclotron, which produced its first internal beam in 1943; the beam was extracted two years later. In 1945 Kees received his PhD for his work, done under Scherrer's supervision, on the nuclear activation and spectroscopy of short-lived isotopes.

After two years as a research associate at ETH, Kees left in 1947 for Princeton University, where he worked until 1956, first as a research associate and then as an assistant professor. He spent a productive period in the fast-developing field of nuclear reactions induced by proton, neutron, and alpha-particle beams. He was among a team of physicists who reconstructed the prewar Princeton cyclotron and turned it into a powerful research tool. He also built the 60-inch scattering chamber, which allowed researchers to use the cyclotron's enhanced capabilities to conduct new experiments in nuclear physics. Kees became a leader in research on the evaporation of particles from the compound nucleus, and his pioneering papers from that era are citation classics.



Piet Cornelis Gugelot

During 1955–56, Kees was a visiting professor at the University of Washington, Seattle. He then returned to the Netherlands to accept an appointment as director of the Instituut voor Kernfysisch Onderzoek (Institute for Nuclear Physics Research, or IKO, now known as the

National Institute for Nuclear Physics and High Energy Physics) in Amsterdam. His tenure there was marked by his persistent promotion of research in nuclear reactions. With Haruhiko Morinaga, he began a program of (α, xn) reactions on medium-weight nuclei, thus introducing high-angular-momentum states to study rotational bands. This area of nuclear structure research was later perfected by Richard Diamond and Frank Stephens of Lawrence Berkeley National Laboratory. Kees also stressed the need for an electron accelerator at IKO because the existing synchrocyclotron's capabilities were limited. He and a few of his students spent time at Stanford University with Robert Hofstadter measuring nuclear form factors. Kees's advocacy of the accelerator was realized in the construction at IKO, in 1979, of the 700-MeV linear accelerator, nicknamed MEA for medium-energy accelerator.

Kees left the Netherlands in 1966 to take on the scientific directorship of the Space Radiation Effects Laboratory in Newport News. Concurrently, he joined the University of Virginia as a professor of physics. Following the end of his appointment at SREL in 1969, Kees moved to Charlottesville to resume teaching and research in nuclear physics. After he retired in 1990, he maintained a keen interest in contemporary nuclear and particle physics.

Kees was a lively and approachable physicist. His congeniality, experimental ingenuity, and breadth of knowledge in nuclear and particle physics made him a welcome visitor at many laboratories, including Oak Ridge National Laboratory, Los Alamos National Laboratory, CERN, the University of Tokyo, and the Max Planck Institute for Nuclear Physics in Heidelberg, Germany. His association with Heidelberg was sponsored by the Alexander von Humboldt Foundation through a Senior Scientist Award, which was granted to Kees in 1982 and renewed in 1987.

An exceptionally engaging person, Kees had numerous friends, including renowned physicists Hendrik Casimir, Hofstadter, Leon van Hove, Bernd Matthias, and Valentine Telegdi. With friends and colleagues, he shared his hobbies—mountain climbing, skiing, orchid growing, and photography. He filmed citizens of Papua New Guinea in war dress shooting poisoned arrows and made a movie showing orchids blooming.

Kees was an endearing friend, and his presence in any surrounding was