THE FACULTY OF MEDICINE
Harvard University

Milford David Schulz

Milford D. Schulz died October 22, 2000. Milford Schulz was the first radiation oncologist in New England and one of the very first in the United States. He was, I think, the first physician educated in the US to become a radiation oncologist. Milford received his M.D. degree from Northwestern University Medical School in 1936 and continued there for his internship and residency in radiology.

In 1940, because of an interest in the efficacy of radiation in the management of cancer patients, he accepted a position as radiologist at the Collis P. Huntington Memorial Hospital. This was operated by the Harvard Cancer Commission. For Milford, this was a splendid opportunity based on his talent and interest in physics and technology. The Huntington was the first hospital to have a Van de Graaff accelerator. In 1942, Milford was appointed Radiologist at the Massachusetts General Hospital, and was to be principally involved in radiation oncology. He was the only full-time radiation oncologist at MGH until 1953, at which time he invited Dr. C.C. Wang to join him. Although he worked in the Department of Radiology and there was no designated unit or section or division of Radiation Oncology, Milford served effectively as the Head of Radiation Oncology. He was responsible for the care of the patients there and the administration of the unit. The practice grew regularly, and by 1970 there were approximately 100 patients being treated per day.

Milford was a participant in many of the innovations in radiation oncology, and contributed prominently to the literature regarding the efficacy and, in several instances, the hazards of radiation treatment. At MGH, he was a pioneer and vigorous proponent of high-energy photon therapy. In particular, he was a central figure in the development and clinical use of the 2 MeV Van de Graaff accelerator.

Dr. Schulz received many honors and distinctions. He served as president of the American Radium Society, the Roentgen Ray Society, American Society for Therapeutic Radiology and Oncology, New England Roentgen Ray Society, and the New England Cancer Society. He served on the editorial board of several journals. He served as a member of the International Commission of Radiological Units and the National Commission of Radiation Protection. He was a member of the Committee of Radiologic Units Standards and Protection of the American College of Radiology. He served as Chairman of the Group 75 C45 Committee for the Revision of the American Standard Definition of Electrical Terms. This was under the aegis of the American Institute of Electrical Engineers. He was a member of the Committee for Revision of International Glossary of Electrical Terms. Additionally, he held many important roles in

radiology and radiological safety at MGH.

Dr. Schulz was the President of the Club of Therapeutic Radiology at the time that it made the transition from a club to a professional society. He led the group through this transition smoothly and easily. A paper by Milford that merits most favorable comments is the Janeway Lecture he presented to the American Radium Society in 1974. The title was "The Supervoltage Story." This paper describes the development of supervoltage radiation equipment and its advantages for cancer patients receiving radiation. I have thoroughly enjoyed going back through this article, as it is wonderfully informative. Dr. Schulz and MGH had a long affiliation with the Van de Graaff accelerator, as John Trump and Van de Graaff worked at MIT, which is just across the Charles River from the hospital. Regarding the first Van de Graaff that was installed at the Huntington Memorial Hospital and used for the first patient treatment in 1937, in the Janeway lecture he commented, "…this machine was a magnificent monster, air insulated with a high voltage terminal some ten feet on its side and large enough for a man to walk around in. The continuously evacuated tube was made of multiple porcelain sections ten feet long to the focusing coil and extended through the floor of the generator into the treatment room below." He continued by recounting that a "…fairly honest 1 megavolt was achieved by the use of six charging belts, each about 1 meter wide driven by three electric motors at a rate of 4,000 feet per minute. This enormous and quite complicated piece of machinery had an output of 40 R per minute at 80 cm." This machine was decommissioned in 1941. He was exceptional in his knowledge of technical aspects of radiation oncology. He worked with physicists Ted Webster at MGH and Ken Wright at MIT.

Dr. Schulz was essentially the only person responsible for the radiation oncology program at MGH from 1941 up to 1956. He was extraordinarily busy with patient care and teaching radiology residents about radiation oncology. During that time, he managed to publish twenty-six papers. Importantly, he wrote a textbook entitled *Therapeutic Radiology*; George Holmes was a co-author. This was one of the very first texts in the new specialty. His principal interest was tumors of the head and neck region, including the eye/orbit. In 1956, the program expanded, with Dr. C.C. Wang joining full time in the radiation oncology effort. Schulz then proceeded to publish another forty-five papers. Milford Schulz carried the rank of Professor at Harvard Medical School.

Of the general radiology residents that Milford taught, several entered into radiation oncology, including C.C. Wang, Melvin Tefft, and George Zinninger. He further participated in the education of a large number of residents in radiation oncology after a separate department was established in 1970.

I, of course, read the Schulz file in preparing this note. The clarity and vigor of the numerous letters that Milford wrote not only to the administration of MGH but to outside organizations about the absolute need to have radiation oncology as a specialty separate from diagnostic radiology, and that radiation oncology should be an administratively separate unit, were thoroughly impressive. He was surely very far ahead of his time in this thinking and accordingly, it is no surprise that he and a very small group of individuals helped establish the professional organization for radiation oncology in this country.

Milford Schulz had impressive talents extending well beyond radiation oncology. He would certainly be classified as a master woodcraftsman. He knew and valued fine woods and had all of the equipment and an abundant skill to fabricate exquisite pieces of furniture. He prepared the casing for an organ. He enjoyed organ music and was quite skilled at playing the organ. He and his wife, Marie, lived for the duration of his career in Belmont in a fine home on a quiet street where they maintained beautiful flowering shrubs and a garden. Milford Schulz is survived by his daughter, Catherine, and one granddaughter.

Professor Schulz retired in 1976. The Department of Radiation Oncology at Massachusetts General Hospital has sponsored the Milford D. Schulz Lectureship on a biannual basis since 1978. His very successful effort and hard work in establishing radiation oncology in this country is most noteworthy.

Respectfully submitted,

Herman D. Suit, *Chairperson*
Chiu-Chen Wang