In Memoriam: Dr. Leonidas D.Marinelli, 28 November 1906 - 13 September 1974

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These proceedings are respectfully dedicated to the memory of Leonidas D. Marinelli, whose untimely death saddened his many colleagues and friends. Radiological physics has lost one of its brightest stars, which had shone uninterruptedly for over 40 years.

Marinelli began his career in 1929 as a research technician in the Physics Department of Memorial Hospital, New York City, and remained with that hospital until 1948, when he terminated his employment as Physicist-in-Charge. From 1945 until 1949 he headed the Division of Physics and Biophysics of Sloan-Kettering Institute. He obtained his MA degree in 1936 and completed course requirements for a PhD degree at Columbia University's Division of Mathematical and Physical Science in 1938. His first publications in 1933 with Failla and Quimby were on RBE (Relative Biological Effects) and depth dose in X-ray therapy. During the next fifteen years his published work was in the forefront of his fields: fundamental and practical aspects of X- and y-ray dosimetry, followed by radioisotope dosimetry. In an important paper, published in 1942, he introduced the concept of an "equivalent-roentgen," the forerunner of the rep and the rem.

In 1949 he moved to Argonne National Laboratory. For the next fifteen years he was the Associate Director of the Radiological Physics Division,* becoming Director in 1963, a post which he held for only four years since he preferred to devote the remaining time before his retirement in 1971 to his research interests. At Argonne, Marinelli continued his fundamental studies relating to radiation from external sources, and he expanded greatly his interests in internal emitters. Recognition of his expertise came with his appointment to several subcommittees of the National Advisory Committee on Radiation Protection and its successor, the NCRP, to Committee II of the ICRP, and with his designation as a certified Health Physicist. In 1964 Marinelli delivered the Failla Memorial Lecture to the New York Chapter of the Health Physics Society. He was quick to recognize the importance of a study of Schlundt's Elgin Hospital radium injections cases of the early 1930's, and he was instrumental in starting Argonne's basic studies on radium toxicity, metabolism, and measurement *in vivo*, which now continue in the Center for Human Radiobiology. His interest in the delayed carcinogenic effects of radium led to his proposals, in the 1958 Janeway Lecture to the American Radium Society, for epidemiological studies of human populations exposed to increased levels of internal radiation.

During the early 1950's, he instigated the development of new techniques for the measurement of small amounts of radioactivity within the living human body using thallium-activated sodium iodide crystals. These techniques have undergone tremendous development in the last two decades and are in widespread use throughout the world.

Dose to bone from the translocated daughters of 232-Th in Thorotrast patients was a subject to which he gave special attention. In 1957 he showed that 224-Ra might be responsible for most of the dose. It was this perceptive idea that led to the intercomparison at this symposium of the skeletal effects in Thorotrast patients, in patients injected with 224-Ra, and in the radium dial painters.

After his retirement, Marinelli served as a consultant to the Center for Human Radiobiology. Although his health began to give him unexpected concerns, he remained busy and alert to the end. His last publication, on leukemogenesis by a-irradiation of bone marrow, appeared in 1974, forty-one years after his first.

As a scientist, he was relentless in his pursuit of knowledge; as a human being, he was an unfailingly courteous, kind, and gentle man. He is survived by his wife and two daughters. He will be sorely missed by all. **John Rundo.**

***** Rundo removed his statement that Marinelli was Associate Director of the Biological and Medical Research Division from 1950 to 1960, concurrently with his position in the Radiological Physics Division, at request of the editor. Private conversation with daughter Judith Marinelli Godfrey, May 3, 2000.