Rudolph A. Marcus was born in Montreal, Canada and received his BS and PhD in Chemistry from McGill University in 1943 and 1946. After postdoctoral research in experimental gas phase reactions at the National Research Council of Canada he became a postdoctoral fellow in theoretical chemistry with O. K. Rice at the University of North Carolina. At U.N.C. he formulated the RRKM theory of unimolecular reactions. In 1951, he joined the faculty of the Polytechnic Institute of Brooklyn and subsequently developed the theory of electron transfer reactions, for which he later received the Nobel Prize in Chemistry. He joined the faculty of the University of Illinois in 1964 and in 1978 the California Institute of Technology as Noyes Professor of Chemistry. Professor Marcus' research has covered a variety of other areas in physical chemistry, including reaction coordinates and Hamiltonians, semiclassical theory, and intramolecular dynamics.

Professor Marcus has received many awards, including the Wolf Prize in Chemistry, the National Medal of Science, the ACS Peter Debye and Irving Langmuir awards, and the Pauling, Richards, Gibbs, Chandler and other medals. He is the recipient of a number of honorary degrees and is a member of the National Academy of Sciences and the American Philosophical Society, a Foreign Member of the Royal Society of London and of the Royal Society of Canada. His hobbies include skiing, tennis, music and history. He and his wife Laura, whom he met and married in 1949, have three sons.