



Young Suh Kim, Ph.D.

University of Maryland
Professor Emeritus
College Park, Maryland
yskim@umd.edu



Dr. Young Suh Kim, Ph.D., is a Professor Emeritus of Physics at the University of Maryland. Inspired by Albert Einstein, he decided to pursue a career in Physics. In 1958, he earned a Bachelor of Science in Physics from the Carnegie Institute of Technology (now known as Carnegie Mellon University in Pittsburgh, Pennsylvania). Subsequently, Dr. Kim obtained his Doctor of Philosophy in physics from Princeton University and served as a postdoctoral fellow until 1962. At the request of John S. Toll, chairman of the Department of Physics of the University of Maryland, Dr. Kim joined the faculty of

the University of Maryland. From 1962 to 2007, he excelled as an assistant professor and became a full professor of physics at the institution in College Park, Maryland. In 2007, he attained emeritus status after 45 years of impeccable contributions. Devoted to research and development, Dr. Kim is the author of Observable Gauge Transformations in the Parton Picture, published in Physics Review Letters in 1989. Dr. Kim also co-authored numerous other books and contributed articles to professional journals. In 2019, he co-authored Poincare Symmetry from Heisenberg's Uncertainty Relations in Symmetry, Einstein's $E=mc^2$ Derivable from Heisenberg's Uncertainty Relations in Quantum Reports and Mathematical Devices for Optical Sciences. He also co-authored New Perspectives on Einstein's $E=mc^2$, Applications of Einstein's Theory of Relativity in 2018, Physics of the Lorenz Group in 2015, Phase Space Picture of Quantum Mechanics in 1991, and Space-time Geometry of Relativistic Particles in the Journal of Mathematical Physics in 1990.

One hundred years ago, in the early years of the 20th Century, Niels Bohr was interested in the electron orbit of the hydrogen atom, leading to quantum mechanics. Albert Einstein was interested in how things look to moving observers. This became his special theory of relativity with $E = mc^2$. Then there is the question of how the hydrogen atom looks to moving observers. This question was left unresolved until 1977 when Dr. Kim, with Marilyn Noz, published his paper entitled "Covariant Harmonic Oscillators and the Parton Picture" in Physical Review D. Later, in 1989, Dr. Kim reinforced this result by publishing his paper entitled "Observable Gauge Transformations in the Parton Picture" in Physical Review Letters. The issue has been whether the present form of quantum mechanics is compatible with Einstein's special relativity. These days, Dr. Kim's main interest is to see whether these two theories can be synthesized into one theory. This question is whether the equations of these two different theories can be derived from one basket of more fundamental equations. With his younger colleagues, Dr. Kim is publishing papers along this line. One of his recent paper is entitled "Einstein's $E = mc^2$ derivable from Heisenberg's Uncertainty Relations" published Quantum Reports (2019). Dr. Kim was inspired by the early papers of Paul A. M. Dirac (1902-84) and Eugene P. Wigner (1902-95) who pioneered this subject of constructing quantum mechanics valid in Einstein's relativistic world of space and time. In 1962, thanks to John S. Toll who was the chairman of the physics department at the University of Maryland, Dr. Kim was in close contact with Dirac (Nobel 1933) for one week. Dirac was an inspirational physicist. During the years 1987-90, Dr. Kim published six papers with Wigner (Nobel 1963) on this subject. Dr. Kim met Wigner when he was a graduate student and post-doc at Princeton University (1958-62).

PHYSICS

