$E = mc^2$: Opening Windows on the World

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Particles can be made from energy, and mass can disappear into energy. This simple truth, the profound discovery of Einstein a century ago, inspires the experiments that provide our knowledge of the smallest building blocks of matter. The experiments, done at enormous accelerators, have led to a consistent theory of the origins of our world. A growing realization has been that the theory of the very small is intimately connected to the very large -- the origin and structure of our universe. In this lecture Professor Kim will trace out the path from where we are in our everyday world down through many levels to the smallest particles that we have discovered. Then Professor Kim will take us on the journey to the farthest reaches of the universe. These two journeys take us to the same place.

Kim was a leader of one of the experiments at the Tevatron that discovered the top-quark, the heaviest building block of matter. Since then, she and her colleagues at Fermilab have set their sights even higher and now, after substantial improvements to the Tevatron and its associated experiments, are searching for the Higgs' particle, which is the hypothesized source of all mass.

Professor Kim attended high school in Daegu, Korea, received her BS and MS degrees from Korea University in Seoul, and her Ph.D. from the University of Rochester. She was on the faculty of the University of California, Berkeley from 1996 until 2003 at which time she moved to the University of Chicago. She became Deputy Director of Fermilab in July 2006. She was awarded an Alfred P. Sloan Foundation Fellowship in 1998, became an American Physical Society Fellow in 2004 and received the 2005 Ho-Am Prize from the Ho-Am Foundation in Korea. Professor Kim has given numerous talks on particle physics to general public and high school audiences both in Korea and in the United States.

Physics teachers and students are especially encouraged to attend. More information about Prof. Kim is on her web site http://hep.uchicago.edu/~ykkim