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Extreme Physics Where Small and Big Things Meet

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Illinois Mathematics and Science Academy

Great Minds Program®

presents

**Extreme Physics Where Small and Big Things
Meet**

featuring

Dr. Young-Kee Kim

The Deputy Director of Fermilab

and Professor of Physics at University of Chicago



Tuesday, March 24, 2009

at 4:30-5:30 p.m.

IMSA Pearson Lecture Hall

The profound discovery of Einstein a century ago, that particles can both be made from energy and disappear back into energy, inspires the experiments that provide our knowledge of the smallest building blocks of matter and the interactions between them. Experiments, done at enormous accelerators, have led to a consistent theory of the origins of our world up to a certain point. However, at an energy scale not far above what we can attain at existing accelerators, this picture is predicted to break down. Moreover, the theory of the very small is intimately connected to cosmology -- the ultimate cause and structure of our universe. Cosmological observations again point to the need for a new theory in this energy range. In this talk, I will trace out the path from where we are and what we need to do to take the next step towards understanding the nature of space and time.