



Name in English: Steven Chu
Name in Chinese: 朱棣文 [朱棣文]
Name in Pinyin: Zhū Dìwén
Gender: Male
Birth Year: 1948
Birth Place: St. Louis, MO
Current location: Washington DC

Profession(s): Public Service as US Secretary of Energy, Theoretical Physicist, Professor, Director of National Laboratory

Education: Bachelor of Arts, Mathematics & Bachelor of Science, Physics, 1970, University of Rochester; Ph.D., Physics, 1976, University of California, Berkeley

Awards: A co-winner of Nobel Prize in Physics in 1997 for development of methods to cool and trap atoms with laser light. Member of: the National Academy of Sciences, the American Academy of Arts and Sciences, the Academia Sinica, the Chinese Academy of Sciences and the Korean Academy of Sciences and Technology.

Contributions: Steven Chu, a leading advocate of alternative fuel development, solar energy, and the reduction of atmospheric greenhouse gases, became the first Chinese American Secretary of Energy in 2009. Formerly he was Professor of Physics and Molecular and Cellular Biology at the University of California, Berkeley and Director of the Lawrence Berkeley National Laboratory.

Born in St. Louis, Missouri, Chu is a second generation Chinese American whose family spoke only English at home. After earning his Ph.D. at UC Berkeley in 1976 and spending two years there doing post-doctoral work, he joined Bell Labs. His research there involved utilizing lasers to cool molecules to very low temperatures to trap them. This has applications in examining and manipulating matter at a molecular level and was deemed so scientifically important that Chu became a co-recipient of the Nobel Prize in Physics in 1997. He became Director of the Lawrence Berkeley National Laboratory in 2004. Formerly devoted almost exclusively to the maintenance and development of nuclear weapons, Chu shifted the lab's work more heavily into research into advanced biofuels, artificial photosynthesis, other solar energy research, and methods of combating climate change. Key to these developments was his leadership in forming a \$500 million biofuels institute that combined the research efforts of UC Berkeley, BP (formerly known as British Petroleum), the Lawrence Berkeley lab, and the University of Illinois.

In his acceptance speech after being nominated to become Secretary of Energy, Chu quoted a paper that he had co-written with fellow physicist Jose Goldemberg, "We believe that aggressive support of energy, science and technology, coupled with the incentives that accelerate the development and

deployment of innovative solutions, can transform the entire landscape of energy, demand and supply.” Steven Chu is in the forefront of many people who are trying to change the world.

Selected Papers: Chu S, Hollberg L, Bjorkholm JE, Cable A, Ashkin A. Three-dimensional viscous confinement and cooling of atoms by resonance radiation pressure. *Phys Rev Lett.* 1985;55(1):48-51
Chu S, Bjorkholm JE, Ashkin A, Cable A. Experimental observation of optically trapped atoms. *Phys Rev Lett.* 1986;57(3):314-317.
Zhuang X, Kim H, Pereira MJ, Babcock HP, Walter NG, Chu S. Correlating structural dynamics and function in single ribozyme molecules. *Science.* 2002;296(5572):1473-6.
Blanchard SC, Kim HD, Gonzalez RL Jr, Puglisi JD, Chu S. tRNA dynamics on the ribosome during translation. *Proc Natl Acad Sci U S A.* 2004;101(35):12893-8.
Uemura S, Dorywalska M, Lee TH, Kim HD, Puglisi JD, Chu S. Peptide bond formation destabilizes Shine-Dalgarno interaction on the ribosome. *Nature.* 2007;446(7134):454-7.

Publications: "A Sustainable Energy Future: The Essential Role of Nuclear Energy"

External links:

http://www.energy.gov/organization/dr_steven_chu.htm

http://nobelprize.org/nobel_prizes/physics/laureates/1997/chu-autobio.html