

## **HONORABLE DR. STEVEN E. KOONIN, FORMER UNDER SECRETARY FOR SCIENCE, U. S. DEPARTMENT OF ENERGY**



Dr. Steven E. Koonin served as the U.S. Department of Energy's second Senate-confirmed Under Secretary for Science from May 19, 2009 through November 18, 2011.

As Under Secretary for Science, Koonin functioned as the Department's chief scientific officer, coordinating and overseeing research across the DOE. He led the preparation of the Department's 2011 Strategic Plan (<http://energy.gov/downloads/2011-strategic-plan>) and was the principle author of its recently released Quadrennial Technology Review (<http://energy.gov/sites/prod/files/ReportOnTheFirstQTR.pdf>). Koonin particularly championed research programs in High Performance Simulation, Exascale Computing, Inertial Fusion Energy, and Greenhouse Gas Monitoring, Reporting, and Verification. He also provided technical counsel on diverse nuclear security matters.

Dr. Koonin brought to the post a distinguished career as a university professor and administrator, as well as experience in industry. He joined the Caltech faculty in 1975, was a research fellow at the Neils Bohr Institute during 1976 - 1977, and was an Alfred P. Sloan Foundation Fellow during 1977 - 1979. He became a professor of theoretical physics at Caltech in 1981 and served as Chairman of the Faculty from 1989 - 1991. Dr. Koonin was the seventh provost of Caltech (from 1995 - 2004). In that capacity, he was involved in identifying and recruiting 1/3 of the Institute's professorial faculty and left an enduring legacy of academic and research initiatives in the biological, physical, earth, and social sciences, as well as the planning and development of the Thirty-Meter Telescope project.

As the Chief Scientist at BP between 2004 and early 2009, Dr. Koonin developed the long-range technology strategy for alternative and renewable energy sources. He managed the firm's university-based research programs and played a central role in establishing the Energy Biosciences Institute at the University of California Berkeley, the Lawrence Berkeley National Laboratory, and the University of Illinois at Urbana-Champaign.

Dr. Koonin was a member and past chair of the JASON Study Group, advising the U.S. Government on technical matters of national security. He has served on numerous advisory committees for the Department of Energy, the National Science Foundation, and the Department of Defense, including the Defense Science Board and the CNO's Executive Panel. He is a member of the Council on Foreign Relations and a fellow of the American Physical Society, the American Association for the Advancement of Science, and the American Academy of Arts and Sciences, and a former member of the Trilateral Commission.

In 1985, Dr. Koonin received the Humboldt Senior U.S. Scientist Award and, in 1998 the Department of Energy's E. O. Lawrence Award for " his broad impact on nuclear many-body physics, on astrophysics, and on a variety of related fields where sophisticated numerical methods are essential; and in particular, for his breakthrough in nuclear shell model calculations centered on an ingenious method for dealing with the huge matrices of heavy nuclei by using path integral methods combined with the Monte Carlo technique." He was elected to membership in the US National Academy of Sciences in 2010.

Dr. Koonin's research interests have included nuclear astrophysics; theoretical nuclear, computational, and many-body physics; and global environmental science. He has been involved in scientific computing throughout his career and is a strong advocate for research into renewable energies and alternate fuel sources. His academic research in computational and nuclear physics has impacted the direction of science both nationally and internationally. He has supervised more than 25 PhD students, produced more than 200 peer-reviewed research publications, and authored or edited 3 books, including a pioneering textbook on Computational Physics in 1985.

Born in Brooklyn, New York, Dr. Koonin received his B.S. in Physics from Caltech in 1972, worked as a summer graduate student at Los Alamos from 1972-1975 and received his Ph.D. in Theoretical Physics from the Massachusetts Institute of Technology (MIT) in 1975. Dr. Koonin married his wife, Laurie, in 1975. They have three grown children, Anna, Alyson, and Benjamin.

Dr. Koonin currently works at the Institute for Defense Analyses in Washington D.C., and will take up an academic position in 2012.