Biography

Neil Siegel

The IBM Professor of Engineering Management / Professor of Engineering Practice with Distinction
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Neil Siegel is the IBM Professor of Engineering Management and a Professor of Engineering Practice with Distinction in the Epstein Department of Industrial and Systems Engineering, and is also a professor of Computer Science practice, both within the Viterbi School of Engineering at the University of Southern California. He is a recognized expert in the design and development of large, complex systems that serve important societal needs, both as a practitioner at the largest scales, and as a researcher.

Until his retirement at the end of 2015, he held the position of sector vice-president and chief technology officer at Northrop Grumman, for the Mission Systems and Information Systems sectors. He led the sector's research portfolio ($600M / year), and oversaw the development of technical solutions for their customers' most-important problems. He also oversaw the sector's 12,000-plus scientists and engineers, directed engineering process improvements, and activities to develop the company's technical talent.

Previously, Dr. Siegel served as vice-president and general manager of the company's Tactical Systems division, and a director of the company's U.K. subsidiary. He has been responsible for engineering projects in many portions of the world, including the United States, the U.K., NATO, the Middle East, etc. In all, he served as a vice-president of the company for nearly 18 years.

Dr. Siegel led the engineering on a large number of successful fielded military, intelligence, and commercial systems, including the U.S. Blue-Force Tracker; the Army's first unmanned aerial vehicle; the Forward-Area Air Defense system; the fire-control segment of the world's first complete laser weapon system; and played important roles for many other systems for ground, sea, space, and cyber-space. These systems have repeatedly been cited as model programs and important national capabilities. He also led work for the steel industry, the movie industry, the healthcare industry, and the electric power industry. He helped to invent techniques to reduce unintended adverse interactions between drugs prescribed by different doctors; these techniques are now used almost universally in the U.S. and Europe, saving thousands of lives each year. Techniques that he pioneered are used in a very large number of mobile consumer electronics devices around the world (including almost every GPS receiver, smart phone, and tablet computer in existence). He is a recognized expert in information networking, especially network management, wireless networks, and networks of mobile devices. Much of his recent research has made contributions in the field of improving development methodology for large-scale systems, through the identification of novel root-causes of system-development failures, new methods to correct those root-causes, and application of those new techniques to problem domains such as health, energy, and Government information systems. He holds nearly 50 issued and pending patents worldwide.

Among his many honors are the following:

- U.S. National Medal of Technology and Innovation
- Election to the U.S. National Academy of Engineering
- Selection as a Fellow of the U.S. National Academy of Inventors
- Selection as a Fellow of the Institute of Electrical and Electronics Engineers (IEEE)
- Selection as a Fellow of the International Congress on Systems Engineering (INCOSE)
- Selection as a Fellow of the Asia-Pacific Artificial Intelligence Association (AIAA)
- The IEEE Simon Ramo Medal for systems engineering and systems science
- The TRW Chairman's Award for Innovation (three times)
- The Army's Order of Saint Barbara
- The iCMG award for system architecture
- The Northern Virginia Technology Council CTO-of-the-year award
- The Albert Nelson Marquis Lifetime Achievement Award
- The Crosstalk Award for the best-managed software project across the entire U.S. Government

Recent publications include 3 textbooks, as well as a chapter in a book on ethics in engineering. Public service includes board positions for three charitable organizations, 10 years as an elected public official (California Hazard Abatement District board), former membership on the Defense Science Board, the Army Science Board, and the board of the research foundation of the State University of New York.