

Stephen L Squires, PhD

Abbreviated Executive Biography focused on Information Technology and Security

Dr Squires has devoted his entire professional career to the most challenging science, technology, and policy issues associated with advancing the frontier of Information Technology and Information Security. As a freshman undergraduate electrical engineering student at Drexel University he was invited by NSA to be an Engineering Intern in their advanced computing and communications research group. During his 5 year co-op internship he had the opportunity to personally work on the first single user workstations, the most advanced supercomputers of the time, the first large scale secure operating system at NSA and the related ARPA project at MIT called Project MAC that became the basis for Multics, and first ARPAnet IMPs at NSA.

Following an NSF Graduate Fellowship at Princeton University and a year at the Burroughs Advanced Development Organization he returned to NSA. As a computer scientist at NSA and joined the new Computer Science research division that worked on close cooperation with the existing Crypto Math research division and the new Computer Security research division. Shortly after returning to NSA, he developed a prototype of the first operational public key system using advanced computational complexity theory results and that was experimentally used on the internal NSA ARPAnet-based system by the mid 1970s. By the early 1980s, he had demonstrated the ability to rapidly prototype advanced computing systems for a variety of mission critical applications while working closely the mission organizations. He was awarded an NSA Graduate Fellowship for a PhD at Harvard University. He was also invited to take the NSA CA-400 "Intensive Study Program in General Cryptanalysis" to provide an advanced computer science perspective for the field. By the early 1980s, he was directly involved in rapid prototype software with advanced VLSI designs using the most advanced technologies developed in cooperation with DARPA.

In summer of 1983, he was invited to join DARPA as a software technology program manager for the new Strategic Computing Program. Within a few months, he became responsible for the high performance computing and associated software technology parts of Strategic Computing. He led the revolutionary transition from serial computing to scalable parallel computing and provided the leadership that enabled the development of the Mach scalable derivative of Unix, Trusted Mach, and a new generation of advanced software and hardware analysis tools using formal methods in cooperation with NSA. During this time he was among the small team that initiated the formation of the Software Engineering Institute (SEI) at CMU and a few years later the Computer Emergency Response Team at the SEI. His leadership and the results produced in the DARPA Strategic Computing Program became the foundation for the Federal High Performance and Communications Program initiated in 1992. The Federal HPCC Program included the development of the first trillion operations per second computing systems, the first gigabit per second networking systems, the introduction of the client server model, DNS, IPv6, and an expansion of the CERT System.

By the end of 2000, he was invited to join HP as its first Chief Science Officer and Vice President. In this role he was responsible for providing strategic guidance to HPLabs at the frontier of IT and IS along with HPBizs to accelerate the transition of advanced IT and IS into commercial products.

In early 2006, he left HP to pursue independent consulting as Founder and President of Kelvin 1687 Inc providing consulting services to industry, academia, and government in diverse areas of information technology and security including high performance computing, networking, and trusted systems.