Computer scientists honored for software tools development

By Jeffery Kahn

Almost two decades ago, three Berkeley Lab computer scientists popularized a suite of software tools that many computing professionals considered revolutionary and maybe even subversive. This week, their work is being recognized with Lifetime Achievement Awards by one of their profession's most prestigious associations.

It was 1978, a time when mainframes ruled the world. Computer operating systems were designed to squeeze the maximum efficiency out of the computer. Never mind that they did not maximize the effiency of the people using the machine. As Dennis Hall, one of the software "revolutionaries" recalls, "These were the days when people practically bowed down to computers." The machine was master.

Hall and two of his Berkeley Lab colleagues, Deborah Scherrer and Joseph Sventek, helped to change that, presumably forever. They founded the Software Tools Project, which over the course of several years blossomed into a movement that helped transform computer operating systems by empowering the people who use them.

On Jan. 24, Hall, a member
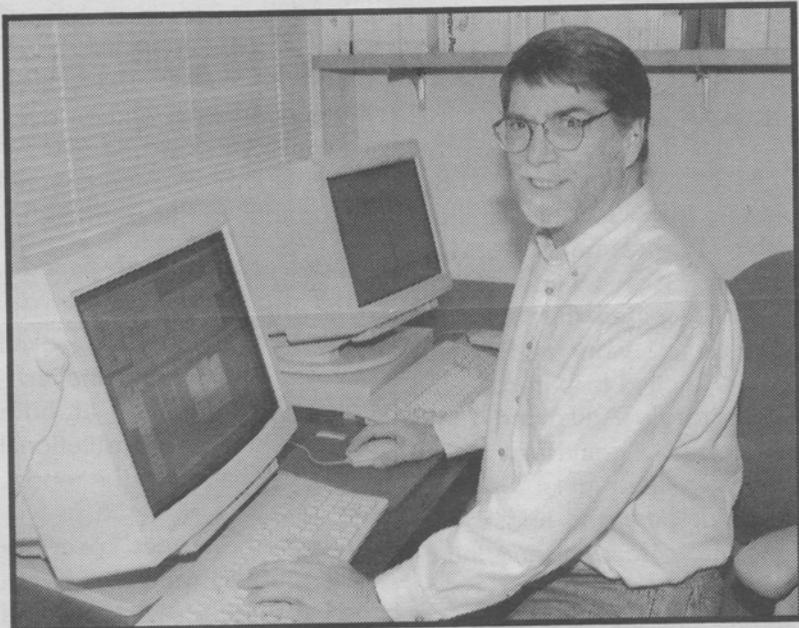
ICSD's Dennis Hall and colleagues have been recognized for their development of the Software Tools Project. *Photo by Don Fike*

of the Information and Computing Sciences Division, and Scherrer and Sventek, no longer with the Lab, were presented with Lifetime Achievement Awards by the USENIX Association. USENIX is the Unix and advanced computing systems technical and professional association. Since 1975, it has united the community of software engineers and computer scientists working on the cutting edge of the computing world.

In honoring the three, USENIX said, "Before the gen-

eral availability of Unix, the Software Tools project popularized a new vision of operating system software, offering a bridge to portability and power for those beleaguered by limited, proprietary operating systems. With its extraordinary focus on building clean, portable, reusable code, shared amongst multiple applications and runnable on virtually any system, the Software Tools movement established the tradition of empowering users to define, develop, control, and freely dis-

tribute their computing environment."

USENIX also recognized Brian Kernighan and P.J. Plauger for having inspired the Software Tools movement.

The Unix operating system was developed in the early 1970s at AT&T Bell Labs. "When it came to maximizing efficiency," Hall said, "Unix favored the software developer rather than the hardware. This was controversial. It was part of the reason that Unix gained a reputation as being academic in nature and not suitable for commercial usage."

Not long after the debut of Unix, Kernighan and Plauger authored an instructional manual for writing software called "Software Tools." Hall bought the book along with a tape of development tools. He says mastering what was contained in this package inspired the Software Tools project.

In 1978, Hall, Scherrer, and Sventek moved the Software Tools development code onto a Berkeley Lab mainframe, the CDC 6600. The 6600 was not running Unix, but with Software Tools, it looked like it was Unix-based. With no loss of efficiency, the 6600 became more user friendly and efficient. The experiment was repeated for DEC machines running both VMS and Berkeley Unix. Berkeley Lab's Van Jacobson and Bob Upshaw added many new tools to the collection, and Sventek added an electronic mail system.

The three developers described their work in a September 1980 paper, and formed the Software Tools Users Group. Within several years, the users group had some 2,000 participants internationally.

Through the users group, the Software Tools were eventually installed on a wide range of systems, including Cray, IBM, Hitachi, CDC Data General, DEC and IBM XTs running DOS and CP/M. By the late 1970s and early 1980s the Software Tools spanned more than 50 distinct machine architectures and their operating systems. Apollo, later bought out by Hewlett Packard, took the tools and developed their first operating system from them.

"Over its five-year heyday," says Hall, "the Software Tools movement trained many people in Unix who would otherwise not have had this exposure. This influenced the evolution and improvement of Unix, and contributed to its eventual success in the commercial world. The Software Tools movement was fun. It definitely felt like a revolution. It put the machine to work for you."

Where are they now?

Dennis Hall currently heads the Information Systems Projects group in ICSD's Technical and Electronic Information Department. Joe Sventek is Hewlett Packard's Distinguished Engineer for Distributed and Object-Oriented Computing, based at Hewlett Packard's Corporate Research Laboratories. Deborah Scherrer went on to become president of Mt. Xinu, one of the first UNIX software companies. ■
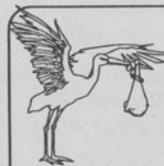
Lab Life

Rosalyn Farmer of Structural Biology and her husband Rod welcomed their first child, Tiffany Nicole, on Jan. 10, 1996. The baby weighed 8 lbs. and was 21" long at birth. Rosalyn, says she is a happy new mother!