

UW CSE 2015 Alumni Achievement Awards

CSE honored two extraordinarily accomplished alumni — Tim Paterson and Kevin Jeffay — during its June 12th graduation ceremony. UW CSE's Alumni Achievement Awards have two purposes: to celebrate alums such as Tim and Kevin, and to affirm to new graduates that they are joining a community of UW CSE alums who have changed the world.

Tim Paterson (B.S. '78)

DOS Seals His Contribution to PC History

Tim Paterson's email address neatly unites his past and present — dosman@patersonstech.com. It encapsulates his early claim to computer science fame and his current engineer's proclivity to tinker and design tools for his own everyday needs. If other people consider them useful and want to buy them, that adds to his gratification and mission to be of service.



Paterson was among the first UW computer science undergraduate alumni. His combination of programming and design talent, drive to fix problems, and luck to work for key organizations at the right time sealed his contribution to the explosive development of personal computers.

At the age of 24, as the only engineer at Seattle Computer Products, he took on a rush project to create an operating system for the company's new 16-bit computer system that he designed. He gave it the internal name of QDOS, for "quick and dirty operating system." In fall 1980 it went on the market under the name 86-DOS, aimed at computer manufacturers and companies like Microsoft.

Microsoft soon came knocking on Seattle Computer's door to license 86-DOS, then purchased the rights for a total outlay of \$75,000. Paterson remained at his job, working on the underpinnings of the program. Ready for a bigger company, he joined Microsoft in May 1981 as employee #80. Only then did he learn the big secret — IBM was Microsoft's customer for 86-DOS. The PC was announced that August, and Paterson completed the DOS 1.0 and 1.1 upgrades. That helped seal the company's future as a software behemoth, and it ensconced Paterson as the original author of the world's most widely used program for the next two decades.

Paterson's UW and engineering roots go deep. His father was a '35 UW EE graduate who kept all kinds of parts and gadgets around the house, which led to frequent

father-son tinkering projects. They ordered Heath Kits, and Paterson built a radio receiver and an oscilloscope he still keeps in his basement "museum," along with other stray parts from early creations.

Paterson's talents won him admission to the College of Engineering, and then to the CS department once undergraduate students were admitted to the newly created program. In this era, only grad students had access to the Sieg Hall computer room and a Sigma with a 5-MB hard drive. "I got a peek of it on a tour but never saw it again. Undergrads had to hike over to the computer center near Mercer Hall," he says. "In junior year a buddy and I bought a dial-in modem and IMSAI-8080 so we could program in our dorm."

It's no surprise Paterson graduated *magna cum laude* with the right mix of skills, smarts, and creativity to design the operating system behind the PC revolution. Paterson left Microsoft just short of a year after his hire, returned briefly in 1988, and again in 1990 for an eight-year run working on Visual Basic. When he left, the value of his stock options enabled him to retire in good humor and high energy at age 42. "Doing okay," he calls it.

With a sound grasp of the joys of life beyond work and no captain of industry desires, he established Paterson Technology as a hobby outlet for building "gizmos" — both for creative satisfaction and practical use around his own home. He posts photos of his inventions on his website and offers them for sale to other folks looking for outside-the-box items for their otherwise unmet tech needs.

In retirement Paterson poured abundant passion into crazy fun and geeky hobbies. For about 20 years he reveled in pro rally racing on twisty logging roads. After winning several regional competitions in the late 1990s, he competed on the national circuit for a few years, placing third Open Class in the 2001 national championship. "Just luck," he says. Paterson also admits to "rolling cars more times than I can count," at least once when his wife was his co-driver. From about 2000 to 2005 he turned his attention to combat robots, even competing in several BattleBot tournaments, a TV reality series broadcast on the Comedy Central cable channel.

That's life on a fast track in numerous adrenalin-pumping lanes.

Kevin Jeffay (Ph.D. '89)

A Real-Time Researcher, Leader, and Lauded Teacher



Kevin Jeffay jokes that the digital clock has barely begun the countdown on his tenure as chair of computer science at the University of North Carolina, Chapel Hill. He has four years and five months to tick away, but as the new chair is focusing month by month on the challenges and opportunities. "It's an important service, someone has to do it, and after 26 years on the UNC faculty I'm deeply bonded to this university," he says.

UNC is proud of being the second university in the nation to establish a CS department and celebrated its 50th anniversary in May. "It's an exciting time in computer science, and our department has experienced phenomenal growth with classes bursting at the seams," Jeffay says. "But like many public institutions we are dealing with state budget cuts and are treading water fast."

When he returns to the UW in June to accept the Alumni Achievement Award, he can look forward to chair shoptalk with Hank Levy and Ed Lazowska (famed for his countdown clock).

"This award is really truly an honor," Jeffay says. "Nothing in my life has felt more flattering. I owe everything to this department and never miss a chance to get back and connect with old friends."

Jeffay landed at UW via a jolting academic rupture and an opportune connection. After earning a mathematics degree at the University of Illinois, he headed to the University of Toronto for graduate work in computer

science. "On my first day of classes I was surprised to see students wearing ties and sports coats with school crests, and here I was, a loud-mouthed kid from the Illinois corn fields," Jeffay laughs.

By the end of his master's program, he was *persona non grata* with an influential faculty member, "going down in flames and being shown the door." Fortunately, another faculty member liked him, saw his talent, and suggested he apply to the UW doctoral program. A decade or so previously, that faculty member had advised both Ed Lazowska and John Zahorjan during their grad studies at Toronto. "When Ed heard why I was out the door, he immediately understood and said 'I'll take him,'" Jeffay says. "UW CSE was a far younger department and a great fit for me. Toronto did me the favor of my life."

At Toronto he did his master's research in real-time systems. The Washington Technology Center wanted to fund work in the area, and Professor Alan Shaw was interested too, so that became the focus of his doctoral research, with Shaw as his advisor. Along the way Jeffay also worked with David Notkin, who joined the faculty in 1984. Hank Levy became a good friend and skiing buddy.

Jeffay's next transition, to a faculty position at UNC Chapel Hill, was another cross-continent leap of faith. There computer science was housed in the College of Arts and Sciences, while the engineering programs were located at NC State in Raleigh. "My first class at UNC had only three students," says Jeffay. "When one dropped, I had to beg the others to stay so I could keep my job."

He helped build the real-time systems program at UNC and, to attract students, established a multimedia group working on the then radical idea of processing audio-video in real-time on a computer. Current high-profile research in the CS department includes a partnership with the physics department in developing the nanoManipulator, a virtual reality interface for scanned-probe microscopes. It can visualize an individual atom or clumps, and measures the mechanical forces required to bend a carbon nanotube. Another current project focuses on a free-space optical communications network that would cover the U.S. through equipment installed on aircraft.

Jeffay has held the Gillian T. Cell Distinguished Professorship in Computer Science since 2008 and is heavily engaged in service activities and leadership roles with professional organizations in his specialty fields. Students remain a high focus, too. Since 1994 he has coached the ACM International Undergraduate Programming Contest, taking teams to the World Finals in 2001 and 2006. Jeffay has won three outstanding computer science teaching awards and two favorite faculty awards, a big leap from his two-student start.



In addition to his own return to CSE in June, Jeffay also is responsible for the recent return of a famous photo, lost for 25 years, that had graced the grad student board in Sieg Hall. "CSE graduate student Monkey W. Duncan, ABD '89" now lives digitally on the CSE news blog:

news.cs.washington.edu/2015/03/09/famous-photo-lost-for-over-25-years-finally-returned-to-uw-cse/