

David Berends Sarnoff

If you think music and engineering make an odd career mix, don't tell that to David Berends, whose passion for music led him to a career as an electrical engineer with a specialty in digital signal processing.

Hailing from Baltimore, Maryland, Berends first laid his eyes on a piano at the age of three and told his parents in no uncertain terms he wanted to play it. He would actually start at the age of five or six.

Berends started college at the University of Pennsylvania not knowing what he wanted to study, wavering between mathematics and music. "I was intrigued with electronic music. This was the early days of analog synthesis, and I built a kit synthesizer," he recalls. "I was fascinated with the possibility of making sound with electronics. At the same time, I was growing disillusioned with academic classical music."

That led Berends to transfer to Princeton University, and his fascination with electronic music moved him to study engineering. He took an interest in digital signal processing (DSP) and studied analog and digital electronic music synthesis while playing in jazz bands on the side. He went on to receive a B.S. in electrical engineering and computer science.

Early in his career, Berends, 47, worked at a series of companies in the Princeton, New Jersey area before he landed at Sarnoff, a Princeton firm that conducts contract research for government and commercial clients in electronic, biomedical, and information technologies. Founded in 1942 as RCA Laboratories, the company was renamed in honor of RCA Chairman General David Sarnoff in 1951. Berends works as a member of the technical staff in the company's communication systems and networking group, which deals extensively with wireless technology.

"It's a very different environment from most companies because of the contract R&D nature of the work," Berends says in describing Sarnoff. "One of the attractions of the company is that we do a very broad range of things." Much of it is leading edge. One of his current projects involves developing a new radio for the military, which he says will serve as the new communication standard for all the services. He's designing an amplifier that works specifically in the 400 megahertz to 2 gigahertz space.

In carrying out such work, Berends reports, "I do a lot of DSP programming. I spend a lot of time writing code and testing it with the hardware in front of me." In typical projects, he designs the hardware using CAD design tools. This leads him to comment, "The tools available to the engineer today are so much more powerful than what we had in college. I do a lot of work now with Matlab and simulating things." But he adds, "The fundamentals stay the same, though. And all the things we learned in college have not changed much from an electrical engineering point of view. The things that have changed have been in the software domain."

Meanwhile, in his other life, Berends' music career has come to include innumerable radio, television, and concert performances with the likes of jazz guitarist Stanley Jordan and the legendary Chuck Berry. He not only plays, he also composes piano pieces and has two CDs to his credit.

The perspective gained from juggling dual careers allows Berends to share some unique wisdom with prospective engineers. “What’s important is that you pursue your passion. To be a happy engineer, find that area of engineering you really want to pursue with all the energy you have.”