One of the most remarkable things about the School of Engineering and Applied Science is our Division of Technology, Culture, and Communication. With faculty like Edmund Russell and Bernard Carlson, widely regarded for the excellence of their teaching and scholarship, we can be sure that our students view the practice of engineering for what it is: one of the human arts.

Richard W. Miksad
Alton G. Keel, Jr., never set out to be anything but an engineer. After completing an undergraduate degree in aerospace engineering and a doctorate in engineering physics at the University, he completed a postdoctoral program at the University of California at Berkeley and took a job with a navy research lab. But after applying for and winning a Congressional Service Fellowship, he embarked on a career that is noble both for its variety and for its distinction.

Ambassador Keel is remarkable for finding new fields to apply his skills. His engineering education gave him the confidence to take on the first systematic examination of the Defense Department’s multibillion-dollar R&D budget ever undertaken by Congress; to conduct complex negotiations with our NATO allies, and to evaluate the prospects of high-tech start-up companies.

Ambassador Keel’s eclectic career is not surprising in light of his decision, right at the start, to pursue engineering at the University. “I was drawn to the combination of a high-quality engineering school within a major university with areas of excellence in medicine, law, the liberal arts, and the sciences,” he recalls. “It was a great opportunity to study and socialize with people of varied interests.”

Although he’s acted in a variety of capacities during his life, he has always seen himself as an engineer. “I’ve been mistaken for a number of different things,” he says, “a diplomat, an economist, and a foreign policy analyst. But the fact is, I am an engineer.” And throughout my career the engineering training I received at U.Va. has served to my advantage.

Alton G. Keel, Jr. (B.S. ’66, Ph.D. ’70), has built an impressive career on foundations laid more than three decades ago at the engineering school. As associate director of the Office of Management and Budget, acting assistant to the president for national security affairs, ambassador to NATO, and now president and managing director of an investment bank, he draws constantly on the analytical skills he honed while a student in Charlottesville.

Thanks to the generosity of an anonymous donor, the School of Engineering and Applied Science will be creating a distinguished professorship with an endowment of several million dollars. This is the largest endowed chair ever created in the engineering school and one of the largest that any school at the University has received in its 300-year history. The chair will honor an unknown alumnus of the college.

“Establishing a professorship at the School of Engineering and Applied Science is a sign of the University’s continued commitment to providing high-quality education for generations of students,” said Virginia Engineering Foundation director Tom Connors. “It will ensure that we can compete with the best schools for the most eminent and excelling faculty.”

One of the most important characteristics of the new professorship is its flexibility. The chair is awarded at the discretion of the dean, so it can be used to bolster the school’s strength in new fields as they emerge. The dean also sets the term of the professorship, providing an incentive for the holder to do the best possible work.
EVERYDAY Y2K

The hubbub over Y2K only illustrates how deeply embedded computers have become in our daily lives. From the braking systems in automobiles to the cockpit of a Boeing 777, computers are being left on their own to perform more sophisticated tasks. And while computers can lead to higher performance and greater safety, our greater dependence on them means that the consequences of computer failure may be catastrophic.

What’s worse, the designers and users of these systems may not be able to pinpoint all the potential causes of failure—like the coding problems brought on by the shift to a new century. Addressing something like the Y2K bug is relatively simple compared to the challenges that U.Va.’s Center for Safety-Critical Systems routinely takes on.

“We are not just talking about computers,” notes center codirector Ted Gams. “The problems we deal with involve complex interactions among computers, physical systems, communications systems, and people.”

The center’s expertise in factoring in these variables and creating enormously sophisticated models to quantify the risk has attracted international attention. For instance, the center is currently working with the Federal Railroad Administration to develop a process for railroad system suppliers to demonstrate the safety of their products.

“I believe strongly in working closely with industry,” says codirector Barry Johnson. “That’s the way we find out where the real problems are.”

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Ambassador, Investment Banker, and Engineer, Alfred Kail

GOT HIS START AT U.VA.