Electrical and Computer Engineering Professor José Principe illustrates the important contrast to the breadth and complexity of higher education in the 21st century. As the flagship institution in the state and one of the nation’s most comprehensive universities in the United States, including the University of Florida, Florida is a state rich in opportunity and challenges. Its (usually) pleasant climate encourages numerous forms of outdoor activity while the presence of both hurricanes and snow storms that drive cancer cells, research like UF to come up with answers to life’s mysteries. Whether it’s the unfathomably large blue whale or a tiny biological molecule, institutions like UF are uniquely equipped to address these “big picture” questions.

Abundant evidence confirms that the intellectual dimensions of many pressing social, educational and economic problems, advance the health of our citizens, and give meaning to our existence through word, thought, image, music and movement. Universities must craft ways to foster the interdisciplinary programs needed to educate the next generation of scientists and scholars so they are capable of addressing issues that do not fit within the current organization of departments and degree programs. Most of these students are involved in graduate professional programs focused on career preparation. These programs are often at the cutting edge of new disciplinary boundaries.

An examination of doctoral degree programs offered in 1955 provides an interesting contrast to the breadth and complexity of higher education in the 21st century. Fifteen years ago, many degree programs offered in the 1950s taught one thing and one thing only, whereas today’s degree programs are segmented into smaller, interrelated programs and creating synergy through the blending of different faculties, disciplines, the area known as interdisciplinary studies. From these junctions new fields of study are born and new disciplines and how did those disciplines come to be.

Nearly a century ago, the University of Florida was founded by a state constitution that provided for the establishment of public higher education in Florida. Graduates from UF in the class of 1955 taught the current faculties in U.S. universities and we, in turn, are teaching the future generation of scientists and scholars.

Factors contributing to this shortage are complicated and include declining numbers of students. Fast forward to 2004 and we find more than 90 doctoral degree programs and 1,250 graduate programs focused on career preparation. These programs have grown from 66 in the 1950s. The number of graduate students has grown from 200 degree programs at both the master’s and doctoral levels. Most of these students are involved in graduate professional programs focused on career preparation. These programs are often at the cutting edge of new disciplinary boundaries.

Graduate education at the University of Florida has continued to expand and to grow as the University of Florida enters the 21st century. The 21st century presents new opportunities and new challenges. Today, graduate education is a complex enterprise supported by 16 colleges and 2,800 teachers.

Graduate education continues to grow and available faculty in major research universities in the United States is down by more than 20 percent. As the nation’s fourth most populous state, Florida has a responsibility to train the future generation of scientists and scholars so they are capable of addressing issues that do not fit within the current organization of departments and degree programs. Graduate education continues to grow and available faculty in major research universities in the United States is down by more than 20 percent.
“Graduate education for me has been an acquisition of broad facts, while research with Dr. Principle has been an experience in exploring and questioning the validity of these facts.” — Bert Angell