Ivan G. Seidenberg
School of Computer Science
and Information Systems
he Ivan G. Seidenberg School of Computer Science and Information Systems, established in 1983, is the youngest school within Pace University. It was one of the first comprehensive schools of computing in the country and remains in the forefront of the field. Its mission is to prepare men and women for professional work, research, and lifelong participation in a new and dynamic information age. The school offers a student-centered environment; small classes; committed teaching; research with professors; innovative programs, projects, and partnerships; and convenient multicampus locations in New York City and Westchester County as well as online courses and programs. Inherent in the school’s activities and services to students, businesses, and the community is the belief that information technologies are tools for the empowerment of people.

With undergraduate and graduate programs spanning the computing disciplines, the school attracts a geographically diverse cross section of students. In 2004, the school enrolled 1,013 undergraduate and 611 graduate students on Pace’s campuses in downtown Manhattan and Westchester County, New York, and in programs taught by distance learning. Students came from regions extending from California to Korea, from Maine to Macedonia.

Seidenberg Scholars

In September 2005, the Pace University trustees renamed the school the Ivan G. Seidenberg School of Computer Science and Information Systems, honoring Ivan G. Seidenberg, the chairman and CEO of Verizon Communications, Inc., who made a $15-million gift to help endow the school. Seidenberg, who earned his MBA from Pace in 1981 and serves as a University trustee, is widely recognized for transforming the telecommunications industry by pioneering uses of wireless technology and for recently setting the goal of taking broadband to every home.

His donation is the largest gift ever given to Pace University and represents his long-standing commitment to Pace’s mission of providing opportunity for students from all walks of life. As a strong proponent of connecting students and teachers to technology, Seidenberg, in 1989, was instrumental in securing a large grant to the school from the Bell Atlantic Foundation to create and support the Technology Center for Education and Human Empowerment, a project that initially was dedicated to educating teachers in the use of Internet technology and now assists a large range of companies and institutions. In 2005, Verizon made a significant grant to help the computing school support the information and technology needs of nonprofit institutions in Westchester County.

Part of the new gift will create a new Seidenberg Scholars program, making it possible to recruit the brightest students and finest scholars and researchers in the country. The Seidenberg Scholars are expected to help propel the school to new heights and a position of national leadership among its peers.

Career Outlook

Contrary to perceptions about the outsourcing of basic programming and service center jobs abroad, the Seidenberg School focuses on the extraordinary opportunities for advanced computing careers that lie ahead in the U.S. and are likely to become more numerous than ever. An April 2005 Fortune magazine survey of professional jobs most likely to be in demand over the next decade found that at least half of the top 20 are in computing, and that unlike jobs in several other categories, those jobs will be filled by college graduates. Jobs with titles such as network systems and datacom analyst, computer and infosystems manager, and software engineer will require advanced degrees. Other forecasts show
increasing demand for people who can integrate computing skills into disciplines like business, education, health care, forensics, and environmental studies. Computing opportunities are also expanding in the nonprofit sector, where the application of computer technology has lagged.

Over the years, Seidenberg School graduates have taken their expertise to such diverse industries as financial services (JPMorgan Chase, Goldman Sachs), computer manufacturing and application development (IBM, Lucent Technologies), telecommunications (Verizon, AT&T), consumer products (Avon, Colgate-Palmolive), health care and pharmaceuticals (Pfizer, Merck), and entertainment and communications (HBO, NBC). The Computer Merchant, Ltd., a highly respected information technology consulting company, was founded by John Danieli ’66, a Pace alumnus who is a Seidenberg School Advisory Board member.

Teaching Philosophy and Program Offerings

Pace University’s Seidenberg School has been a leader in computer literacy for college students. For more than two decades, the school’s basic course, “Introduction to Computing,” has been part of the Pace required undergraduate core curriculum. In recent years, additional courses satisfying general education requirements have been added that combine computing class work with service internships in computing at nonprofit organizations. These increasingly popular courses have benefited teenagers with AIDS, artists with emotional disorders, library patrons without basic computing skills, seniors in adult day care centers, and the Nations of New York Project that supported New York City’s bid for the 2012 Olympics, while helping close the digital divide between haves and have-nots. In addition, Pace University offers courses, such as “Film and Computing: Real and Virtual Identities” and “Scandal in the Boardroom: Business, Ethics, and Information Technology,” taught in interdisciplinary learning communities, that combine the introductory computing course with content from disciplines like English or business.

The school’s approach to computer science and information technology reflects Pace University’s emphasis on balancing classroom instruction with practical experience. Every Seidenberg student has a professional placement as part of his or her program. As a result, undergraduates are transformed into knowledgeable and self-confident professionals. According to Dean Susan Merritt, Seidenberg computing majors “know well what they are doing and have already demonstrated it by the time they graduate.” One student, for instance, recently worked in the Infrastructure Data Services Department of Merrill Lynch, another tested applications at IBM on one of the world’s newest and fastest mainframe computers, and others worked during summers on grid computing at the Argonne National Laboratory.

The Seidenberg School also is credited with developing an innovative doctoral program, the Doctor of Professional Studies (DPS) in Computing. Designed for working information technology professionals, it transforms the conventional doctoral sequence by making it possible to complete the degree in three years of part-time study, enhanced by online computer interaction that is combined with one weekend a month of study on-site.

This program has proved particularly beneficial to people with professional and family responsibilities, including women and minority group members who are underrepresented throughout the doctoral level in the U.S. and especially in computing. Of the school’s currently enrolled students and most recent graduates, 21 percent are women, 21 percent are African-American, 10 percent are Hispanic, and 20 percent are Asian-American, figures that generally exceed national averages. In its 2004 survey of institutions conferring master’s degrees in computer and information sciences, the magazine
Black Issues in Higher Education cited Pace as the nation’s number one grantor of master’s degrees to Asian-Americans and the number two grantor to African-Americans and Hispanics. Women and minority group members are also unusually well represented among the faculty.

Working in partnership with many industries to develop courses that meet the needs of business, the school develops innovative programs like National Coalition for Telecommunications Education and Learning (NACTEL). This union-management collaboration gives employees of companies like Verizon, Qwest, and Southern Bell and members of the International Brotherhood of Electrical Workers and the Communications Workers of America the chance to obtain a college-level degree in telecommunications or networking technologies online, from anywhere in the country. The award-winning program provides opportunities for people who work nontraditional hours, have pressing family obligations, or live at a distance from the nearest university to gain knowledge and credentials essential to their advancement. Since its inception, more than 2,000 telecommunications workers have participated in the program, with 159 completing the AS in applied information technology and four completing the recently-introduced BS in professional technology studies.

Research

Research in the Seidenberg School transforms significant sectors of society with practical computing applications. Professor Paul Benjamin, PhD, heads a robotics lab that develops intelligent agents to perform operations that are dangerous to humans. He and others, including Professors Li-Chiou Chen, PhD, and Chienting Lin, PhD, work on security and intrusion detection as part of the school’s recently designated National Center of Excellence in Information Assurance, one of just 59 in the country. Professor Francis Marchese, PhD, is chief scientist of the Center for Advanced Media, developing virtual tools for collaboration over Internet 2, the second Internet used by a network of researchers around the globe. That center also collaborates with the Pace Digital Gallery to foster the creation, display, and understanding of this new art form. Professors Sung-Hyuk Cha, PhD, and Charles Tappert, PhD, direct the Pervasive Computing Lab, studying and applying human-computer interaction and machine learning techniques to a wide variety of wearable and handheld devices. The lab also supports applied research in pattern recognition and detection involving markers like handwriting, fingerprints, irises of the eye, and voices. Professor Michael Gargano, PhD, is an expert in the research and application of genetic algorithms to solving complex problems in the financial services industry.

Ultimately, the Seidenberg gift will benefit the national economy and workforce by encouraging and preparing a new level of talented, industrious, and knowledgeable computing professionals. The nation faces a growing threat to its historical leadership in computing. The Seidenberg School will now be empowered to address this crisis more strongly, both by increasing the number of first-rate computing professionals and by research in critical areas of information technology and its relationship to every other human endeavor.