At Florida International U., a ‘Bootstrap’ Approach to Research

By JEFFREY BRAINARD

LIKE THE REST of South Flori- da, Florida International University has grown fast, first by attracting children of Cuban immigrants. And now, perhaps surprisingly, by serving mostly commuters, the university is poised to become a major player in scientific research.

Opened less than 40 years ago, Florida International is Miami's first and only four-year, public institution. It rose on the grounds of a defunct airport, inland from the glitz and breeze of Miami Beach. Since then its rapid growth has made it the country's 20th-largest university, with an enrollment of about 44,000. Although South Florida's historically high population growth has slowed, enrollment is projected to rise 50 percent by 2020. The university, where Spanish can be heard across campus, has become its state's largest source of bachelor's degrees for Hispanic students.

Perhaps less well known is the steady expansion of Florida International's research enterprise. Its federally funded spending on scientific and engineering research—a key marker of the volume and competitiveness of its scholarship—was $55.6 million in 2009, up from $25 million in 1999. That gain in rank was one of the largest among research universities during the decade. It put Florida International ahead of several older research institutions, like Auburn University and Rensselaer Polytechnic Institute.

Florida International's research budget appears poised to climb still further. In 2006, its state governing board authorized it to start a medical school, one of only three new osteopathic ones created nationally in the previous 20 years. That will help the university vie for biomedical research funding from the National Institutes of Health, by far the largest source of research funds.

Further expanding its research points challenges for a university that is accustomed to relying on revenue from tuition, student fees, and endowment. The discounts are not always sufficient to keep up with state and federal cuts in state appropriations.

But the campus, like other university campuses, is full of contributors to the university's research effort. Some are veterans who, having retired to Florida, maintain their research at their homes or in their offices. Others are faculty members who have doubled as researchers, and some are people who have been drawn to the area by the university. They work in the university's research facilities, constructing the buildings, and doing the research. They are creative and entrepreneurial, and they are driven by a common goal: to make Florida International a leader in scientific research.

One explanation for the growth in federal research money is that Florida International has improved the pump by spending more of its own internal funds on research. That spending, $26.9 million in 2009, more than doubled during the previous decade. It allowed the university to provide start-up money for young faculty members.

International succeeded at assembling that pump of internal research money thanks largely to a feature of the state's financing for higher education. The Legislature annually sets out money for constructing campus buildings from its Public Education Capital Outlay fund, financed by a tax levy. That support, the university has expanded its research facilities by about one third in recent years with space within those new buildings for the health sciences on its main campus and one for marine biology on its Biscayne Bay campus.

The panel-colored buildings are part of a spirit of construction during the past decade that brought a new museum, architecture school, football stadium, and parking garages to the main campus.

The buildings themselves have helped Florida International lift its research, because it collects overhead, or "indirect" cost rebates, from federal grants to help cover the costs of constructing those and previous campus laboratories. The university has been free to plow money back into its own research in subsequent years. It did not issue bonds to construct the facilities, or other public institutions have done, and so did not have to use the rebates for service debt, notes the provost, Douglas Wortham. It also helped that Florida International's immediate past president, Modesto A. de la Madrid, an engineer, steadily advocated for expanded research during his 23-year tenure, which ended in 2009. Mr. Madrigal's big personality and self-assurance were on display when, in 2008, The Miami Herald noted that he had asked visitors to name the only other college president besides himself who had established schools of architecture, law, and medicine. The answer, he said, was Thomas Jefferson.

Competing Priorities

A steep drop in state revenues is hammering all of Florida's public universities. Florida International's share of state appropriations fell from $225 million in 2005 to $170 million in 2010.

Another challenge for the university is to maintain its research growth while also finding funds to hold steady its student-faculty ratio, as both enrollment and the number of professors continue to grow. In 2009 this ratio stood at 27:1, the third-highest among all public research universities, U.S. Education Department data show.

Despite agreeing to finance the medical school, the Legislature has been cool to financing an expansion of research generally at Florida International when the state already has two top-tier research institutions, the University of Florida and Florida State University. In response, officials here have emphasized how far away they are from those campuses, in Gainesville and Tallahassee, respectively.

"The urbans" —Florida International and the University of Central Florida, another fast-growing research institution, in Orlando— have managed to get the Legislature increasingly comfortable that we don't intend to be as "urbans" as Florida and Florida State," says Mark B. Rosenberg, Florida International's president. "I don't think the allocation of resources from the Legislature will change appreciably. We'd like to have more support for our enrollment, but we're not standing around waiting for the Legislature to fix the challenges that we have."

Florida International has worked to add funding and hire faculty members in niche areas of science that are good fits with its strengths and its region's needs.

That effort has included environmental and marine research to protect the Everglades and coastal waters; engineering research to prepare for hurricanes; and public-health research to deal with AIDs and other conditions that affect the area's black and Hispanic populations at disproportionately high rates. In 2008 the university cut 200 jobs and 23 academic programs as part of efforts to better focus its resources on those and other specified areas.

The university is also expanding its recruiting of accomplished professors. It increased its faculty of about 900 full-time members by an additional 64 positions during the past year and plans to add 80 next year.

One recent hire was Ramo Jones, a specialist in research on prostatic tumors who became chair of biomedical engineering. He was attracted, in part, because Hispanics are underrepresented in science and engineering. She wants to encourage more Hispanic students to pursue degrees and careers in science.

Eventually, Florida International's biomedical engineering department will be located adjacent to its new medical school to encourage interdisciplinary collaborations.

There was excitement here, she said, "that we were going to build those bridges."