

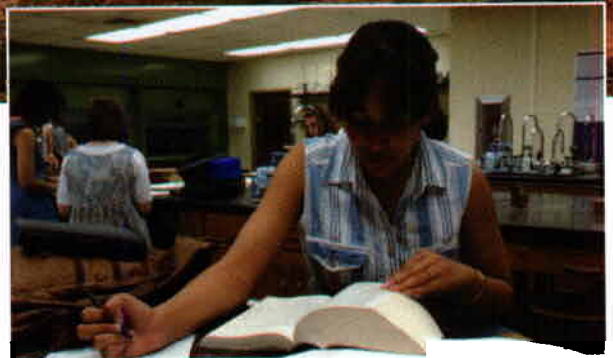
James Madison University steps up

But can it jump-start the Shenandoah Valley's economy?



by Jack Milligan

NOT TOO LONG AGO, SMART-ALECK high school students referred to "JMU" or James Madison University as "Just Missed UVA." The school, in a pastoral setting in the central part of the Shenandoah Valley, was considered a second-tier, but still decent fallback college for students whose grades and test scores just missed the cut at the more prestigious University of Virginia across the Blue Ridge Mountains in Charlottesville.



The ISAT/CS building of JMU's College of Integrated Science and Technology, east of the school's original campus

Not any more. What began as a small, all-female college in Harrisonburg has steadily built up its programs and reputation over the past two decades. These days JMU is being noticed and is winning national rankings as a top co-educational university in the South. Meanwhile, it's taking U.Va. head-on. Last spring, a record 16,050 students applied for

3,300 spots in this year's freshman class, a volume that exceeded that of its Charlottesville rival.

The big question, though, is whether JMU can turbocharge economic development in the Shenandoah Valley. While it has promising programs, the institution so far has failed to lead local business out of its rather ordinary mix of



A. Jerry Benson, dean of JMU's College of Integrated Science and Technology

poultry farms, warehouses and mountain resorts.

Indeed, while JMU is on the move, it's still taking time for its growth to affect the surrounding area. So far, there hasn't been a swarm of university-related start-up firms moving to Harrisonburg and Rockingham County. That's partly because JMU just began kicking into high gear relatively recently and doesn't have the big research base that other schools, such as Virginia Tech, do.

Its mission is different, too. A. Jerry Benson, dean of JMU's College of Integrated Science and Technology, says his institution is different from such places as Virginia Tech and U.Va. which do much more basic research. "That's not the ballgame we're in," he says. "We're not going to go head-to-head with them. Our primary mission is still to teach."

Partly because JMU hasn't spun off many for-profit businesses, the economic picture around Harrisonburg and Rockingham County looks fairly standard — manufacturing plants and distribution centers. For example, Coors Brewing Co. and pharmaceutical giant Merck & Co. have opened plants. Nearby, Massanutten ski resort employs another 1,200 people. Best Buy and Target have opened large distribution centers in the area to take advantage of Interstate 81's close proximity and its role as a major north-south transportation artery. The good news is that the industrial base is diverse enough to make unemployment low — about 2.4 percent.

Still, the promise for the region remains with JMU. With an operating budget last year of \$211 million, more than 2,000 full-time employees and 15,000 students, JMU dominates as the most powerful economic engine in this part of the valley. Students, of course, love to spend money, and local

merchants are happy to oblige. "Any time you grow a student body to the extent that that student body has grown," says Carter Melton, president of Rockingham Memorial Hospital, "the impact on your retailers is huge." According to a university report, JMU contributed more than \$278 million to the local economy during the 2000-2001 academic year. This number could get a boost if Virginia voters approve a \$900 million bond referendum on Nov. 5 that would pay for improvements at the state's public colleges and universities. The single largest amount — \$99.9 million — is slated to go to JMU for seven capital improvement projects that would pump even more money into the local economy.

One of its most successful undertakings is the nine-year-old College of Integrated Science and Technology (CISAT). It takes an interdisciplinary approach to education, emphasizes teamwork and equips students with strong problem-solving and computer skills. For its part, CISAT has recruited a significant number of faculty members with extensive private sector experience. Startups are inevitable, local planners believe. "We look to JMU to lead our development effort as we focus more on technology," says Brian Shull, economic development director of Harrisonburg.

CISAT offers several degree programs, including computer sciences, health sciences, nursing and social work. But the department that has attracted the most attention is Integrated Science and Technology, which accounts for 20 percent of CISAT's 4,000-student enrollment and combines the study of science, mathematics, technology, society and business. Freshmen and sophomores take a variety of foundation-building courses ranging from organizational behavior and information systems to biology, chemistry and engineering. As juniors and seniors, students dig deeper into various "strategic sectors" such as biotechnology, energy, the environment, engineering and manufacturing, telecommunications and health systems. "We're not organized around disciplines," says John B. Noftsinger Jr., an associate vice president for academic affairs. "We're organized around problems." The program emphasizes the computer as a problem-solving tool, and trains students in a collaborative approach to problem solving.

The program's culmination is the senior project, where students form into teams to tackle real-world problems provided by industry or government. An example might be water quality and availability in the drought-stricken valley. Benson says that any recommendations on water use would have to recognize the widespread agricultural practice of using human and animal waste as fertilizer. Any restrictions on that practice — even though there might be solid scientific reasons for doing so — would most likely be opposed by area farmers.

CISAT trains its students to solve problems from a variety of perspectives, so not only would this team look at the water problem from a scientific point of view, but from a public policy one as well. Or as Benson puts it, "How would you get something like that" — restrictions on manure-based fertilizers — "past the county commission?"

"We think of ourselves as training system scientists," says Benson. "We say 'system scientists' because we're looking at the entire systems surrounding a problem." What CISAT is really doing is training scientific problem solvers who are ready to function in the real world. For this reason, graduates of the CISAT program are in great demand with starting salaries after graduation averaging around \$50,000.

One company with a strong partiality for JMU students is American Management Systems, a Washington, D.C.-based technology consulting firm. Mark L. Clark, who heads up the firm's college recruiting efforts, says JMU graduates enter the work force better prepared than graduates at other schools, because experiences like the senior project give them an introduction to the real world. "JMU is probably in the top five schools nationally that we recruit from," he says. From 1998 through 2000 AMS hired an average of 25 to 30 JMU graduates a year, although it took just 12 graduates last year when its overall hiring dropped. Most of the firm's recruits come from the CISAT and computer sciences programs.

JMU's rise to prominence has been a long time coming. The university went through a major growth spurt in the 1970s, then again in the early 1990s when it expanded across I-81 to a 110-acre site that sits atop a hill overlooking Harrisonburg. This most recent expansion was an outgrowth of the Commission on the University of the 21st Century, a state-funded group that did a comprehensive review of higher education in the state.

The commission also directed each institution to develop its own growth plan. Among recommendations made by a subsequent JMU study group in December 1989 was the establishment of a new program to teach science differently than most universities do. Thus was born the CISAT. "We took a concept and built the college around it," says Noftsinger. The college enrolled its first class in the fall of 1993, and two years ago moved into a new building. Much of JMU's growth in the 1990s was driven by the college's expansion. "During that period, when [the university] was growing, CISAT was the focal point," says Benson.

Yet even before CISAT opened its doors, JMU encouraged students to participate in such hands-on experiences as nationally funded science research projects and internships to prepare them for the real world. "I think CISAT built on what the university had already started to put in place and that it's not the reason alone why JMU grads are in demand," says Michael P. Walsh, director of admissions. "We're seeing an increase in

applications across all disciplines," he adds.

Moving onto the highly coveted ranking lists issued by *U.S. News and World Reports* has given the university additional national exposure. This year JMU ranked number three in the Southern region in the category of best universities-master's and number one among top public universities-master's, competing among schools that offer undergraduate and master's level programs.

Meanwhile, JMU is fostering ties with the local business community. The university plays an active role in the Shenandoah Valley Partnership — a consortium of business and governmental interests in the area — and provides it with office space. Noftsinger also started the Shenandoah Valley Technology Council in 1998, which provides informational programs and networking opportunities to its 80-member companies, and currently serves as the council's president.

While spin-offs are few so far, JMU does significant research in areas such as information security. CISAT is currently partnering with George Mason University on a \$6.5 million research program on infrastructure protection funded by the National Institute of Standards and Technology, and





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John B. Noftsinger Jr., associate vice president for academic affairs

with several other Virginia colleges on a \$4.1 million project funded by the state. It's the kind of work that could spark entrepreneurial creativity.

Other important, if somewhat less tangible, benefits come from the meshing of a university and a small town with Mayberry values. The growing status of JMU is lending a degree of sophistication to Harrisonburg. "The university is just a real asset to our community both culturally and financially," says Henry Clark, a local attorney and longtime resident. While some longtime residents bemoan the heavy traffic and crowds that are now a way of life in their once-peaceful hamlet — Clark says his own wife grumbles about it occasionally — what has been good for JMU has generally benefited Harrisonburg and the surrounding county. "As JMU has gained national acclaim as a great institution — and a great [tuition] bargain — that has added to Harrisonburg's star a little because everyone loves a winner," says Melton.

Even so, like all of Virginia's universities, JMU is hitting a bump because of the state's budget shortfall that's approaching \$2 billion. In mid-October, Virginia colleges were facing



mandatory budget reductions of as high as 13 percent as the state's fiscal crisis worsened. Cuts of that magnitude would almost certainly lead to layoffs, according to one official there.

Nathan H. Miller, a local attorney who set up a for-profit business incubator a few years ago, expects JMU's recent dynamism to hatch new start-ups before long. Miller currently has four companies in his privately funded incubator. And while none of them has a JMU connection, he says it's just a matter of time because the university has plenty of talent and ideas. "The synergies are there." ■

Science and Technology for the

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