March 29, 2002

**States Push Public Universities to Commercialize Research**

*By PETER SCHMIDT*

Conflict-of-interest fears take back seat to economic development

State lawmakers are sending public research universities a clear message: It's time to begin commercializing your discoveries to promote local economic development.

As states convene their 2002 legislative sessions, the use of university research to spur economic development is in many cases at the top of their higher-education agendas. Nearly a third of the nation's governors have called on legislatures to pump money into public universities' research and technology-transfer programs. In many cases, governors have proposed those expenditures even while making recession-driven plans to limit or cut state spending on other aspects of university operations.

Several states also are considering, or recently have passed, changes in their laws that eliminate barriers to collaboration between public-university faculty members and private companies. The measures are intended to give for-profit companies unprecedented access to public-university research facilities, while encouraging public universities and their employees to hold a financial stake in companies making use of research findings.

State lawmakers are no longer willing to support universities' research simply for the sake of expanding knowledge and improving the reputations of higher-education institutions. They are hoping, and seeking assurances, that tax-dollar expenditures on research will lead to the creation of new businesses and jobs. And they are willing to put universities in the position of having to routinely wrestle with potential conflicts of interest if that is what it takes to give the institutions a larger role in economic development.

"I don't think there is any question that there is a change in the view that most states have of the role of their universities," says Dan Berglund, the president of the State Science and Technology Institute, a nonprofit organization that advises state economic-development offices. In recent years, he says, "the amount of
interest in encouraging the commercialization of university-developed technology has just exploded."

Concern Over Conflicts

The idea of promoting economic development through university research is not a new one for states; there was a big wave of state spending on research with commercial potential in the mid-1980s. But the previous state efforts generally assumed that local economic development would naturally follow from research spending, and paid scant attention to brokering relationships between the universities and specific businesses. Those efforts also offered universities and faculty members few opportunities to directly profit from their discoveries. Little technology transfer or economic development actually resulted, and disappointed state leaders subsequently turned their attention to economic-development programs that worked directly with the businesses, and left universities out.

The newest state efforts pay much more attention to the nuts and bolts of commercializing research, and seek to ensure that tax-dollar expenditures on university-business collaborations will lead to the development of new products and local companies and jobs.

Most have been politically popular, and have met little organized resistance on campuses or elsewhere.

Yet Virginia A. Sharpe, director of the Integrity in Science Project at the Center for Science in the Public Interest, says she worries that state leaders who advocate closer ties between public-university researchers and industry "are not looking at the trade-offs."

Ms. Sharpe, whose nonprofit organization, based in Washington, monitors potential conflicts of interest in university research, expresses fear that states' emphasis on the commercialization of research will cause such conflicts to become more common. She also says that public universities will be tempted to neglect research that benefits the public in favor of research intended to help particular companies.

"Obviously, we need to have a public debate about what our public universities are for," Ms. Sharpe says.

The state lawmakers who are promoting collaborations between business and public universities express confidence that the institutions can be trusted to manage potential conflicts of interest. And they argue that such relationships benefit the public at large, because the creation of new, high-technology businesses and
industries is vital to each state's economic future.

Keeping Pace

Among the state leaders espousing such views is Gov. Bob Taft of Ohio, a Republican. Last month, as part of his annual State of the State address, he proposed spending $1.6-billion over 10 years to promote high-technology economic development. Of that amount, $500-million would be used to finance new research facilities and equipment. Another $500-million would go toward recruiting top researchers to the state's universities and financing the universities' efforts to bring new products to market.

Governors Take the Lead

"Thousands of Ohioans are now exploring the next frontier in science, medicine, technology, information, and communication," Mr. Taft said. "But we're not moving fast enough to keep pace with our competitors or replace jobs lost to productivity."

Mr. Taft said that the state's research funds "could be used for any number of purposes in every part of Ohio. For example: polymers in Akron. Information technology in Dayton. Fuel cells in Cleveland. Nanotechnology in Columbus. High-tech manufacturing in Canton, Toledo, and Youngstown, and advanced farming in our rural heartland."

Mr. Taft predicted that the effort would draw up to $3.5-billion in federal grants and private support. In the short term, however, he may have trouble coming up with state money to finance his plan, given that Ohio is grappling with projected revenue shortfalls of more than $700-million in both the current fiscal year and in 2003. The state has cut spending on public-college operations by 6 percent in the current fiscal year, and the institutions have responded by planning tuition increases of 9 percent or more for the fall.

Elsewhere, Gov. Jeb Bush of Florida, a Republican, last month proposed spending $100-million to create technology-research centers at state universities to spur economic growth. Mr. Bush pledged that the centers "will stimulate groundbreaking research bridging the gap between the laboratory and the marketplace."

And Gov. George E. Pataki of New York, also a Republican, has proposed spending $250-million to establish research centers at both public and private colleges that would promote collaboration between academic researchers and the private sector. He also has called for the creation of a new state program, Security Through Advanced Research and Technology, with the mission of helping
colleges and universities secure federal and private funds for research "for the emerging homeland-security industry."

The governors of Connecticut, Michigan, West Virginia, and Wyoming are among the others who advocated major investments in research universities in their recent State of the State addresses. More than half of the states are either considering, or have recently made, sizable expenditures on their research universities to create or attract businesses.

Many states have been setting up new agencies or offices with the mission of bringing university researchers and businesses together. As of 2000, 13 states had established programs to finance the creation of such partnerships, according to a report published by the National Governors Association. In many cases, these programs match private investments in research with state funds.

Under the Radar

Much less public attention has been paid to efforts to repeal state laws that are seen as impediments to technology transfer and the commercialization of university research. Whereas state leaders typically have announced new economic development programs and strategies with great fanfare, they have been able to change laws to promote university-business collaboration with little public debate.

Last year, Texas quietly adopted a law intended to make it much easier for public universities to set up, and own equity in, new companies spawned from research on campus. The measure was backed by several public universities, with Texas A&M University taking a lead role in getting lawmakers behind it, and passed easily. It went largely unnoticed by local newspapers.

The sponsor of the measure was state Sen. Rodney Ellis, a Democrat. He says the bill was intended mainly to send the signal to university administrators and faculty members that they should be involved in the commercialization of research, and that the state government has no plans to get in their way. "Our state lags behind other states in transferring technology," he says, and part of the blame lies with "the cautious nature of academics" who fear being accused of inappropriately using their time or public property for the benefit of a for-profit company.

Less State Oversight

Ohio lawmakers voted overwhelmingly in 2000 to adopt a bill that lets public-university faculty members have an ownership interest in start-up companies spawned from technologies that they
developed. One of the leading advocates for the measure was the president of Ohio State University, William E. (Brit) Kirwan, who, in his former capacity as president of the University of Maryland at College Park, had helped persuade lawmakers in Annapolis to adopt a similar law in 1996.

Mr. Kirwan says he doubts such legislation could have been passed by either state a decade ago, because lawmakers would have questioned whether public universities should be involved in the commercialization of research.

"There is a much greater recognition today, by the general public and political leadership, of the essential role that research universities play in economic growth," Mr. Kirwan says. Most state leaders now see involvement in the commercialization of research as "a very appropriate role for public universities," he says.

The Ohio law transferred the responsibility for policing potential conflicts of interest among university researchers from the state ethics commission to the universities themselves. David E. Freel, executive director of the Ohio Ethics Commission, says he endorsed the change because his office lacks expertise in high-technology fields, and because he believes that universities "understand that it is in their best interest to protect against unethical activity or conflicts of interest." Other states have similarly divested oversight of university research to the institutions, or, as in Mississippi, have set up new state agencies to deal with any ethical questions that arise as the result of collaborations between universities and businesses.

Changing Constitutions

State laws on freedom of information are often viewed as an obstacle to collaborations between university researchers and businesses, because they could force universities to disclose the details of proprietary research.

Nearly half of the states have passed exemptions to their freedom-of-information laws that allow public colleges to withhold such information from the public.

In some states, opening the door for the commercialization of public-university research has required changing the state constitution to amend language that prohibits the use of public funds for private gain.

Oregonians will vote this May on a proposed amendment to the state Constitution that would allow public universities to accept
stock in new companies as payment for technology developed on campus. The measure was drafted in response to the recommendations of a gubernatorially appointed panel on economic development, and has the backing of individual members of the Oregon State Board of Higher Education, as well as various high-technology companies in the state.

Oklahomans adopted a similar constitutional amendment in 1998. They also approved a separate ballot initiative that amended the state constitution, which had prohibited public property from being used for private gain, to allow private companies to have access to university laboratories.

Critics of the measures, whose ranks included the state chapter of Common Cause, complained that the initiatives would put taxpayers in the position of subsidizing corporate research. The proposed amendments were heavily supported by business and higher-education leaders, however, and passed easily.

State lawmakers and higher-education leaders also are encouraging the commercialization of university research in subtle ways that do not require changes in law. For example, they are urging public universities to rethink restrictions on how faculty members use their time, so that professors can engage in more commercial research without fearing that they will be penalized or hurt their chances of advancement. Public universities also are being encouraged to set up venture-capital funds to invest in companies spun off from their laboratories; establish business incubators and research parks on their campuses; and ensure that both their policies and their arrangements with businesses provide faculty members with adequate financial incentives to conduct research with commercial applications.

Broad Support

Many of these state actions are being driven by technological advances and changes in the economy. In a report released last September, the Biotechnology Industry Organization said that 10 states had developed strategic plans to position themselves as hubs of the biotechnology and life-sciences industries. Philip E. Psilos, director of the National Governors Association's office in charge of economic- and technology-policy studies, says the growth of these fledgling industries, in particular, has prompted states to reexamine their laws to look for barriers to the commercialization of research.

Several prominent national organizations also have been beating the drum for states to do more to promote the commercialization of
research. In recent years, the bipartisan National Governors Association, the American Council on Education, and the centrist Democratic Progressive Policy Institute all have issued major reports urging states to take steps to improve technology transfer. The reports encourage states to follow the examples set by states such as North Carolina, which laid the groundwork for its famed Research Triangle Park by sinking money into university research throughout the 1960s, or Georgia, which has helped create dozens of partnerships between universities and businesses through the Georgia Research Alliance, an economic-development program established in 1990.

Finally, much of the push for state action is coming from the public universities, which are becoming increasingly dependent on the revenue derived from the commercialization of research, and are finding it difficult to recruit talented young faculty members in technology-related fields unless they can offer such recruits assurances that they will be free to profit from their discoveries.

Changing Colleges' Cultures

Ultimately, whether public universities encourage the commercialization of research "is not a function of state law so much as institutions' cultures and reward systems," says Louis G. Tornatzky, a senior fellow at the Southern Technology Council, a consortium of 15 southeastern states working to improve their technology policies. At some universities, the commercialization of research "is not only allowed -- it is celebrated," while other institutions appear to discourage research with commercial applications or to hold those engaged in it in lower standing than their peers, he says.

Although state leaders "are not going to change the priorities of research universities," they can use financial incentives to entice the institutions to focus more on commercializing their findings, Mr. Tornatzky says.

States are wise to pursue this policy goal, he contends. "It is hard to point to a robust regional economy that is not in some sense anchored by a major research university or two," he says.