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MU RESEARCHERS MOVE BRAVELY INTO BUSINESS WORLD (Published January 14, 2006, Columbia Business Times) - 1/14/2006
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COLUMBIA, Mo. – Ed Sauter has learned not to count chickens.

Last month, when the surgery professor's research team was about to receive a $750,000 check from a Colorado-based angel investor, the man who was supposed to write the check died in a plane crash. The tragedy caused the check signing to be postponed until Jan. 18, just another setback in the chain of events necessary to build a company from research at the University of Missouri-Columbia.

"It's more complicated than getting a grant," said Sauter, vice chair for research in the university's department of surgery, and added that he and his partners are very concerned about conflict of interest. "We want to maintain our academic careers. This company business is fine, but if it puts our academic reputation and job at risk, I'm not interested."

In preliminary research that may lead to a new, noninvasive detection test for breast cancer, Sauter and his partners, Tom Quinn and Sue Deutscher, discovered two protein markers that are usually present in women with cancer but not in healthy women. The team's data showed one or both proteins to be present in 92 percent of cancerous breasts, and only 4 percent in non-cancerous breasts.

If the early results can be validated in future studies, a new test for breast cancer could be developed to be used in conjunction with mammograms, which are only 50 to 70 percent effective in detecting very early stage breast cancers in pre-menopausal women, and 80 to 90 percent effective in post-menopausal women. Biopsies are taken after mammographic findings lead a physician to suspect the presence of breast cancer, but only one fourth to one third of the biopsies actually turn out to be cancerous. Since so many turn out benign, and arguably unnecessary, the MU researchers hope that their new test, used in combination with physical examinations and mammograms, may lead to fewer biopsies.

Although the partners haven't decided on a name for their company yet, barring any unforeseen setbacks, Sauter hopes the company will be off and running soon. Even if these markers don't work as well as hoped, he said, they are part of a larger field of markers that might work too. Angel investors such as Allied Minds, the Colorado company interested in the

MU research, provide early seed capital for new companies. Upon validation of the preliminary data, other venture capital companies may be willing to provide the $5 to $10 million needed to build the company further.

Economic development has been an important side activity of the university for a long time, but it only officially became part of the university's official mission statement in 2003. Last year, the university announced that it would build a business incubator, and the construction project received a $2.5 million federal grant. In October, the university announced it was developing a research park on its South Farm property near KOMU-TV.

"Just as we build athletic facilities to practice in and have the venue of the game, we're trying to build those kinds of technology advancement, those technology commercialization facilities as well," he said.

If MU's facilities had been in place a year or two ago, a product such as Professor Jeffrey Phillips' Rapinex heartburn drug might have been developed in a company based here in Columbia. While the drug was successfully licensed to the Santarus pharmaceutical company in San Diego, bringing $5 million in revenue so far to Mizzou and likely millions of dollars more in the future, the $200 billion start-up probably will produce a much greater impact on the economy in San Diego.

The increased entrepreneurial spirit is a response to the changing nature of basic research in the United States, two thirds of which is now done at universities and not in the private sector, said John Gardner, vice president for research and economic development for the University of Missouri System. Increasingly, in today's marketplace, the business community takes basic research developed at universities, licenses it and focuses on applied research to develop products.

"I don't think entrepreneurship and academia are mutually exclusive; if done right, both can and should exist at a scholarly institution," Gardner said. "Moving innovation as quickly and efficiently as possible into the marketplace is just a key ingredient in this economy now."

Gardner said the other main driver is the university's obligation to provide a public good for the nation and state. "Increasingly, as you see the federal budget, and you see these large federal science agencies, I think the public is asking, 'What are we getting for that?'" he said. "Recently, there have been in-depth analyses of NIH funding, for example, over the last 25 years, and what has the public gotten in public health with all of this funding?"

Gardner, who has held his newly created post since October, plans to assess and improve upon the university's facilities, which are just one of the organization's assets that can be used to generate economic development. He also plans to foster the culture of entrepreneurship at the university and to retool the internal processes to be friendlier to business and to provide a better interface between the business and university communities. For instance, he hopes to improve and simplify the university's patent application process.

"If we're successful, it will just kind of happen organically; it's not like there's going to be all of these home runs out there," he said. "One of the criticisms that I would levy towards us is that we manage strictly for home runs, and that means that we give up a lot of singles, doubles and triples. The cluster – mid-Missouri as a cluster for technology development – is going to be built not on home runs. It's going to be built on singles, doubles and triples. The home runs will come."

The best approach is to collaborate with other nearby institutions to build networks of innovation, he said. "If you look at any place that's been successful, it's not been through a stand-alone, island approach," Gardner said. "The competition for the kind of faculty that make this happen, the foundation for this whole thing, is fierce."

And the best opportunities for MU lie not only in medical fields. Whereas a neighbor such as Washington University in St. Louis ranks third or fourth in medical research, MU ranks 11th in the nation in agricultural science research, he said.

One successful entrepreneurial project in the agricultural field is based on Galen Suppes' research with glycerin, a byproduct of biodiesel production. In research funded by checkoff fees from the Missouri Soybean Merchandising Council, Suppes developed a process that converts glycerin into propylene glycol, which can be used as biodegradable antifreeze for automobiles and deicer for airplanes. His award-winning product could provide an extra revenue source of up to 40 cents a gallon for biodiesel producers out of what is now considered a waste product.

His company, Renewable Alternatives, recently signed a license deal with Senergy Limited, which was formed by a consortium of companies interested in the technology. The worldwide market for propylene glycol is growing by about 200 million pounds per year, or $160 million at the current price of 80 cents a pound. Investing millions in a new plant, Senergy aims to dominate that market growth, planning to add a production facility each year for the next ten years and to produce from $30 to $150 million of product at each facility, Suppes said.

"The big reason you want to use biodiesel is to create an additional market for a farm commodity," Suppes said. "And you can do that while displacing a small part of the diesel use. We won't be able to displace all of diesel with biodiesel, but at least we can route some of that money, instead of going overseas, to the Missouri soybean farmers."

As for Ed Sauter, whose breast cancer detection research may be on the verge of greatness depending on successful validation of its preliminary results, the surgery professor is buoyed by a story in the Wall Street Journal highlighting high-tech trends for the new year. It ranked diagnostic kits for cancer number one, he said.

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