

Monsanto Renews Ties to Washington University

Total investment over 12 years will reach \$100 million

WHEN MONSANTO, the St. Louis chemical giant, first formalized research ties with neighboring Washington University in 1982, Howard Schneiderman, Monsanto's senior vice president for research, told *Science* that the key to the ultimate value of the collaboration would be the number of times it is renewed. By that measure, it has been spectacularly successful. Last month, Monsanto anteed up for the third time. Its agreement with the university, which began with a \$23-million commitment over 5 years, has been extended through 1994 for a total investment of \$100 million.

That makes the collaboration one of the biggest industry-university liaisons in the United States, and one of the oldest. Joined at a time when there was great fear that ties to industry would somehow subvert basic biological research, the Monsanto-Washington University alliance seems to have proved that such alliances can work, especially when the corporate partner sees the collaboration as a long-term investment. Indeed, Monsanto chairman Richard J. Mahoney calls the company's \$100-million investment "a catalyst for increased economic competitiveness."

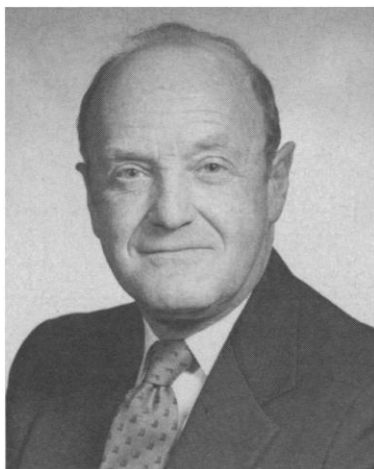
Monsanto joined forces with Washington University at a time when the company was preparing to expand into the pharmaceutical business and the collaborative research focuses on proteins and peptides that modulate the behavior of cells. "If everything works right, we'll see a few products approaching the marketplace by the end of the decade, given luck and a few people lighting some candles," said Schneiderman (*Science*, 18 June 1982, p. 1295).

By that measure, the venture has yet to yield results. No products have emerged, and Schneiderman has now revised his estimate—a product in 5 to 8 years from today, he predicts. But he's far from discouraged. Several lines of research look promising, he says, noting that 16 patents have been granted for Monsanto-supported research and another 24 patents are pending.

In 1985 Monsanto bought Searle—a major pharmaceutical house. Although Searle is located in Illinois, two floors of Monsanto's new center for biological sciences in St. Louis have been set aside for Searle researchers so that they, like their Monsanto col-

leagues, will be right next door to Washington University.

Among the patents that may yield new medicines is one on a novel form of atrial natriuretic factor, a diuretic and blood vessel constrictor. A patent was granted on the basis of sequence work by Philip Needleman who recently left the university to join Monsanto. A pending patent derives from work on the anticoagulant thrombomodulin by



Howard Schneiderman. *The collaboration may go on "indefinitely."*

university scientist Philip Majerus. Work in the relatively new field of myristylation of proteins (the attachment of fatty acids) is also high on Monsanto's list of collaborative efforts that are likely to be successful. "We're taking a Manhattan Project approach to myristylation with a team of some 30 scientists," Schneiderman reports.

When the agreement was struck 8 years ago, there was some fear that the university would end up selling its academic soul to its corporate sponsors, but researchers on both sides consistently report that has not happened. One explanation lies in the unique structure of the deal. University researchers whose work fits into the protein/peptide framework apply for Monsanto money just as if they were applying for an NIH grant. Decisions are made by a joint review committee headed by Washington University's chairman of medicine, David Kipnis. Once the money is awarded, researchers say, they are on their own to follow leads wherever they take them. Under the terms of the collaboration, the university holds the pat-

ents and Monsanto has a right to exclusive licenses, but individual researchers cannot reap private reward.

Other explanations for the apparent smooth sailing go beyond anything written in contractual terms: one is the fact that the company and the university share a long-standing commitment to St. Louis as a community. Monsanto, whose chairman has traditionally held a seat on the university's board, is not an outsider.

Another oft-cited reason for success is Howard Schneiderman himself. A Ph.D. zoologist from Harvard, a member of the National Academy of Sciences, and a professor at the University of California at Irvine when he joined Monsanto in 1979, Schneiderman was very much a member of the academic elite who was also widely respected at Monsanto. It is he who is credited with keeping the company on the right path with Washington University, resisting any corporate temptation to interfere with the independence of the researchers. "We hardly know that Monsanto, the company, is there," one university researcher says, "and we give Howard a lot of credit for that."

Schneiderman modestly calls such credit "sweet but untrue." But he cannot deny that he played a crucial role in the development of what he calls "mutual trust and confidence" between company and university researchers and that it has been important to keep the "accountants and lawyers out of this as much as possible."

Majerus, who heads the university's department of oncology and hematology, reports with a certain satisfaction that it is now routine to ask Monsanto scientists to make a peptide or sequence a protein. "They just do it, for nothing, whether it is part of an explicit joint project or not. I'm not even sure whether they're supposed to."

Says Schneiderman, "That is exactly the way it should be. On our side, we will occasionally ask someone at the university to test something for us as a courtesy. That is what this is all about. Real intellectual collaboration."

To ensure that Monsanto's next chief scientist also will be academically bred, the company has already recruited Schneiderman's successor—Philip Needleman from Washington University. He is expected to continue Schneiderman's philosophy that what's good for Washington University is good for Monsanto, and vice versa.

As far as Schneiderman is concerned there is no reason why the Monsanto-Washington University partnership cannot be extended "indefinitely." The story so far is one of a marriage that works, but longevity ultimately will depend on some offspring.

■ **BARBARA J. CULLITON**