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DuPont gives USC patent rights

Gift could be worth more than $25 million if research is successful

By JIM DuPLESSIS
Staff Writer

Chemicals manufacturer DuPont on Thursday gave the University of South Carolina a gift designed to keep on giving -- patent rights that could be worth more than $25 million over the next 10 years and could expand the university's reputation for research.

If further research is successful, the gift's value would exceed the $25 million Darla Moore pledged to the university in 1998, the university's largest gift ever.

Passing -- or even reaching -- that mark will depend on John Weidner, a 40-year-old USC associate professor of chemical engineering who worked with DuPont from 1995 to 1998 to develop the technology to recover chlorine from chemical wastes.

DuPont picked USC to receive the patents after scrutinizing the abilities of researchers across the country to perfect the technology and generate license fees from it, said Robin Kump, director of patent licensing for the Wilmington, Del.-based company.

"Weidner had the passion to develop this and the support of the university to take it to the next level," Kump said.

The patent gift is the second to USC, following one from Eastman Chemical Co. last year worth a projected $10 million to $20 million for technology to extend the shelf life of bottled beverages.

University officials in the state expect more patent gifts in the years ahead as universities expand their research activities and corporations cut funding for research that doesn't produce profits within ever-tightening deadlines.

Clemson University has received three patent gifts in the last three years that together have a potential value of more than $60 million over the next 18 years.

So far, none of the Clemson or USC patent gifts has generated profits, but Clemson is on the verge of making money on an absorbent fiber, said Ed Page, director of Clemson's Technology Transfer office.

"Companies like DuPont and Procter & Gamble have far more patents than they can ever use themselves," Page said. "If a product does not have a potential to generate half a billion dollars in sales in five years, they say they're going on to something that does."

DuPont has cut its research projects from about 4,000 in 2000 to about 3,200 now as part of its strategy of focusing on businesses with strong growth potential. The company still has about 18,000 to 20,000 patents, but many are for businesses DuPont is no longer pursuing, Kump said.

Rather than allowing them to expire, DuPont began giving some patents to universities about three years

ago and using the gifts to lower its taxes, he said.

The Internal Revenue Service scrutinizes the gifts to determine their value for tax purposes.

The patents given USC cover a process that allows manufacturers to recover chlorine gas from a chemical waste generated in making refrigerants. Chlorine is one of the key ingredients to make refrigerants, so recovering it would allow manufacturers to reuse it.

The alternative is buying chlorine, which is shipped in large trucks or rail tankers. But the highly reactive gas is dangerous if spilled, and interest has grown in producing the gas as needed at the sites where it will be used.

Among the keys to turning the technology into profits for USC will be solving a corrosion problem in the equipment.

The technology is also of interest because it is related to fuel cells, which many hope will become the energy of the future for automobiles. While fuel cells combine chemicals to produce electricity, the DuPont technology uses electricity to separate chemicals.

"We think any breakthrough made here will help fuel cells," Weidner said.

Weidner and graduate students working under him also hope for breakthroughs that will spawn more patents, adding to the gift's value and extending its revenue stream.

The chlorine patent looks particularly promising because it was licensed to a Canadian engineering firm from about 1998 to 2001, but the company found the electrolytic cells corroded faster than expected, Weidner said.

The firm did not have the expertise to fix the problem, and by 2001, DuPont's prime researcher on the technology had retired. Now those bugs are for Weidner to work out.