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Scientists await word on grant

BY ROY WENZL
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Via Christi scientists could find out this spring whether they will get a \$31 million grant from the state to launch a new industry that could eventually create 2,600 new jobs and bring \$200 million into Wichita's economy each year.

Paul Wooley, a scientist and director of the Orthopaedic Research Institute at Via Christi, said the Kansas Bioscience Authority has been studying the grant proposal that he helped write.

Over five years, Via Christi and its partners would use the money to develop a new medical industry based on composite materials invented by aerospace science.

Wooley also said that he and his research partners at the National Institute for Aviation Research at Wichita State University have already achieved a breakthrough that could lead to a revolution in orthopedic medicine.

KBA spokesperson Chad Bettes said the proposal is being evaluated for the KBA by a panel of third-party experts. Once that study is complete, the proposal is expected to be considered by a KBA investment committee that meets April 2.

If the grant request is recommended for approval, the full board of KBA directors will consider it at a May 18 meeting.

Medical breakthrough

The breakthrough Wooley mentions came after his team and NIAR scientists worked with a Wichita composite materials manufacturer to create a porous composite.

Several aerospace scientists from NIAR, including director John Tomblin, have worked with Via Christi medical researchers for years.

Once they had the porous composite, Wooley's researchers implanted it in mice in his lab at WSU.

Wooley's team was "delighted to see not only that it was not rejected but that blood cells actually grew into the material," Wooley said.

If an implanted material gets along well with mouse tissue, it will likely get along with human tissue.

"We were thrilled that the first material we tried ended up doing so well," he said. "We were looking through microscopes saying, 'Are we really seeing this?'"

"Scientists usually aren't that lucky in the lab."

Wooley said he pays attention to research around the world, and he's sure this is the first time anyone has developed a porous composite material that passed such medical tests.

The research team's goal, he said, is to replace "antiquated" rigid steel and metal alloy implants for hips, knees and other bones with new flexible and porous materials more compatible with the human body.

It will also be possible with such materials to make them so compatible and so porous that bio-engineers could build bone frameworks from composites and implant them in humans. Those implants would allow a body to re-grow living blood and bone tissue where bone may have been removed because of accident or disease.

Looking for funding

Wooley has arranged the scientific work so far with limited money. His own position was funded by a grant of nearly \$1 million from the KBA, and Via Christi and NIAR have supplied some support.

He has done it while being short of equipment, and said he needs a micro-CT, a device that can do a scan called micro-computerized tomography.

"If anyone out there would like to come up with the \$325,000 or so that we'd need to buy one of those, we'd be glad to stick your name in a plaque over a room in the lab," Wooley said, only half joking.

Full funding from the KBA, he said, would mean he and his partners could begin developing the devices he's sure could be invented here: operating tables, battlefield splints, lightweight gurneys, and many others, all made from lightweight composites. Eventually he plans to develop artificial hip and knee implants.

If the grant is approved, Wooley said, he and his team will be collaborating not only with NIAR but with the University of Kansas through its school of medicine in Wichita. They are also working with Pittsburg State University, which has done advanced work on polymers, and with Kansas State University, which has said it will help with some of the animal research to test composite materials' compatibility with mammalian bone.

The full progression of animal testing, Wooley said, will involve sticking aerospace-industry composite materials into white mice, then into rats, then into rabbits, then into goats. With each animal, they will learn more about the materials' compatibility with mammal tissue and how they can make blood and bone grow into or around it.

The research team from WSU and Via Christi says that if they get the grant, a lot of new money will be generated in Wichita and Kansas. Many of the jobs created would be high-dollar research jobs. Many more would be industrial jobs working with composites.

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