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## Five in running for top prize in medical innovation contest

**DEAN OLSEN****The State Journal-Register***Published June 06, 2010 @ 7:12 a.m.*[Recommend](#)

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Winning the top cash prizes isn't the main goal of the five finalists in the Greater Springfield Chamber of Commerce's Project Innovation competition.

They agreed that the top \$15,000 prize and the \$8,000 second prize — to be awarded at the end of the public "final competition" at 4:30 p.m. Wednesday at Lincoln Land Community College's Capital City Training Center — would be helpful for developing or marketing their products.

But the publicity and access to potential investors would be an even bigger benefit, they said.

The five finalists were selected from 15 entries in the contest, the first of its kind in Sangamon County, which is designed to encourage entrepreneurs and companies to expand medical-related employment in the Springfield area.

### The Pill Mill

W. Allan Shears, 73, a mechanical engineer who works out of his Divernon home to make "one of a kind" instruments and machinery for doctors, dentists and businesses, invented an electrically powered machine that reduces pills to powder.

"It took seven different designs to get to this," said Shears, who formerly worked for Allis-Chalmers/Fiatallis in Springfield.

Many people can't swallow pills but can swallow powdered medicine, which can be dissolved in water or other liquids, he said.

He invented the device five years ago and received a patent for the Pill Mill, about the size of base of a blender, in 2009. The device probably would retail for \$75 to \$85, he said.

The pills are inserted into a compartment that fits in the palm of your hand. The compartment then fits into the base, which contains a motor that turns small, interlocking metal arms, resembling the guts of a paper shredder, which grind up the pills in seconds.

Pill crushers already on the market are either expensive (up to \$370), can be hard for people with joint problems to operate, or aren't designed for institutional use, he said.

Shears has come up with other inventions, including something he called a "heated padlock," but none of them made it big because none was widely available for sale.

"You can invent anything," he said. "Getting it on the market is a killer."

### Patient Kiosk

A Springfield Clinic-owned company, Jardogs, last year began installing the \$13,800 kiosks it designed. Jardogs plans to equip all of the clinic's locations with the touch-screen check-in device.

The device provides more patient privacy and accuracy during the process of updating patients' personal information, Jardogs president John Pacione said.

Response from patients has been “overwhelmingly positive,” he said.

Publicity generated by the chamber’s competition could help Jardogs market the kiosks and other Jardogs products to other health-care providers throughout central Illinois and beyond, he said.

### **Tru-Balance Orthotic**

Springfield resident Jack Milbourn, 73, a certified orthotist, has invented a shoe insert designed to reduce pain and correct problems connected with misalignment of the skeleton.

“Everybody suffers from the effects of time and gravity,” Milbourn said.

His orthotic insert, which he patented in 2009, is designed to stabilize the heel and support tendons along the bottom of the foot. The goal is to prevent elongation of the tendons and pronation, which is excessive inward rolling of the foot and ankle, Milbourn said.

Inserts are sold everywhere, even on television infomercials, but he said the Tru-Balance orthotic “is the only one that’s different from what’s on the market.”

Milbourn’s orthotics are sold for \$29.95 at the Big Rs in Springfield and Lincoln, and the Springfield Fire Department recently bought 100 pairs. Milbourn would like to increase marketing and move production from China to the United States.

“We don’t even have a website,” he said. “My ultimate goal is to create a manufacturing facility in Springfield and manufacture footwear with our products in it.”

### **Wikiphen**

Dr. Michael Schneider, a clinical geneticist at Springfield’s Southern Illinois University School of Medicine, wants to help doctors diagnose inherited conditions with an online database that improves upon the online search engines currently available to physicians.

Schneider, 51, is five months into the effort to create what he has called Wikiphen. He is collaborating with Sae Hwang, an assistant professor of computer science at the University of Illinois Springfield.

“Wiki” refers to what he hopes will be a “collaborative, community effort” that links doctors and scientists across the world, and “phen,” referring to “phenotype,” or the physical characteristics a person develops from a combination of his or her genes and environmental factors.

Diagnosing genetic conditions has become even more difficult because research into the human genome has identified 3,000 to 6,000 new conditions connected with certain genes, Schneider said.

Wikiphen, Schneider said, could help organize information associated with those conditions to help doctors in the 60 percent of cases in which there is no clear diagnosis “on a complex human problem. Our goal would be to create something that is useful and used.”

### **New pediatric catheter**

Collecting urine over a period of 12 to 24 hours from a sick infant or young child can give doctors valuable information on kidney function, but as Dr. Om Jha has learned working with nurses at St. John’s Hospital, the catheters used on male children haven’t worked well for decades.

The current “condom sheath catheter” fits over the shaft of the penis and attaches to adjacent skin. But the narrow strip of adhesive often comes off within minutes, and the urine leaks out, ruining the collection. This problem often prompts doctors to check kidney function through expensive blood tests or catheters that enter the urethra and increase the patient’s risk of infection.

A few months ago, Jha, 34, who is in the second year of a three-year SIU pediatric residency, came up with an idea to improve on the device.

He attached a wide circle of clear, flexible adhesive tape to the edges of the sheath catheter, creating a seal that attaches to the skin around the genitals. The adhesive keeps the device sealed and in place without discomfort to the patient, Jha said.

“It’s such a simple thing,” he said. “One of the nurses said, ‘It’s a miracle.’”

After doing research and taking steps to file for a patent, Jha said he is convinced there is a potentially huge market for the device worldwide. He estimated the device would cost less than \$10.

The device could shorten hospital stays by reducing infections from other catheters and could reduce the number of blood tests, he said.

“I would really love to open up a plant and produce the devices here to create more jobs,” he said. “I want to dedicate this invention to the nurses on the pediatric floor at St. John’s Hospital.”

Jha calls the device STUC-OM, or Skin Traction (external) Urinary Catheter On Male.

Dean Olsen can be reached at 788-1543.

*Caption: Divernon resident and inventor W. Allan Shears shows off the working prototype of his “pill mill” on Thursday June 3, 2010. The pill mill is a battery-powered device that finely crushes pills. Shear’s unique home, designed and built in 1971, can be seen behind him. Photo by David Spencer/The State Journal-Register*

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