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UNH professor's lung imaging efforts could benefit millions

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DURHAM — A University of New Hampshire professor's research into lung imaging has resulted in a spin-off company, the school announced yesterday.

Backed by \$2.3 million in grants from the National Institutes of Health, physics professor Bill Hersman has developed magnetic resonance imaging using xenon gas that allows for an accurate interior view of human lungs.

Hersman has become chief executive officer of Xemed LLC, and he wants to commercialize the technology he developed within the next 2½ years.

Hersman's process requires patients to inhale polarized xenon gas, which allows clear MRIs of the lung interior. Conventional MRI techniques had not been able to produce images of the inside of lungs.

(Hersman's) "initial work was driven by intellectual curiosity and wasn't designed for commercial development," said UNH Vice President for Research and Public Service John Aber. "This clearly demonstrates the value of basic research at UNH, both for our ability to improve the human condition and to support economic development."

The new technology could benefit millions who suffer from chronic obstructive pulmonary disease, the fourth leading cause of death in the United States, by allowing doctors to see which parts of the lungs are affected, according to UNH.

Hersman has secured FDA approval to test polarized xenon with MRI in humans. The testing is scheduled for later this year with Sam Patz, a collaborator at Brigham and Women's Hospital in Boston. The pressure is on now, said Hersman. "The world has been waiting long enough for a diagnostic procedure for lung health, so we're scrambling to provide that."

Hersman developed his technique for polarizing xenon, the most effective in the world, with previous NIH funding. The new grants will fund research to further refine the technology and shrink its size.

"To make it practical we had to make it fit into a cabinet small enough so that every hospital with an MRI unit could have one," said Hersman. "The challenge is



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to bring everything together into a small space without the three magnetic fields involved interfering with one another."

UNH has already filed for three patents based on Hersman's innovations and is in the process of filing for two more.

Still in the research and development phase, Xemed has only one employee besides Hersman, but in the next three years he envisions hiring three or four more to help hand-build polarizers. The company would probably not sell them, said Hersman, but rather offer annual service agreements to provide polarized xenon on site in hospitals and research institutions.

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