

Computerized liver could one day be used to test medicines

Harbour City Star
Wed 06 Jun 2007
Page: B1 / FRONT
Section: Lifestyle
Byline: Keith Gerein
Source: CanWest News Service
Edition: Final
Story Type: News
Length: 282 words

As computer simulations go, Rebecca Marsh's new "virtual liver" doesn't offer the fun of learning to shoot a gun or fly a plane.

Yet despite its lack of video-game potential, the graduate student's creation could be destined for great things in the health-care industry.

With its ability to closely mimic the behaviour and function of a human organ, the computerized liver could one day be used to test new medicines and help doctors determine the best drug dosage for their patients.

"People have developed simulated organs before, but this is a dynamic simulation," said Marsh, who recently completed her PhD in biophysics at the University of Alberta.

"It's the first one of its type. What makes it different is that we can actually perform experiments of flowing blood and drugs through our virtual liver and then look at how the drugs react with it."

The simulation was created through an internship in which grad students are linked with an Alberta company and asked to apply their research to help solve industry problems. In Marsh's case, she got the chance to work with Computer Modelling Group, a Calgary-based company that had developed its own simulation software.

That software, however, was designed to help in the exploration of oil and gas deposits, so Marsh had to adapt it for the human body.

"Instead of modelling the flow of oil and gas through sediment, we can watch blood flow through liver tissue."

To ensure the simulation performs like a real organ, the virtual liver uses detailed information taken from scans of a patient's abdomen. Any patient's data can be loaded into the system, giving researchers the ability to look at all different kinds of livers.