

WESTERN NEWS



VIRTUAL SURGERY

Virtual reality simulators can play a pivotal role in training doctors and refreshing the skills of current practitioners.

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FLU REPORTING

The university begins rolling out a new online flu-reporting tool intended to provide early warning of an outbreak of illness.

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IMPACT ON HEALTH

Developments by two Western faculty members make the top-10 list of Canadian health discoveries.

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Research more than skin deep

BY PAUL MAYNE

Development of artificial human tissue could soon provide medical trainees with the head start they need to become the next great surgeon.

Independent researcher Leonardo Millon and his team, under the mentorship of Engineering professor Wankei Wan (Director, Graduate Program in Biomedical Engineering), are creating synthetic anatomic models made of polyvinyl alcohol (PVA) that provide a realistic surgical experience for students.

A multiple Western grad, Millon holds a chemical and biochemical degree ('00) and PhD in bio-medical engineering ('06).

Currently, human and animal cadavers are used for surgical training but they come with limitations, a key one being they are not quite like living tissue.

The research is attracting a lot of attention, already netting the Ontario Centres of Excellence (OCE) Martin Walmsley Fellowship for Technical Entrepreneurship, and an award of \$100,000 over two years. Millon is the first Western graduate to win the award.

As well, Millon has created a start-up company, LifeLike Bio Tissue Inc., to provide surgical training materials to medical schools in southwestern Ontario. He hopes to begin with Western's Schulich School of Medicine & Dentistry within the next year.

The model he will produce will



Paul Mayne, Western News

Researcher Leonardo Millon is developing synthetic human tissue that can provide surgical trainees a lifelike model on which to develop their skills.

give surgical trainees the ability to practice over and over.

"We are proud to honour Leonardo with the Walmsley Fellowship which will accelerate this technology to help him achieve the next level of commercial development," said OCE President and CEO Mark Romoff, "His technology could have a profound impact on surgical training, giv-

ing surgeons the chance learn procedures faster and with more accuracy."

The fellowship provided the boost needed to go commercial, he says.

"Without this funding I probably wouldn't have started this company," says Millon.

He has developed models of different tissues and organs such

as the aorta and coronary arteries. They are made from a novel proprietary material that is non-toxic and has a similar composition to soft tissue.

"This really wasn't on my radar," admits Millon, whose main research focuses on implantation, such as for bypass surgery. "But the feedback I received was tremendous. Mechanically it's pretty

much the same as skin, the same mechanical properties."

Schulich associate professor Mackenzie Quantz (Cardiac Surgery) was one of the examiners during Millon's thesis and saw potential with PVA material.

"To be honest, I can't really pinpoint what it was that sparked the idea of using it for mimicking skin," admits Quantz. "But that's the great relationship we have with bio-medical (program). We create that think tank that allows us to come together on similar problems, with different approaches to the solution."

Quantz says training opportunities for new surgeons are limited. While current materials look good, they don't have "the same feel and texture" required for training. He likens the importance of good simulated tissue material to that of flight simulation for pilots and offers a way to move training from the operating room to the classroom.

Millon says with the help of his sister Karen, an Ivey graduate, the pair will look at ways to increase the number of models to be created, as well as prepare to scale up production. Millon says a number of companies worldwide produce artificial human tissue using regular silicone, although they don't always have the realistic feel that surgeon want.

In the future, it's possible these materials will be used in medical schools across Canada, North America and globally.

Western launches \$500M public campaign

BY HEATHER TRAVIS

If University of Western Ontario fundraising chair Geoff Beattie feels he has his work cut out for him raising \$500 million for the university, he's not letting it show.

Beattie (LLB'84) returned to his alma mater to celebrate the kickoff of the public phase of the Make A Difference fundraising campaign on Saturday during Western's Homecoming celebrations.

The announcement coincided with the opening of the Claudette MacKay-Lassonde Pavilion, the

Website

For more information on the campaign and funding priorities, visit westernmakesadifference.ca.

first LEED (Leadership in Energy and Environmental Design) certified building on campus.

Beattie's confidence stems from a belief he has some great stories to take on the road in showing potential donors how Western is having an impact, nationally and internationally.

"I think people don't really get

a chance to understand what is going on day-to-day at the university," says Beattie, noting as chair he is charged with spreading the word about Western.

"The biggest challenge will be giving people a sense of the priorities and a sense of understanding of what that money is going to do. We've got to be careful to make sure it is not seen just as money that will be used to operate the university but money used to change the university and build the university."

He hopes to inspire those influenced by the university, whether they are alumni or members of

the community, to give back to the institution. After all, it was for this reason he decided to sign on as campaign chair.

Having grown up in London and studied at Western, he sees the university as having played an important role in his life.

"It really is the seed of what you are today," he says.

The goal is to raise \$500 million by 2014. The campaign began quietly in 2007 and has since raised more than \$130 million or 26 per cent of the overall goal, which Beattie calls "more than a great start."

Beattie is encouraged by the

Other Homecoming coverage

Page 3 Engineering goes green with the opening of a sustainability showpiece.

Page 8-9 Year after year, thousands return to a campus that feels like home.

gifts to date. To further Western's goal of becoming an international leader, "it's going to take more capital," he says.

"Recessions will come and go,

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