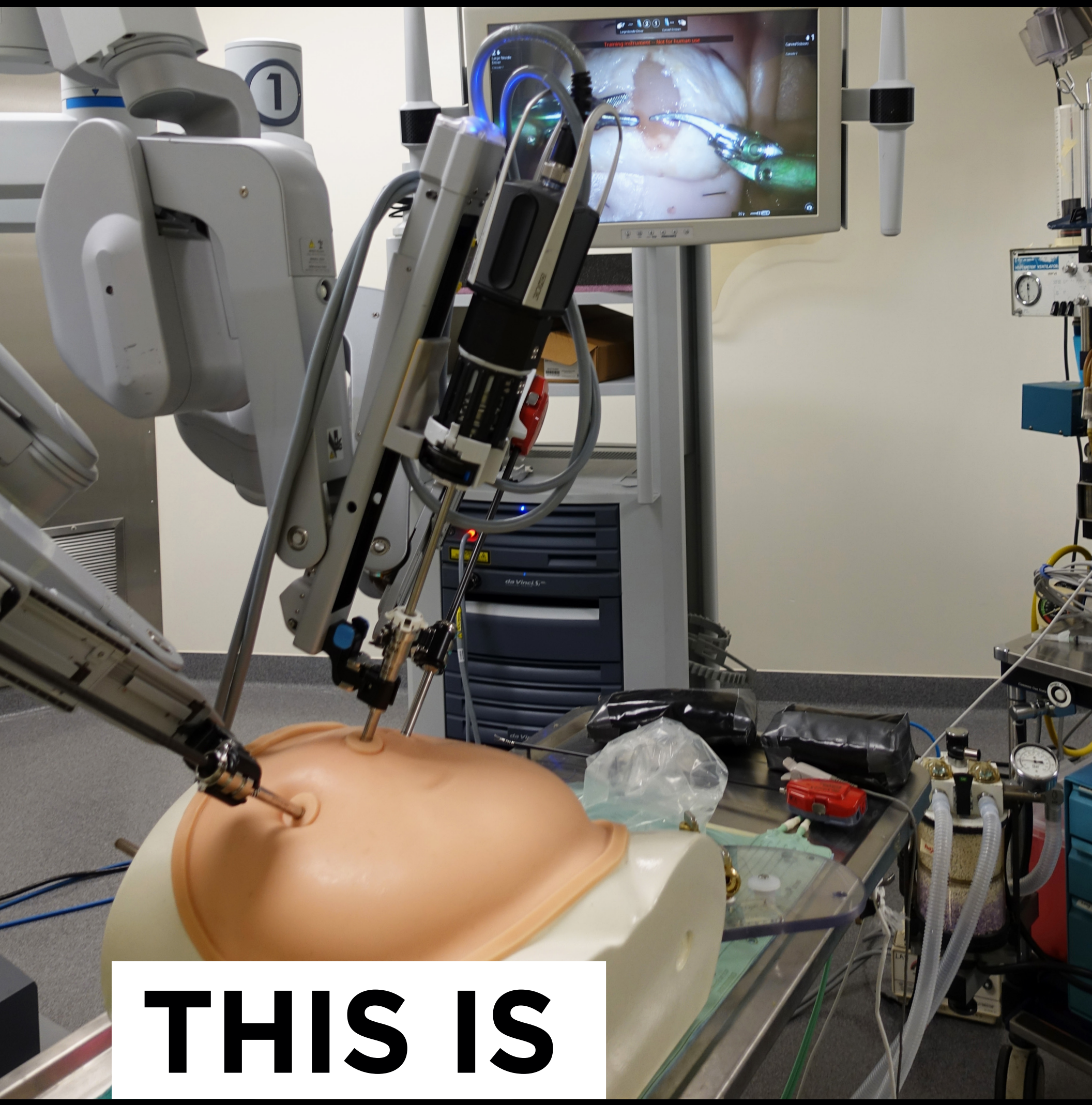

THIS IS RESEARCH

Simulator for Robotic In Utero Surgery (2018)

Francis LeBouthillier, Associate Professor Faculty of Art

I was invited by researchers at the The Hospital for Sick Children and Mount Sinai Hospital to develop a simulator that recreated the conditions of a fetus in utero with a congenital birth defect, commonly known as spina bifida (Myelomeningocele). The simulator involved the development of a fetal model of approximately 23 weeks gestation from synthetic and biological material. The fetus was positioned in a maternal abdomen that was modified to accept the surgical instruments of the DaVinci Robotic Surgical System. The goal of this pilot study was to investigate the potential of using a DaVinci SI system to perform an in-utero repair of spina bifida in a pregnant phantom model. The clinical component of this research was conducted by Dr. Thomas Looi and Dr. James M. Drake (The Hospital for Sick Children, Canada) and Dr. Tim Van Mieghem and Dr. Greg Ryan (Mount Sinai Hospital, Canada). The results of this research project were presented at the Hamlyn Symposium for Medical Robotics, London England in June, 2018.

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