London Health Sciences Foundation

Partnership Opportunity

MOMENTS CHANGING LIVES

CSTAR

Surgeons at London Health Sciences Centre (LHSC) are saving people's lives through our expertise and innovation in minimally invasive surgery. Our Hospital is a major player on the world stage in terms of developing and introducing new minimally invasive surgery technologies and techniques – benefitting surgical patients not only in London and region, but around the world.

Our proud tradition of embracing minimally invasive surgery technology and innovation is demonstrated by LHSC's many world and Canadian surgical firsts. London was the first to adopt surgical robotics in Canada and opened the door for the widespread use of robotics in operating rooms across the country.

The many benefits of minimally invasive surgery include fewer surgical complications such as surgical site infections, a shorter hospital stay, less post-operative pain and a faster recovery – good news for surgical patients as well as the health care system.

At LHSC's CSTAR (Canadian Surgical Technologies and Advanced Robotics), **our mission is to improve the safety and effectiveness of patient care by embracing innovation and introducing the latest technologies in surgical care**. We accomplish this through our active programs – such as research and development into computer-assisted surgical devices and simulation technology, and interdisciplinary simulation and skills training – and by guiding surgical innovation within London's academic hospitals.

Current CSTAR Initiatives in Clinical Practice, Research, Education and Training

Through our engagement with London's top surgeons, CSTAR has led the effort to drive innovation and establish a protocol for the safe introduction of new surgical technologies into clinical practice.

At CSTAR's Brent and Marilyn Kelman Centre for Advanced Learning, **simulation and skills training programs** are wide-reaching and continue to grow. From multidisciplinary team training to surgical skills training, simulation programs are advancing the skills and knowledge of health care providers and allied health personnel in London and around the world.

We continue to develop our training opportunities, which include an infection-control program for LHSC's environmental service workers (ESWs) and support service workers (SSWs); a collaboration

with the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) to train surgery residents from across Canada in minimally invasive endoscopic surgery; and a tele-mentoring program to train surgeons in Canadian community hospitals and around the world in new surgical technologies.

CSTAR's **successful research program** focuses on using innovative technologies to improve patient care. To support our mission, we have developed research programs in collaboration with many local, national and international research partners for the development of novel technologies, technology assessment and simulation training.

Our greatest funding success to date has arisen from our efforts to focus our wide range of research activity under the banner of surgical simulation. In May 2011, CSTAR was successful in Round V of the Ontario Research Fund – Research Excellence Program. The Ministry of Research and Innovation approved our application for an operating grant entitled *Effective Systems for Procedure Specific Healthcare Simulation (Principal Investigator – Dr. Christopher Schlachta, Medical Director, CSTAR)*.

This $9.67-million, five-year project brings together the research interests of 20 co-investigators, 10 Canadian and international industry partners and multiple academic institutions. This will establish a research pipeline for the development and commercial application of five computer-based simulators.

This grant builds upon the success of several smaller, high-quality projects supported by organizations such as the Natural Sciences and Engineering Research Council of Canada (NSERC), Canadian Institutes of Health Research (CIHR), Physicians' Services Incorporated Foundation (PSI) and Western Innovation Fund.

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Our Fundraising Priority: Minimally Invasive Surgery ***$25 million***

The goal at LHSC is to become *the* global leader in surgical technology and innovation – establishing our Hospital as the go-to centre for developing new approaches in minimally invasive surgery, being the centre of choice for surgical and simulation training, and ensuring that patients in London and region receive the safest and most advanced surgical care.

Our fundraising focus for ***patient care*** includes new robotic surgical equipment. As a consequence of our pioneering leadership role, London now has the oldest robotic technology among advanced robotic centres in Canada. Much of this equipment is at or near an end-of-life scenario.

We are striving to acquire a next-generation da Vinci Si HD surgical system for each of our two main Hospital sites, introducing new features designed to enable the best possible patient outcomes. These features include enhanced 3D high-definition vision, a second console for education and collaboration, and improved natural motion for surgeons.

Additional patient care priorities include upgrading all LHSC ORs to fully integrated video endoscopic suites; the introduction of transanal endoscopic microsurgery (TEM) for treating patients with low-lying rectal polyps and early cancers, allowing surgeons to use a video endoscopic apparatus to spare the patient more extensive and disfiguring surgery; and a new imaging system to provide faster, better patient images within the vascular surgery OR.

Our ***research*** priorities include the development of computer-based simulators for training health care providers in minimally invasive interventional techniques in areas such as cardiac surgery, orthopaedic surgery, prostate oncology and gastrointestinal surgery.

Our ***education*** priorities include becoming the training centre of choice for robotic surgeons. We are aiming to expand our selection of simulation and skills training programs offered at CSTAR's Brent and Marilyn Kelman Centre for Advanced Learning, including our multidisciplinary team training and surgical skills programs.

CSTAR

CSTAR's efforts will have a remarkable impact for London:

Economic Development – It is estimated that the global market for simulation-based health care training will be in excess of $1.5 billion by 2012. This is an emerging area in which London can be a world leader.

Job Creation – Through the improvement of current and future simulators, career opportunities in areas such as computer engineering and computer science will be created. As well, improving the ability to train and assess foreign-trained graduates seeking licensure as physicians here will go a long way toward alleviating doctor shortages.

London's Reputation – Our city will be internationally recognized as a leader in surgical technology and innovation.

An Additional Funding Priority: CSTAR Business Development *$4 million*

CSTAR's innovative academic, industry and government partnerships have positioned the program to grow beyond its current capacity and responsibilities to LHSC to include ***expanded business development in the global medical device sector***. With the city as partner and provider of sufficient catalyst funding, CSTAR will position London as the gateway or portal for international medical technology companies seeking successful entry to the North American market.

CSTAR has established medical device performance validation services and many of the world's largest manufacturers, including Johnson & Johnson Medical Products, currently use CSTAR's services for clinical trials and access to key opinion leaders utilizing testing standards acceptable to the Food and Drug Administration (USA) and Health Canada.

Additional funds will enable the expansion of CSTAR's economic development capacity for London through a business model and governance structure which provides clear accountability to its partners. Such a structure will provide the necessary autonomy for this entity to be agile, competitive and responsive to the needs and changes of the global medical device sector and will provide returns many times that of the initial investment.

City funding for this initiative will be used to develop sales and marketing capabilities; for the pursuit of markets where opportunities for development exist, including the identification of companies with emerging technologies that require clinical trial, training, validation and other services; for CSTAR participation in key surgical academic congresses, in which major medical device companies take part; and for close collaboration with partners such as TechAlliance, creating a Team London approach to fostering economic development opportunities in the medical device sector.

This initiative will have great value for London:

Economic Development – CSTAR has demonstrated on a *pro bono* basis for the community that qualified economic development opportunities in the international medical device sector exist. There is tremendous potential to attract foreign companies into London as North American headquarters.

Job Creation – CSTAR's growth will result in several thousand industry, government and academic visitors to our city and, in the short term, the creation of seven to 10 high-quality new jobs. As the above companies establish North American headquarters in London, we are currently estimating approximately 150 new jobs over the next two years.

London's Reputation – Our city will be positioned as an international centre of medical device excellence and innovation.

The City of London: A Key Partner in Our Vision

The City of London has been an outstanding partner of our Hospital. Now, we need the city's strong and continuing commitment to make our vision a reality – building the international reputation of our city and ensuring that the *best possible* surgical care is available for the people of London and Southwestern Ontario.

We respectfully request from the City of London a contribution of $29 million over a period of five to 10 years in support of this enterprise. We would welcome an opportunity to present to you a more detailed business plan and budget through which we will bring this exciting vision to reality.

Thank you for considering this proposal and this notable endeavour.