

Ride Dollars at Work

How The Princess Margaret is Conquering Cancer with Your Help

Every day scientists are unraveling the mystery that is cancer. The momentum is building as more effective treatments become available, as the disease is detected at earlier stages, and as people live longer following cancer treatment with a good quality of life.

Lives are being saved right now. And it's happening right here, each and every day, in Canada. At The Campbell Family Cancer Research Institute. At The Princess Margaret, one of the Top 5 cancer research centres in the world.

Proud to be working at a leading cancer centre, the scientists and clinical investigators at The Princess Margaret strive every day to gain a deeper understanding of how cancer begins in order to develop personalized cancer therapies for the patients facing this terrible disease. We could not be more grateful for your support in making this happen.

Since 2008, the Ride To Conquer Cancer has raised an amazing \$62 million. This funding ensures that the most promising cancer research programs can be initiated and continue uninterrupted at The Princess Margaret Cancer Centre.

Where We Are in 2011

The past 30 years have produced an explosion in our knowledge of the basic biology of cancer. We now know that:

- cancer is a disease of our genes
- not all cancer cells in a tumour are equal (some cells can sustain or 're-grow' a tumour, while others cannot)
- the immune system does try to prevent tumour formation

Recent Research Advances

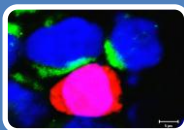
Drs. Frances Shepherd, Ming Tsao, and Igor Jurisica have identified a set of genes (termed a 'gene signature') that helps determine whether certain types of lung cancer patients will benefit from chemotherapy in combination with surgery. This discovery means that patients will only get chemo if their specific cancer responds to it.

Drs. Brad Wouters and Michael Milosevic are teaming up to understand and exploit properties that are specific and unique about the environment in which tumours grow. For example, tumour environments tend to be low in oxygen with poor blood flow. New drugs that take advantage of these properties are being tested.



Conquering Cancer

Our researchers take determined and innovative approaches to their work. Here are some of the groundbreaking programs that the funds you raise have and will continue to support.



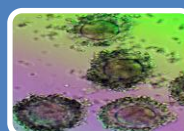
Immunotherapy- The human immune system is an amazing defense system, so Dr. Pam Ohashi and her team are focused on helping the immune system to mount an attack on tumour cells in the body. The potential for enlisting the immune system as a weapon in fighting cancer is enormous.



Image-Guided Therapeutics- This highly specialized team working under the direction of Dr. David Jaffray is focused on developing more precise and effective forms of radiation and surgical therapies that spare more healthy tissue and allow patients to recover quickly.



Molecular Diagnostics- Understanding the genetic properties of each specific cancer could very well be the future of cancer care. Thanks to Ride and other funding sources, our lung cancer team is now performing a genetic analysis of each lung patient's tumour.



Cancer Stem Cells- Under Dr. John Dick's leadership, this team is investigating how to target cancer stem cells--believed to be the root or source of malignant tumours. These cells are relatively few in number and appear to be resistant to our current cancer therapies.



Computational Biology/Bioinformatics- Led by Dr. Igor Jurisica, a strong team of mathematicians, analysts and software engineers are dealing with the challenges of transforming enormous volumes of numbers into intelligence that will lead to more effective treatment for patients.

Thanks to the major insights and discoveries of cancer biologists working at The Princess Margaret, there is more hope than ever before. We know the enemy now—and though it is wily and resourceful, it is not invincible.

Personalized Cancer medicine of the future will look dramatically different than it does today. First, using molecular diagnostics and ever-improving imaging devices, we will detect tumours of ever smaller size. We will remove them using robotic, image-guided surgeries that are easier on the body.

The 'microscope' of the future will be a DNA sequencer. Tumours will not be diagnosed as only 'breast' or 'colon' cancer. Rather, new technology will determine the complete spectrum of genetic mutations in each tumour. Then specific therapies that target the Achilles heel of each tumour can be prescribed. If targeted agents alone won't do the job, the immune system will be mobilized to eliminate the tumour and/or prevent tumour recurrence. Targeted therapies and immunotherapies will be used in combination to deliver maximum benefit for the patient. Personalized Cancer Medicine is the future and Princess Margaret is at the forefront of this 'revolution'.

The future is now. To finally defeat cancer will take hard work, and a lot of it, and it will require substantial additional investment. With your help, the tipping point in the fight against cancer is at hand, and the team at The Princess Margaret is committed to one goal: CONQUER CANCER IN OUR LIFETIME

