

## Emerging Areas of Research

### Immunotherapy

Immunotherapy using PD-1 inhibition and PD-L1 inhibitors show promise in various tumor types, particularly in non-small cell lung cancer and melanoma. We are also participating in several clinical trials using PD-1 and PD-L1 inhibitors in renal cell cancer and gastric cancer.

### Stereotactic Radiosurgery

The Juravinski Cancer Centre is one of only two centres in Ontario to offer Cyberknife radiation technology (The Ottawa Hospital being the other site).

Cyberknife is a type of radiation treatment using very small beams of radiation to get to and remove small tumors anywhere deep in the body. No cuts are made; a robotic system focuses the radiation beams just on the tumor.

We have many clinical trials studying stereotactic radiosurgery using Cyberknife technology in brain tumors, and cancers of the breast, lung, kidney, prostate, liver, bone, and spinal metastases.

### Vaccines

A new Hamilton-developed vaccine is currently being tested in early Phase 1 cancer clinical trials.

The virus was discovered by Dr. Brian Lichty of McMaster University jointly with Dr. David Stojdl and Dr. John Bell of the University of Ottawa. Patients in the Hamilton region may be eligible for this treatment if their cancer expresses the MAGE-A3 protein. The vaccine works by targeting this protein within tumor cells and destroying the tumor using the patient's own immune system.