

## Diagnostic Devices Will Deliver Customized Patient Care, Improve Cancer Detection and Help Save Lives

Supported by CMC Microsystems, a team of university researchers, clinicians and oncologists in Alberta has developed a life-saving diagnostic technology that will move from the university research labs to clinical trials by 2007

*"The Alberta Cancer Diagnostic Consortium is creating robust, adaptable and transformative technologies for fast and highly accurate cancer testing at the point-of-care, in the field and on the spot."*

**Dr. Linda Pilarski**  
Canada Research Chair in Biomedical Nanotechnology  
University of Alberta



Dr. Karan Kaler of the University of Calgary (left) is collaborating with Dr. Chris Backhouse of the University of Alberta (right) and Dr. Linda Pilarski of the Cross Cancer Institute (centre) on the development of microfluidic devices that will enable novel treatments that are highly customized to the needs of each patient.

**M**any cancer tests are simply too complex, expensive and time-consuming to be performed routinely in clinics using conventional methods and technology. With the development of a new diagnostic device in Alberta, this reality is about to change.

The Alberta Cancer Diagnostics Consortium (ACDC) represents a unique collaboration among clinicians, oncology researchers and engineers from the University of Alberta, the Cross Cancer Institute and the University of Calgary. The interdisciplinary research team is developing portable microfluidic devices that will enable earlier and more accurate testing for the detection of cancer and other life-threatening diseases.

The devices will enable novel treatments that are highly customized to the needs of each patient, providing timely and accurate data about the potential side effects of drugs, monitoring the efficacy of vaccinations and detecting disease-related genetic abnormalities of patients.

CMC has provided access to computer-aided design tools for the design and simulation of all microfluidic components, including high-voltage chips and sensors, and access to fabrication for the development of prototype devices—prerequisites for moving products closer to market.

"CMC provides an effective vehicle for prototype development that would otherwise not be available or would incur high costs for the researcher," says Dr. Karan Kaler, Professor at the University of Calgary and co-founder of ACDC, together with Dr. Chris Backhouse of the University of Alberta, and Dr. Linda Pilarski of the Cross Cancer Institute.

ACDC is also partnering with Micralyne of Edmonton, Alberta on the development of microfluidic platforms that bring together microsystems and nanotechnology to enable real-time diagnostic tests for cancer. This cost-effective microsystems technology promises to improve the accessibility and quality of patient care in Canada. [cmc](#)