

## Ultrasound device detects breast tumors

An ultrasound device that will detect breast tumors the size of a pimple could be ready for clinical trials at Ottawa's Civic Hospital this summer.

The device should be cheaper and less hazardous than the traditional X-ray mammogram now used to detect breast cancer, says its inventor, Carleton University physicist Robert Clarke.

Dr. Clarke has spent three years developing the ultrasound breast scanner in hopes it will complement or eventually replace the X-ray in the diagnosis of breast cancer, which affects 15 per cent of Canadian women, mostly between 50 and 60 years old.

According to Dr. Clarke, for every 1 000 women who have their breasts X-rayed to screen for tumors, the radiation contributes to or causes one case of cancer.

### Detailed look

Ultrasound is used successfully to scan the body for liver cancer, kidney stones and to give a detailed look at the developing fetus in pregnant women. Sound waves generated by a thumb-sized transmitter are pulsed into the organ and bounce back from it, providing a medical

"map" of that organ's characteristics.

But there have been numerous problems in adapting ultrasound to breast scanning. First, cancer tumors in the breast are often similar in elasticity and density to the breast tissue itself, making small lesions — up to half a centimetre in diameter — difficult to pick out against the background of surrounding tissue.

### Sharp focus

As well, the sound waves must penetrate several centimetres into the tissue, yet still yield precise detail. To date, ultrasound techniques have tended to provide sharp focus for only a few centimetres before blurring.

But Dr. Clarke, graduate student Hripisime Shahvazian and research associate Boguslav Jarosz believe they have a technique that will scan with precision as far as ten centimetres into the tissue.

"It's like the difference between using a pinhole camera to take a picture and using a wide angle lens. We're getting high resolution over a wide area."

Similar research is being done by Dr. John Hunt at Princess Margaret Hospital in Toronto. But that work is aimed at building completely new ultrasound

equipment, while the Ottawa group wants a breast scanner that can be adapted to fit ultrasound equipment hospitals have already purchased.

The team does not think the technique will yield results noticeably better than those gleaned by X-ray or a direct examination of the patient.

In tests done on liver tumors, for example, X-rays detected tumors in some instances that did not show up under ultrasound. Conversely, the ultrasound technique picked out some cancers not found with X-rays.

## Papers of Marshall McLuhan acquired by Public Archives

The Public Archives of Canada has acquired the papers of Marshall McLuhan whose ideas, it is believed, have had a greater impact on the world than those of any other Canada.

The late Edmonton-born professor and scholar's work brought "the global village" and "the medium is the message" into everyday use. His sometimes outrageous wit and his often penetrating observations became widely known as "McLuhanisms".

This multi-media collection documents the full spectrum of Marshall McLuhan's career and includes personal correspondence with thousands of people, including such notable individuals as Ezra Pound, Wyndham Lewis, Margaret Atwood, Buckminster Fuller, John Kenneth Galbraith, Pierre Trudeau, Jimmy Carter and Hubert Humphrey. Also included are manuscript copies of his books, unpublished works, articles, video and sound cassettes of interviews, as well as speeches and papers delivered at symposia. Teaching materials, such as lecture notes, resource material and papers prepared by students, some of which include McLuhan's notes and comments, also make up part of this extensive collection.

At a party marking the event, Communications Minister Francis Fox welcomed the arrival of the McLuhan papers at the Archives because, he said, Canada has been a front-runner in communications technology since its earliest days, when explorers, fur-traders and subsequently railway builders, knitted the country together.

He noted that last year, Teleglobe Canada established an international prize in Marshall McLuhan's name for research in the social impact of modern communications.

## Stamp marks Yellowknife's fiftieth anniversary

The first new stamp of 1984, issued March 15, commemorates the fiftieth anniversary of the gold mining community of Yellowknife, capital of the Northwest Territories.

André Ouellet, Minister responsible for Canada Post Corporation, said the stamp "symbolizes the industry which caused Yellowknife to grow, in the short space of 50 years, from a prospectors' tent city into an administrative centre of a vast northern territory".

To symbolize the growth of Yellowknife and of its major industry, the stamp depicts the head frame of a gold mine — a characteristic feature of the city — rising out of a prospector's pan.

Prospectors on their way to the Klondike first discovered gold in Yellowknife Bay in 1896. Almost 40 years later, in 1934, a larger find resulted in the birth of Yellowknife as a gold mining town.

In 1944, a second gold rush brought renewed economic vitality to the area, 1 000 kilometres north of Edmonton, and its population grew rapidly to 3 000. It has now reached about 10 000. In 1967, Yellowknife was declared capital of the Northwest Territories, a vast and diverse region of close to four million square kilometres — more than one third of Canada's total area.

A popular misconception is that Yellowknife owes its name to the colour of gold. In fact, it stems from the copper bladed knives used by Indians in the area around 1770. Explorer Samuel Hearne called them Copper Indians but fur traders soon began to refer to them as Yellowknives.

