



**Micheline Bouchard**  
President and CEO

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M A R K E T  
I N F O R M A T I O N

TSX Symbol: ARA-T

52-Week range:

H: 3.24; L: 1.30

Shares Outstanding:

26,673,341

Market Cap:

\$63M

Year-End:

April 30  
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# Optical Molecular Imaging Technology

Herein lies tremendous promise to advance the process of biomedical diagnosis and detection

by TOD HOFFMAN

**W**hereas X-rays, ultrasound and magnetic resonance imaging (MRI) are medical modalities providing *structural* or *anatomical* images, ART's proprietary time domain optical imaging technology renders a *functional* image that reveals physiological activities in living tissue. While positron emission tomography (PET) can also provide functional information, ART's platform has the advantage of being considerably more cost-effective and non-invasive, not requiring radioactive compounds, which means that patients can be imaged frequently without risk.

SoftScan® promises to revolutionize the diagnosis of breast cancer. Measuring the time distribution of photons traveling through the breast, tissue perfusion (blood volume) and metabolism (oxygenation rate), it has the capability to accurately distinguish between benign and cancerous lesions based on the physiological processes of cancer. This, in contrast to mammography, which detects the presence of the lesion based exclusively on anatomical information. Close to 80% of breast lesions detected by mammography are thereafter determined to be benign, but only following biopsy. SoftScan®, as a new modality, will greatly improve the timely diagnosis of cancerous lesions in the breast.

The prevalence of breast cancer (it strikes one of every eight women worldwide) is staggering. Current imaging technology results in far too many false negatives, or failure to detect small tumours. The configuration of SoftScan® is being optimized in clinical tests at Montreal's McGill University Health Centre - Royal Victoria Hospital to reduce this factor, thus allowing for detection at the earliest possible stage.

ART's strategy, according to President and CEO Micheline Bouchard, is to obtain early regulatory approval for SoftScan® as an adjunct to mammography. She anticipates bringing SoftScan® to market in Canada sometime in late 2004, and moving on to the United States in mid-2005 once FDA approval is obtained.

In October 2002, ART entered into a multi-year agreement with GE Medical Systems whereby the latter will help market, manufacture, and distribute SoftScan® on a worldwide basis, as well as develop new molecular imaging applications with ART. Its parent company, General Electric, also provided ART with a private placement of US\$3 million.

This year ART is commercializing its Small Animal Molecular Imager, or SAMI™. SAMI offers pharma and research centres access

to functional and quantitative *in vivo* images, previously impossible to obtain. It offers the unique advantages of quickly demonstrating the effectiveness of drugs and monitoring side effects on organs or regions not targeted by the drug treatment.

"A large European pharmaceutical company was able to attain results in a few hours that would otherwise have taken several weeks in the pre-clinical phase," says Bouchard. "Finding out early on in the drug development process whether a drug has unintended effects (for example, if it goes to the brain when it isn't supposed to) represents major productivity enhancements and reduces the overall cost of development and time to market of new drugs."

Two additional large pharmaceutical companies also successfully completed the testing of SAMI. Since it is designed for use on small lab animals, no regulatory approval from health agencies is required prior to commercialization.

"In the near future, we'll be able to apply this molecular imaging technology to humans," Bouchard affirms.

Last summer, ART divested itself of its industrial thermal imaging division, ISIS®, selling it to Photon Dynamics for US\$5.5 million. This decision was taken to allow ART to concentrate all its efforts on the bio-medical and health sciences sectors.

"We were spread too thin, trying to operate in two completely separate business environments," says Bouchard. "Now, we have a clearer definition of our mission and can better deploy our resources."

Bouchard, a member of the Order of Canada, holds degrees in engineering physics and electrical engineering. She joined ART in September of 2002, bringing a wealth of executive experience from Hewlett Packard and Motorola, where she oversaw product development and was responsible for worldwide commercialization.

"The challenge with a smaller company is to understand the larger players and establish a world-wide footprint for our product in the marketplace," she says. "Our technology fulfills an unmet need and is generating interest as a bio-optical molecular imaging platform. My mandate is to go forward with commercialization and grow the company." **B**

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