

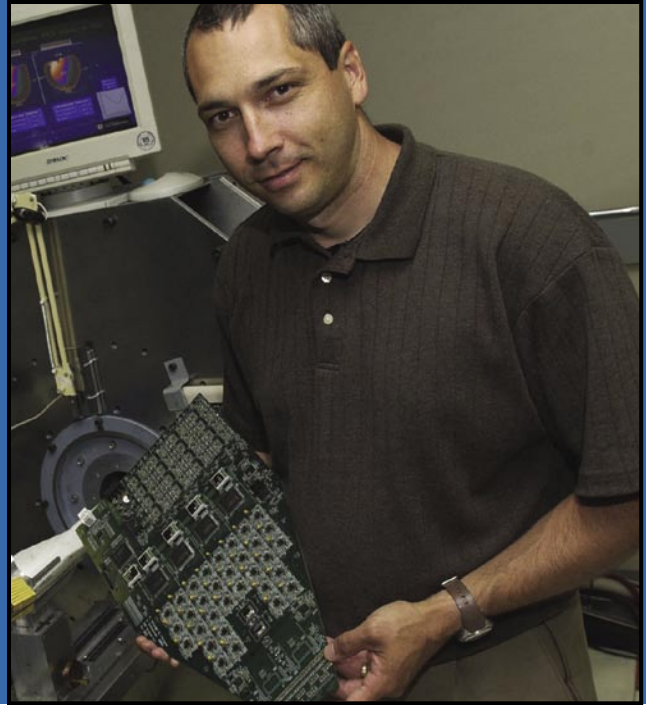


## A More Complete Picture of Human Life

**A team of electrical engineers and medical physicists are developing an all-in-one imaging device that can detect cancer and pinpoint its exact location in the body**

*"When we attend conferences outside of Canada, researchers tell us how fortunate we are to have CMC. CMC made it possible for us to design at 1.8 micron for the PET/CT scanner project. Teams from around the world tell us that they can't perform this type of research because it's simply too expensive."*

**Dr. Réjean Fontaine  
Adjunct Professor  
Electrical Engineering  
Université de Sherbrooke**



Dr. Réjean Fontaine displays the technology for his unique dual-modality scanner. The technology will be used by researchers in oncology, cardiology, neurology, genetics and drug development.

PHOTO: Université de Sherbrooke

**H**idden from view, but embedded inside one of the world's most advanced imaging systems, is a tiny microchip that was designed and manufactured with the help of CMC.

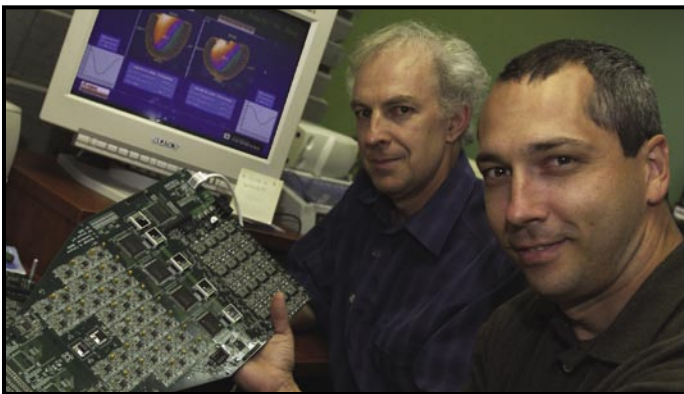
Working with Dr. Roger Lecomte, a nuclear medical physicist at the Université de Sherbrooke's Clinical Research Centre and colleagues at the Brookhaven National Laboratory in New York, Dr. Réjean Fontaine

used tools and technologies provided by CMC to solve a critical integration problem. The team wanted to simultaneously acquire Positron Emission Tomography (PET) molecular images and Computer Tomography (CT) anatomical images.

By using the same detector and electronic chain to detect the high-energy PET annihilation radiation and the low-energy CT X-rays, the team is creating a system that images in-vivo biological activity and anatomy all at once.

"To combine the two imaging modalities, we needed to develop and manufacture some dedicated integrated circuits for the front end. That is where CMC helped us," says Dr. Fontaine, a biomedical microelectronics engineer at Sherbrooke. "We're the only research team in the world working on a PET/CT scanner that uses the same electronics for both devices."

This unique dual-modality scanner will be used by researchers in oncology, cardiology, neurology, genetics and drug development. Sherbrooke has already spun-off Advanced Molecular Imaging (AMI) Inc. to market the device within the next two years. *cmc*



Dr. Roger Lecomte (left) and Dr. Réjean Fontaine (right) used products and services delivered by CMC to design and manufacture an innovative microchip for a new imaging scanner. PHOTO: Université de Sherbrooke