Image Processing & Medical Imaging Laboratory

This document provides information about research at the Image Processing and Medical Imaging Research Laboratory at the University of Houston.

**Associate Professor:** Thomas J. Hebert  
**PhD student:** Victor Gallardo  
**Collaborator:** Patrick Ford, M.D., Radiology, Baylor College of Medicine.

**Research Areas**

- segmentation and analysis of time-varying 3-D medical images,  
- laser imaging, adaptive optics, real-time control of adaptive optics systems,  
- lossless compression of seismic data,  
- image restoration, 3-D reconstruction, Bayesian approaches to image restoration and reconstruction, 3-D tomography, image modeling, multi-modality image registration and correlation, gated cardiac imaging, statistical image processing, automated image analysis.

**4-D segmentation of gated Myocardial Perfusion images**

![4-D segmentation of gated Myocardial Perfusion images](image1.png)

**3-D segmentation of Positron Emission Tomography transmission images**

![3-D segmentation of PET images](image2.png)

**Facilities**
The laboratory provides an optical bench and a high speed programmable video processing board.

Several medical imaging research projects involve close collaboration with premiere institutes in the Texas Medical Center, such as St. Luke's Episcopal Hospital and Baylor College of Medicine. Access is available to several state of the art nuclear medicine and magnetic resonance imaging equipment in the Texas Medical Center.

© University of Houston Cullen College of Engineering, Department of Electrical and Computer Engineering