

1. Estimation of Adipose Tissue with Micro Computerized Tomography (CT)

The purpose is to non-invasively quantify adipose tissue in murine models

2. Ultrasound Imaging with Contrast Agents to Quantify Blood Flow in Kidney Disease Models.

Ultrasound contrast agents are composed of gas microbubbles, which are injected intravenously and increase the signal from the blood. Ultrasound video clips of roughly 1 minute will be processed to achieve contrast enhancement quantification to obtain a parameter termed "time to 80% perfusion" within the kidney. This parameter is a measure of kidney disease, as diseased kidneys exhibit reduced perfusion.

Dr. Michaelann Tartis, NMT Dept. of Chemical Engineering

2. Optimization Code for a H.264/Moving Picture Experts Group (MPEG)

This would involve Joint Photographic Experts Group (JPEG2000) and H.264 and comparisons of IR data.

3. Comparisons Between 14 bit and 8 bit Imagery

Comparisons using different scaling equations, pseudocoloring. Analysis may also include to look at bitrate vs. information, content, etc.

Mr. Eric Husman, White Sands Missile Range

4. Other projects in which the student is already involved