**Echocardiography System Requirements and Hardware Specifications**

* Capable of 2D and 3D imaging and precision blood flow determinations in real time
* Support rate-subtraction contrast imaging on both cardiac and linear vascular probes
* Consistent platform and data collection as used by University of Oregon’s collaborators
* Transthoracic 2D/3D
* Real-time views of cardiac structure in a single beat
* Capable of acquisition frame up to 500 frames per second
* The system architecture designed to simultaneously process the entire bandwidth

of broadband transducer-received frequencies from 1 MHz to 17 MHz

* The system shall operate in the following modes:

Real-time spatial compound imaging

Panoramic real-time spatial compound imaging

Adaptive image processing (real-time analysis of patterns at the pixel level and

 refinement of images)

Real-time 3D Echo imaging

o Real-time 3D or real-time 3D imaging

o Real-time 3D zoom imaging

o Elevation compounding

o Real-time full volume imaging

o Manual cropping

o Real-time 3D color flow

o ECG display 3D swivel

o 3D LVO setting

o Multiplane imaging in transthoracic echo

Biplane imaging, consisting of real-time, simultaneous display of two full-resolution

images acquired from different planes, where one image can electronically tilt and rotate

2D grayscale imaging

Tissue Harmonic imaging

Chroma imaging

Contrast Specific imaging with 2D Harmonics using Pulse Inversion Technology

Power Pulse Inversion Contrast Harmonic imaging

Agent Detection imaging (ADI) for contrast

M-mode

Color Doppler imaging

Tissue Doppler Imaging

Adaptive Broadband Color Flow Doppler

Color Power Angio imaging (CPA)

High PRF Doppler

Simultaneous PW Doppler and 2D

Simultaneous 2D, color Doppler and PW Doppler (Triple Mode)