

Machine shop core facility

Peter Caron

(708)216-5322

pjcaron@luc.edu

5th floor: main office

Maguire center basement: machine shop

Overview

The Machine Shop provides all departments within Loyola University access to a skilled Machinist/Designer on a fee for service basis. The Shop provides investigators with design and fabrication of unique instruments and assemblies that are not available or are cost prohibitive for purchase. It can also perform repairs to crucial instruments in a timely manner to minimize down time.

Description

The Machine Shop is staffed by skilled technicians with experience in the design, manufacturing and repair of precision instruments. We are ready and excited to work with you on all of your machining needs. The Shop is fully equipped with 3D design and manufacturing capabilities. This allows you to visually see your project before it is manufactured to insure that your requirements will be exactly what you have in mind. Just added to the machine shop is **3D printing**. This will allow a faster turnaround for parts and assemblies. Delivery can be as little as a couple of hours.

SERVICES

- CAD Design
- 3D Printing
- Computer Aided Milling
- Instrument Repair
- Equipment Repair
- Cutting, Forming, Bending
- Drilling and Cutting Glass
- Lathe Work
- Bench Work
- Sawing
- Manual Milling/Drilling

PRICING

- You can receive a quotation for any project, or charged at an hourly rate.

Within University:

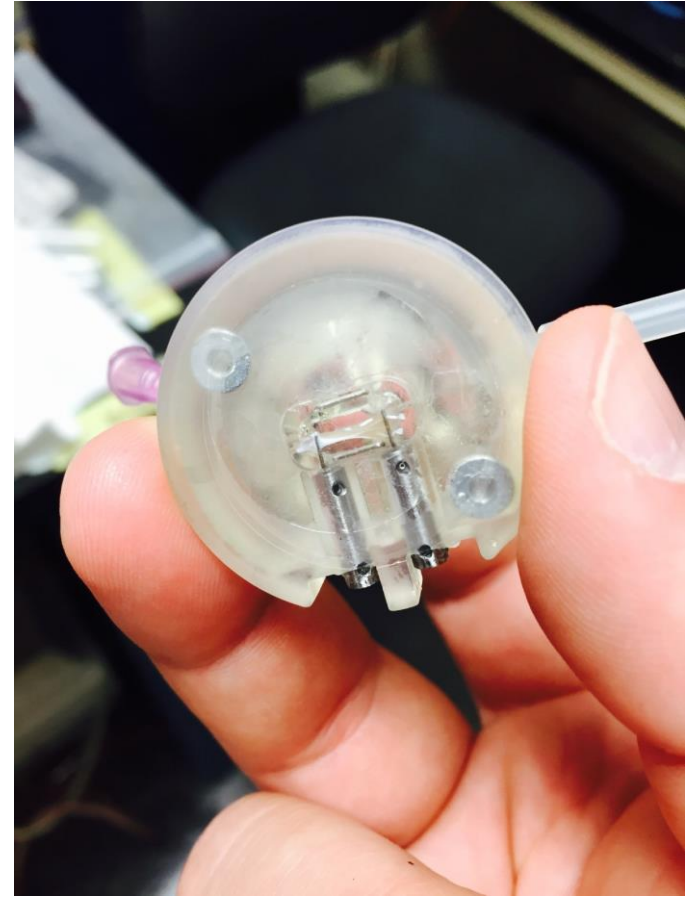
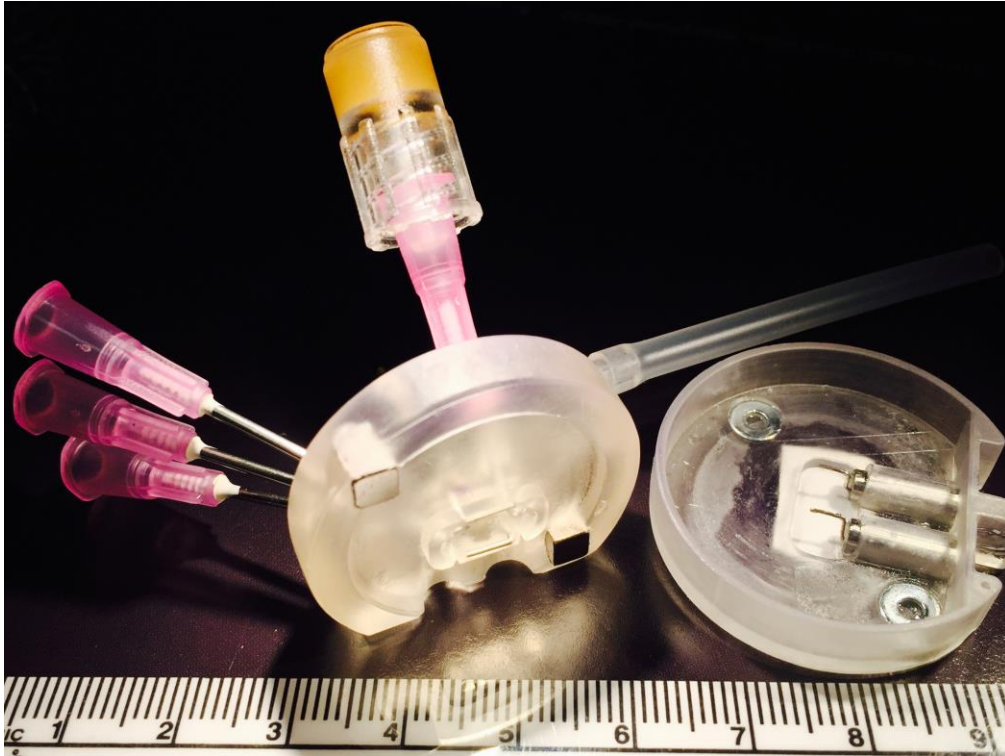
- \$25.00 per hour**

Outside of the University:

- \$50.00 per hour**

- ** Plus all materials

EXAMPLE



Patent applied for

Small animal surgery/hemodynamics core facility

Sarah Burris, Ph.D.

(708)216-8510

sburris@luc.edu

5th floor: main office

Basement animal facility: procedure rooms

Overview

The small animal surgery/hemodynamics core facility provides all departments within Loyola University access to a state of the art facility to support research involving small animals such as mice, rats, guinea-pigs, and rabbits.

Description

The small animal facility is staffed by skilled personnel with experience in handling small animals for both acute and chronic studies. The facility includes the following equipment:

- Bi-ocular surgical microscope stand
- Vevo 2100 ultrasound imaging system (range of probes micro -> rabbit heart)
- Catheter pressure-volume system (mice -> rabbit)
- ECG/pressure telemetry
- Metabolic cages
- Hypoxia chamber
- Mouse treadmill

Multiple independent rodent respirators and anesthesia systems

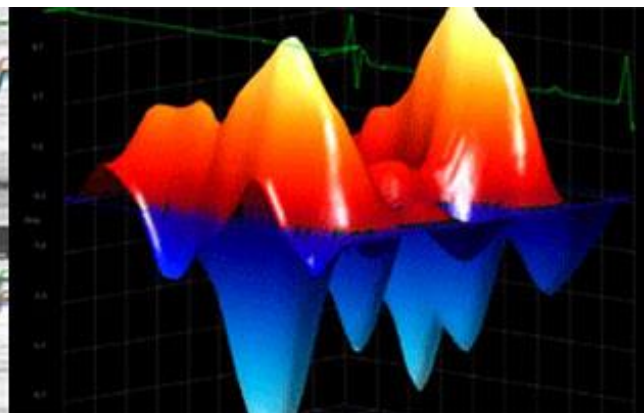
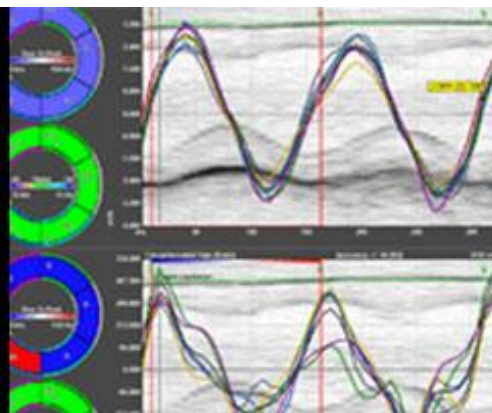
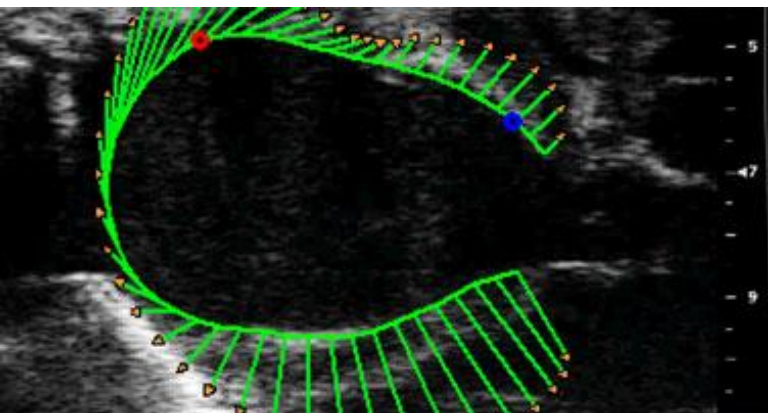
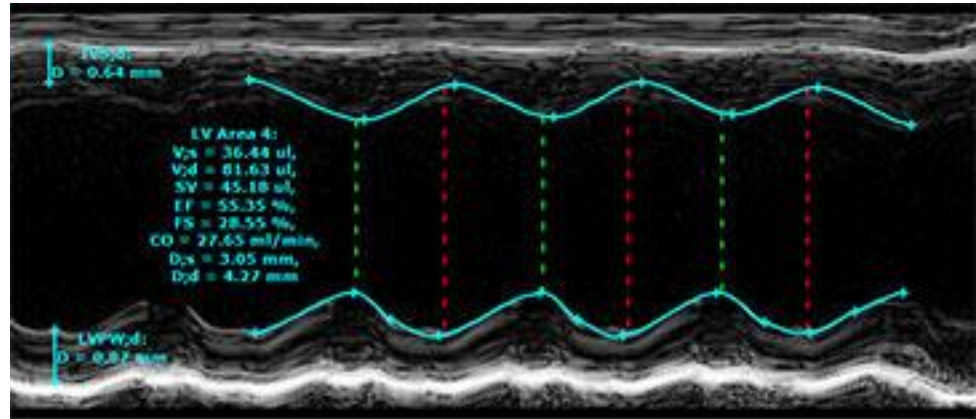
High-speed ultrasound Imaging

- Vevo-2100 (~\$600k\$).
- Fully equipped with 4 ultra-sound probes ranging from very small (e.g. mouse carotid artery imaging) to fairly large (rabbit heart).
- Full software packages, 2D, Doppler, M-mode, speckle tracking, pressure-volume capability, ECG synchronization.
- Motorized stand /w 3D injector for echo guided injections.

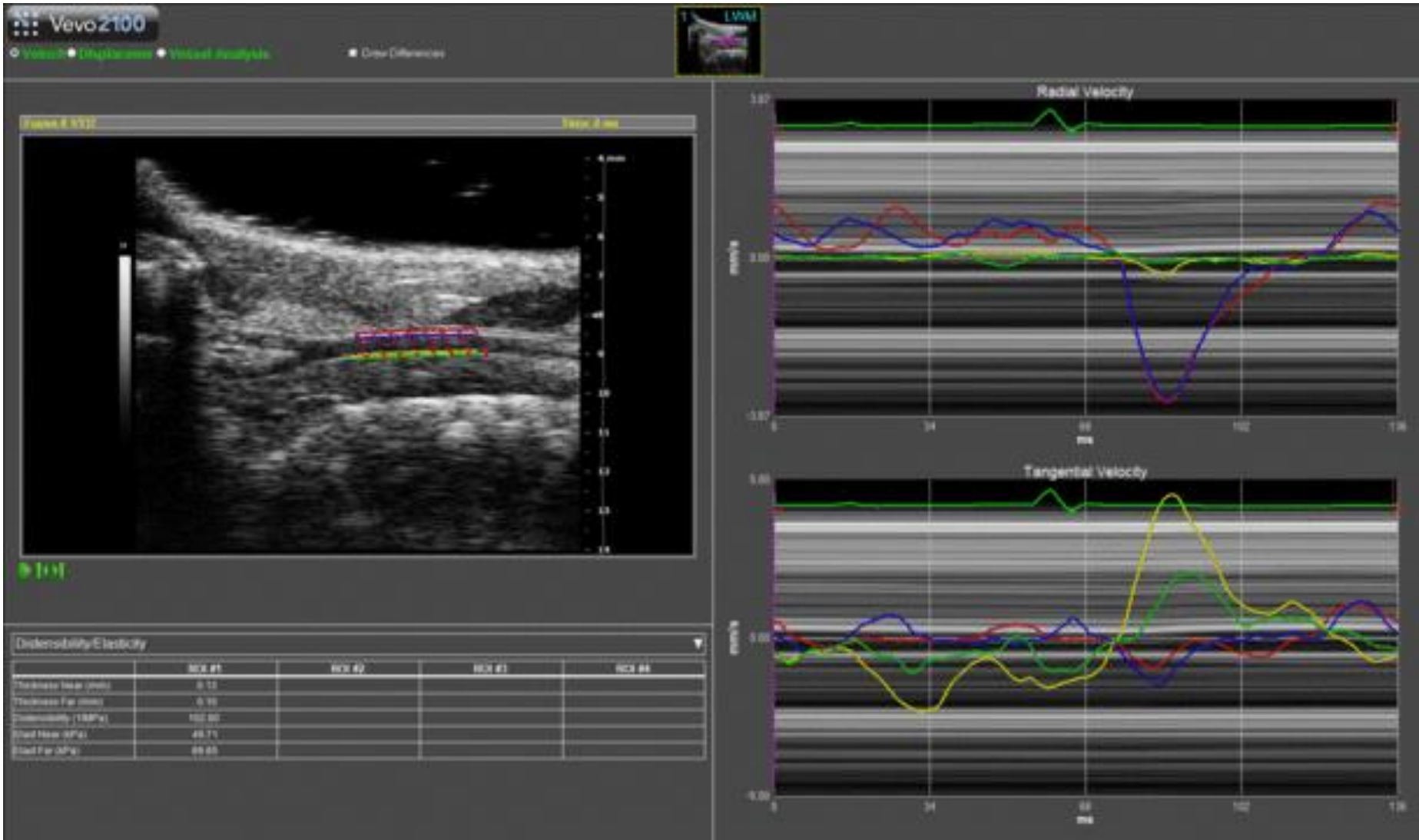




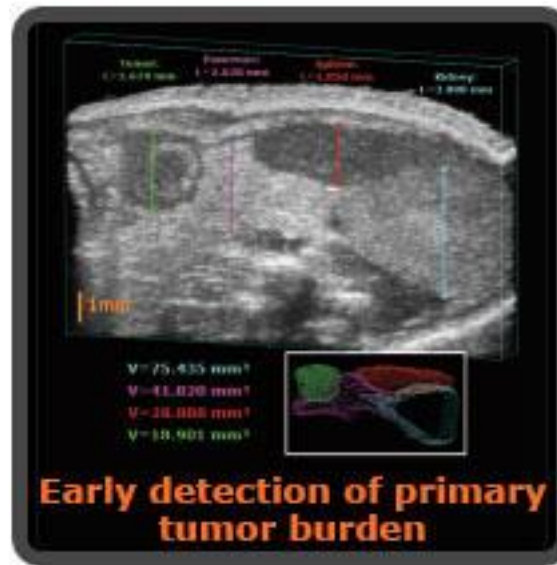
HEART



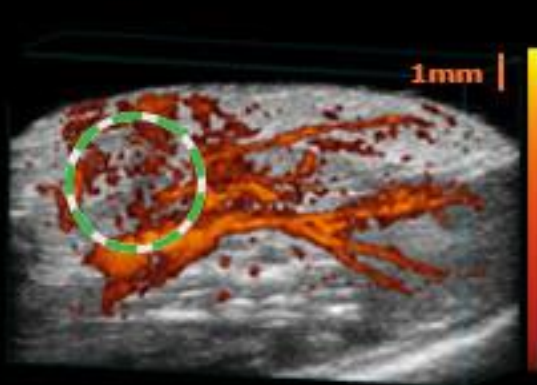
VASCULAR



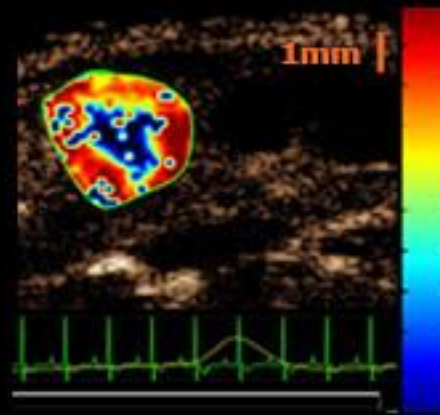
CANCER BIOLOGY



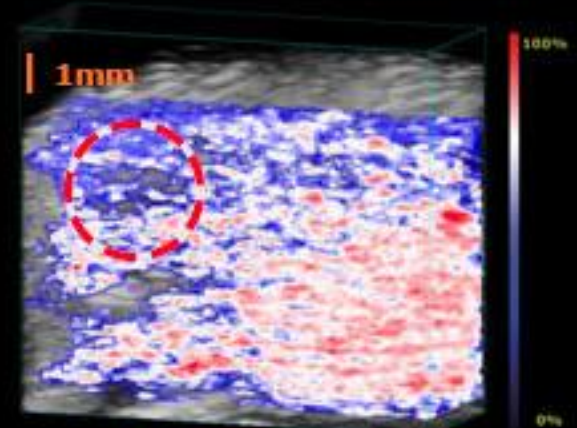
Multiple microenvironment assessment of a pre-palpable pancreas tumor in one imaging session



2.9% vascular density

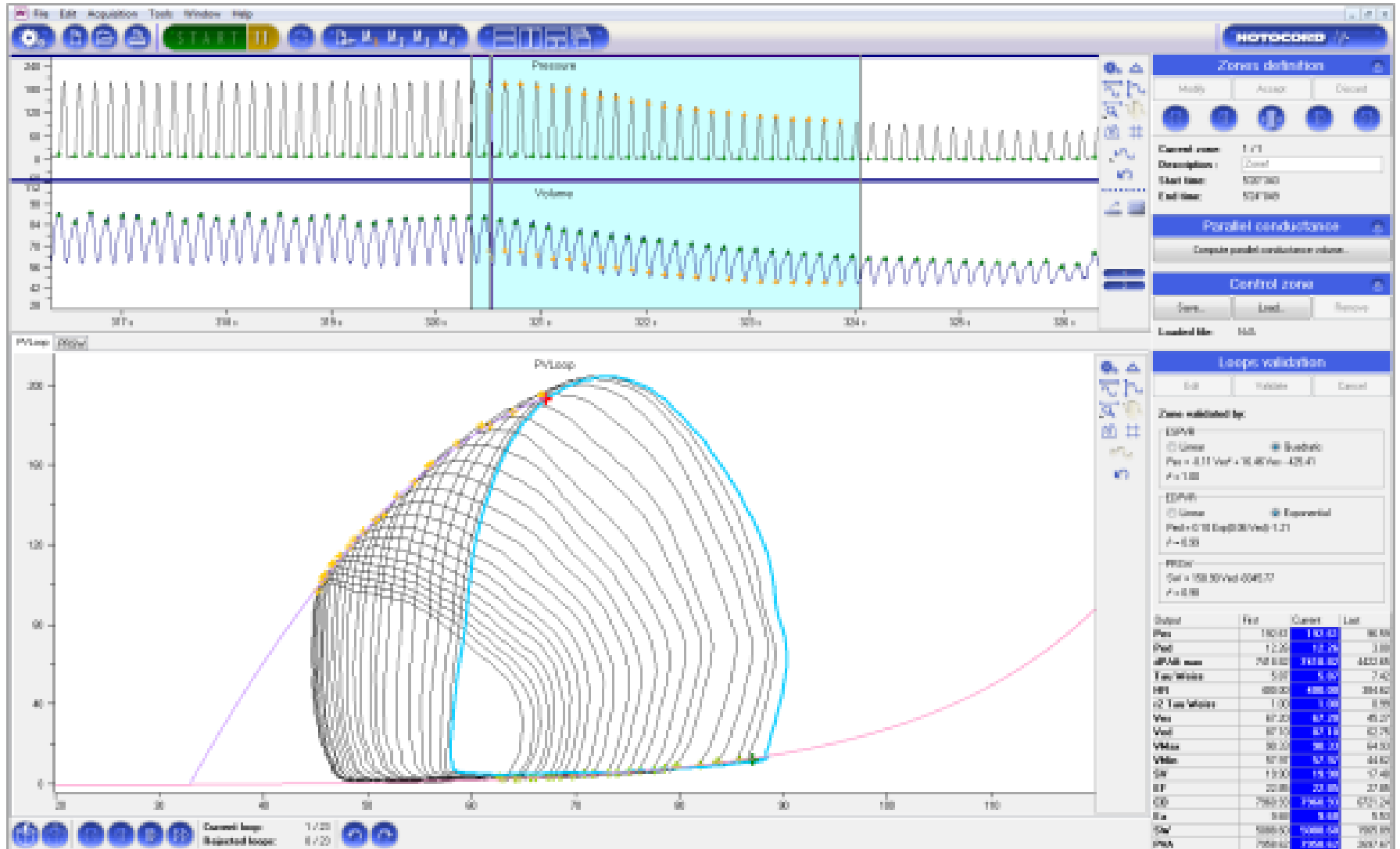


10% microvascular perfusion



50% oxygenation

Pressure-Volume



PRICING

Echocardiography

cardio (2-D B mode short and long axis, m-mode, doppler flow)	\$100 animal
cardio (tissue doppler)	add \$30 animal
cardio (strain)	add \$30 animal
cardio (simpson's)	add \$30 animal
cardio (3-D modeling)	add \$35 animal
tumor (3-D modeling)	
organ (3-D modeling)	
training	\$600 day
machine use	\$100 hour

chronic ECG/arterial pressure measurements

full instrumentation/probes/analysis	\$250 animal
surgery (no probe provided)	\$80 animal

Transverse Aortic Constriction (TAC)

PV loop	\$120 animal
Myocardial infarction	\$150 animal
Aortic banding	\$120 animal
Ischemic/repurfusion	\$120 animal
Minipump implantation and drug-induced cardiac hypertrophy model	\$120 animal
	\$40 plus pump

Minor surgery (IV injections, blood sample collection, etc).

Tissue harvesting	\$40 procedure
Surgical facility use (*excludes use of PV loop probes, DSI probes, etc).	\$30 organ
	\$100 hour