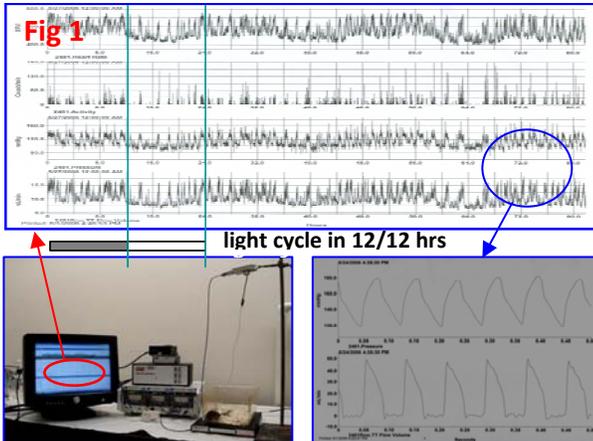




The SOM Small Animal Physiology Core has been expanded and renamed the “Physiological

Phenotyping Core” (PPC). Services provided by the PPC: *in vivo* measurements of cardiovascular and extra-cardiovascular functions in mice and larger animals; including surgeries & experiments, equipment rental, and training & consultancy.

The VisualSonics Vevo 2100, the most up-to-date ultrasound biomicroscopy system, is now available. The new system provides microscopic spatial resolution (e.g., see 60  $\mu\text{m}$  artery in Fig 2), 3D imaging & volume analysis, and high frame rate (1000 fps, M-mode) unattainable by MRI or CT.



**Chronic recordings of mouse BP & CO**

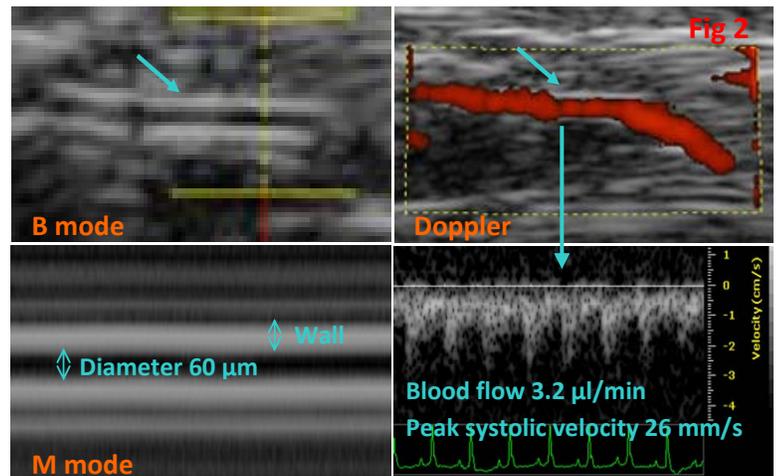
## Examples of services provided in the PPC:

### Surgeries and acute/chronic experiments

- **Implant surgeries:** telemetry transmitter; flow probe; vascular access catheter/port; electrode; infusion pump
- **Animal models:** coronary ligation; aortic banding; arterio-venous fistula; chronic hypoxia; carotid denervation
- **In vivo measurements (Fig 1):** cardiac catheterization; regional blood flow; pulmonary function; ECG, EEG, EMG; renal sympathetic activity; tissue  $\text{O}_2$  concentration

### Biomicroscopy (high frequency ultrasound):

- **Analysis of blood flow in all size vessels:** pulsed-wave Doppler for large arteries and veins; color flow and power Doppler for smaller vessels (Fig 2); and contrast imaging for flow at near-capillary resolution.
- **Structural analysis of tumors (Fig 3), and embryonic/adult organs,** such as the heart & vessel; brain, spinal cord, nerve; kidney, urinary tract, bladder; liver, pancreas, gall bladder; musculoskeletal system.
- **Imaging-guided injections, extractions, or gene transfer (Fig 4)**
- **Molecular imaging** for expression of angiogenic and inflammatory biomarkers in vascular endothelial cells.



**Biomicroscopic study of mouse femoral artery branch**

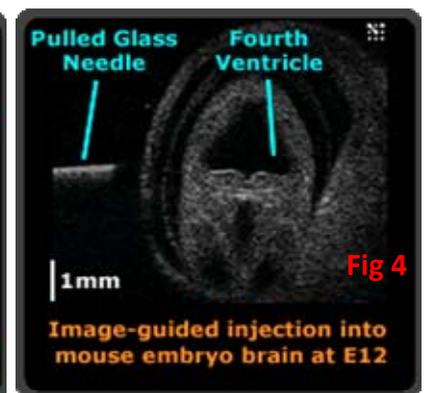
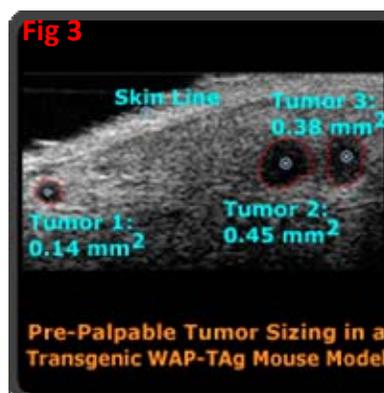


Fig 3 & 4 courtesy of VisualSonics, Inc