

Instrument Expo 2021

WSU Spokane

Research Service Centers

WASHINGTON STATE UNIVERSITY  HEALTH SCIENCES
SPOKANE



Genomics

Illumina Platform NGS services

HiSeq 2500
NextSeq 500

Standard Applications:

- RNA-seq
- Whole genome sequencing
- Whole exome sequencing
- ChIP-seq
- Methylation sequencing metagenomics

Custom Sequencing Services:

- NGS projects on low-quality DNA/RNA
- Amplicon sequencing
- Genotyping by sequencing and more...

Bioinformatics Services

Access to high performance computing clusters for data analysis including:

- RNA-seq
- ChIP-seq
- Whole genome sequencing
- Whole exome sequencing
- Methylation sequencing
- Metagenomics
- Gene functional annotation and more...



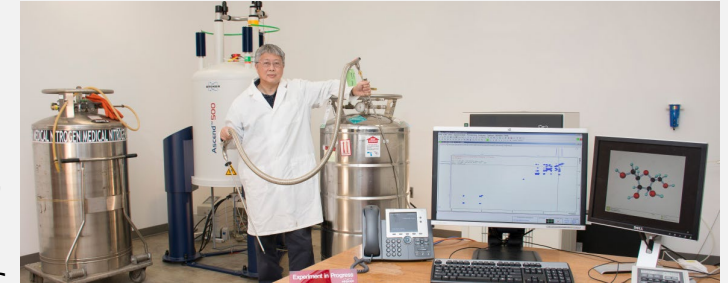
Genetic and Genomic Service

- DNA/RNA extraction
- DNA/RNA quantification
- DNA/RNA fragmentation
- ChIP
- PCR
- qPCR

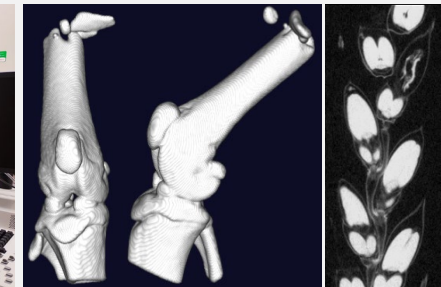
NMR

Bruker Avance I 500 MHz NMR

- 1D spectra for ¹H, ¹³C, ¹⁹F, and ³¹P
- 2D spectra including COSY, HMBC, and HSQC



Imaging



Instruments:

- **Quantum GX mircoCT:** Whole body imaging (45 mm resolution) and high-resolution spot scans (5 mm resolution reconstruction)
- **IVIS Spectrum CT:** Pair fluorescent or bioluminescent imaging with microCT in up to 5 live animals simultaneously
- **XRAD 320 Irradiator:** Suitable for x-ray irradiation of cells and small animals
- **Vevo 2100 Ultrasound**

Biomedical Engineering and Design

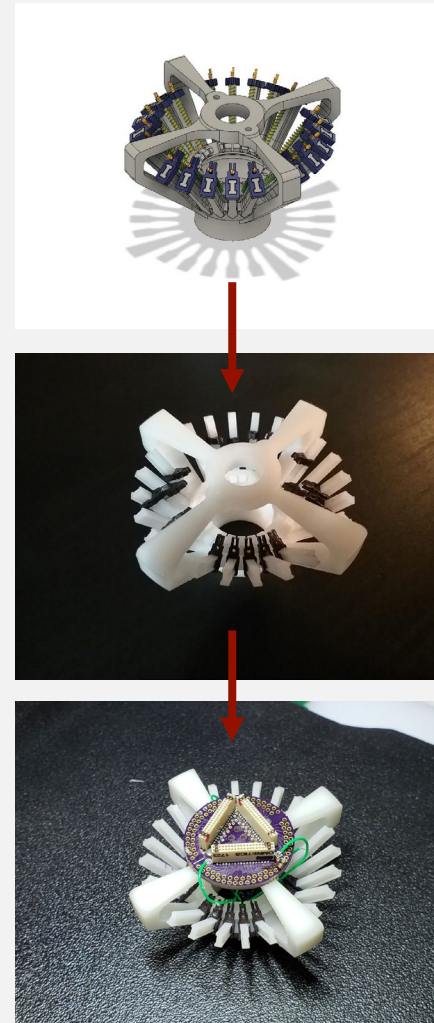
Facility Capabilities

- Manual and CNC 3-Axis Milling
- Engine Lathe
- Vibratory Deburring
- Steel Heat Treating
- Plasma Cutting
- Welding/Brazing (TIG, MIG, Arc)
- CAD (2D/3D)
 - New designs and
- 3D printing
 - Stereolithography (resins including high temperature and ceramic)
 - Fused Deposition (nylon, PETG, ABS, and more)



Circadian Rhythm chambers

- Chemical resistant, sound attenuated, light baffled design with lightproof door gaskets
- Fully IACUC compliant lighting and carbon filtered ventilation
- EMI insulated
- 2 light circuits + battery backup with full spectrum daytime LEDs and nighttime 660 nm red LEDs
- Castor wheels for easy transport

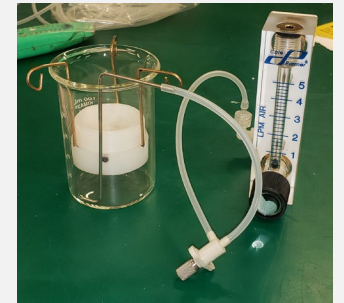


Customized research hardware

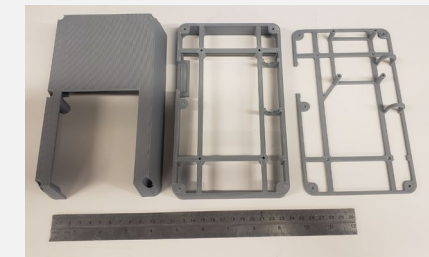
- Modify existing hardware
- Design new tools
- Instrument repair and replacement parts
- CAD and 3D printing



Replacement parts
custom milled out of
UHMW-PE



Custom aeration chamber for
brain slices



3D printed computer enclosure
prototype for novel instrumentation

Mass Spectrometry

Mass spectrometry is a powerful analytical technique for accurately measuring the mass of molecules, identifying unknown compounds within a sample, quantifying known materials, and for elucidating the structure and chemical properties of different molecules.

AB Sciex QTRAP 6500

Self-service or Full-service

Coupled to the Shimadzu UHPLC system



Flow Cytometry

Beckman Coulter Gallios

- 2 lasers (488 and 638 nm)
- 6 fluorescence parameters
- Kaluza analysis software

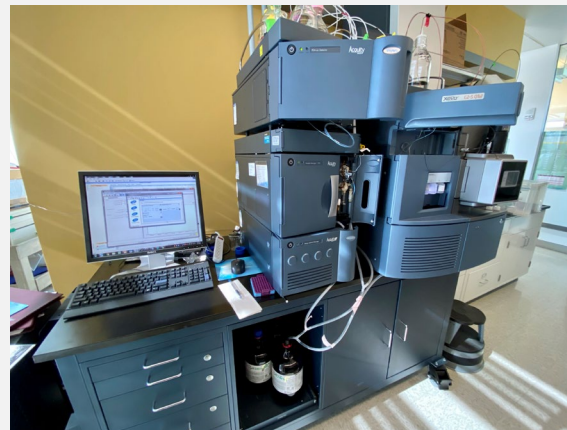
Sony MA900 Cell Sorter

- 4 lasers (405, 488, 561, and 638 nm)
- 2 beam spots
- 12 fluorescence parameters
- 3 nozzles sizes (70, 100, and 130 μm)
- Sort devices include tubes and 6- to 384- well plates



Xevo® G2-S QToF

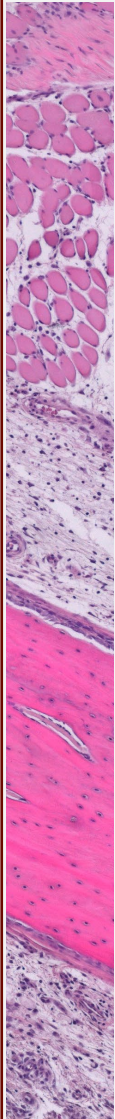
Full-service only



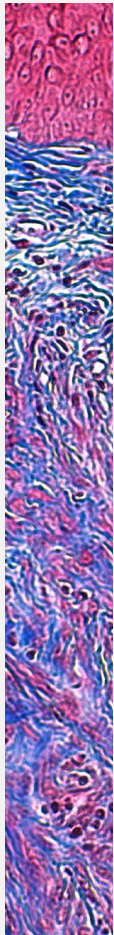
Histology

Customizable histology, from processing to sample layout and staining, focused on research quality slides.

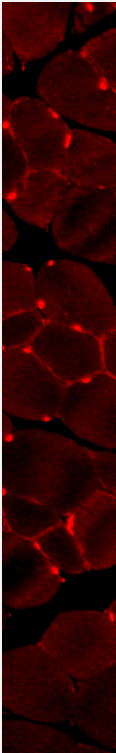
Traditional stains, protocol development, and IHC available



Whole Rat Leg, H&E

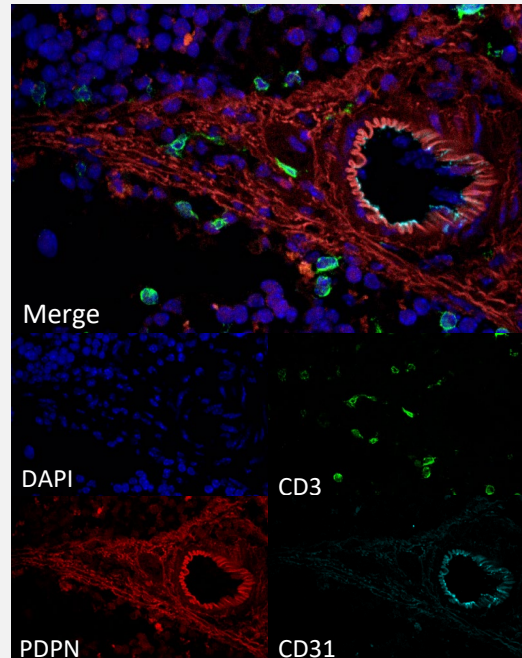


Mouse Uterus, Mason Trichrome



Mouse Muscle, SULF2

Microscopy



Instruments

- **Leica SPE Confocal:** 4 lasers with fluorescent and transmitted light PMTs, equipped with a DFC9000 camera and live cell imaging chamber
- **Zeiss M2 Epifluorescent Microscope**
- **Zeiss Z1 Inverted Epifluorescent Microscope:** Equipped with monochrome and color cameras and live cell imaging chamber
- **Olympus IX-81 Confocal:** multi-area time lapse, spectral scanning, FRET/FLIP/FRAP, 3D/4D reconstruction, and 3D mosaic imaging



Lab Services

- Common equipment
- Lab safety
- Hazardous materials shipping
- Training
- Experimental design
- Bench technique
- Assisted Imaging
- Troubleshooting
- Instrument Repair

We gratefully acknowledge the support of [Health Sciences and Services Authority of Spokane County](#) (HSSA)

Additional information and rates for all Spokane Services and Instruments on [our website](#)

Contact us at:
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