

Sinclair Research Center provides orthopaedic surgical capabilities and services ranging from simple to complex orthopaedic procedures. Whether supporting the development of a new orthopaedic device or treatment, SRC's unique combination of technology, facilities and experience provide our clients with all the right tools.

Representative capabilities include:

### Joint/Cartilage Models

- ☛ Articular Cartilage Repair
- ☛ OA Models
- ☛ Reconstruction/Fixation of Ligaments/Tendon
- ☛ ACL Repair
- ☛ Meniscal Repair

### Bone Fracture/Defect Repair Models

- ☛ Critical/Non-Critical Segmental Defects
- ☛ Maxillofacial/Mandibular Defects
- ☛ Bone Ingrowth for Joint Replacement,
  - *Non-Weight Bearing (Axial, Transcoritcal)*
- ☛ Tibial/Femoral/Ulnar Osteotomy Models
- ☛ Autograft/Allograft/Bone Graft Substitutes
- ☛ Bone Cements, Puttys, Etc.

### Spinal Fusion and Spinal Instability/Fixation Models

- ☛ Spinal Surgery/Bone Reconstruction
- ☛ Intervertebral Disc Reconstruction
- ☛ Spine Intervention
- ☛ Posterolateral/Interbody Fusion
- ☛ Discectomy/Disc Replacement

### Models of Osteopenia and Trabecular Plate Perforation

- ☛ Calcium Restricted Ovariectomized Sinclair Miniature Swine Model
- ☛ Sinclair Miniature Swine Adult Osteopenia Model

### Supporting Equipment and Facilities

#### Facility and Personnel:

- ☛ Four Surgical Suites - High Volume Programs
- ☛ Network of Consulting Orthopaedic and Device Surgeons
- ☛ Experienced In-Vivo Surgical Support Team
- ☛ Dedicated Large Animal Necropsy Suite
- ☛ Board Certified Veterinary Pathologist
- ☛ Network of Experts for All Experimental Phases

#### Imaging equipment including:

- ☛ DEXA (Hologic Discovery A)
  - *Bone Density*
  - *Whole Body Composition*
- ☛ Fluoroscopy, Angiography, Radiography
- ☛ 1.5 Tesla GE Signa Horizon LX MR
- ☛ Picker PQ6000 Spiral CT  
(CT/MR via collaborative agreement with MU Vet School Radiology Lab)
- ☛ Color Doppler Ultrasonography

### Supporting Sub-Contractors

#### Histopathology/Histomorphometry:

Plastic Imbedding, Qualitative and Quantitative Analysis, including Fluorochrome Labeled Histomorphometry

- ☛ Histon  
(Dr. Donna Wheeler for Histomorphometry - GLP)
- ☛ Alizée Pathology (GLP)
- ☛ Accellab (GLP)
- ☛ Fellowship of Orthopaedic Researchers (non-GLP)

#### Mechanical Testing:

- ☛ Gustilo Medical Education Center (Non-GLP)  
(Soft Tissue Mechanical Testing)
- ☛ Bone Healing Research Laboratory, University of Iowa College of Medicine (Non-GLP)
- ☛ Fellowship of Orthopaedic Researchers (non-GLP)
- ☛ Histon (GLP)
- ☛ MDS (GLP)