Histology is a critical endpoint for the pre-clinical evaluation of medical devices, drugs, biologics and biomaterials. CBSET provides our partners with industry-leading, GLP-compliant anatomic histology facilities that specialize in the retrieval, sampling, preparation and histopathologic evaluation of valuable pre-clinical specimens. CBSET histology specializes in the use of routine and customized staining techniques to ensure the most sophisticated analysis of tissue response to treatment for our partners.

The expertise at CBSET can be utilized to develop the optimal processing, sectioning and staining paradigm for a novel treatment, device or material. Please contact us for details.

Histologic staining options available include, but are not limited to:

**Routine nuclear & cytoplasmic:**
Using a variety of progressive and regressive staining reagents and techniques, our routine hematoxylin and eosin (H&E) stains are adapted to produce vibrant nuclear and cytoplasmic staining for a wide variety of processing methods.

**Connective and muscle tissue:**
These stains are primarily used to differentiate between different types of connective tissue including cartilage, bone, collagen, blood, muscle, elastic fibers, etc.
- Masson’s Trichrome
- Elastin Trichrome or Elastin H&E
- Movat’s Pentachrome
- Verhoeff’s Elastin Stain

**Nerve:**
Staining of various nerve tissue components typically falls into three groups:
- Neurons: Bodian, Holmes Method, Silver Nitrate
- Glial Fibers: Phosphotungstic Acid Hematoxylin (PTAH)
- Myelin: Luxol Fast Blue

**Additional stain (viability, proteoglycan, lipid, mineral, fibrin, collagen):**
- Triphenyltetrazolium (TTC)
- Alcian Blue Periodic Acid Schiff (AB-PAS)
- Alizarin Red
- Osmium Tetroxide
- Von Kossa
- Carstair’s and MSB
- Oil Red-O
- Picro-Sirius Red
- Bodian, Holmes Method, Silver Nitrate

**Immunohistochemistry (frozen, paraffin and resin-embedded tissues):**
- Tyrosine Hydroxylase (TH)
- CD31 (PECAM-1)
- vWF
- SMC alpha-actin
- CD3
- CD45
- CD68
- Ki-67

**Microorganisms (bacteria & fungi):**
- Acid Fast
- Gram
- Giemsa
- Methenamine Silver
- Warthin-Starry
- Chromic Acid-Schiff (CAS)
- Gridley Fungus Stain
ABOUT CBSET
CBSET is an AAALAC accredited, not-for-profit, pre-clinical research organization dedicated to research, education, and the advancement of early-stage biomedical technologies. Our mission is to assist in methodologies uniquely suited for novel and innovative treatments for complex diseases. We offer a full range of GLP and non-GLP services, ranging from early product evaluation through lead optimization and pre-clinical safety, to physician assessment and training courses. We specialize in the development and application of techniques in the fields of cardiology, electrophysiology, orthopedics, wound healing, regenerative medicine, endoscopy/ laparoscopy, drug and device delivery and safety, cellular therapy, and diagnostic imaging. Our world-renowned regulatory and scientific expertise helps transform early-stage concepts into novel therapies.

CBSET EXPERTISE
Our professionally trained staff and consultants provide expertise for all phases of biomedical discovery and development research including regulatory consulting, veterinary medicine, surgery and minimally invasive surgery, imaging, pharmacokinetics and drug metabolism, drug and device safety, pharmacology, lead optimization, and specialized histopathology and pathology. These individuals provide the basis for successful scientific collaborations, rapid concept advancements, unparalleled consultation services, and expert dissemination of information and findings to regulatory and scientific bodies.

CBSET offers a full range of GLP and non-GLP services, from early product evaluation through lead optimization and pre-clinical safety, to physician assessment and training courses. Our expertise includes:

- Stents/balloons
- Novel catheters/wires
- Robotic-assisted surgery
- Vessel sealing/closure devices
- Heart valve replacement/repair
- Cardiopulmonary bypass
- Beating heart technology
- Electrophysiology devices
- Tissue ablation devices
- Endovascular/NOTES surgery
- Laparoscopic surgery
- Orthopedic devices
- Novel surgical instruments
- Wound healing devices
- GLP training and regulatory consulting

CBSET FACILITIES
CBSET offers an unparalleled, GLP-compliant, 30,000 square foot state-of-the-art facility within minutes of Cambridge, Boston, and Logan International Airport. Our facility includes vivariums, catheterization/imaging labs, and full surgical suites containing the latest equipment for fluoroscopy, echocardiography [TEE/ TTE], electrophysiology, IVUS, optical coherence tomography [OCT], endoscopy/ laparoscopy, orthopedic surgery, and surgical video recording. CBSET offers dedicated labs for GLP-compliant SEM, specialty histopathology/pathology, metabolism and pharmacokinetics.