

**Center for Skeletal Research  
MGH Endocrine Unit**

**Imaging and Biomechanical Testing Core**

Director: Mary Bouxsein, Ph.D

Assistant Director: Daniel Brooks, MSc

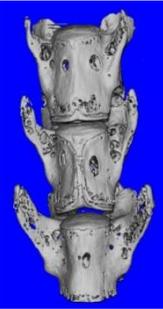
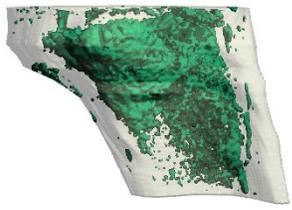
Email: [microCTcore@partners.org](mailto:microCTcore@partners.org)

Core website: <https://www.csr-mgh.org/cores/imaging-and-biomechanical-testing-services/>

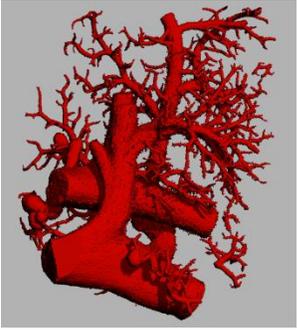
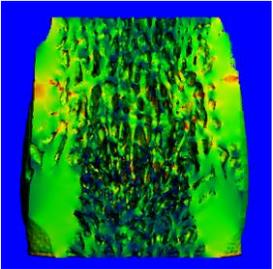
Order services at: <https://researchcores.partners.org/login>

**Imaging and Biomechanical Testing Core Services and Fees**

Services:

Service	Description
<p><b>Mouse long bone and vertebrae microCT</b></p>   	<p>Billing: A flat fee is charged per bone (please see fee schedule online). The flat fee includes the following:</p> <ul style="list-style-type: none"> <li>- Metaphyseal region scan (10-12 <math>\mu</math>m resolution) for trabecular evaluation</li> <li>- Mid-diaphysis scan (10-12 <math>\mu</math>m resolution) for cortical evaluation</li> <li>- Vertebral body scan (10-12<math>\mu</math>m resolution) for trabecular analysis (some types of cortical analysis are also possible).</li> <li>- Image reconstruction</li> <li>- Standard sample analysis</li> </ul> <p><u>The following will be given to you upon completion of the project:</u></p> <ul style="list-style-type: none"> <li>- Data will be provided in an Excel spreadsheet</li> <li>- Short report with synopsis of the results of our analysis</li> <li>- Standard images of scanned regions (slice images)</li> <li>- We will provide assistance with writing methods for publications</li> <li>- Upon request we can provide DVDs with DICOMs for your scans (extra fee applies)</li> <li>- Non-standard images will be produced at the hourly consultation rate</li> </ul>
<p><b>Osmium Tetroxide Staining for measuring Marrow Adiposity in Mouse Long Bones</b></p> 	<p>Billing: A flat fee is charged per bone (please see fee schedule online). The flat fee includes the following:</p> <ul style="list-style-type: none"> <li>- Decalcification and osmium tetroxide staining of bones</li> <li>- <math>\mu</math>CT scanning and Image reconstruction</li> <li>- Analysis of the quantity of osmium tetroxide staining (marrow adiposity)</li> <li>- Standard cortical and trabecular analysis performed on bones prior to decalcification</li> </ul> <p><u>The following will be given to you upon completion of the project:</u></p> <ul style="list-style-type: none"> <li>- Data will be provided in an Excel spreadsheet</li> <li>- Short report with synopsis of the results of our analysis</li> <li>- Standard representative slice images of scanned regions</li> <li>- We will provide assistance with writing methods for publications</li> <li>- Upon request we can provide DVDs with DICOMs for your scans (extra fee applies)</li> <li>- Non-standard images will be produced at the hourly consultation rate</li> </ul>

Services (cont.):

Service	Description
<p><b>Consultation and Custom microCT analysis</b></p> 	<p>Billing: The fee will be based the scan resolution and the number of slices. The hourly consultation rate will be charged for custom analysis (please see fee schedule online). Prior to starting your project we will give you an estimate of what the cost will be to scan and analyze each sample.</p> <p><u>Available options include:</u></p> <ul style="list-style-type: none"> <li>- We can give you the data (DICOMs, TIFFs, etc.) and you can analyze it yourself</li> <li>- Generation of images or videos for publications and presentations</li> <li>- Finite element analysis (FEA) for modeling structural properties</li> <li>- Custom quantification of client defined parameters</li> <li>- Consultation on results and study design</li> <li>- Many other options are available!</li> </ul>
<p><b>PIXImus (DEXA) scanning</b></p>	<p>Billing: Users are charged the hourly PIXImus scanning rate (please see fee schedule online) for using the PIXImus machine. Users are required to demonstrate knowledge on the use of the PIXImus machine prior to use. Training is available and is billed at the hourly consultation rate.</p>
<p><b>Mechanical testing (Performed at BIDMC)</b></p>	<p>We offer various types of mechanical testing of bones. Please contact us a quote for your project. The current cost of three-point bending of mouse bones is available on the service ordering website.</p> <p>Equipment:</p> <ul style="list-style-type: none"> <li>- Bose ElectroForce (Axial-torsional)</li> <li>- Instron 8511 (Axial)</li> <li>- Biodent (Reference point indentation)</li> </ul> <p>Types of testing:</p> <ul style="list-style-type: none"> <li>- Three or four-point bending (Spans from 10mm to 150mm)</li> <li>- Torsional tests (torques from 0.2Nm to 225 Nm)</li> <li>- Tension and compression tests (1N to 10kN)</li> <li>- Reference point indentation</li> <li>- Custom tests</li> </ul>
<p><b>μFE Analysis</b></p> 	<p>Following μCT analysis, we can perform micro-finite element analysis (μFEA) to model the predicted stiffness and strength of bones. This analysis is well suited for samples such as mouse vertebrae that would be very difficult to perform actual mechanical testing on. This is a service that can be added onto your μCT project. Please contact us for a quote for this service.</p>