**Facilities, Equipment and Other Resources**

**The Pennsylvania State University**

**Center for Quantitative Imaging**

The Center for Quantitative Imaging at the Pennsylvania State University (PSU) provides both micro/nano CT scanning and image processing services. The facility includes two X-ray CT scanners: (1) GE Phoenix v|tome|x L equipped with two x-ray tubes, a direct 300 kV tube and a transmission 180 kV tube. The 300 kV tube has a maximum kV of 270 and a maximum wattage of 320. The 180 kV tube has a maximum kV of 160 and a maximum wattage of 15. The detector is a Waygate Technologies Dynamic 41|100 CsI panel. The pixel pitch is 100 µm on a 4000 x 4000 pixel panel. With this panel, the 300 kV tube can achieve a minimum pixel size of approximately 5 µm, while the 180 kV tube can achieve a minimum pixel size of approximately 1 µm. The instrument is equipped with a virtual detector, which can increase the maximum scan object diameter to 1200 mm from 600 mm. The instrument is also equipped with multi|scan, which allows for scanning of samples larger in one direction. Data is collected and reconstructed using the Datos|x software; (2) Zeiss Xradia 620 Versa has an x-ray source with a maximum kV of 160 and a maximum wattage of 25. The Zeiss contains a set of objectives to provide 0.4X, 4.0X, 20X, and 40X magnification. This allows for a minimum scanning resolution of 400 nm. The maximum scan object diameter is approximately 14 cm. Scans are collected and reconstructed with Zeiss Scout and Scan software. Image processing capabilities include 6 remote workstations equipped with RAM ranging from 128 to 512 GB, Intel Xeon processors with 4 to 16 cores at 2.10 to 3.00 GHz, and NVIDIA graphics cards with 12 to 16 GB of GPU RAM, which are accessible to Penn State Clients. All workstations have access to ImageJ and Avizo software. Additionally, there are two workstations onsite with 512 GB of RAM, dual Intel Xeon silver 4114 cpus with 10 cores at 2.2 GHz, and two NVIDIA Quadro P5000s with 16 GB of GPU ram with Avizo, ImageJ, Dragonfly, and MeshLab.