

13) High Field Magnetic Resonance Imaging Facility

Equipment and Research Support Services

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The High Field Magnetic Resonance Imaging (MRI) Facility provides high quality MRI data for a large diverse user base. Currently research from investigators at University Park, several branch campuses, and the College of Medicine in Hershey, as well as research from faculty at other institutions is conducted. The High Field MRI Facility houses two preclinical MRI systems. A 7 tesla Bruker BioSpec 70/30 MRI system and a 14 tesla Agilent wide bore microimaging MRI system for in vivo imaging and material characterization. Both systems are equipped with four receive channels and X nuclei acquisition possibilities. Commercial and home built radio frequency (RF) detectors in various sizes are available to fit the investigated sample. Besides standard noninvasive three dimensional morphological MRI, a variety of sophisticated MR methods are available on both systems. These methods include for example magnetic resonance angiography (MRA), cardiac MRI (e.g. CINE MRI), diffusion tensor imaging (DTI) and tractography, functional MRI (fMRI), magnetic resonance spectroscopy and spectroscopic imaging (MRS/MRSI), and zero TE imaging for e.g. material characterization. Each system has a lab area next to the magnet room for animal preparation. Standard equipment like a small animal monitoring system and anesthesia machines are at hand. Besides the animal prep areas a chemical lab for sample preparation and an electronic suit for RF detector manufacturing are available. Animal housing can be provided on the same floor as the MRI systems through the Animal Resource Program.