The Advanced MRI Center is a research core facility providing the latest magnetic resonance imaging and spectroscopy capabilities to scientists, clinicians, government and industry. Technical and clinical expertise for collaborative research is also provided.

The Center’s specialized techniques are able to elucidate functional, physiological and biochemical information from all organs of the body. This enables physicians to make better decisions regarding patient care. Additionally, researchers are better able to understand the mechanisms of diseases such as heart disease, cancer, stroke, epilepsy, multiple sclerosis, lupus, rheumatoid arthritis, osteoarthritis, osteoporosis, back pain and injuries, autism, Alzheimer’s disease, bipolar disease and depression. This facilitates the development of new therapies that can be safely and continuously evaluated throughout patient treatment.
Function MRI (fMRI)

Effect of nicotine administration on light smokers

Right brain map showing areas where activation is greater in smokers than in nonsmokers in response to nicotine administration

Images courtesy of Dr Difranza and Dr Huang
Diffusion Tensor Imaging and Tractography

Images courtesy of Dr Cauley
Perfusion

Dynamic Susceptibility Contrast (DSC)  Arterial Spin Labelling (ASL)
Angiography (MRA)

Time of Flight (TOF)          Phase Contrast (PC)
MR Spectroscopy (MRS)

1H Spectroscopy

Images courtesy of Dr Moore and Dr Muazzez

2D 31P

Images courtesy of Dr Cauley
Small and large animal imaging, including mouse, rat, rabbit, dog, sheep.
Other Studies

Real-Time Motion Track

Real-time MRI-Guided Robot

Images courtesy of Dr Fisher and Dr Su

Images courtesy of Dr King and Dr Dasari