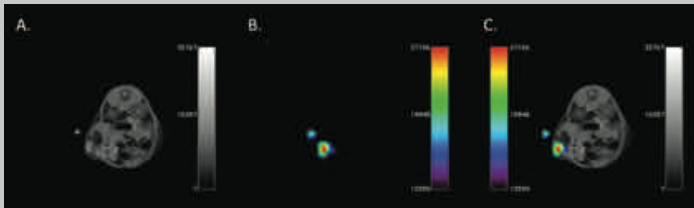
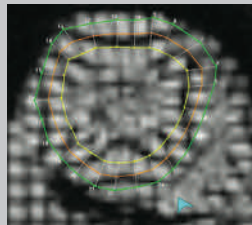


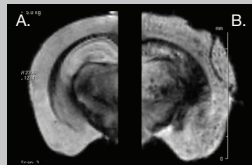
MAGNETIC RESONANCE IMAGING & SPECTROSCOPY



Top image, three panels: Imaging *in vivo* macrophage tumor infiltration tumors with ¹⁹F MRI. Panel A: ¹H anatomical image; Panel B: ¹⁹F MRI of labeled macrophage; Panel C: Overlay of panels A and B depicting macrophage tumor infiltration. The advantages of ¹⁹F MRI include a high spatial resolution not afforded by other *in vivo* imaging modalities. Mouse tumor model courtesy of Dr. Rita Serda.



Tagged cardiac MRI for stress/strain calculations



A: Imaging amyloid beta plaques in the mouse brain
B: Control mouse; Tg2576 mouse model of Alzheimer's disease

A state-of-the-art Bruker BioSpec® 9.4T horizontal bore MRI scanner is equipped to perform a wide variety of magnetic resonance imaging and spectroscopy studies on small animals (mice and rats) for non-invasive, high resolution longitudinal imaging for translational research. This elegant system allows for:



- Pristine anatomical assessments
- Cerebral blood flow
- Diffusion tensor imaging (DTI)
- Perfusion imaging
- ³¹P spectroscopy of metabolites
- ¹H spectroscopy of metabolites
- ¹³C spectroscopy of metabolites
- MRI contrast agent assessments
- Diffusion imaging
- Amyloid beta plaque imaging
- Longitudinal tumor volume assessments
- Angiography
- Muscle imaging
- Magnetization transfer contrast (MTC) to assess white matter damage
- In Utero Imaging in Rats and Mice
- CEST Imaging — Chemical Exchange Saturation Transfer
- Cardiac Imaging — EDV, ESV and EF Assessments
- Cardiac Imaging — Anatomical Assessments
- Cardiac Imaging — Stress/Strain Calculations
- Cardiac Imaging — In vivo Ca²⁺ influx changes in Myocardium
- Fat Assessment
- ¹⁹F MRI — Imaging Inflammation
- ¹⁹F MRI — Imaging tagged cells (e.g. lymphocytes)
- Dynamic Contrast Enhancement (BBB, tumor and placenta permeability)