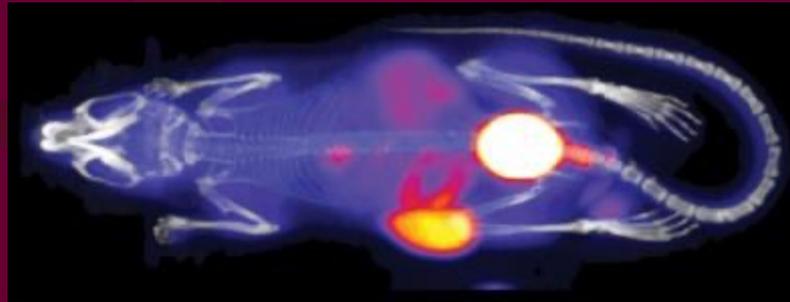




Frank Corwin, Ph.D.  
Sundaresan Gobalakrishnan, Ph.D.



**Bioimaging and Applied Research Core (BARC)** maintains the instrumentation necessary for noninvasive, real-time visualization of biochemical events at the cellular and molecular level within living cells, tissues and intact subjects.



Molecular imaging involves specialized instrumentation, used alone or in combination with targeted imaging agents, to visualize tissue characteristics and/or biochemical markers.

# BARC Directors



Sundaresan

Gobalakrishnan, Ph.D.

- Research Faculty, Dept. of Radiology
- 20+ years experience handling radioisotopes for a number of small animal imaging paradigms



Frank Corwin, Ph.D.

- Medical Physicist, Dept. of Radiology
- 30+ years experience in preclinical Magnetic Resonance Imaging

# BARC Imaging Modalities

## Classical Imaging Modalities

- Computed Tomography
- Magnetic Resonance Imaging
- Ultrasound
- Single Photon Emission Tomography (SPECT)
- Positron Emission Tomography (PET)



## Cutting Edge Imaging Modalities

- Optical Fluorescence Imaging
- Optical Bioluminescence Imaging
- Photoacoustic Imaging

# MRI at BARC



7 Tesla, 30 cm free-bore

Capable of imaging rodents to  
small mammals

MRI anatomy  
routinely imaged:

- Brain
- Heart
- Internal organs
- Flank tumors
- Extremities

Anesthesia, animal  
monitoring and  
warming provided  
inside of the magnet  
bore.

# MRI Image Contrast

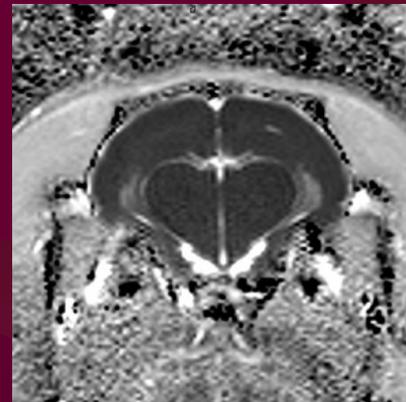
Magnetic Spins may be manipulated by modifying timings, excitation and gradient parameters in a number of ways to exploit variations in image contrast.



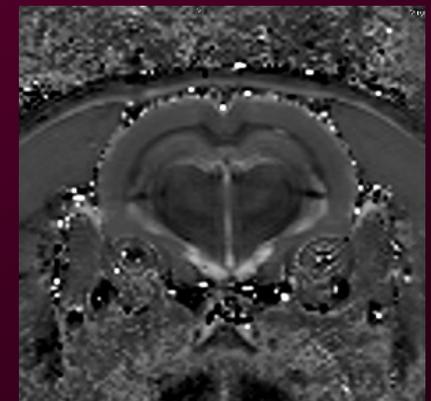
T1W



T2W



Diffusion  
Tensor



T1 Map

