# MRI Laboratory of XX University

## Team

Our lab is home to 5 faculty members, 10 postdoctoral research fellows, and nearly 30 graduate students. Our research faculty are from Computer Science, Engineering, Physics, and clinical investigators from Cardiology, Neurology, Radiology, and Surgery. They work in conjunction with our physical scientists and engineers to develop new imaging technologies and research applications, and to bring these developments to the sphere of medical care.

## Equipments

The lab houses a 1.5 Tesla and a 3.0 Tesla superconducting magnet imaging systems.

Philips Achieva 1.5T: Dual Quasar Gradients (slewrate 180 mT/m/ms, maximal gradient strength 42 mT/m), 32 RF channels, possibility for 1H, 13C, and 13P spectroscopy fMRI-presentation hardware, and response pads.

GE Discovery MR750 3.0T: Equipped with a high performance gradient system (slew rate 200 T/m/s and maximal gradient strength 50 mT/m) with an advanced thermal management system, 32 receiver channels, and a powerful reconstruction engine capable of supporting 32-channel studies with high image throughput. This system is for studies in humans and larger animals.

## Main Research Interests

The lab designs new MRI techniques and equipment for improved disease diagnosis and treatment. These technologies enable MRI scanning with greater speed, clarity, contrast, and comfort. Students and staff work with physicians on imaging solutions for major areas, including Alzheimer's disease, addiction, aging, depression, autism and traumatic brain injury.

## Recent Achievements

MR Systems Hardware

Current work is focused on development of our flexible and scalable Medusa Console for parallel imaging applications, as well as a vector modulation array system for parallel transmit and array coil decoupling.

Interventional MRI

This research focuses on development of hardware and imaging methods for specialized interventional procedures. This includes monitoring of RF heating and imaging of MRI guidewires, transmit and receive hardware for interventions, and current density imaging for RF ablation.

## Contact Information

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