MRI Research Facility
www.medicine.uiowa.edu/mri

Facility Description
The MRI Research Facility is dedicated to providing MR imaging equipment and expertise to any researcher with MR imaging needs. Three field strengths are available (1.5T, 3T, and 7T). Oversight is provided by both internal and external research advisory committees. The internal research committee reviews new project proposals and equipment acquisitions. The MR research center currently supports more than 60 research imaging projects from fourteen different departments representing 5 colleges within the University of Iowa.

Instrumentation
The facility currently has three whole body MR scanners available for research: two Siemens 3T TIM Trios and Siemens 1.5T Avanto. An MRI Simulator is available to all researchers. In 2014 a GE 7T MR950 research dedicated whole body MR scanner will be installed in the new Pappajohn Biomedical Discovery Building (PBDB). In 2014 the clinical MRI Siemens 3T TIM Trio will be replaced with a Siemens Skyra 3T.

Siemens 3T TIM Trio MR Scanners (L169 MERF and 0400 JCP)
This imaging and spectroscopy MR scanner is equipped with Total Imaging Matrix (TIM) receiver technology and an 18-channel broadband receiver. The scanner has 45 mT/m gradient coils with a maximum slew rate of 200 T/m/s. The Department of Radiology has research agreements in place with Siemens Medical Solutions to acquire preview and works-in-progress sequences and applications.

- **Specialized Sequences:**
  - Advanced 3D (3C DESS, 3D CISS)
  - Advanced Turbo (True FISP, HASTE, Hyperecho HASTE)
  - Advanced Angiographic Imaging (Contrast Enhanced Protocols, Phase Contrast, 3D VIBE)
  - CARE Bolus Imaging
  - Echo Planar Imaging
  - Neuro Perfusion
  - Bold Imaging and Advanced Functional (3D PACE)
  - Single Voxel Spectroscopy
  - Chemical Shift Imaging (Spin-echo, STEAM)
  - EPSI
  - PEPSI
  - Arterial Spin Labeling
  - Advanced Cardiac Imaging Package
  - High Angular Diffusion Tensor Imaging
  - Susceptibility Weighted Imaging (SWI)
  - T1rho (T1P)
  - MEGA-PRESS and MEGA-SEMI-LASER
  - Multi-Echo MP-RAGE

- **Functional (fMRI) Equipment:**
  - Avotec Silent Scan Audio Equipment
  - Avotec RE-5701 Eye Tracker
  - Stimulus Computer with E-prime 2.0, Presentation
  - Matlab & CD/DVD capabilities
  - Psychology Software Tools (PST) fiber optic manipulandums - left & right hand
  - DLP projector
  - Internet Radio
  - Lumina Response pad
  - FOMRI II Dual-channel MRI microphone system
  - MediGoggles interchangeable prescriptive glasses
    (range from -6 to +6 diopter in 0.5 diopter increments)

- **Coils:**
  - 12-channel Head Coil
  - 8-channel Body Coil
  - 12-channel Spine Matrix
  - Wrist Coil
  - Extremity Coil
  - Neck Array
  - Endorectal Coil
  - 1 inch Small Loop Coil
  - Dual Tuned Rapid MRI ¹H / ³P Coil
  - ¹⁹F Body/Lung Coil
  - 15-channel Knee Coil
  - Foot and Ankle Coil
  - Transmit-Receive Head Coil
  - Runoff Coil
  - Breast Array

- **Other Equipment:**
  - JD-Medical Small Animal Anesthesia Machine (VT-110-MRI)
  - BIOPAC Physiological Monitoring System -Including 2012 updated Photoplethysmograph (PPG), Respiratory, Galvanic Skin Response (GSR), Pulse oximeter, air flow, and expired gas analysis
  - Merasens FerroGuard metal detector
GE MR950 7T Scanner

- **Specialized Sequences:**
  - Advanced 3D (CUBE, LAVA-Flex)
  - Propeller 2.0
  - IDEAL
  - Echo Planar Imaging
  - Diffusion Tensor Imaging / FiberTrak
  - Arterial Spin Labeling
  - BOLD Imaging / BrainWave
  - Single and Multi-Voxel Spectroscopy
  - SWAN
  - TRICKS
- **Functional (fMRI) Equipment:**
  - Nordic NeuroLab auditory and visual presentation systems
  - Stimulus Computer with E-prime 2.0, Presentation, Matlab & CD/DVD capabilities
  - Psychology Software Tools (PST) fiber optic manipulandums - left & right hand
  - Internet Radio
  - Lumina Response pad
  - FOMRI II Dual-channel MRI microphone system
  - MediGoggles interchangeable prescriptive glasses (range from -6 to +6 diopter in 0.5 diopter increments)

Siemens 1.5T Avanto MR Scanner (0400 JCP)
This scanner is equipped with an 18-channel broadband receiver. The scanner has 45 mT/m gradient coils with a maximum slew rate of 200 T/m/s.

Psychology Software Tools, Inc. MRI Simulator (155 MRF)
An MRI Simulator, built by Psychology Software Tools (PST), provides a realistic approximation of an actual MRI scanner to allow acclimatization and fMRI training of participants in an environment less daunting than a real scanner. Access is controlled by a University ID badge reader. The MRI Simulator is available free of charge for any researcher participating in MR imaging studies.

**Availability and Pricing**
The research-dedicated Siemens 3T TIM Trio MR (L169 MERF) and GE 7T scanners are available Monday through Friday 8:00am - 6:00pm. The Other systems have limited availability which can be found on our website. Pricing for the scanners is set yearly, is charged in half-hour increments, and includes a technologist to run the scanner. The FY2014 internal customer rate for the 3T and 1.5T scanners is $600/hour for University of Iowa investigators and $900/hour for outside investigators. The FY2014 rate for after hours and weekends on the research-dedicated 3T, with user supplied trained and qualified operator, is currently $400/hour. Gadolinium contrast is $100 per injection. Additional service fees are charged on a per-use basis.

**Contact Information**

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