

MRI FACILITY DIRECTORY

Name of Institution: **Northshore University Health System**
Institution's Address: 2650 Ridge Avenue
Evanston, IL 60201

Web Site Address: www.northshore.org

Can accommodate both Pre-Clinical and Clinical research projects.

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Below is a brief narrative of the institution's MRI capabilities. The following information was provided by the institution. BioPAL has compiled the MRI facility directory to aid researchers access MRI services. The listing is not an endorsement by BioPAL.

Facilities and Resources

Laboratory: See major equipment for current MRI research resources. The Center for Advanced Imaging (CAI) is about 10,000 sq. Ft. and includes two MRI bays (1.5T 32 channel Siemens Avanto and, as of November 2008, a 3T Siemens Verio), with subject preparation rooms, image processing lab, RF development lab, animal preparation room, C-arm for endovascular and other x-ray based imaging, cubicles for research staff, students and fellow, lounge, storage space, etc. Additionally, all senior investigators have offices on the floor above, with administrative support and conference room facilities.

Clinical: Magnetic Resonance Imaging: NorthShore University HealthSystem MR division consists of five 1.5T MR imaging systems. Two GE Medical scanners are located at Evanston Hospital, including a 1.5 T Cvi system with 40mT/m gradients, a LX platform 1.5T system and an Advantage workstation.

Animal: Fully AAALAC accredited animal facilities are available in the Burch Building, adjacent to CAI, and are used for the housing and daily care of the animals. The facility also includes animal preparation and surgical suites. CAI has a MRI compatible, small animal EKG monitor with gating interface to the scanner.

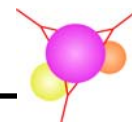
Computer: Our image processing laboratory (350 sq. ft.) is equipped with a broad range of clinical and research based systems. Siemens Leonardo, GE Advantage, and Vitrea workstations provide a full scope of clinical level analysis of MR and CT images. Research image processing is served by 4 PCs with Linux and equipped with several standard image processing software packages including MATLAB, SPM and AFNI as well as ImageJ 1.32j from the National Institutes of Health.

Personnel: We have 4 Ph.D. scientists, two research dedicated and experienced MR Technologists, Study coordinators, animal technician, image processing specialist, at least 2 M.D.s with MRI research in cardiac and cardiovascular applications.

Office: All key personnel have private office facilities available including: word processing, copying, data storage and retrieval and administrative support personnel.

Other: The NorthShore University HealthSystem Research Institute provides comprehensive statistical and epidemiological support. There is a dedicated electronics and machine shop to support FR coil and other hardware development, fabrication and maintenance of NMR instrumentation. The shop is equipped with an HP network analyzer

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with T/R and impedance test sets, Wavetek sweep generator, directional coupler and oscilloscope, Tektronix 150 MHz and 400 MHz oscilloscopes, Bird RF Power analyzer, BK precision capacitance meter, Fluke RMS multimeter, drill press with full drill set, band saw, X-Y machine vice, and electrical and hand tools for soldering, drilling, wire wrapping and connector crimping. In addition, the Northwestern University campus (within walking distance) provides excellent machine shop support which can be utilized for larger jobs. The laboratory is also equipped with a programmable fluid pump for simulative flow phantom studies.

Equipment

Center for Advanced Imaging is equipped with:

- A 1.5T Avanto (Siemens, Malvern, PA) dedicated to research is housed within the Center for Advanced Imaging. There is an Invivo patient monitor (HR, BP (cuff and invasive), pO₂) and a power injector for administration of contrast medium.
- A whole body 3.0T scanner (Siemens Verio, Malvern, PA) with 40 m T/m gradients and slew rate of 200 mT/m/s is located in the room next to the 1.5T.

In addition to these whole body scanners, we have the following instrumentation at the Center for Basic MR Research:

- Biospec Avance 4.7T 40-cm bore horizontal axis superconducting magnet with B-GA20 (20G/cm) and BGA12 (40G/cm) actively shielded gradients operated by a HP x4000 Linux workstation. The Biospec Avance system has two equivalent transmit broadband RF channels, four quadrature detection receivers, and is capable of multinuclear spectroscopy and imaging.
- A Bruker Avance 600WB 89-mm bore vertical axis superconducting magnet with Micro AHS 2.5 (120G/cm) actively shielded gradients operated by a HP xw6000 Linux workstation. The Bruker Avance system has two equivalent transmit broadband RF channels and is capable of multinuclear microimaging, multinuclear spectroscopy and gradient enhanced spectroscopy.
- A Biospec Avance 9.4T 305 mm bore horizontal axis, actively shielded superconducting magnet. This imager is equipped with two actively shielded gradient systems (BFG-240/150-S-7 and BFG-150/90-S-7) with built in RT shims, a console with dual channel RF transmitter and dual receiver system, operated by a HPxw6000 Linux workstation and is capable of multinuclear spectroscopy and imaging.

Key Research Interests:

- ◇ Cardiovascular MRI
- ◇ Cardiac MRI
- ◇ Novel contrast agents
- ◇ Atherosclerosis
- ◇ Functional renal MRI
- ◇ Osteoarthritis

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