

## *Introduction*

The 3T MRI facility is used primarily for *in-vivo* studies of human and animal anatomy and physiology. These studies include assessment of anatomical structure, physiology, cognitive function, and numerous tissue characteristics, not only in normal and research patient populations, but also in *in-vivo* animal models and *in-vitro* phantom/tissue samples using a variety of advanced Magnetic Resonance Imaging techniques. TIRF represents a unique national resource for state-of-the-art evaluation using unparalleled MRI methods and multi nuclear capabilities. The facility resources are available to peer-reviewed grant funded scientific collaborators with appropriate Research Ethics Board (REB) protocols in place.

Research involving Magnetic Resonance Imaging (MRI) at high magnetic field strengths presents unique hazards to both research subjects and individuals working within and around the MRI system. Consequently, the potential for serious personal injury is present due to the sheer size and strength of the static magnetic field along with the immense flexibility of the research system and associated peripheral hardware.

The static magnetic field in the 3T MRI facility is always present. It is important that all those entering the facility be aware of the presence of the field, since we cannot otherwise detect it (i.e., magnetic fields cannot be seen or felt). There are also electrical and acoustic noise related safety risks associated with the use of any high-field MRI research facility.

To address these safety risks, the following SOPs outline the levels of facility access, proper equipment training/operation, general safety procedures, proper handling of equipment, and emergency situations. Administrative issues are also addressed, such as, scheduling, billing, data handling, protocol development and ethics submissions.

These SOPs have been specifically designed and reviewed on an annual basis to ensure that all activities in the 3T MRI facility comply with all applicable guidelines and regulations.