

# MR SYSTEM OPERATION AND SAFETY TRAINING

EVERYONE INVOLVED IN RUNNING AN EXPERIMENT ON OR AROUND THE RESEARCH MAGNET IS REQUIRED TO VIEW THE MAGNET ENVIRONMENT SAFETY VIDEO.

Steven Shannon will hold training sessions every few weeks at the Athinoula A. Martinos Imaging Center at the McGovern Institute for Brain Research. Notifications of these training sessions will be announced by Steven via email to [MRI-all@MIT.EDU](mailto:MRI-all@MIT.EDU).

Please note that if you intend on imaging at MGH you must attend the safety training at the Martinos Center for Biomedical Imaging at MGH Charlestown.

Our training system consists of three levels,

- 1) White = Safety
- 2) Yellow = In Training (for all areas)
- 3a) Green = Certified Scanner for human scanning on the 3T Tim Trio
- 3b) Dark Blue = Certified Scanner for Animal scanning on the 3T Tim Trio.

The descriptions of each role are below. We have developed this system so we can better keep track of what level each person is at in his or her training, and ensure that each person has received the proper training to work around the MRI scanner.

**\*\*\*If you do not have a badge, you should not be in the 3T area (46-1158, 46-1158A, or 46-1158AA)\*\*\***

Badges usually take up to 2-3 business days to make. Steven Shannon will send an email notifying you when your badge is ready. Badges may be picked up in room 46-1171.

The [MRI team](#) (Christina Triantafyllou, Steven Shannon, and/or Sheeba Arnold) reserves the right to refuse anyone permission to operate the 3T magnet.

## I. Description of Training Levels

- 1) White = Safety:

A person who can be present during the scan and is available to get help or to assist in the case of an emergency. This person **does NOT** assist with the set up of the subject or run the scanner or any of the equipment (this includes stimulus equipment). With this white SAFETY badge, the person is allowed to sit in the scanning area for emergency purposes ONLY under the supervision of a person at the Certified Level Status.

Training requirements to obtain a white SAFETY badge include:  
Step 1: Watch the safety video (~20 minutes)  
Step 2: Take and pass the Safety Training Test (passing score is an 8 out of 10 (~5-10 minutes)  
Step 3: Attend the 1st half of Steven's Lecture (the safety portion) (~30 minutes). *Altogether this training session takes approximately 1 hour.*

2) Yellow = In Training:

This is a person who is present during the scan session and is in training to learn the finer details of running the scanner. This badge allows the person to assist with the setup of the subject in the magnet room, setup and run the stimulus and scanner equipment, and assist in an emergency under the supervision of a person at the Certified Level status (See Manual for further details).

Training requirements to obtain a yellow IN TRAINING badge include:

Step 1: Watch the safety video (~20 minutes)  
Step 2: Take and pass the Safety Training Test (passing score is an 8 out of 10 (~5-10 minutes)  
Step 3: Attend the 1st half of Steven's Lecture (the safety portion) (~30 minutes).  
Step 4: Attend the scanner/console training portion at the Athinoula A. Martinos Imaging Center at the McGovern Institute for Brain Research (~40 minutes).

3a) Green = Certified Scanner for Human scanning on the 3T Tim Trio

3b) Blue = Certified Scanner for Animal scanning on the 3T Tim Trio

This person has completed steps 1-4 of the initial training and typically participates in at least 5-6 additional training scan sessions with fellow lab members, who are already certified to scan, until the person in training becomes proficient in scanning and MRI safety (see list on last page of packet for checklist of items each person should be able to do for either 3a or 3b above). For someone who is training for the 3T scanner and feels like he/she is proficient with everything on the checklist: email [Steven Shannon](#) to set up an assessment appointment. He will observe you during a scan session with a real subject to determine your qualification to become a "Certified Scanner".

## **II. Training Program Contents**

### **Magnet Safety**

- Safety video
- Emergency procedures
- Stop scan buttons
- Calling for help (MIT Emergency 100)
- Getting the subject out of the magnet
- Adverse event reporting
- Magnet Area orientation
- Rules for equipment use
- Reporting equipment problems
- Where to find coils, linens, supplies
- How to use coils, linens, supplies
- Subject preparation
- Informed consent
- MR screening
- Demetaling
- Hearing protection
- Positioning in magnet and landmarking
- Squeeze ball

### **Using the Testing Equipment**

- Computers
- Audio
- Video
- Response box
- Physiological monitoring

### **Operating the Magnet**

- Login/Logout
- Scanning
- Archiving and retrieving data
- Discovery of a potential physical abnormality

## **Handouts**

- Athinoula A. Martinos Imaging Center at the McGovern Institute for Brain Research Policies and Procedures for Human Subjects
- Safety Rules for the Magnet Environment
- Safety Hazards
- MR Compatibility Screening

### **III. Evaluation and Certification Procedure**

- View Safety Video
- Complete Training
- Scan a subject or phantom with a MRI Support person present ("qualifying exam")

### **IV. Center Record Keeping**

The Athinoula A. Martinos Imaging Center at the McGovern Institute for Brain Research will keep records of all investigators certified to operate the 3T Tim Trio including:

- date safety video viewed
- date training course part 1 (safety portion) completed at Athinoula A. Martinos Imaging Center at the McGovern Institute for Brain Research, trainer
- date training course part 2 (scanner/console portion) completed at Athinoula A. Martinos Imaging Center at the McGovern Institute for Brain Research, trainer
- date of qualifying scan session