

# Center for Functional MRI: Magnet Room, Operator, and PI Policies

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This document describes the Center for Functional MRI policies for:

- A. Entering the Magnet Room and Screening of Personnel and Equipment
- B. Operator Training, Certification, and Responsibilities
- C. PI-related activities (parking, subjects, IRB, IACUC)

These policies apply to both the 3T and 7T systems. Additional policies that are more specified to each system are posted at <http://cfmriweb.ucsd.edu/policies.html>.

## A. Policies for Entering the Magnet Room

### 1. Only a certified Operator can run a study, and that person has absolute authority over who enters the magnet room.

- a. The Operator, and not the PI, has full responsibility for everyone who enters the magnet room.
- b. In the event that several operators are present, the Operator in charge is the one designated on the scheduler.
- c. Operator certification will lapse if an operator goes more than 4 months without running a study (see B. Operator Policies below).

### 2. No one can enter the magnet room until they have been screened by the Operator, and it is the Operator's responsibility to file appropriate forms with Linda at the Center.

- a. *Certified Operators* are screened at the time of certification or at the safety training, and it is assumed that they will recognize if their screening status has changed and act accordingly. We cannot assume this for anyone else, so re-screening is essential.
- b. *Subjects* should be screened several times:
  - 1) By the PI prior to coming to the Center, using the "Advanced screening form" available on the fMRI center website, or a screening form of their own choice/design with subject identifying information, signed by the subject and retained by PI. We strongly encourage PIs to screen their research subjects well in advance of their proposed scan session. This allows subjects who are unsuitable to be identified early (reducing short-notice cancellation of the scanner).
  - 2) By the operator prior to entering the magnet room, using the fMRI Center "Pre-entry screening form" with no subject identifying information except the subject number supplied by the PI, signed by the operator and filed with the Center.
  - 3) By the operator again if the subject is brought back for a repeat study, using a new "Pre-entry screening form", with no identifying subject information, signed by the operator and filed with the Center. The "Pre-entry screening form" is valid only on the day it is filled out and signed. Subjects may be rescanned on the same day without submitting a new form. Subjects rescanned on subsequent days will require re-screening.
- c. *Research personnel* who regularly engage in MRI research are **required** to attend safety training. Research personnel are screened at the safety training, and it is assumed that they will recognize if their screening status has changed and act accordingly. All safety-trained personnel will be required to update their screening status when they take the yearly safety test. Repeated use of screening forms for necessary research personnel should **not** be used as a replacement for safety certification. Additional screening forms (beyond those completed as part of safety training) are **not** required for personnel who are safety certified by the Center, but the Operator **must** still verify that all personnel are in compliance with MRI safety guidelines.
- d. *Screening Forms* (and instructions) are provided in the console room of each scanner, or may be printed from the CFMRI website: <http://cfmri.ucsd.edu/forms.html>

### 3. Only people who have been through the safety training may enter the magnet room (the only exception is screened experimental subjects).

- a. Where an assistant is essential for the subject (e.g. parent if the subject is a child), they may also enter the magnet room, but require the same pre-entry screening and ear protection as the research subject

(completed form is filed with the Center). In general the number of personnel in the magnet room should be kept to an absolute minimum. **See also:** supplementary safety guidelines regarding scanning of children at at <http://cfmriweb.ucsd.edu/policies.html>

- b. The 2-hour safety lecture will be given regularly, and everyone is encouraged to attend (even multiple times).
- c. All researchers with after-hours access to the Center **must** have the safety training.

**4. Only approved equipment may be taken into the magnet room, and *no* equipment may be taken into the magnet room while anyone is near the magnet bore.**

- a. **Only** equipment explicitly approved by the Center may be taken into the magnet room, even if it appears to be non-metallic. Please coordinate equipment approval with Kun Lu ([kunlu@ucsd.edu](mailto:kunlu@ucsd.edu)), the MRI Physics Lab Manager
- b. Even the approved equipment should always be taken in before the subject is placed on the table or other researchers have begun to work near the bore of the magnet.
- c. It is the Operator's responsibility to control for equipment in the magnet room.

**5. Maximum number of people in the console room.** To ensure the safety of personnel and equipment, a **maximum of 5 people** including the operator(s) are permitted in the console room at a time. In the event of a tour or a class when a group of more than 5 is needed in the console room, please coordinate with Linda di Leo ([ldileo@ucsd.edu](mailto:ldileo@ucsd.edu)) prior to the event. Additionally, at least **TWO** Center certified operators must be present with the group during the event or whenever there more than 5 people are present in the console room. If you have trouble finding a second certified operator, please indicate to Linda when contacting her. Note that even when more than one certified operator is present, one operator should always be designated as the primary operator (and assumes responsibility for safety during the scan session).

## B. Operator Policies

**Primary Responsibility of the Operator:** Operators are trained by the CFMRI staff and certified to operate the 3T and 7T imaging systems. The primary goal of this training is to insure safety, and the designated Operator is fully responsible for the safety of everyone involved in a study. For this reason, it's good to think of the Operator as accountable to the Center Director rather than the PI, and it is their responsibility to make sure that everyone involved strictly adheres to Center policies. Each time a study is scheduled, a single individual is designated as the Operator of record, and that individual is fully responsible for the study, even if other Operators are present. The designated Operator must be in control of the scanner room at all times.

**Eligibility for Operator Training:** Due to liability concerns, operators must have a UCSD affiliation or be a student or employee of a partner institution that has signed the License and Equipment Use Agreement with UCSD. Volunteer faculty and staff members at UCSD or the partner institutions are not eligible. Because the training process is costly, it is most appropriate for people who will be at UCSD for several years. Temporary hires, undergraduates and Masters students generally are not appropriate for this reason. Additional eligibility requirements for training on the 7T system are described in the 7T policies document available at <http://cfmriweb.ucsd.edu/policies.html>.

**Requesting Operator Training:** All requests for training must come from a PI who has a project currently approved at the CFMRI or who is planning to submit one within two months. In planning this, it is good to remember that Operator Certification will lapse if an Operator does not scan for four months (see below).

**Operator Training:** Training consists of a formal safety lecture and at least four hours of hands-on training. In addition, the Operator must complete an online test focusing on safety concerns, and be approved by Center staff. On completion, each Operator will sign a statement pledging to follow and enforce the policies of the Center related to scanning. If at any time an Operator does not feel comfortable with operating the scanner, they can contact Linda ([ldileo@ucsd.edu](mailto:ldileo@ucsd.edu)) to request a refresher session with the Center staff.

**Maintaining Operator Status:** Each year the Operator must pass the online safety test to remain certified. In the event that the certification lapses because of failure to pass the online test, the Operator must (a) attend the safety lecture again and (b) pass the online test to become re-certified. In addition, if an operator goes more than **four months** without serving as the designated Operator in a study, they must arrange to scan with the Center staff for re-certification. Operator privileges can be revoked at any time for failure to adhere strictly to Center policies.

### **Specific Responsibilities:**

1. ***Screening everyone who enters the magnet room.*** The only people authorized to enter the magnet room without being screened are certified Operators. **Everyone else** must be screened before entering the magnet room, and re-screened for every study (you cannot assume that a screening from another day still applies). Research personnel who are safety-certified by the Center but not operator-certified should be screened by the operator, but a screening form is not required. For personnel and subjects who are **not** safety-certified and have entered the magnet room, a screening form must be filled out and a legible copy of the completed screening form should be left with Linda. New forms are available on the CFMRI website, with substantial added information to help Operators make the decision about whether someone should be scanned. If there is any doubt about whether it is safe to scan a subject, they should not be scanned.

2. ***Controlling access to the scanner room.*** The Center policy is that no one except the experimental subject should enter the scanner room unless they have been through the safety training lecture and passed the online test. It is the Operator's **responsibility** to insure that others, such as members of the research team, who have not been safety trained do not enter the scanner room. In addition, it is the Operator's **responsibility** to minimize the number of people present in the scanner room to just those essential for the experiment (see **Section A5**).

3. ***Controlling equipment brought into the room.*** No equipment should be brought into the magnet room unless it has been specifically checked and carries an approval tag from the Center. Even with approved equipment, always put the equipment in place before the subject is put on the table. Equipment approvals should be arranged well

before the day of the experiment. Please coordinate equipment approval with Kun Lu ([kunlu@ucsd.edu](mailto:kunlu@ucsd.edu)), the MRI Physics Lab Manager.

**4. Insuring that the scanning session ends on time.** The research team should be completely out of the magnet room and the control room by the end of their scheduled time. The time booked on the web scheduler is the total time for access to the scanner, not for scanning, and you should be sure to allow time for clean up. Remember that the next group is paying for that time as soon as their time slot begins. (Note that you cannot always trust local clocks to be precise—the schedule refers to true time.) At the end of the experimental session, the Operator is responsible for insuring that any adjustments to what was originally scheduled (e.g., a change of operator, or extending the session into unbooked time) are accurately reflected on the Web schedule program. The Center reserves the right to audit usage of the scanner and bill for unscheduled time that has been used. Any changes that can't be made directly by the Operator should be emailed to Eman.

**5. Insuring that the control room and magnet room are left clean and neat and in the standard configuration.** This includes picking up laundry, making sure all cables are connected in the standard way, projectors are turned off, and in general leaving the area in the defined default state so that everything is the same each time a group arrives. The Operator is responsible for insuring that no equipment is borrowed from the other scanner. In addition, the operator is responsible for insuring that the console room doors (with keypad locks) are **not** propped open.

**6. Reporting problems.** The Operator should report any technical problems through the CFMRI Webschedule web page when they occur. Remember that reimbursement for time lost due to scanner problems is contingent on a report being filed when the problem occurs. In addition, any other problems encountered (e.g. the room is a mess, cables are missing, failure of the previous group to finish on time, etc) should be reported through the complaint page on the CFMRI Web schedule web page.

**7. Scanning on weekends, holidays or after hours (8 pm – 8 am).** Scanning in these times carries additional responsibilities because you may be alone in the building, and should only be done by experienced Operators after consulting with Center staff. The Operator must insure that the outside doors are **not** propped open and that they are locked when leaving.

**8. The equipment room.** Operators should not touch any of the hardware in the back equipment room. If the scanner fails to scan when center personnel are present at the center, report the problem to center personnel. When center personnel are not present at the center, then the operator should cancel the scanning session and report the problem on the Webschedule web page immediately (including notification of future users of the status of the scanner). The Operator should NOT call GE Service.

**9. If an object is pulled into the magnet.**

- a. If there is a serious or life threatening human injury that is being exacerbated by the continued presence of the object (for example, if the subject is pinned by the object), then hit the quench button, assist the subject as best you can, and call 911 from a center phone (campus police will then coordinate with the appropriate emergency services). In addition, an emergency call list is posted in each console room and should be used.
- b. If there is serious or life threatening human injury that is NOT being exacerbated by the continued presence of the object (i.e., the object struck a person but then lodges out of the way), then do **NOT** hit the quench button, but assist the subject as best you can, and call 911. In addition, an emergency call list is posted in each console room and should be used.
- c. If the object did not seriously injure a person, but is lodged in the scanner, and CANNOT be removed easily and safely with ONE hand, then find center personnel to help remove the object and assess damage.
- d. If the object CAN easily and safely be removed with ONE hand (i.e., a paper clip, small hair clip, or small piece of jewelry), then it is permissible to remove the object, check for injuries, assess the scanner, and report the incident.

## C. PI-related Policies

1. **Parking:** Please refer to [http://cfmriweb.ucsd.edu/pdf/parking\\_policy.pdf](http://cfmriweb.ucsd.edu/pdf/parking_policy.pdf) for the Center's policy on parking.

2. **Informing subjects about the time and place of their scan:** The PI should give clear directions to the subjects about where and when they should arrive. Please be sure to be there when your subject arrives so you can get the proper passes from Linda. If you expect a subject to arrive before you do, it is advisable to let Linda know. Also, be sure that each subject knows the name of the PI—that is the only way for Linda to connect the subject with a scheduled time slot.

3. **IRB or IACUC approval:** Linda must have a copy of a current IRB or IACUC approval on file for each project, and it is the PI's responsibility to insure that this is done. In order to use accumulated pilot hours for a project after the initial IRB or IACUC approval has expired, the PI must obtain a new approval and file it with Linda.

4. **Check website for updates:** This is the best way to check on the status of the systems.