

# UCSD Center for Functional MRI Policies and Procedures for Using the 7T Scanner

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Investigators holding faculty (or equivalent) appointments at research institutions in the San Diego area may request access to the 7T magnetic resonance imaging system at the UCSD Center for Functional MRI (CFMRI) for their research studies. Investigators not employed by UCSD will require that their home institution establish a standard License and Equipment Use Agreement with UCSD in order to apply for access to scan on the 7T.

## **Summary of Key Steps**

1. Submit an online proposal to the Bioimaging Proposal Review Committee describing the project.
2. Obtain animal protocol approval from UCSD IACUC (only required for imaging live animals).
3. Once these two administrative approvals are in place, a project number is assigned and the Investigator may schedule time through the online scheduler (referred to below as the Webschedule system). Non-UCSD projects also need a PO prior to adding the project to the online scheduler.
4. Invoices will be generated based on scheduled time according to the Billing, Cancellation, and Pilot Hour Policies described below.

These steps are described in more detail below. The goal is to keep these procedures simple and straightforward, but they are subject to change when required. Suggestions are always welcome. For questions about these policies, and for inquiries about the status of a submitted proposal, please email [cfmri@ucsd.edu](mailto:cfmri@ucsd.edu).

## **Proposal Review Committee**

Proposals will be reviewed for scientific feasibility by the Bioimaging Committee. Prior to proposal submission, Investigators are encouraged to discuss their proposal with the CFMRI's 7T Engineer (Robert Bussell, [rbussell@ucsd.edu](mailto:rbussell@ucsd.edu)).

## **7T Online Proposal Submission**

Proposals for review by the Bioimaging Committee should be submitted using the online proposal form available at <http://cfmriweb.ucsd.edu/info/7TSubmission.html>. If the Investigator already has a 7T Webschedule account, he/she may login and click on the **Manage My Proposals** button (Main menu). If the Investigator does not yet have an account, please email Eman Ghobrial at [eghobrial@ucsd.edu](mailto:eghobrial@ucsd.edu) to request an account.

1. After logging in to the 7T Webschedule account, click on **New Proposal**.
2. Depending on the information entered, there will be 3 or 4 web forms to complete. For additional information about each form, use the Help button.
  - a. General Information
  - b. Operator Information
  - c. Billing Information
  - d. Project Information.
3. Your session will log out after 30 minutes of idle time. Please click **Save for Later** if you will not complete all forms in one sitting. Your proposal will remain editable until you click on the **Final Submit** button on the preview page.
4. To edit a saved proposal click on the **Edit Saved Proposal button** (on Manage My Proposals Page), select your proposal and click **Edit Saved Proposal**.
5. Once the Final Submit button is clicked, your proposal will be sent to the Bioimaging Review Committee. At this point, additional editing cannot be done.
6. Use the **Check Proposal Status** button (on Manage My Proposals Page) to check on the proposal status.
7. After review of the proposal, the PI will receive e-mail notification indicating that either (a) the proposal

has been approved or (b) there are comments that need to be addressed. The PI can respond to the comments via the **Show Comments** page. If major revisions are required, the PI may be advised to resubmit their proposal.

8. Once the Committee approves the proposal, an administrative review will be performed to ensure all required certifications are on file. After this review, an account will be added to allow the PI to schedule research time, and an e-mail notification will be sent.

### **IACUC Review**

In addition to the local committee review at the CFMRI, all studies using live animals must have appropriate UCSD IACUC approval. For live animal studies, the Center's Bioimaging Proposal Review Committee may review the project in parallel with the UCSD IACUC committee. However, the study cannot start until both committees have approved it. A copy of the letter of approval from the UCSD IACUC must be emailed to [cfmri@ucsd.edu](mailto:cfmri@ucsd.edu). In most cases, Investigators with an existing IACUC protocol will only require an amendment to their existing protocol. Such an amendment will generally need to go to the next IACUC meeting and cannot be done as an administrative amendment. An example of an amendment is available at the online Proposal Management website.

### **Animal Transfer**

It is the Investigator's responsibility to complete the ACP animal transfer form and obtain approval from veterinary staff several days in advance of transfer between the CFMRI and the vivarium. ACP approval does **not** require the animal to be transferred onto a CFMRI IACUC protocol.

In compliance with the UCSD IACUC regulations, no animals will stay at the CFMRI for more than 12 hours. No animals will be in the building at night unless they are being scanned in a night-time slot.

### **Animal Transportation**

It is recommended that the Investigator transport their animals to CFMRI at the time of scanning. If animals are being delivered by animal transportation, the Investigator either has to be at the CFMRI to receive the animals, or has to make prior arrangements with CFMRI staff to receive the animals. The same applies for pick up by animal transportation.

### **Access to 7T Magnet Room**

Access to the 7T magnet room is generally limited to personnel who have received MRI Safety Certification from the Center. A more detailed policy describing magnet room access is at <http://cfmriweb.ucsd.edu/UserTools/7T/policies.html> (choose the link to "Policies regarding magnet room access, operator status, and PI-related activities"). To learn how to obtain MRI Safety Certification from the Center, see <http://cfmriweb.ucsd.edu/UserTools/7T/training.html>.

### **Operator Certification and Training**

In order to assist PIs with starting projects on the 7T system, the CFMRI provides an operator training program and staff consultation at the beginning of the new study. The goal of operator training is to train users to use the MRI console and ancillary equipment independently. The Center recommends that PIs designate an operator to be trained to carry out their study. In some limited cases, staff may be available for scanning by prior agreement.

Operator certification will be granted to those individuals who have successfully completed the training and have clearly demonstrated the ability to safely operate the scanner without supervision. Keeping the restrictions stated above in mind, the PI of an approved project can submit an operator training request form through <http://cfmriweb.ucsd.edu/operator-training/>. See <http://cfmriweb.ucsd.edu/UserTools/7T/training.html> for additional information about training.

Only Certified Operators are permitted to run the scanner, and the right to withhold or withdraw certification is at the discretion of the CFMRI Director. Certification will expire if an Operator does not serve as the designated Operator for 4 months. After 4 months, he/she must arrange with the Center staff for re-certification. In addition, each Operator must pass the Safety Certification test each year. The

designated Operator for each scan session is fully responsible for the enforcement of the safety policies and for the proper treatment of the equipment. Further details on Operator eligibility and responsibilities are provided at <http://cfmriweb.ucsd.edu/UserTools/7T/policies.html> (choose the link to “Policies regarding magnet room access, operator status, and PI-related activities”).

Scanning during night/weekend hours may only be performed by highly experienced Certified Operators. Operators must obtain prior approval from the 7T Engineer (Robert Bussell, [rbussell@ucsd.edu](mailto:rbussell@ucsd.edu)) to scan during night and weekend hours.

### **Scheduling**

Once approvals are on file at the CFMRI and a Certified Operator has been identified, a project account is created on the Center system (the Webschedule) under the PI’s name. The PI or Certified Operators associated with the project may then log in and schedule time in half-hour blocks using the Webschedule at <http://cfmriweb.ucsd.edu/webschedule.html>.

The Center **reserves the right** to make minor adjustments to the schedule to make the most effective use of available time. For example, if there are several 2 hour studies scheduled during the day that are spaced apart by 2 hour unscheduled time blocks, the Center may work with the Investigators to reduce the unscheduled time blocks in order to allow for an additional study to occur on that day. Center staff will coordinate any adjustments with the Investigators.

### **Billing**

Billing is done in half-hour increments. Hourly rates are subject to change, and are currently as follows:

UCSD Recharge Rate	\$250 per hour
Non-UCSD Invoice Rate	\$363 per hour

The non-UCSD invoice rate includes a 45% differential fee to fund University resources. This 45% is normally recovered via indirect costs by UCSD researchers from their sponsored research grants. For non-UCSD users, the same fee must be recovered by the University.

### **7T Cancellation Policy**

The Webschedule must be used to reserve time for any activity that is performed on the scanner console or magnet. Time reserved using the Webschedule system will be billed to the PI who books it whether or not the time is used, with three exceptions:

1. A reservation that is made and cancelled within two hours will not be billed. PI’s can use this feature to temporarily hold time on the Webschedule while coordinating with others.
2. If a PI cancels a reservation and another PI books the same slot, the PI who originally reserved will not be billed.
3. A slot that is cancelled more than 14 days before the scheduled time will not be billed to the PI who reserved it.

### **7T Pilot Hour Program (applicable only to UCSD-funded projects)**

1. **Paid Hours:** Hours actually paid for. Each month the Paid Hours used by each project are tallied.
2. **Lost Hours:** Lost Hours are time slots that go unused but were previously reserved by a PI for more than 2 hours during the previous 14 days. Lost Hours are also tallied monthly by project.
3. **Pilot Hours:** Effective August 1, 2013 Pilot Hours will be calculated for each project at a rate of:

1 Pilot Hour awarded for each 2 Hours of Paid Scan time.

To calculate the number of *net* Pilot Hours, the Center will subtract the number of Lost Hours from the number of potential Pilot Hours (e.g. potential Pilot Hours – Lost Hours = net Pilot Hours). See Example below.

Paid Hours of Scanner time	Potential Pilot Hours (2:1)	Actual Lost Hours	Pilot Hours Awarded/Deducted
10	5	0	5
10	5	2	3
10	5	7	-2

- 4. Reconciliation of accounts:** Periodically the Center will reconcile all accounts for a PI, removing Pilot Hours from their other accounts, if necessary, to offset deficits in other Pilot Hour accounts. If a PI accrues a negative Pilot Hour balance, then the Center reserves the right to invoice for scan time that was previously used and scheduled with Pilot Hours.
- 5. Scheduling Pilot Hours:** The Center will set up a separate Pilot Hour account on the Webschedule system for each PI project. To schedule Pilot Hours the PI should use the project identified with the prefix "Pilot" before the project name.

### Technical Problems

Technical problems should be reported immediately through the **Problem Report** page of the Webschedule system. This will let Center personnel know of the problem, and all other Investigators will be able to see any current technical problems that may require them to change their plans. The best procedure for avoiding lost time due to technical problems is:

- 1. Check the Webschedule system before arriving.** Before arriving for a study, the PI and/or the Operator should login to the Webschedule system and check the current reported problems (if any) that might preclude their planned study. Scheduled time will be moved by Center staff to the technical difficulty category so that automated billing does not occur.
- 2. Check the FAQ's on the CFMRI web site.** If a technical problem is encountered after the study begins, first consult the FAQ section of the web site to see if this is a known problem that can be easily fixed.
- 3. Report all problems.** If this is a new problem, the PI or Operator should report the problem through the **Problem Report** page of the Webschedule system. Note that even if direct help for the problem is obtained from someone in the Center, the problem must still be reported and how it was fixed. This benefits everyone and provides a better record of how often problems occur.

### Billing Adjustments for Technical Problems

If technical problems arise with the scanner, there will be no charge for lost time. The PI must report the technical problem through the Webschedule system within **72 hours** of the incident. This will allow the scheduling/billing database to be adjusted, which will then cancel the billing for the lost time.

Billing will not be adjusted for:

1. Technical problems that have not been reported by the PI or Operator within 72 hours;
2. Time lost due to problems that are the responsibility of the PI or Operator (e.g., the PI's computer fails or the Operator uses the wrong pulse sequence parameters);
3. Minor system glitches that do not prevent completion of the scan session.

Please note that the Pilot Hours provided to each account (see 7T Pilot Hour Program above) are absorbed by the Center in an effort to help the PI deal with the various problems associated with getting good data, such as optimization of their techniques and minor system glitches. The hours used will be

adjusted only if there is a major failure of the functionality of the 7T MRI system.

### **Pilot Studies**

There are no “free” Pilot Hours available at the start of a new project. Instead, Pilot Hours are credited monthly in accordance with the policy described above. The 7T Pilot Hour Program is applicable only to UCSD-funded projects.

### **Material Transfer Policies**

All projects are expected to follow IACUC approved policies with regards to the safe transfer of materials related to the experiment. In the event that these policies are not followed and Center personnel need to transport material after the completion of a study, the Center reserves the right to deduct Pilot Hours (nominally 2 hours per incident) from the associated project.

### **Annual Report**

If live animals are used the IACUC approval for a project will need to be renewed each year and a current copy of the approval must be emailed to [cfmri@ucsd.edu](mailto:cfmri@ucsd.edu). At the time of renewal we also ask that each PI submit a brief report on the progress of the study. This should include the number of studies performed, results to date, and any problems encountered.