September 23, 2008

UCSD Center for Functional MRI

Policies for Using the 3T Scanners

Investigators holding faculty appointments within the San Diego research community may apply for access to the 3T whole-body imaging systems for research studies at the UCSD Center for Functional MRI (CFMRI).

Summary of key steps

1. Submit a proposal to one of our Proposal Review Committees describing the project and identifying a certified scanner operator to run the study (use the templates and checklist at the end of this document).
2. Obtain protocol approval from the appropriate UCSD IRB (human studies) or IACUC (animal studies).
3. Once these two administrative approvals are in place, a project number is assigned and you can schedule time through the online scheduler.
4. Invoices will be generated based on scheduled time at a rate of $525/hr for the 3T systems. VA investigators are currently eligible for these UCSD rates, which do not include the use of our technologist.

These steps are described in more detail below. We have tried to keep these procedures simple and straightforward, and they may need to be changed in the future if problems arise. Suggestions are always welcome. The central contact for questions about these policies, and for inquiries about the status of a submitted proposal, is Linda Di Leo (ldileo@ucsd.edu).

Proposal Review Committees

We have two Proposal Review Committees: one handles only human neuroscience research proposals and is headed by the Chair of the Human Neuroscience committee; the other handles all other research proposals and is headed by the Chair of the Bioimaging committee. Prior to submission, we encourage you to discuss your proposal with the chair of the appropriate committee.

Proposal Submission

The first step for an investigator to request time on a scanner at the CFMRI is to submit a proposal to Linda Di Leo (ldileo@ucsd.edu) using the templates at the end of this document (also available under "Forms" on the website). The proposal templates are slightly different for the two committees, so it is important to use the proper form. The billing and contact information must be put on the checklist form, and both the checklist and the proposal should be submitted electronically. The proposal outlines the goals of the project, the experiments to be performed, the data acquisition methods to be used, the methods for data analysis, the time required, and administrative details necessary for appropriate contacts, record keeping, and billing. A central goal of this review process is to insure that the proposed research is appropriate for the technology available and that the investigative team is adequately prepared to conduct and analyze the proposed experiments. To this end, it is important that enough information is provided about exactly what will be done in each study to allow the committee to fully evaluate the proposal.

IRB or IACUC review

In addition to the local review at the CFMRI, all protocols must also have appropriate UCSD IRB or IACUC approvals. Proposals for human studies can be reviewed by the Proposal Review Committee before the UCSD IRB approval is complete, but the IRB approval must be on file at the CFMRI before a project number is assigned. For animal studies our Bioimaging Proposal Review Committee must approve the project before IACUC will approve it. A copy of the letter of approval from the appropriate UCSD review board (and an approved consent form for human subjects) must be given to Linda Di Leo (ldileo@ucsd.edu).

Access to 3T Magnet Rooms
Access to the 3T magnet rooms is generally limited to personnel who have received MRI safety certification from the Center. A more detailed policy is available at (http://cfmriweb.ucsd.edu/policies.html). More information about safety training can be found at http://cfmriweb.ucsd.edu/info/gettingstarted.html.

Operator Certification and Training
A training course is offered covering scanner operation and safety, leading to certification as an independent scanner operator. Information on training is available at http://cfmriweb.ucsd.edu/info/gettingstarted.html. Only certified operators will be allowed to run the scanner, and we reserve the right to withhold or withdraw certification at the discretion of the Director. Certification will expire if the Operator does not scan for 4 months. In addition, each Operator must pass the Safety Certification test each year.
Eligibility: Only students and staff members affiliated with UCSD or a partner institution that has signed the License and Equipment Use Agreement with UCSD are eligible to become an Operator. Volunteer faculty and staff members at UCSD or the partner institutions are not eligible. Further details on operator eligibility and responsibilities are provided in additional documents available at the CFMRI website (http://cfmriweb.ucsd.edu/policies.html).

Scheduling
Once approvals are on file at the CFMRI and a certified operator has been identified, a project account is created on the Center computer under the PI's name. The PI may then log in and schedule time in half-hour blocks using the Web-based scheduling system (http://cfmriweb.ucsd.edu/webschedule.html).

3T Cancellation policies

Note: These policies apply to projects from UCSD or non-profit research institutions that have a partnership agreement with UCSD. Cancellation fees can be applied to other projects at the discretion of the Center.

1. *Lost hours*: *We define lost hours as time-slots that go unused but were previously reserved by a PI for more than 2 hours during the previous 30 days*. The 2-hour clause provides the opportunity for a PI to hold a slot briefly to confirm that it can be used, and as long as the PI cancels the slot within 2 hours they incur no responsibility for that slot. If a PI cancels a reserved slot and another PI reserves the slot, the first PI no longer has any responsibility for that slot. Otherwise, the PI is responsible for lost hours attributed to that project. Each month the responsible lost hours will be tallied for each project.

2. *Funded hours*: Each month we will also tally the funded hours used by each project.

3. *Rewards and Penalties*: We have targeted an acceptable level of lost hours as 25% of the funded hours. The Center will calculate the number of potential pilot hours at a rate of 25% of funded hours used by each project. 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. net pilot hours = potential pilot hours – lost hours). If the number of net pilot hours is greater than zero, then these pilot hours will be added to the PI's pilot hour account. If the number of net pilot hours is less than zero, then these pilot hours will be subtracted from the PI's pilot hours account.

4. *Reconciliation of accounts*. If a project consistently performs worse than the 25% level, it is possible for the pilot hour account to go negative. Periodically we will reconcile all accounts for a PI, removing pilot hours from their other accounts if necessary to offset the deficit in accounts that have gone negative. In this way, the average performance of the PI's full suite of projects is required to meet a lost hours percentage of no more than 25%. If a PI cannot meet this goal, then we will have to introduce new policies limiting that PI's freedom in scheduling. At this point we hope that will not be necessary.

Examples: For a project that accrues 32 funded hours of scanner time, the maximum number of lost hours is 8. If the project has no lost hours, it will be awarded 8 pilot hours. For 5 lost hours, the project will be awarded 3 pilot hours. If the project is responsible for 10 lost hours, then 2 hours will be deducted from the project's pilot hour account.

Recharge rate

For UCSD investigators using UCSD budget index numbers, the rate for access to the scanner (without technologist) is $525 for each hour that a 3T scanner is reserved. Access to scanners with our technologist will be charged an additional $50 per hour. These rates are also currently applicable to VA. For outside investigators the rate is $761/hr for the 3T systems without a technologist and $834/hr with a technologist. This will be charged to the index number based on the number of hours scheduled. That is, the scheduling database will become the billing database. Note that these rates are subject to change.

Technical problems
A "technical problem" includes basic scanner functions as well as functionality of the standard ancillary equipment (projectors, button boxes, etc). Problems should be reported immediately through the Problem Report page of the website. This will let Center personnel know of the problem, and all other investigators will be able to see if there are current problems with the scanner that may require them to change their plans. While we certainly try to minimize such problems, they do occur. The best procedure for avoiding lost time due to technical problems is:

1. **Check the web page before you come in**. Before arriving for a study, the PI and/or the Operator should check the web page to see if any equipment problems have been reported that will preclude their planned study. If so the PI should cancel their scheduled time so that they are not billed for it.

2. **Check the FAQ's on the web site.** If a technical problem is encountered after the study begins, they should 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 website. Note that even if you are able to obtain direct help with the problem from someone in the Center, we still ask that you report the problem and how it was fixed. This will benefit everyone and provide us with a better record of how often problems occur.

Adjusting the billing for technical problems
If technical problems arise with the scanner, there will of course be no charge for lost time. It is important to remember that the scheduling database is also the billing database, so this needs to be adjusted. To do this, the PI should report the technical problem through the web-scheduling system within **72** hours of the incident.

Our policy is that we will not adjust the billing 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., if the subject doesn't show, 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 (e.g. the scan could be completed after a TPS reset). Note that the physiological monitoring equipment is **not** considered standard equipment and is provided free of charge as an optional service that may be of benefit; billing will not be adjusted because of issues with this monitoring equipment. Please note that the free pilot hours provided to each account (see 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 3T MRI system that prevents completion of the scan session.

Pilot studies
There are no free pilot hours available at the start of a new project. Instead, free pilot hours will be awarded monthly in accordance with the cancellation policy described above.

Yearly report
Each year the IRB or IACUC approval for a project will need to be renewed, and current copies of these approvals must be on file with Linda Di Leo (ldileo@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.

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contact: ldileo@ucsd.edu

Center for Functional Magnetic Resonance Imaging
Proposal Review Checklist

Proposal Category (check one): Human Neuroscience ____ Other ____

Date: _____

Principal Investigator: _____ **Academic Title:** _____

Project Title: _____

Address: _____ Contact Person: _____

_____ Phone/Email: _____

P.I. Email/ Phone: _____

Name of Scanner Operator (1): _____ Phone: _____

Name of Scanner Operator (2): _____ Phone: _____

Recharge Information:

UCSD Index Number: _____ Financial Contact: _____

Mail Code: _____ Phone/Email: _____

Non-UCSD Billing Information:

Billing Address: _____ Financial Contact: _____

_____ Phone/Email: _____

FOR OFFICIAL USE ONLY

Project Information:

Total Hours Approved: _____

UCSD IRB or IACUC Approval:

Number: _____

Approval Date: _____

Operator Certification

Opr 1:		Opr 2:	
No	⬭	No	⬭
Yes	⬭	Yes	⬭

IRB Approval on File ⬭

Equipment Form Approval ⬭

Proposal on file ⬭

Proposal Review Committee Approval:

Account Created:

_____ _____ _____ _____

Chair **Date** Eman Ghobrial Date

Template for proposals for human neuroscience research using the MRI systems.

The proposal must include the checklist (previous page) and the information in this template, and should be submitted electronically to ldileo@ucsd.edu. The information you provide on this form will allow us to ensure that the MRI capabilities we have match you scientific needs (and if not how we can help you), and for us to gauge what resources you will need for your project. We also use it to document who will be using the MRI facilities, what their level of expertise is, and relevant billing information. Notes in blue are for your information, and do not need to be copied into the proposal submission. Please keep the information concise (up to 2 pages). For further information please the Center (ldileo@ucsd.edu).

1. Project title

2. Principal Investigator and co-investigators

3. Contact person (phone and email)

This is the person we will contact regarding scheduling and other issues related to the day-to-day running of the experiment.

4. Scanner operator(s)

Only individuals who have been certified as operators can run the scanner. The training course is organized by Cecelia Kemper (ckemper@ucsd.edu). We encourage you to have members of your lab trained and certified. Alternatively, you can request that Cecelia Kemper, our research technologist, operate the scanner at the cost of an additional $50 per hour.

5. Scanner requested (East or West 3T)

6. Total number of scanner hours requested

Please detail the duration of each study and the total number of studies required.

7. Estimate of total duration of the project

Project accounts will have an expiration date, which can be extended if necessary.

8. Brief description of the project

This should include some background on the significance of the project, the specific experiments to be performed, details of the pulse sequences to be used, and the expected results. If any agents will be administered to the subject (sedatives, gases, contrast agents etc), indicate where these will be administered (in the fMRI center, in the scanner, in your lab etc.), and by whom, and what physiological monitoring will be performed.

9. Data analysis methods

As a rule you are responsible for your own data analysis unless special arrangements are made with fMRI center personnel. Include the software and the type of analysis you intend to use. Please note: we will provide advice on AFNI, Free Surfer and LabView. Other software is acceptable (of course) but we may not be able to help you out with it.

10. Additional equipment required

e.g. Special RF coils, Projector (in house projector, or your own), Response box, Audio headphoness, Physiological monitoring equipment, Other ancillary equipment

11. UCSD-IRB information

The proposal can be submitted before the human subjects IRB approval is complete, but a copy of the letter of approval and the approved consent form must be filed with Linda Di Leo (ldileo@ucsd.edu) before a project account can be established.

Template for proposals for animal and biomedical research using the MRI systems.

The proposal must include the checklist (previous page) and the information in this template, and should be submitted electronically to ldileo@ucsd.edu. The information you provide on this form will allow us to ensure that the MRI capabilities we have match you scientific needs (and if not how we can help you), and for us to gauge what resources you will need for your project. We also use it to document who will be using the MRI facilities, what their level of expertise is, and relevant billing information. Notes in blue are for your information, and do not need to be copied into the proposal submission. Please keep the information concise (up to 2 pages). For further information please contact the Chair of the Bioimaging Committee (mscadeng@ucsd.edu).

1. Project title

2. Principal Investigator and co-investigators

3. Contact person (phone and email)

This is the person we will contact regarding scheduling and other issues related to the day-to-day running of the experiment.

4. Scanner operator(s)

Only individuals who have been certified as operators can run the scanner. The training course is organized by Cecelia Kemper (ckemper@ucsd.edu). We encourage you to have members of your lab trained and certified. Alternatively, you can request that Cecelia Kemper, our research technologist, operate the scanner (or other fMRI Center staff depending on the complexity of the project and your needs) at the cost of an additional $50 per hour.

5. Scanner requested (3T West only)

6. Total number of scanner hours requested

Please detail the duration of each study and the total number of studies required.

7. Estimate of total duration of the project

Project accounts will have an expiration date, which can be extended if necessary.

8. Brief description of the project

This should include some background on the significance of the project, the specific experiments to be performed, details of the pulse sequences to be used, and the expected results. Also indicate what additional agents you may need (sedatives, gases, contrast agents etc), where these will be administered (in the fMRI center, in the scanner, in your lab etc.), and by whom.

9. Data analysis methods

As a rule you are responsible for your own data analysis unless special arrangements are made with fMRI center personnel. For analysis and evaluation of mouse images please contact Miriam Scadeng (mscadeng@ucsd.edu).

10. Additional equipment required

e.g. Special RF coils, Projector (in house projector, or your own), Response box, Audio headphones. Restraints, Physiological monitoring equipment, Anesthetics, Other ancillary equipment

11. Biohazards

Biomedical samples should be double wrapped and sealed in plastic prior to coming into the fMRI center, to prevent contaminants coming into contact with the scanner (e.g. biological fluids, formaldehyde etc.). If you have special needs, please discuss them with Kun Lu (kunlu@ucsd.edu). Note: Animal transfers from off campus need additional UCSD veterinary approval.

12. UCSD-IACUC approval

For animal studies the approval of the fMRI Center Bioimaging committee is required before IACUC will grant approval. If you have special needs, please discuss them with Miriam Scadeng (mscadeng@ucsd.edu).