TEXAS TECH UNIVERSITY
Neuroimaging Institute™

TTNI Imaging Policy

1. **Read and sign the TTNI Imaging Policy.**

2. **Read the TTNI Safety Policy:**
   (https://www.depts.ttu.edu/research/ttni/getting-started.php)

3. **To get IRB approval for a new study or re-approval of an existing study that involves the TTNI:**

   a) Approval to utilize the TTNI involves the assessment of two main components: MR safety of the proposal and MR safety of research personnel. The TTNI Protocol Review Committee must determine that the research proposal meets MR safety standards as outlined in the TTNI Safety Policy. All personnel involved in the project must provide documentation of having received MR safety training.

   b) Investigators interested in using TTNI facilities will submit a project request form for use of TTNI resources and email the form, research protocols and consents, using IRB templates, to the staff of the TTNI Protocol Review Committee at neuroimaging@ttu.edu.

   c) If modifications that impact the TTNI, other than eliminating the use of the TTNI facility in the Experimental Science Building (ESB), are made to an existing approved protocol, the TTNI Protocol Review Committee must re-review the protocol. A committee member who is listed as a PI in a protocol may not participate in the review process beyond providing information that is requested by the committee. Once the MR safety of the project is approved by the TTNI committee, all research personnel associated with the project must undergo MR safety training. Training consists of the following:
      1. Online course and test on MR safety (updated every 2 years)
      2. MR safety video (updated every 2 years)
      3. TTNI Safety Screening Sheet (updated every 2 years)
      4. The TTNI Imaging Policy (one-time requirement)

      Note: The two documents noted in #3 and #4 can be obtained from the TTNI website: https://www.depts.ttu.edu/research/ttni/getting-started.php. The four elements of MR safety (online course, video, safety sheet, TTNI Imaging Policy) will be tracked for each researcher by the online training system as well as TTNI personnel. All research personnel who later join an ongoing project must also be trained in MR safety.

   d. A project is considered to be approved and ready for IRB submission after the TTNI Protocol Review Committee approves of the MR safety aspects of the project and after all personnel have submitted documentation of MR safety

training. A letter will be sent to the primary investigator stating that the research protocol is approved through the TTNI.

    e) For annual IRB renewals, it is not necessary to resubmit your protocol to the TTNI Protocol Review Committee if it has already been approved and your protocol meets the following requirements:

       1. New or different intravenous infusions of any kind will not be used,
       2. New or different medications will not be administered,
       3. The participant population will not change and
       4. The MR sequences will not change.
       5. If there are changes in the above requirements, submit your revised IRB protocol or amendments to your IRB protocol to the TTNI Protocol Review Committee and then, after you have TTNI approval, to the IRB. You must submit all IRB protocol documents with amendments to the TTNI Protocol Review Committee.

4. IRB requirements

    a) Every study with human subjects requires an approved IRB protocol and the TTNI Staff will not book imaging time without a copy of the IRB approval letter, which will be kept on file in the institute.

5. MR Safety Training

    a) Each researcher who comes to the magnet console must be trained in MR safety, which consists of the following:

       1. Take and pass the online MR safety course (required every two years)
       2. Watch the MR safety video (required every two years)
       3. Sign and date the TTNI Safety Screening Sheet (required every 2 years). This form is to make sure that each researcher is safe to go in the magnet.
       4. Sign and date the TTNI Imaging Policy (one time requirement)

    Note: The TTNI Safety Screening Sheet and TTNI Imaging Policy are available online at www.ttni.ttu.edu. Please return these two signed and dated documents for each researcher by email to neuroimaging@ttu.edu.

6. MR Safety

    a) *The magnet is ALWAYS ON* – and the magnetic field is extremely powerful.

    b) The magnet can pull metal from your hands.

    c) If it does pull something from your hands it will pull it to the center of the magnet. This could injure or kill the person in the magnet and could injure or kill any research personnel who might be next to the scanner.

    d) It will also possibly ruin the magnet, which could cost several million dollars to repair or replace.

    e) NEVER enter the magnet room with any metal whatsoever.

       1. No metal in your pockets, no metal in your hands, no jewelry.
       2. No credit cards or ID cards – they will be erased.

3. No computer disks, pens, scissors, syringes, scalpels, knives, oxygen tanks, carts, or other tools – EVER.
4. No one should enter the magnet room unless they have been screened for metal and are well aware of this issue.

f) Participants with tattoos containing metal in the ink (participants should confirm with their tattoo artist that it does not), pace makers, hearing aids, metallic implants, vagal nerve stimulators, aneurism clips, colored contact lenses, etc. cannot be scanned. Eyeglasses are <u>not</u> permitted in the scanner. Plastic goggles are available at TTNI for participants without contacts who need visual assistance.

g) Each human subject must fill out a TTNI Safety Screening Sheet prior to scanning.

h) You should pre-screen participants *before* you book them so you do not end up having to cancel when you learn just prior to your scanning appointment that they have braces or a pacemaker. **Note**: <u>You will be charged for the scan even if your participant shows up but is ineligible due to metal or other exclusions.</u>

i) Again: *The magnet is ALWAYS ON* – never enter the magnet room with any metal. Always double check yourself and your participant before walking through the metal detector/door (e.g., pockets empty, jewelry and watch off, no hair clips/pins, etc.)

7. **What you need before going to the magnet**
   a) Your entire procedure must fit into your scheduled time slot. This includes everything you need to do in the console or scanner rooms---all instructions, practice, equipment set-up, structural scans, functional scans, and breakdown/clean-up. If your slot is scheduled for 1.5 hours, your slot runs from the scheduled start (not the time you show up) until the scheduled end (not necessarily the time it takes to finish the entire procedure).

   b) You need to have programmed your task and put it on the computer at the magnet console and checked the timing on the computer at the console. This can be done off-hours or during magnet down time, or when cancellations permit.

   c) You need to know the exact timing of your task.
      1. How long is each run.
      2. How many runs.
      3. How many acquisitions to discard at start (i.e., disdaqs).

   d) You need to have defined your imaging protocol including parameters for
      1. Localizer scan
      2. Anatomic scan
      3. Functional scan(s)
      4. 3D
      5. Others

   e) The imaging parameters that must be defined include number of slices, slice thickness, FOV, matrix size, number of images per slice, TE, alpha, TR, pulse sequence, bandwidth, etc. The technician will work with you to establish the parameters best suited to your study.

f) All parameter and timing details should be included on a detail sheet that you give to the technician for each scan. A template is available by e-mail request to: neuroimaging@ttu.edu.

g) You must supply the billing information (e.g., Account # or FOP) for each scan prior to the actual scanning session.

8. **When to show up**
   a) You and your participant should show up **at least 15 minutes prior** to the start of your scanning slot (sooner if your instructions/practice, etc. require more time). This allows time to fill out the pre-scan Safety Screening Sheet and instruct the participant on the task etc. prior to moving into the magnet.

   b) Please make sure your participants know who they are to meet, where and when.

   c) All interviewing and training of the participants is to be done in an interview room, not the MRI suite waiting room.

   d) You should be ready to put the participant in the magnet when your slot is scheduled to start.

   e) Do **not** bring your participant to the MRI control room early. Contact (or call) the technician (806-834-8349) to let them know that you are ready, and then wait in the waiting area. They will inform you when they are ready for you to come into the control room with your participant.

   f) Do **not** bring a crowd of people with you – the number of people should always be minimized and all discussion should be focused on the study at hand. It is very difficult for the technician and the participants to focus on the task if there are too many people in the control room having multiple conversations.

   g) It is OK to bring guests to observe a study but you **must** clear this with the technician ahead of time. Due to confidentiality issues, you should also confirm that your participant does not mind. All guests **must** have completed all Safety requirements and submitted those documents prior to entering the control room.

   h) Parents or guardians of child participants may enter the control room. At no time should a parent or guardian be standing or seated directly behind the MR technician. The parent or guardian should remain either in a dressing room or in the waiting room while the pediatric subject is in the scanner to ensure safety for all personnel. Other family members and friends of participants must wait in the waiting room.

9. **What to expect from the Technician**
   a) The technician will enter your protocol into the system.

   b) The technician will help with getting the participant in and out of the magnet.

   c) The technician will perform all scanning on the participants.

   d) The technician will ensure that the projector and/or sound system work with and that the participant can see/hear adequately while in the scanner.

   e) The technician can cancel your study if they feel a given aspect of the project is inappropriate.

f) The technician will make every effort to help claustrophobic participants but it will be their decision as to whether to scan such participants or not. Note that a mock scanner is available to help prepare participants for the actual scan. You will need to book additional time to use this pre-scan equipment.

10. What not to expect from the Technician

a) The technician will not define your acquisition strategy for you.

b) The technician will not help with the task.

c) You must have worked out the number of slices, imaging parameters etc. before arriving at the magnet. Talk to someone who has done such a study or contact the Director, Dr. Eric Walden (eric.walden@ttu.edu) to help you define parameters.

d) The technician will not describe the task to the participants or answer questions about the paradigm.

e) You need to know how to run the stimulus presentation programs and inform the technician as to what equipment will be needed in terms of visual or auditory stimulus presentation (prior to putting the participant in the magnet) and whether or not the participant requires the response boxes.

f) It is the PI's responsibility to train their Post-Docs, RA's, TA's, etc. in use of paradigm presentation equipment.

11. Participant Selection

a) Please use a MRI pre-screening checklist with participants when recruiting (available on the TTNI website: https://www.depts.ttu.edu/research/ttni/getting-started.php).

b) Very obese, claustrophobic, or participants with metal implants are *not* suitable for scanning.

c) Colored tattoos and piercings can be a problem. All body piercings **must** be removed ***BEFORE*** the participant arrives at the scanner (they often have difficulty removing their jewelry, so they should do this ahead of time).

d) Colored contact lenses **must** be removed.

e) Participants with cardiac pacemakers cannot be scanned.

f) All participants must be able to walk unassisted into and out of the scanner. No wheelchairs, walkers or crutches are allowed in the suite.

12. What you need to record

a) You need to record all the participant info, age, weight, race, gender, and all of the imaging info including series number, and imaging parameters for each scan obtained.

b) Please record these details on a participant information sheet each time you scan.

13. When the scan is finished

a) Please escort the participant back to the waiting room and ensure that they know how to get out of the building.

b) Make sure to clean up any mess you made in the console area, and help the technician put things in order for the next study.

c) Be sure to return all equipment to its normal state, this includes monitor/projector resolution, luminance, computer extensions, etc.

d) If your project involves non-human participants see the cleanup regimen outlined in #16 below.

14. Data Transfer

a) *No data is backed up indefinitely!*

b) You will be given access to your data at the end of the session. Please bring a USB or External Hard drive with you for data transfer. We will not transfer the data directly onto a laptop due to possible virus infection.

c) You should confirm transfer of the data is complete after each scan.

d) Failure to confirm data transfer and backup of your files can result in loss of data.

e) You will not be reimbursed for studies lost due to lack of timely transfer.

15. Scan Time Charges

a) You may be billed for scan time if your subjects do not show up. The TTNI scanning policy is that we bill for booking the scanner not by subject. The scan time includes the time it takes to get the participant into the magnet at the start and out of the magnet at the end. If you constantly go over your booked time, you need to either shorten the protocol or extend the slot by 30 minutes.

b) There is a *minimum* 2-week notification required to relinquish a slot and avoid being billed

c) Our scan fee is currently $550 per hour or $9.17 per minute.

d) If you bring the technician in for a special study off-hours and they are required to be paid overtime, there will be a nominal incremental fee added to cover their overtime pay.

e) Excessive cancellations will result in the slot being assigned to another investigator.

16. Non-Human Scanning

a) The TTNI is a multi-use facility and so is involved in both human and non-human scanning projects. In light of this fact there are specific guidelines regarding post-animal project cleaning of the equipment that each PI/or research assistant must follow. Note that only individuals who have passed the TTNI safety requirements will be allowed to enter the magnet chamber to clean the equipment. For details of the cleaning process after non-humans see the TTNI Animal Studies Policy located on the TTNI website: https://www.depts.ttu.edu/research/ttni/getting-started.php.

Declaration:

I have read the above guidelines, I understand them fully, and I agree to follow these guidelines. I recognize that failure to follow these guidelines can be a serious safety hazard. Failure to follow these guidelines can also result in a loss of imaging privileges. I also recognize that the TTNI has the right to change these guidelines at any time if the need arises.

_____   _____
                    Signature   Date

_____
                  Printed Name

_____
                  Email address

_____
Name of the Principal Investigator of the study.