

# **CCP LAB RA REFERENCE MANUAL**

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## PRE-SCAN PREP

1. Check in with Carol M to make sure that the subject confirmed and if they haven't make a decision about whether to cancel them and schedule someone else or just chance it
2. Confirm with your scan partner that they will be at the scan
3. Fill the binder with the necessary paperwork: you should always make sure that there is more copies of all the paperwork in the binder than you need
  - i. For EACH SUBJECT you will need:
    1. TWO copies of the current CONSENT FORM (make sure the date stamped on the back has not passed!)
    2. ONE copy of the MR SCREENING FORM (2-sided!)
    3. ONE copy of the RACE/GENDER FORM
    4. ONE copy of CHECK REQUEST FORM
    5. ONE copy of the READ-ME
  - ii. All of the above forms can be found in the "Pre-Scan Prep" folder in RA Info
4. Make sure that all the necessary subject schedule sheet, subject task instructions, scan instructions, data handling guidelines are also in the binder
5. Generate an access code for each subject you will be scanning that day
  - a. Go to the NIL website
    - i. [www.nil.wustl.edu](http://www.nil.wustl.edu)
    - ii. under RIIS Resources select MR Access Code Module
    - iii. at the Login screen use your RIIS login name and password
      1. under protocol number select the *appropriate NP number*
      2. in the subject field select *human*
      3. click continue
      4. click Federally Supported Wash U Investigator
      5. click Due to regulations, I must use a generated id; please generate one
      6. click continue
      7. select appropriate ethnicity, select gender, enter appropriate date of Birth, select handedness
      8. click generate access code
      9. record the access code on the subject sheet and email it to yourself so that you have an electronic record of it
6. Make sure that the appropriate laptop has the task practice script on it – and also make sure that you take any other hardware that would be necessary for the particular study

## FMRI SUBJECT SCHEDULING

1. Access the Scan Calendar from the NIL website:
  - a. <http://mirsharepoint.wustl.edu>
  - b. on the left side is a list of things you can schedule like Bays, mock scanner, and parking spots, click them to view the schedule
  - c. our scan slots will be marked by B3 D Braver
2. To reserve a scan slot, email the times you want to reserve and who the times are under (Braver/Barch) to Cathy at the East Building ([mri@npg.wustl.edu](mailto:mri@npg.wustl.edu)) -- she will email you back to confirm the reservation
3. Make sure and release any scan slot that you are not going to use 24 hours PRIOR to the scan time. To release a scan slot, email the time you want to release and who the time is under to Cathy at the East Building ([mri@npg.wustl.edu](mailto:mri@npg.wustl.edu)) - make sure and cc the Bay 2 ([bay2-users@npg.wustl.edu](mailto:bay2-users@npg.wustl.edu)) or Bay 3 ([bay3-users@npg.wustl.edu](mailto:bay3-users@npg.wustl.edu)) list (whichever scanner the time you are releasing is on) so others can pick up the time!!
4. Once you have the calendar days and times → FIGURE OUT WHAT STUDY is going to use the slots – in general if the scan slot is from 3pm – 9pm we have the first subject arrive a half hour early and have the subjects overlap by a half hour or 15 minutes depending on the study
5. Once you know the times you have know what study you are running in those times → email Carol McKenna [cmckenna@artsci.wustl.edu](mailto:cmckenna@artsci.wustl.edu)
  - d. SHE NEEDS AT LEAST 2 WEEKS NOTICE TO FILL A SLOT
  - e. Fill out a New MR Study Form (form can be found in “fMRI Subject Scheduling” folder in RA Info) and email to Carol M. for each subject slot she will need to know Date (include day and date), arrival time and estimated departure time
  - f. Fill out an excel sheet to give to Carol M. that contains the following columns (NP #, PI, date of scan, day of scan, time of scan (arrival time through estimated departure time) – Carol M. will then add the following information to the excel sheet and will send it back to you once she’s done filling the slots (Name of participant, phone, email, S.S.#, birth date, age, gender, race, weight, and handedness) – this excel sheet can be found in the “fMRI Subject Scheduling” folder in RA Info
6. Once you receive the subject sheet that contains everything you need to know about the subjects for the scan, keep it LOCKED UP at all times except when it is with you for a scan – Carol will often update these sheets so always make sure that you shred the OLD ONE
7. A few days prior to the scan Carol will send out a confirmation email which she will copy to you → once the subject confirms she will forward you their confirmation

Information contained in Confirmation email to subject from Carol M.

~~~~~  
HI 'subject',

?

Please REPLY to this message to confirm that you will keep your appointment.

?

You have the appointment on 06/13 at 12:30 p.m. At that time you will need to meet the researcher in the waiting room of the East Building. I have enclosed instructions and directions for you below.

?

We ask you to not have any caffeine on the day of your scan. Please also do not take any Tylenol or aspirin on the day of your scan.? If you have contacts, wear them, if not, bring your eye prescription.? Wear something comfortable - but no zippers or snaps on your top.? Zippers on pants are fine.

?

At 12:30 p.m. you will need to be in the waiting room of the East Building located at 4525 Scott Ave.? There is no receptionist so just have a seat and the researchers will come out to meet you. If your appointment is on the weekend or on a weeknight after 6:00 pm the front doors may be locked. Someone will meet you at the front doors and let you in.? Directions are below:

Coming from the Hilltop Campus, take Forsyth to Skinker. Turn LEFT onto Skinker. Turn RIGHT onto Lindell. Turn RIGHT onto West Pine. Turn RIGHT onto Kingshighway. Turn LEFT onto Forest Park Parkway.? You'll cross over Euclid. Turn RIGHT onto Taylor Ave.? After going through several stop signs you'll cross the tracks of the Metrolink.? As soon as you cross the tracks, the East Building is on your RIGHT on Scott. Turn RIGHT on McKinley. The parking facility is located on Taylor and McKinley. Turn right into the parking lot and stop at the gate. To raise the gate, you will need to press the button and say, ^?I am a patient for a study in radiology.^? The same procedure should be followed when you exit the parking facility. You will exit onto Scott.? There are two parking spots you may use.? One spot will be labeled ^?PET/MR Patients^? and one spot will be labeled ^?Dr. Raichle^?s Patients^?. If you drive and park on the street, the meters run until 7 p.m.

Go up the 10+ steps leading up to the revolving glass doors (main entrance) and the first door on your RIGHT leads into the waiting room.? There is no receptionist, so please just have a seat and wait for the researcher to come out and meet you. If you take the shuttle get out at the end station (you will see the glass green-tinted windows of the East Building while on Taylor). From Taylor the shuttle takes a right onto McKinley.? There is a large parking lot next to, east, of the circle drive.? Go into the parking lot and then go left (north) next to a large brown building to Scott Ave.? The East Building is directly ahead. It has large, green windows.? Address 4525 Scott Ave. If you have any questions before your scan just call or email me. It is very important that you keep your appointment and arrive on time. Please do not be late.

## PROCESSING SCAN PAPERWORK

1. Make a study folder in the general filing cabinets (separated by PI and study approval date)!! DO NOT put your study folder in a filing cabinet other than the general ones for Barch or Braver – this way Carol Cox can always find a study!!!
  - a. Label a green hanging folder with the following information:
    - i. PI
    - ii. Study Number (on consent form)
    - iii. Approval Date
    - iv. Study name
  - b. In the green folder, put in 3 manila folders (1 for consent forms and MR screening forms – stapled together, 1 for race/gender forms, and 1 for copied check request forms for Carol Cox)
2. You should come away from each scan with the following paperwork:
  - a. SIGNED consent form
  - b. Completed MR screening form, race/gender form, check request form
  - c. Print out of the subjects brain
  - d. Completed Read-Me
3. Put the brain print out and the Read-Me in a plastic sleeve in the binder
4. Fill out the check request form.... Calculate payment \$25/hour – within reason round to the half-hour
  - a. If both the “I am a Washington University employee” and “I am a non-resident alien...” boxes are checked on the check request form, you’ll need to have the participant fill out the FORM 8233 TAX EXEMPT NRA and turn this tax form in with payment form to Vicki (this tax exempt form can be found in the “Processing Scan Paperwork” folder in RA Info.
5. make ONE copy of the consent form, MR screening form and race/gender form
6. make ONE copy of the completed payment form
7. give the ORIGINAL reimbursement form to Vicki
8. Put the original consent, original MR screening form, original race/gender form, and copied payment form in their designated folders in the created study folder in the lab
9. In manilla folder with the tab on the right-hand side (not a folder with the tab on top!) put: the originals of the consent, MR screening, and race/gender – label the side tab with the VC# or AB#

## PREPARING FOR A NEW fMRI STUDY

**1. New WUMC IRB submission** – see Carol Cox about filling out the necessary paperwork for a Med School study – be sure to include an questionnaire being used (no need to include the usual MRI paperwork – ie demographics, race gender, mr screening)

**2. Once you have the IRB approval back** – have the person heading up the study fill out or give you the necessary information to fill out the MR protocol form – refer to instructions to help you with this process

- [www.nil.wustl.edu](http://www.nil.wustl.edu)
- select RIIS system
- select Initial Protocol Entry
- complete the application (note: if Todd is the PI and you save a draft the only person who can access the saved draft is Todd – best to just complete the form and submit it rather than saving it in progress)

**3. The NIL protocol entry will take a few weeks to get back.** Once it has been approved you will get an NP# from Karen Klump. Once you (or Todd) receives that number you have to let Karen know who is going to have access to that NP# to run scans.

-- if you ever run out of ‘money’ on the NP# (when you generate an access code the funds are negative) just have Todd email Karen and authorize more funds to be used – this is not real money (the scan bills are still generated separately) – the fund amount listed with the NP# is simply the amount of money on paper that is allowed to be used for the study.

-- any questions regarding scan charges should be directed to Karen Klump at karen@npg.wustl.edu (make sure and cc Carol Cox on all emails regarding scan charges!)

### **4. Prepare scripts for the scanner (Mac/Sync Pulse)**

**5. Set up a binder** that contains copies of the approved/stamped consent form, race gender, MR screening, reimbursement. Also include a read-me, counterbalance sheet, instruction sheet, and scan procedures particular to the study. You may also want to include a few cab vouchers (can get these from Vicki) just in case!

-- The above forms can be found in the “Pre-Scan Prep” folder in RA Info

**6. Directions to the East Building** can be found in the “Preparing for a new fMRI study” folder in RA Info (document is called “MRI Directions”). Carol McKenna will give every participant that she schedules a map to the East Building; however, you may need to send these directions to a subjects who lost Carol McKenna’s directions or are confused on the directions they were sent.

7. A map of the East Building parking lot (where fMRI subjects are told to park) can be found in the “Preparing for a new fMRI study” folder in RA Info. You can give this map to subjects if it’s their first time to a scan or if they are confused about where to park.
- a. Subjects must park in parking spots labeled “Radiology”
  - b. To reserve a parking spot during the time of your scan, email Cathy at [mri@npg.wustl.edu](mailto:mri@npg.wustl.edu) over at the East Building (she also does all of the scanning scheduling)
  - c. Refer to fMRI Subject Scheduling on p. 5 of this document for more on scheduling scan slots with Cathy

# **RUNNING THE fMRI MACHINES**

## **Setting up the fMRI room:**

1. Make sure you have removed all metal BEFORE entering the scanner room to set-up!!
2. To set up the bed, do the following (linens can be found in the scanner room in Bay 2 and outside of the scanner room in Bay 3):
  - a. Cover the mattress on the scanner bed with a sheet
  - b. Cover a head pillow with a pillow case (can be found either in a drawer or on a shelf in the scanner room)
  - c. Place a towel across the bed for back support and a towel across the shoulder cups for padding (shoulder cups are only in Bay 2)
  - d. Place earplugs and tape next to the scanner for easy access
  - e. Make sure headphones covers are over each headphone (covers can be found in drawer in scanner room)
  - f. Make sure the appropriate buttons on the button box are uncovered (and the ones that you are not using are covered!) – you can find the different covers for the Bay 2 button box in the control room between Bay 2 and Bay 3
  - g. Make sure you have a blanket available for the participant in case they would like one
  - h. Place the mirror on the head coil (mirror can be found on a shelf in both Bays)
  - i. Turn the projector on so it can warm up (Behind the machine is a wooden box, open the door to the box to get to the projector, turn the projector on by pushing the “ON/OFF” button located on top of the projector – (I believe they cover it with tape to help identify the correct button...so feel for the tape)
  - j. Make sure the projector screen is set up behind the scanner according to the tape marks
  - k. Once the projector has warmed up, put up a test screen to test that the image is located in the center of the screen (leave the test screen up while you are putting the participant in the scanner)
  - l. In Bay 3, have gloves ready to give to the participant

## **Greeting participant / Paperwork:**

1. Greet the participant in the lobby of the East Building
2. Have the participant fill out a consent form, MR screening form, demographics form, and check request form
  - a. Consent form – It’s extremely important that you go over the information on the consent form with the participant – make sure they understand the risks, what they are being asked to do, payment, confidentiality, etc.
  - b. MR Screening form – Make sure the participant understands the importance of being truthful on the screening form – tell them to go over each and every item very carefully (If you have any doubts about something that is checked on a screening form, call the tech and verify that it’s safe to put the participant in the scanner)
  - c. Check request form – make sure they fill out their address and S.S.# otherwise Vicki will not issue the payment form! You will want to explain that it usually take about a week to process the check request form.

- d. Demographics form – make sure the participant fills out the demo form
- e. All forms can be found in the “Pre-Scan Prep” folder in RA Info

**Putting the participant in the scanner:**

1. Make sure the participant has removed ALL metal and has used the restroom before entering the scanner room!!!
2. Ask the participant to lie down with their shoulders in the shoulder cups (in Bay 2) or with their shoulders touching the base of the head device (in Bay 3)
3. Make sure the towel is positioned comfortably under the participant’s lower back
4. Place the big leg pillow under the participant’s lower legs for more back support
5. Cover the participant with a blanket
6. Have the participant put the headphones on – they can adjust them however they’d like
7. Once the participant is positioned as close to the head device as possible, fill in any empty space between the outside of the headphones and sides of head device with wash clothes (you want their head to be packed in tightly but not so tight that it’s uncomfortable to them)
8. Place the head coil over the participant’s head – make sure it locks into place (check the screen on the scanner to see if the coil has registered)
9. Adjust the mirror in front of the participant’s eyes - make sure they can see the test screen well (try and make the test screen in the center of their field of vision)
10. Place a thin strip of tape across the participant’s forehead (you can put it sticky side up so that it doesn’t actually stick to them but only acts as a reminder to stay still) – attach the tape to the sides of the head coil
11. Hand the participant the button box – place the appropriate fingers over the appropriate buttons
12. Before putting the participant into the scanner, go over the importance of staying still during the entire scan!
13. If the participant is ready, you can move them into the scanner – once they are all the way in the scanner, check to see that they are ok! - If they are ok, you can now go into the control room
14. Once you’re back in the control room, immediately talk to the participant through the headphones – verify that they can hear you (adjust volume if needed) and explain how you’re going to get everything set-up before you actually start scanning
15. Log into the scanner – once you’re ready to start the first scan make sure and warn the person!!!

**Cleaning up:**

1. Put all of the used linens in the linen hamper outside of the Bay
2. Return the head coil, mirror, tape, etc. to the drawer or shelf where you got them
3. Turn off the projector!!!

**Running the machines:**

1. Refer to the Bay 2 or Bay 3 manuals which can be found in the “Additional Information” folder under “Scanning Procedures” in RA Info

## PREPARING FOR A NEW BEHAVIORAL STUDY

1. **Note** – We typically don't use Hilltop IRBs anymore because they are so difficult to obtain and take too long. If possible, do a med school IRB instead.
2. **New Hilltop HSC submission**— see Carol Cox for assistance with submitting a behavioral IRB – make sure that you submit a flier with the paperwork (even if it is not going to be used) and also make sure that if there is any chance that you will run the study for both pay and credit that that information goes in the original submission (so you do not have to modify it just for that).
3. **Prepare the scanner scripts** and pilot the scripts using lab members
4. **Create the experiment on the website** – and make sure that anyone who is going to be involved in running subjects has gone through the proper training for dealing with human subjects (ie the IRB module through the hilltop campus and if necessary HIPPA training)
5. **MAKE SURE YOU COLLECT DEMOGRAPHIC INFO ON BEHAVIORAL SUBJECTS!!!!** (a copy of the demo form can be found in the **RA Information folder or on the CCP website**) – race, ethnicity, gender, age and handedness
6. **For other questions concerning the subject pool** – refer to the document “Overview for Users of the Washington University Psychology Department Subject Pool” which can be obtained from Carol Cox.
7. A map to the Psychology Building on the Danforth campus (document is named “Map\_PsychBuilding”) can be found in the “Preparing for a new Behavioral study” folder in RA Info. You may give this map to a participant that is unfamiliar with how to get to the Psychology Building.
8. **Parking Passes** - Parking passes can be obtained from Jackie Turner by filling out a parking permit request (called “Parking Pass Request Form” and can be found in the “Preparing for a new Behavioral Study” folder in RA Info) – paper copies of this form can be found in the bottom drawer of the filing cabinet by the RA desks
  - Make sure a fund # is written on the back of the permit (if a fund number isn't written on the back and you are unsure what it should be, ask Carol Cox)
  - Do not reuse parking passes
  - Make sure and turn each parking pass back in to Jackie once you are finished using it
10. **Behavioral Payment Vouchers** – All behavioral payment vouchers must be turned in/redeemed before 3pm Mon-Fri by Jackie Turner.
  - Red payment vouchers are kept in the bottom drawer of the filing cabinet by the RA desks – if we run out you can get more from Jim Clancy
  - You can check money out ahead of time but make sure and turn in the filled out payment forms to Jackie to get your name clears of having money checked out – do this in a timely manner!

## IRB TIPS

1. To participate in human subject protocols, you must complete the CITI certification – see Carol Cox for details and set up.
  - a. Please print your CITI certification to be kept on file in the lab
2. Once you have completed the CITI certification, you will be entered into the eIRB system
3. You must be added as a member of the research team before you are able to conduct research studies or consent participants!
4. If you are creating a new study, please see Carol Cox for details
5. The current HRPO templates can be found at <http://hrpohome.wustl.edu>
6. To enter the eIRB system, you must first login with your WUSTL key and password

## **EXPERIMETRIX**

## CREATING A NEW EXPERIMETRIX EXPERIMENT:

1. Once your IRB has been approved, you'll need to send an email to Alan Lambert requesting an experimetrix login and password for a new study – include the pdf files of the following (don't give him paper copies of these – he doesn't like that!!!)
  - Approved IRB cover sheet (with stamp), with faculty listed as PI
  - Written debriefing
2. He will then email you a login and password for a new study
3. Tip – DO NOT EMAIL HIM TO ASK HIM HOW TO GET A LOGIN AND PASSWORD. IT WILL MAKE HIM ANGRY!
4. Go to the Experimetrix Website: <https://experimetrix2.com/WU/>
5. Go to Experimenter Area and login with your new login and password
6. To insert information about your experiment (guidelines, description, exclusions, etc.), go to *Edit Header* on the Experimenter Options page
7. Under *Edit Header*:
  - Choose *Regular Experiment* in the first box
  - If the participant can be paid for their time, check the box under *Payment Options* and insert the amount and fund number – check with Carol C. about the fund number (if the study is for credit only, don't check the box under *Payment Options*)
  - Fill in:
    1. Faculty Supervisor
    2. Experimenter
    3. Location of Study (be specific)
    4. Selection Criteria (ex. 18-40 yrs old for young adult study, native English speaker, right-handed, etc.)
    5. Credit
    6. Session Duration (overestimate)
    7. Cancellation Contact/Phone Number/Email
    8. Description of Experiment : Ex.) During this experiment you will be asked to perform a working memory task while receiving liquids (juice and salt water) through tubes. Be aware that you will get salt water during the experiment. Following the task, you will be asked to complete a few short questionnaires. A VERY IMPORTANT PART OF THIS STUDY IS THAT IT REQUIRES THAT YOU DO NOT DRINK ANY FLUIDS 3 HOURS PRIOR TO PARTICIPATING! IF YOU DRINK FLUIDS LESS THAN 3 HOURS PRIOR TO YOUR SESSION YOU WILL BE TURNED AWAY. You must not have food allergies to any ingredients in apple juice, salt, or distilled water. The study will take approximate 1.5 hours and participants will be paid \$10/hour for their participation. Course credit is not offered.
    9. When you are ready to display the experiment to the student body, check the box at the very top of the page “Display Experiment to Students”

8. To add sessions, go back to the Experimenter Options page and click on *Add New Sessions*
  - Under *Add New Sessions*, you can view the current schedule to double check the times you are posting
9. To view your schedule, go back to the Experimenter Options page and click on *View Schedule >> Future: Available*
  - Under *View Schedule*, you can:
    1. Check subjects that have signed up for your experiment by choosing *Future: Taken*
    2. Check subjects that need to be assigned credit or payment by choosing *Past: Awaiting credit or penalty* (here is where you can penalize someone who didn't show up to their scheduled experiment)
    3. Check subjects that have already been assigned credit or payment by choosing *Past: Already assigned credit or penalty*
10. For additional questions regarding *Experimetrix*, refer to the *Experimenter Guide* in the "Experimetrix" folder under *RA Info* – the guide can also be found in the bottom drawer of the filing cabinet by the *RA desks*

## **RUNNING AN OLDER ADULT STUDY**

### **SCHEDULING**

1. Go to <http://artsci.wustl.edu/~psych/>
2. On the right side, under the red Experiment Signup header, click on the Older Volunteer Pool link. Fill out the form and submit it.
3. When you receive an response from Lily Beck, e-mail her a copy of the IRB approval (cover letter and consent form) at [beckml@wustl.edu](mailto:beckml@wustl.edu).
4. Follow the phone script that is approved by the IRB when you are calling the older adults for scheduling
  - a. Make sure and ask them what kind of car they will be driving, so that you can recognize them when you are meeting them downstairs.
5. It is always a good idea to call your participants the day before their appointment just to remind them that they are supposed to come in.
6. Be sure to fill out a Parking Request form and obtain a parking permit for each participant. Do not reuse parking permits. You can get parking permits from Jackie, and then return them to her after they have been used.
7. Wait for older subjects outside. It is usually a good idea to be there 15 minutes before their appointment time, as they tend to arrive early.
8. If you are running subjects on the weekends or before 8am, you will need to get building access on your employee ID card. See Carol Cox and Cheri Casanova (her office is downstairs across from the mail room).
9. Remember - All payment vouchers must be turned in before 3pm Mon-Fri. You can also check money out ahead of time, but you have to get the proper authorization from Carol Cox first.

## **OBTAINING SCANNER LOGINS/PASSWORDS**

## VPN/UNIX/RIIS

1. You will need a VPN and UNIX login and password for the following reasons:
  - a. To log on to the PC computers in Bay 2 and Bay 3
  - b. To log on to Petsun to get parameters while scanning on Bay 2
2. You will need a RIIS login and password to log on to the scanners in Bay 2 and Bay 3
3. To get these login/passwords, you will need to email or fax an Access Code form to Matt Hicks over at the East Building ([matt@npg.wustl.edu](mailto:matt@npg.wustl.edu); fax: 362-2039).
  - a. The Access Code form can be found in the “Obtaining scanner logins/passwords” folder in RA Info
4. To fill the Access Code form, following the instructions below:
  - a. Fill out the top 2 boxes
  - b. For Account Request Type (box #3), check New Account and enter a start date
  - c. For Requesting Accounts From (box #4), check Neuroimaging Laboratories (NIL)
  - d. Make sure you’ve completed the HIPAA training, once you’ve done this check Yes in box #5
  - e. Now, skip down to Section C (don’t worry filling anything out between box #5 and Section C)
  - f. In Section C – NIL Detailed Account Request, check UNIX login (for petsun), VPN, and RIIS.
  - g. Skip the last 2 boxes
  - h. Have Todd or Deanna (depending on who you’re working under) sign by Approval name and signature
  - i. Fax or email the completed form to Matt Hicks who will then email you your login information

## IAC

1. Email Stuart at [sg@iacmail.wustl.edu](mailto:sg@iacmail.wustl.edu) and give him the login name for the new account and he will set it up and give you a password.
2. Refer to the “Obtaining scanner logins/passwords” folder in RA Info for Unix command help sheets!

## VNC

1. To log in to VNCServer, use your IAC password.

## IAC

## Uploading Data

1. After running a behavioral study or after a scan – the psyscope or e-prime data should be uploaded to IAC
  - a. Have data files (as text files) saved on to a thumb drive (should always have data backed up in multiple places!!!!)
  - b. Launch Fetch
  - c. Host will be whatever location you want to connect to (e.g. iac11.wustl.edu)
  - d. UserID is your login and Password is your password
2. Once you connect to IAC just navigate to the correct directory – click on directories and select change directory – then type in the path that you want to navigate to
3. If you need to make a new directory for a new study (make sure you're in the directory that you want your study to be located in) – click on directories and make a new directory – then type in the name of the new directory
4. Once there just drag and drop the files you want to upload into the fetch window
5. Check to make sure that the transfer was successful by logging into IAC and looking for the new files

RELATED TO THIS:

## **SENDING/RECEIVING EMAIL ATTACHMENTS W/PINE**

1. TO SEND AN ATTACHMENT
  - a. Launch fetch, use artsci.wustl.edu as the host and your login and username for artsci to log in – this will put you in your home directory – you do not need to change directory or anything, just drag and drop files
  - b. Within your email – go to the attachment line and hit cntrl+J and then cntrl+T – this will allow you to highlight the appropriate file to attach
2. TO RETRIEVE AN ATTACHMENT
  - a. Use S within artsci to save the attachment
  - b. Launch fetch to artsci.wustl.edu
  - c. Drag files off artsci onto your desktop (this just makes a copy so the file will remain in your home artsci account until you delete it)

# PETSUN AND ARCHIVING

## PETSUN

### Accessing Petsun (for Bay 2) from Hilltop campus

1. open X11 terminal
2. type `ssh -l VPNusername light`
  - if this doesn't work, telnet to iac first, login, then type `ssh -l VPNusername light`
3. type VPN password
4. type `cd /data/petsun24/data1/tbraver`
5. type `ls` (to view the directories currently on petsun)

### Data Transfer from Petsun to IAC11

1. follow above instructions for accessing Petsun
2. type `cd /vcXXXXX/vcXXXXX_rawdata`
3. type `ftp iac11`
4. enter you username and password
5. navigate to correct directory on IAC11 where you want to put data (e.g. `/data/iac11/spaceX/ccp/XXX/vcXXXXX/vcXXXXX_rawdata`)
6. type `mput XXX*` (Xs here being the image number that you want to transfer)
7. type `quit`
8. telnet to iac11 to check and make sure all the data you wanted is there
9. login using your IAC username and password
10. navigate to the correct location
11. type `mr`
12. if the correct data is not listed, redo this procedure

## PREPROCESSING fMRI DATA

1. You first want to log in to IAC and make sure there is a preprocessing script in the study directory of the subject's whose data needs preprocessed:
  - a. A Bay 2 preprocessing script called "preprocessing\_script" can be copied from the following directory:  
`/data/iac12/space14/ccp/Behemoth/Attention/Scanning/`
  - b. A Bay 3 preprocessing script called "preprocessing\_script" can be copied from the following directory: `/data/iac12/space13/ccp/KIM/EmotAXCPT/`
2. Copy the preprocessing\_script for the scanner used in the current study into your study's directory (the location where each subject's data is located) so it'll be there for every subject
3. Copy the preprocessing\_script into your subject's directory and rename it something specific to that subject
4. Once the preprocessing script is in your subject's directory, type `emacs abxxxxx_script` (or whatever you renamed the script to)
  - a. if you get an error after this command, try exiting out of your terminal window and logging back in.
  - b. if this still doesn't work, log in to IAC through VNCViewer and type `dtpad`

*abxxxxx\_script* instead of *emacs abxxxxx\_script*

5. Once a window pops up that allows you to edit the script (either through emacs or dtpad), you'll want to change the following information in the script:
  - a. Change "dcmroot" and "patid" to the correct subject number (ex. abxxxxx)
  - b. Change "mprs" to the High-Resolution MP-Rage scan # (i.e. refer to the read-me here – usually the High-Res MP-Rage scan number is 3)
  - c. Change "tse" to the T2 scan # (i.e. again refer to the read-me – usually the T2 scan number is 4)
  - d. Make sure all of the sequence numbers are correct (i.e. the bold numbers match the correct scan numbers)
  - e. Save by hitting control x, control s
  - f. Exit by hitting control x, control c
6. You are now ready to run the script (the process of running the script usually takes approx. 3 hours)
7. To start running the script, type *abxxxxx\_script >& abxxxxx.log &* and hit enter (make sure the your subject number goes where abxxxxx is in the command line)
8. To make sure it's running correctly, type *top* and hit enter...you should see your script running (if you don't you did something wrong)
9. When the script is done running, the following directories should be seen in the subject's directory:
  - a. abxxxxx.log
  - b. abxxxxx\_xr3d.lst
  - c. atlas
  - d. movement
  - e. bold1 – boldx (depending on how many bolds the person had)
10. Sometimes the scripts will put some of the subject's atlas information in the bold directories instead of the atlas directory, you can check this by going in to the atlas directory and checking for files that end in *atl.4dfp.img/img.rec/hdr*. If you cannot find any with atl, then you'll need to move the atlas files from the bold directories into the atlas directory, do this by typing the following command (make sure you're in the subject's directory when you type it):  
*mv bold\*/ab\*b\*?\*falndbnd\_xr3d\_atl.4dfp.\* atlas*
11. To run Quality Control, follow these steps:
  - a. Make a directory called QC DATA in the subject's directory
  - b. Go into the first Bold directory
  - c. Type *stackfix\_4dfp -skip 4 -noout -mean -i abxxxxx\_b1\_faln\_dbnd\_xr3d\_norm* (this will run a QC report)
  - d. When the QC report is done running, type *mv \*report\* ../QC DATA*
  - e. Follow these same steps again but now for Bold 2 (in this case you will replace the b1 with b2 in the QC command and type *stackfix\_4dfp -skip 4 -noout -mean -i abxxxxx\_b2\_faln\_dbnd\_xr3d\_norm*

## ARCHIVING

### 1. Tarring

1. open terminal
2. type `ssh -X -l username iac11.wustl.edu`
3. enter your password
4. navigate to correct directory on IAC11 where you want to tar data
  - a. type `cd /data/iac11/spaceX/ccp/STUDYNAME/vcXXXXX`
5. type `tar cvf STUDYNAME.vcXXXXX.raw.tar vcXXXXX_rawdata`
6. file will tar and then type `du -k` and record rawdata file size (first item on list, usually around 130,000)

### 2. Fetching

1. open Fetch window
2. enter `iac11` for "Host"
3. enter your username for "User ID"
4. enter your password for "Password"
  - a. this will bring you into your home directory
5. in the top scroll bar where it says your username, scroll down to and click on the bottom option, which is only a slash symbol (/)
6. in the new window list double click on "data"
7. double click on "iac11"
8. double click on "spaceX", which ever space the data you're looking for is in
9. double click on "ccp"
10. double click on the folder with your study's data
11. double click on the subject number for which you are have tarred and are archiving the data
12. drag the tarred data file (`STUDYNAME.vcXXXXX.raw.tar`) to the desktop
13. do this for each subject you are going to burn to a cd to save (about 3 to a disk)

### 3. Burn to CD

1. open disk drive with open/close button on top right corner of keypad on keyboard
2. place a blank cd in the drive
3. close drive with open/close button and wait for desktop to register a blank disk
4. double click on blank disk icon on desktop
5. name the disk with subject numbers (e.g. `vcXXXXX`, `vcXXXXX`, `vcXXXXX`)
6. highlight and drag 3 tarred files from desktop into the window for blank disk and wait for them to copy over (if 3 don't fit try 2)
7. click on the burn symbol near the upper, left side of the window to burn the cd
8. when it's finished, take cd out with open/close button or by dragging the cd icon to the trashcan
9. use a sharpie to write the study name and subject numbers on the disk
10. store cd in binder with others
11. burn a second cd the same way and store somewhere other than Psych building

#### 4. Remove Tarred File from IAC

1. open terminal
2. type `ssh -X -l username iac11.wustl.edu`
3. enter your password
4. navigate to correct directory on IAC11 where you want to remove tarred file
  - a. type `cd /data/iac11/spaceX/ccp/STUDYNAME/vcXXXXX`
5. type `rm filename` (filename will look like this: `STUDYNAME.vcXXXXX.raw.tar`)

#### 5. Remove Directory from Petsun

1. open terminal
2. type `ssh -l tbraver light`
  - a. if this doesn't work, telnet to iac first, login, then type `ssh -l tbraver light`
3. type password `tmpwd4db`
4. type `cd /data/petsun24/data1/tbraver`
5. type `ls` (to view the directories currently on petsun)
6. type `/usr/bin/rm -R vcXXXXX`
  - a. this will remove the directory and anything contained within it (including images and sub-directories)
  - b. delete the directory for any subject whose data has been archived
  - c. DO NOT leave more than 5 subjects' directories for any study on Petsun
  - d. BE VERY CAREFUL WHEN DELETING DIRECTORIES THAT YOU DO NOT REMOVE THE WRONG DATA!!!!!!

## USING THE CNDA

1. Once you've finished scanning a participant, you need to upload all of the scans on to the CNDA
  - a. Do NOT send individual scans in pieces, instead you want to send the scan as a whole once you've taken the participant out of the scanner
  - b. To send the entire subject's scan, highlight the subject's ab folder in the browser window on the scanner computer (so that all of the scans are included)
  - c. Go to Transfer → Send to → CNDA → Send
2. Once the scan has been sent to the CNDA, you'll need to archive the scan when you get back to the lab
  - a. Open VPNClient and Connect using your VPN login
  - b. Open the Internet and go to the CNDA site (<http://cnda.neuroimage.wustl.edu>) and log in
  - c. Once you're logged in, click "View Prearchive"
  - d. Click the "+" next to the scan date to see all of the scans that were conducted that day
  - e. Click "archive" next to the scan you want to archive
  - f. Select Project, Stabilizer, Investigator, and enter initials of those who conducted scan under Operator
    - If you project is not listed under Project, choose the CUSTOM option and enter the name of your project (ex. NP804) in the box on the right. Once you've done this, your project name will then appear in the drop down list for all future archives
      - a. For step 2, choose "create new subject"
      - b. Enter abxxxxx (or whatever your scan is labeled as) in the lab ID space
      - c. Enter NPxxx under Name
      - d. Enter birthday, gender, handedness, and any other information you want
        - If you need to distinguish between a control and a patient, enter this under Cohort
      - e. Enter Investigator
      - f. Scans will then appear below
      - g. Make sure that each box actually shows the scan that took place at that time
      - h. Mark every scan as usable, unusable, etc. – add notes next to scans if needed (ex. bold vs. trigger test)
      - i. Enter any additional notes you may have in Step 4 and click Submit
      - j. Will show "active processes", meaning that your scan is in the process of being archived – you will receive email notification once it's done archiving (the email will tell you if the archive was successful)

3. To check quality control
  - a. After your scan has been successfully archived, click on “MR Session” on your home CNDA page to view your archived scans
  - b. Click on the notebook next to the scan you want to look at
  - c. To view the image associated with each scan, click the “+” next to each scan
  
4. For more information on the CNDA or CNDABeta, contact Dan Marcus at [dmarcus@npg.wustl.edu](mailto:dmarcus@npg.wustl.edu).

# PSYSCOPE

Reference “Pyscope\_Manual” located in the “Pyscope” folder in “RA Info”

## GETTING BUTTON BOXES TO WORK PROPERLY:

1. Check the computers extensions
  - a. Select Control Panels from the Apple menu (top right of desktop screen)
  - b. Within Control Panels select Extensions Manager -- Pyscope settings must be selected - (all 4 computers have an option called Pyscope or Pyscope settings)
  - c. Dorsal also has a Pyscope and Quicktime option which is only necessary when quicktime movies or images are part of your scripts-- If the Pyscope settings are not selected already (if someone networked the computer to get data off or something like that), select the pyscope settings and restart the computer
2. Open your pyscope script and test the button box
  - a. Select Experiment from the top tool bar and then Test Bbox
  - b. Within the BBox tester you will see how the button box is connected to the computer - either via modem port or printer port
    - VENTRAL, SMA and PUTAMEN SMA all run through a keyspan adapter off the PRINTER port
    - DORSAL runs off the MODEM port
3. Click 'test button box' and it should indicate that it is successfully connected - all three buttons light up and you are able to hit a button and see the response on the screen.

### IF TEST BUTTON BOX FAILS - TRY THE FOLLOWING:

(\*note: we all know that pyscope is picky so if you change something or unplug something per the instructions below always quit pyscope and relaunch it before testing the button box again)

1. Press any one of the three buttons on the box and hold it down for 5 seconds - this should cause one of the lights on the bbox to turn on.

If you do not get a light that means that the adapter plugged into the wall is the problem and the bbox is not getting any power.

  - Unplug it from the wall and plug it in a different outlet - also unplug the adapter from the button box and plug it back in
  - If you still fail to get a light, find another adapter from a different button box and use that.
2. If you are sure that the button box is getting power and the cable connecting the bbox to the computer is plugged in AND IT STILL DOES NOTWORK
  - go back into the test bbox within pyscope and change the port from modem to printer and click test bbox - this will fail

(and say it is disconnected)

- then change it back to modem and test it again -- usually that is enough to make it work.

3. If you are still having trouble, make sure all the settings are correct (extensions and modem/printer port) and all cables are correctly plugged in and restart the computer - for some unknown reason that sometimes works when all else fails.

### **GETTING AROUND PSYSCOPE ERRORS:**

If you run a script and it gives you an error – before you worry about it, try the built in hack to get around it.

- when the error screen appears hold down the control key and the apple key and click the hand icon with the mouse
- then click okay
  - i. if this hack works then it is not something that you really have to worry about effecting your stimuli presentation or the collection of data
  - ii. if the hack does not work then you have to play with the script to figure out what might be going wrong

### **THE EXCEPTION!!!!**

**do not use this hack with Psyscope for OS10!!! It will crash the screen (block parts of it out black and freeze the machine)**

## **E-PRIME**

1. Electronic E-Prime Manuals can be found in the “E-Prime” folder in RA Info – a hard copy of the manual can be found in a blue binder on top of the main filing cabinet across from 338A/B (it’s labeled “E-Prime”).
2. To install E-Prime 2.0 Professional on a PC, first make sure any other version of 2.0 is uninstalled before trying to install Professional. Next, install 2.0 Professional from the website and not from one of our E-Prime 2.0 disks (the disks have an older version on them which will cause problems)!
3. If you are going to make a new script or alter an old one you need an E-prime dongle key (a special USB key):
  - a. We have 5 E-prime dongle keys that float around the lab - to check one out you need to get the red E-prime binder above Carol Cox’s desk and enter your name, date, and the # on the key you’re checking out. **IT’S VERY IMPORTANT TO SIGN YOUR NAME SO PEOPLE KNOW WHO HAS EACH KEY**
4. Once you have ran a script one time, it will generate an E-Run icon in the study folder – you then only need to click on the E-Run icon to run the script (and will no longer need a dongle key to run the script)
5. To alter E-Prime data files:
  - a. Open the data file so you can view all of the data columns
  - b. Click on the icon to “arrange columns” – this will let you remove any columns you don’t want
  - c. Go to File, Export – Select the kind of text file you would like the file to be (ex. Excel text, text, etc.) – Enter something for missing data – click ok
  - d. Name the new file and save it – you can now upload this text file on to iac

### **E-Prime Button Boxes for the Scanner:**

1. If you need a button box that is wired for the scanner, one is usually kept in the front pocket of the PC laptop bag (this is the laptop that is used for scanning with E-Prime).
  - a. There are 2 cords attached to the back of scanner E-Prime button boxes, one that plugs directly into the Fran box at the scanner and the other that plugs directly into the back of the PC laptop.
3. If you need to have another E-Prime button box wired so that it’s compatible with the scanner, contact Gavin Perry at [gavin@pcg.wustl.edu](mailto:gavin@pcg.wustl.edu) or 314-362-2595. Gavin works in the Electronics Shop on the Medical campus at 4566 Scott Ave.

## **RUNNING JUICE EXPERIMENTS:**

1. Refer to the “Juice Experiment Protocol” which can be found in the “Running Juice Experiments” folder in RA Info for additional information

### **Ordering Supplies:**

1. The following supplies are needed to run a juice experiment:
  - Juice pumps (3 juice pumps are kept at the scanner labeled as apple, orange, and water)
  - Custom cable for connecting pumps to computer
  - Syringes (40/box)
  - Tubing (50 ft/box)
  - 3-way stop cocks (10/bag)
  - Male and female leurs (25/bag)
  - Autoclaving bags / tape
  - Juice
  - Other solutions (salt water, neutral solution)
2. Make a list of how many syringes, stop cocks, leurs, autoclaving bags, and how much tubing and tape you will need and give to Carol Cox who will then place the order
  - Be aware that tubing is usually back-ordered...so order early!
3. You will need to purchase the juice and any other supplies you will need (ex. distilled water for solutions, salt, plastic cups, alcohol wipes for cleaning tubing, etc).
  - Bring “Exemption from Sales Tax Form” (can be found in the “Extras” folder in RA Info) to the store so you are not charged tax – if you are charged sales tax, you will not be reimbursed for the sales tax
  - Give receipt to Carol Cox - she will then get you reimbursed

### **Setting up with Psyscope Script:**

1. To have the juice pump trigger in a Psyscope script, do the following:
  - a. You can trigger a certain juice pump by entering a specific number in your script for the scanner to read. The following numbers correspond to the following pumps:
    - i. Apple pump = 32
    - ii. Orange pump = 64
    - iii. Neutral pump = 16

\*\*If you have the number 32 entered in your script during a certain event, that event will trigger the release of liquid from the syringe in the apple

pump\*\*

- b. In your script, you will have a series of text events, delay intervals, responses, stimuli, etc. in a template (refer to Psyscope manual which can be found in the “Psyscope” folder in “RA Info”)
  - c. You will probably want to set the script up so that the liquid is delivered while feedback is on the screen (the feedback will be in the form of a text event in the template)
    - i. To have the juice pump trigger during the text event, do the following:
      1. Double click on the text event so that you can view the attributes window
      2. Go to “Event Attributes”
      3. Have “Actions” set to “Set To:”
      4. Set the “Conditions” to “Start [ ]”
      5. Set the “Actions” to “BBoxOut” – For BBoxOut, set “State” to the appropriate number (apple = 32, orange = 64, and water = 16) and “Mode” to “deassert\_mode”
2. Refer to Hannah Locke’s scripts as a further reference which can be found in the script archive on IAC under Hannah\_JuiceStudy.

### Setting up with E-Prime Script:

1. In your Epime script, you need to insert information directly into the script (not just at the gooey stage) in order to trigger the juice pumps:
  - a. You can trigger a certain juice pump by entering a specific port in your script for the scanner to read. The following ports correspond to the following pumps:
    - i. Apple pump = Port 5
    - ii. Orange pump = Port 3
    - iii. Water pump = Port 6
    - iv. No movement of ports = Port 7
2. Below is an insert taken from a script written by Stefanie Beck in which E-Prime triggered the juice pumps:
  - a. Notice how PortOut = x refers to the port number needed to trigger a specific juice pump

```
'Dim keyResp As Integer  
'Dim PortOut As Integer
```

```
'keyResp = BLDelay.RESP  
'If keyResp = 1 Then  
'    PortOut = 6
```

```
'ElseIf keyResp = 2 Then
  PortOut = 5
'ElseIf keyResp = 3 Then
  PortOut = 3
'End If

'WritePort &H378, PortOut
```

```
Dim PortOut As Integer
```

```
If c.GetAttrib("magn") = 0 Then
  PortOut = 7 'no movemnet
ElseIf c.GetAttrib("reward") = 1 Then
  PortOut = 6
Elseif c.GetAttrib("reward") = 2 and c.GetAttrib ("magn") = 1
Then
  PortOut = 5
Elseif c.GetAttrib("reward") = 2 and c.GetAttrib ("magn") = 2
Then
  PortOut = 3
Elseif c.GetAttrib("reward") = 3 and c.GetAttrib ("magn") = 1
Then
  PortOut = 5
Elseif c.GetAttrib("reward") = 3 and c.GetAttrib ("magn") = 2
Then
  PortOut = 3
Elseif c.GetAttrib("reward") = 4 Then
  PortOut = 7
End If
```

```
WritePort &H378, PortOut
```

3. Refer to Stefanie Beck's scripts as a further reference which can be found in the script archive on IAC under NegRein\_JuiceBehav.

# RUNNING EYETRACKING EXPERIMENTS

## START-UP:

1. Boot up all three computers and all monitors (make sure subject monitor is also on)
2. On the leftmost computer (windows XP machine) open the eyetracking program. Make sure that, next to the graphs, the radio buttons have selected the appropriate parameters (horizontal and vertical parameters)
3. On the far right computer (ubuntu machine), open up a terminal window and navigate to /display. Type:

```
>cd display  
and then  
>startdisplay
```

4. If the screen displays an upset monkey, this will fix itself later. Otherwise, you should see a black screen. Pressing the “c” key will turn on a blue crosshair on both your monitor and the subject’s monitor.
5. On the center computer (DOS machine) type:

```
>reach ps 1
```

6. If the program crashes as soon as it opens, you need to reboot the DOS machine. If the program says “Error with video machine” then press the space bar repeatedly until this message goes away. If the ubuntu machine still displays an upset monkey, press escape repeatedly until you see the terminal window again, then again enter:

```
>startdisplay
```

Everything should be working now!

## SET-UP:

1. Turn the eyeball monitor towards the subject’s room so you can see what the camera sees as you adjust it.
2. Get the subject comfortable in the chair. Remind them not to move or blink too often. Remind them that drooping eyelids will make the task restart and take forever.
3. Adjust the camera until an eye is centered & in focus
4. Go to the leftmost computer (windows XP). Click the box that says “threshold”. The eyeball monitor should now try to color the pupil in with opaque white. Adjust the subject’s infrared light for optimal contrast. Adjust the left computer’s settings for “pupil” until the pupil is solid white with no static outside it. It is likely that you will have to go back and forth between the pupil threshold & the infrared light to get a good image (see Tips & Tricks for more).
5. On the left computer, make sure the checkbox “Track Active” is checked. On the eyeball monitor, you’ll see a crosshair in the center of the pupil and another crosshair on the coronal reflection. If there is no crosshair on the coronal reflection (dark circle

inside or near the pupil) then increase the coronal reflection meter. If the crosshair is someplace silly like outside the eye, then decrease the coronal reflection meter until the dark space recedes to just the coronal reflection.

6. Adjust the image gate settings. Each one corresponds to one side of the box with the thin white outline on the eyeball monitor. You want this to be large enough that it easily accommodates the eye wherever it goes, but not so big that excess noise from outside the eye enters the frame.

### **CALIBRATION:**

1. Calibration should be stack 1. To start, press “1” on the DOS computer. Tell it 900 trials (obviously you won’t run all of these but you don’t want it to stop halfway through!)
2. Press CTRL+F9 to deselect all trials within stack 1. Then, press CTRL+F1 to select stack 3:1. This stack places the target on the very center.
3. Press CTRL+right arrow to expand the error box around the target. This keeps the machine from calling error trials while you’re trying to calibrate.
4. Press “g” to start trials. The machine will now blink the center fixation cross. Using the coarse and fine controls on the left machine, adjust the horizontal and vertical parameters until the subject’s eye cross matches the target box. When finished, press CTRL+F1 to deselect this trial.
5. Press F1 and F5 to open the trials to the left and right of center. Press “g” again. Adjust horizontal position and sensitivity on the left computer (In increases sensitivity, Out decreases it) until the track accurately moves between the two targets. When finished, press F1 and F5 to close these trials.
6. Press F3 and F7 to open the trials above and below the center. Press “g” again. Adjust vertical position and sensitivity on the left computer (In increases sensitivity, Out decreases it) until the track accurately moves between the two targets. When finished, press F3 and F7 to close these trials.
7. Press F2, F4, F6, and F8. This will make a 4-point box around the center cross. Adjust as necessary for an accurate track. Press F2, F4, F6, and F8 to close the trials when finished.
8. If calibration is still not adequate on any of these parameters, go back and repeat the relevant step.
9. While the subject’s eye is open, click “blink set”. The yellow blink light should now go off when the subject blinks.

### **STARTING THE EXPERIMENT:**

1. Press “n” for new experiment. It will ask you if you want to lose the data. If all you’ve done so far is calibration, then yes, you want to lose the data.
2. Press F10 to select several stacks. Tell it you want stacks 11 through 12.
3. Press “o” for options, “f” for first stack. Tell it you want stack 11 to be run first. You don’t want it to run pseudorandom order.
4. Press CTRL+left arrow until the error box is shrunk to a reasonable size; 5 or 6 is about right.
5. Press “g” to start.

## **RUNNING THE EXPERIMENT:**

1. It will be necessary to wrestle with the twiddle box from time to time to keep the subject's eyetrack centered and calibrated. Changing pupil size can affect eyetracking and is unavoidable. Head movement, poor focus, and drooping eyelids will all have adverse effects on calibration.
2. If the subject moves, use the control pad to readjust the camera's orientation so that the eye is again within the white box on the eyeball monitor.
3. If the subject becomes drowsy, eyetracking will become very difficult, with the track falling significantly downward as the eyelid droops over the pupil. The eyetracker may not notice this issue since if enough pupil is covered up, it is interpreted as a blink. It may be necessary to stop the block, ask the subject to take a break for refreshment, and start a new block.
4. When finished with a block, press ESC to stop. Write down

Time PS1 ##:##:###  
Did ## (# errors ##%) (# NS ##%)

and then press w for (w)rite data. Open up a new experiment with F10 or a new calibration with 1.

## **TROUBLESHOOTING:**

Problem: When I try to start calibration, it tells me "Stack 11 requested but not called" or something like that.

Solution: You still have the options set to "first stack: 11". Press (o)ptions, then (o)rdinary. The script will now choose trials at pseudorandom from the calibration stack.

Problem: The eyetrack won't move far enough in a given direction to meet calibration.

Solution: Make sure each dial on the twiddle box is centered, then recalibrate.

Problem: The sensitivity does not seem to be responding correctly.

Solution: This happens sometimes if you click the "Center" button for either parameter. Make sure that you have the correct radio button selected for Horizontal or Vertical. If the problem continues, reboot the XP and DOS machines.

## **TIPS AND TRICKS:**

1. Corrective eyewear is a no-no. Glasses create a big lens flare that covers up much of the pupil. Contact lenses are okay but tend to dry out quickly.
2. Ask female participants not to wear dark mascara. The eyetracking machine can mistake mascara for more pupil, which can skew tracking upwards and interferes with how the machine handles blinks.
3. It's better to test in the morning when people are fresh from the night's sleep and morning coffee. Testing after lunch tends to yield sleepy participants.
4. If there is white static outside the pupil, decrease the pupil meter. If there is dark static within the pupil, increase the pupil meter. Be patient and readjust the light as necessary.

## SCRIPT ARCHIVE:

An archive of past Psyscope scripts is located on iac3 and is named script\_archive\_04. To access it:

1. open terminal
2. type *ssh -X -l username iac11.wustl.edu*
3. type in your password
4. type *rlogin hebb*
  - a. this will take you into iac3
5. type */data/iac3/space2/ccp/SCRIPT\_ARCHIVE\_04*
6. type *ls*
  - a. this will show you the list of all scripts archived here

\*\*Please upload any new scripts to the archive for future use!

## Room Reservations:

1. CCP Lab Testing Rooms: <http://eyes.wustl.edu/ccp/Logon.asp>
  - a. Everyone has their own login. To get a new one ask Jim Clancy.
  - b. If the list of dates on the schedules gets low tell Jim Clancy to update it.
2. Seminar Rooms: <http://eyes.wustl.edu/psychs/Logon.asp>
  - a. Contact Cheri Casanova to get permission to reserve seminar rooms
3. Psych Dept Rooms: <http://eyes.wustl.edu/psychs/Logon.asp>
  - a. See Carol if you want to reserve any of these rooms.
4. MIR Testing Rooms: <http://abrams.wustl.edu/east/Logon.asp>
  - a. Login: ccplab
  - b. Password: coffee
  - c. The computers in these rooms belong to McDermott and Head so you'll have to ask their permission to use them.
5. Scanning Bays, Mock Scanner, and Parking: <http://mirsharepoint.wustl.edu/default.aspx>
  - a. Use this website to view the schedule.
  - b. To request, change, or cancel timeslots email the MRI Scheduler at: [mri@npg.wustl.edu](mailto:mri@npg.wustl.edu)

## **EXTRAS:**

### **VIEWING SCANNER USAGE – to check scanner bills before paying:**

1. [www.nil.wustl.edu](http://www.nil.wustl.edu)
2. RIIS Query Module
3. enter Name and Password (RIIS Login and Password) – and click Login
4. select MR Usage and click Get Criteria (by changing this field you can also view the list of protocols that you have access to (Protocol List) and the specific on each of those protocols (Protocol Information (specific))
5. select a protocol (NP) number, select the correct bay and put in the month dates (be sure that you put in the correct numbers – if there are 31 days in a month and you put in to the 30<sup>th</sup> it will come back with bad results)
6. click Submit Query
7. view the list and verify the charges
8. go to [http://www.imaging.wustl.edu:81/RIIS/RIIS\\_cost.html](http://www.imaging.wustl.edu:81/RIIS/RIIS_cost.html) to see what current scanning rates are

### **ENROLLMENT REPORTS:**

1. Part A – This part separates Hispanic Ethnicity and Race
  - a. Ethnic Category – regardless of race, and out of the entire subject sample, simply count how many are:
    - i. Hispanic
    - ii. Not Hispanic
    - iii. Unknown
  - b. Racial Categories – regardless of ethnicity, and out of the entire subject sample, simply tally each racial category
2. Part B – This part combines Hispanic Ethnicity and Race
  - a. So, of the number of Hispanic subjects you counted earlier, how many were in each racial category.
3. Make sure that the numbers marked with \* correspond and that the numbers marked with \*\* correspond.

### **NIL CONTACT NUMBERS:**

1. [www.nil.wustl.edu](http://www.nil.wustl.edu)
2. click on NIL contact list and that will give you all the information you every wanted to know about contacting the NIL crew
3. that list remains very up to date but if you find inaccurate info email glen and let him know

**PURCHASING MATERIALS:**

1. Usually Carol Cox will buy materials for the lab; however, RAs may have to purchase snacks for lab meeting, juice supplies for a study involving the juice pumps, etc. – Carol Cox will then get you reimbursed
2. If you do have to purchase something, make sure you do NOT pay sales tax as you will not be reimbursed for the sales tax. You may need to present an exemption from sales tax form and your employee/student ID in order to not be charged tax. This exemption form (“Sales Tax Exemption Form”) can be found in the “Extras” folder in RA Info

**INSTALLING NEW SOFTWARE ON YOUR COMPUTER:**

1. A black binder containing installation disks can be found above Carol Cox’s desk
2. If you cannot find the disk you are looking for, ask Carol Cox
3. If you install software on your computer by using an installation disk that only allows has a certain number of licenses, note that you have used one of the licenses on the CD cover so that Carol and others in the lab know how many licenses remain unused.

## POSTERS

Printing posters is done in the Teaching Lab, Room 220, on the 2<sup>nd</sup> level with the poster printer.

1. Check the printer to be sure there is enough ink to print.
  - a. On the control pad of the printer push the up arrow and view the ink levels of each color.
  - b. If one is low talk to Vicki Babbitt.
2. Pick a computer in the lab.
3. Download your poster to the Desktop.
4. Open poster.
5. On the tool bar: scroll down on the window with the size % in it and change the size to “fit”.
6. On the tool bar: click on “File”, then on “Page Setup”, and then write down the dimensions of the poster (e.g. Width=52, Height=36) and click “OK”.
7. On the tool bar: click on “File”, then on “Print”
  - a. Under “Printer” and in the scroll bar next to “names” scroll down and select the 500PS printer.
  - b. Click on “Properties”, under “Paper” and in the scroll bar next to “size” scroll down and select “edit paper list”, then enter the dimensions you wrote down earlier and click “OK”.
  - c. Under “Paper” and in the scroll bar next to “roll” scroll down and select “36 in. roll”. (The only time you would pick a different size would be if the poster height is bigger than that and someone has put the appropriate size paper roll in the printer. This will probably not happen.)
  - d. Next to “Paper” box and under “Copies” box click on “Scale to Fit”, then on “Apply this scaling factor”, then on “OK”.
  - e. Under “Orientation” click “Landscape” and then on “OK”.
8. You should now be on the main print window again. Click “OK” and the poster should print.
9. Delete or trash your poster from the desktop.

\*If you have any problems with the computer or printer talk to David Archer.

\*If you need more ink or paper talk to Vicki Babbitt or David Archer.

## IMPORTANT PHONE NUMBERS AND CONTACT PEOPLE

### Scanning

|               |                                                                                      |                                                                                                                                                                   |
|---------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Glen Foster   | <a href="mailto:gfooster@npg.wustl.edu">gfooster@npg.wustl.edu</a>                   | MRI tech – any technical scan questions – MR certification, orientation etc                                                                                       |
| Linda Hood    | <a href="mailto:linda@npg.wustl.edu">linda@npg.wustl.edu</a>                         | MRI tech – technical scan questions – MR certification, etc                                                                                                       |
| Karen Klump   | <a href="mailto:Karen@npg.wustl.edu">Karen@npg.wustl.edu</a>                         | Status of NIL protocols, NP# assignment, NP# authorization, issues with access-number money etc                                                                   |
| Matt Hicks    | <a href="mailto:matt@npg.wustl.edu">matt@npg.wustl.edu</a>                           | Scanner login information (RIIS, VPN, Petsun, etc.)                                                                                                               |
| Carol Mckenna | <a href="mailto:cmckenna@artsci.wustl.edu">cmckenna@artsci.wustl.edu</a>             | 935-8632 fMRI subject scheduling, subject payment issues, scan report, cancel/confirm scans                                                                       |
| Stuart        | <a href="mailto:sg@iacmail">sg@iacmail</a>                                           | any IAC issues, purchasing new RAIDS, VNC set up issues, archiving full directories to tape – his office is upstairs on the 4 <sup>th</sup> floor in the IAC room |
| David Archer  | <a href="mailto:david@artsci.wustl.edu">david@artsci.wustl.edu</a>                   | 935-6773 any MAC or PC issues                                                                                                                                     |
| Dale          | <a href="mailto:dwineing@ascc2.artsci.wustl.edu">dwineing@ascc2.artsci.wustl.edu</a> | 935-6828 nightly computer backups                                                                                                                                 |
| Bay 2         | 747-4626                                                                             |                                                                                                                                                                   |
| Bay 3         | 362-8454                                                                             |                                                                                                                                                                   |

## ADDITIONAL INFORMATION IN “RA INFO” FOLDER:

### CARET (Computerized Anatomical Reconstruction and Editing Toolkit):

4. Caret is a program used for surface visualization, analysis, and editing, surface flattening, and surface-based warping
5. Basic Caret instructions can be found in the “Additional information” folder in RA Info

### FIDL:

1. FIDL is Washington University’s Imaging Software
2. To log onto FIDL, you must first be logged on to IAC
3. Once you are logged on to IAC, in your terminal window type: `vncserver –geometry 1280x1024 –depth 24 –nolisten local`
  - a. After you type this command in, you will see a new line that looks like this:  
Example: New ‘X’ desktop is iac11:9
4. Open VNCViewer – once vncviewer, go to Display and open
  - a. An Open Display window will open
  - b. Refer to the New ‘X’ desktop command in your terminal window – you will see the following: Hostname : display: \_\_\_\_\_ : \_\_\_\_\_
  - c. Type in the IAC listed in the terminal command window next to display (with previous example: you would type iac11.wustl.edu)
  - d. After iac11.wustl.edu, type the number to the right of the colon in your terminal command line
    - i. Example: Hostname : display: iac11.wustl.edu : 9
  - e. Click ok
  - f. Enter your IAC password and click ok
  - g. A VNCViewer window will then appear
  - h. To start FIDL, type *fidl &* in the terminal window in your VNC window and hit enter – a FIDL window should appear
  - i. Refer to the “FIDL.doc” in the “Additional information” folder in the “RA Info” folder for FIDL instructions
  - j. For Additional information on how to use FIDL refer to the following:
    - i. Washington University’s fMRI Manual (can be found in the 2<sup>nd</sup> drawer of file cabinet 16 across from rooms 338A and B)
    - ii. Hannah Locke’s “Imaging\_Analysis\_Guide” can be found in the “Additional information” folder in RA Info

### SCANNING PROCEDURES:

1. For Bay 2 and Bay 3 procedure manuals, refer to “Scanning Procedures” in the “Additional information” folder in RA Info