



BIAC New User Orientation

Jenn Graves | Duke-UNC Brain Imaging and Analysis Center

Agenda

- Introductions
- Facilities
- Accounts and Access
- Scheduling and Calendar Entries
- Protocol Planning
- Participant Screening and MR Safety
- Day of Scan Expectations
- BIAC Resources and Billing System
- FAQs
- Next Steps

Introductions

Welcome to BIAC!

- The Brain Imaging and Analysis Center (BIAC) was created in 1998 as the key component of the campus-wide neuroimaging initiative.
- We are now home to more than sixty researchers and staff members from throughout Duke University and UNC-Chapel Hill, and across diverse disciplines



Introductions: Dr. Todd Harshbarger & MR Technologists



Dr. Todd Harshbarger Director of MR Operations



Jenn Graves Chief MR Technologist



Lamont Conyers



Susan Music

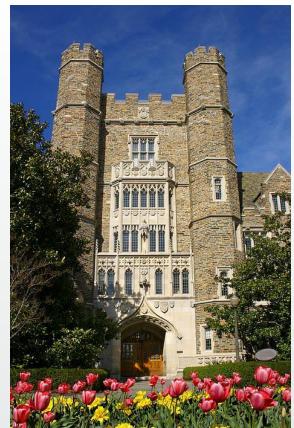
Facilities

Where is BIAC located?

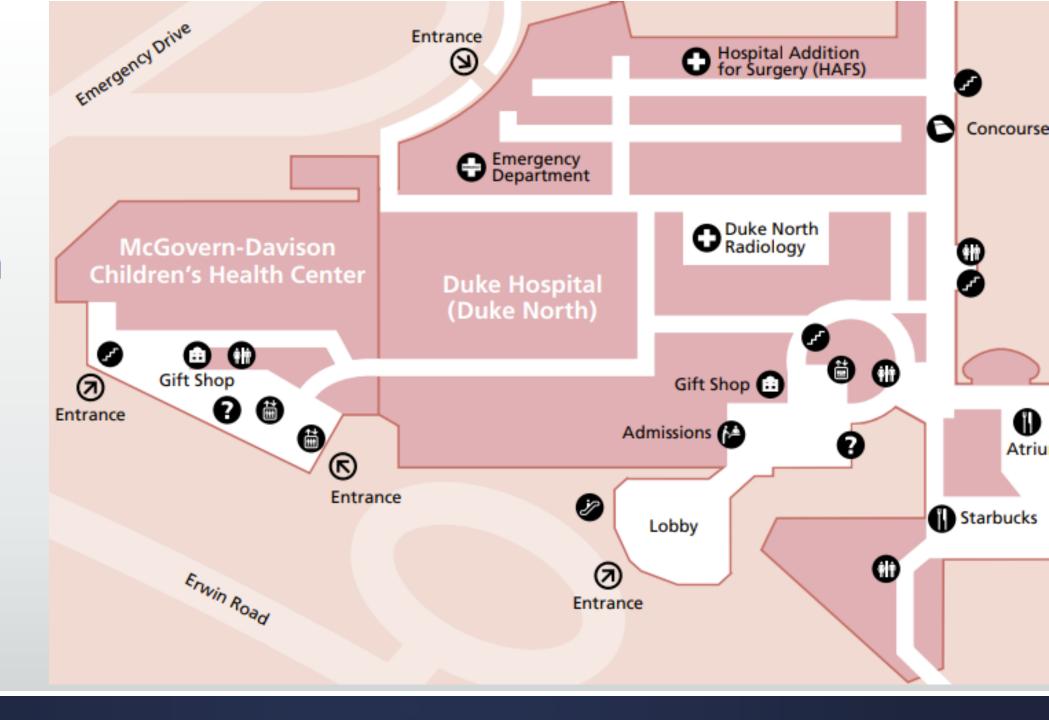
 The main BIAC administrative offices are housed in the Davison Building, fourth floor (Duke Hospital South Green Zone)

 Duke Hospital North houses our research-dedicated MRI suites and our testing rooms.

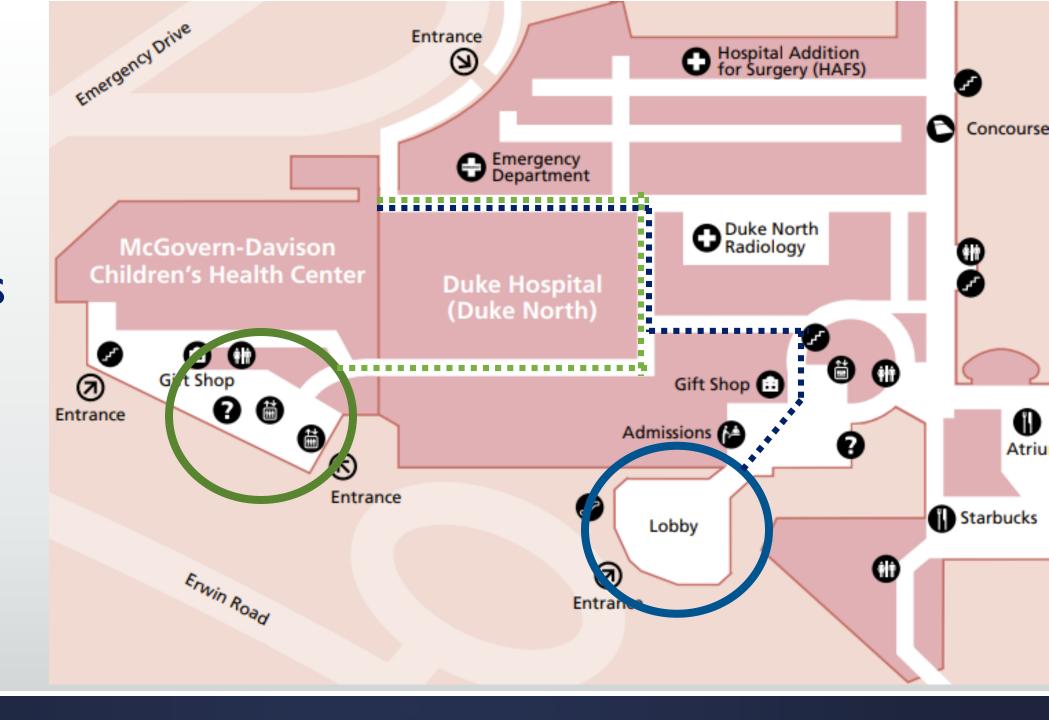




Location within Duke Hospital



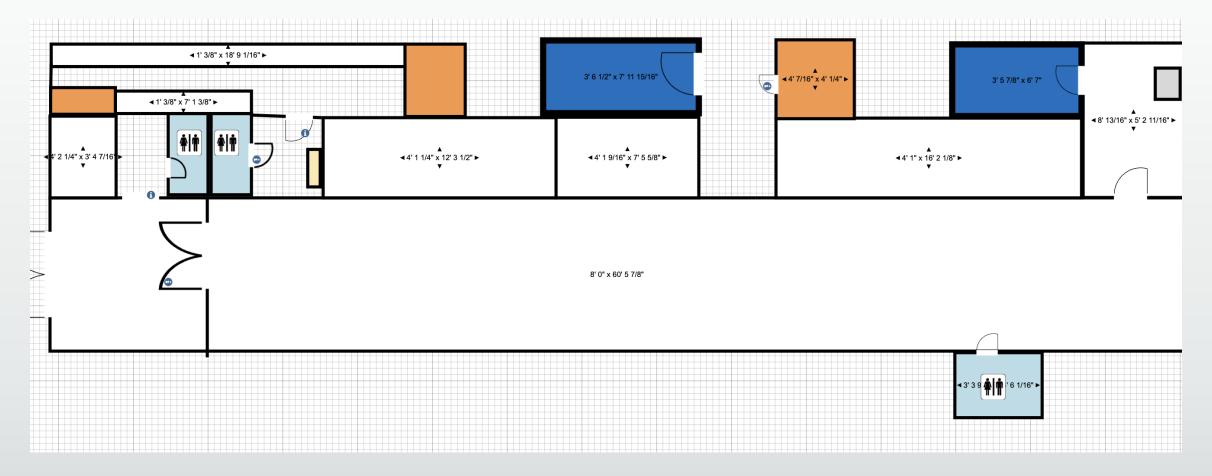
Route to the Scanners from each lobby





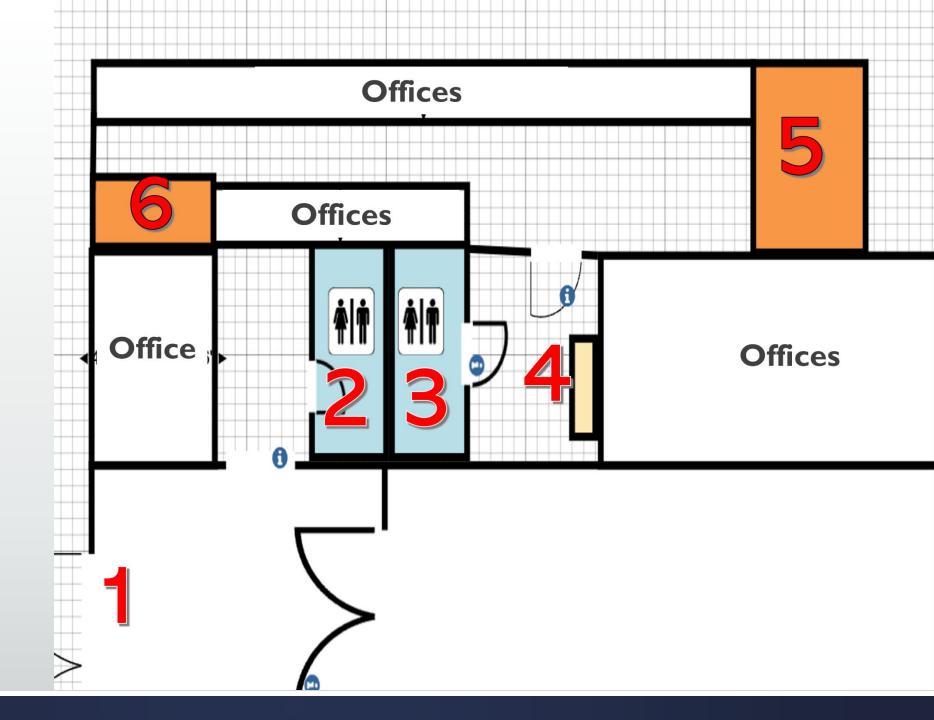
MRI Entrance

Overview of the Scanner Hallway



Key Places

- I)MRI
 Department
 Entrance
- 2)Restroom
- 3)Restroom
- 4)Lockers
- 5)MOCK I
- 6)DHNI

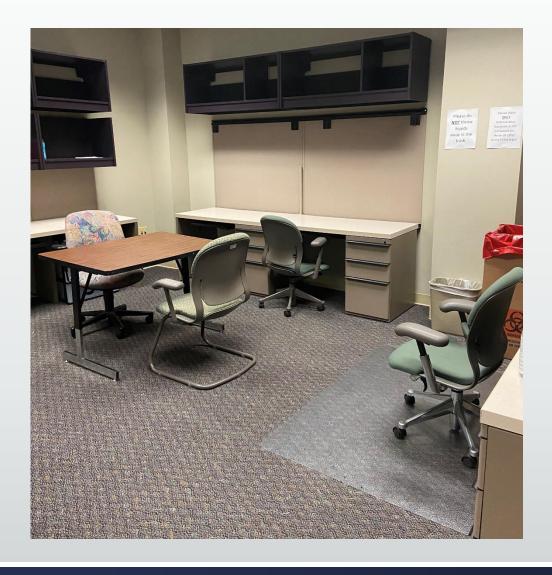


4) Lockers



5) Mock Scanner (Mock I)

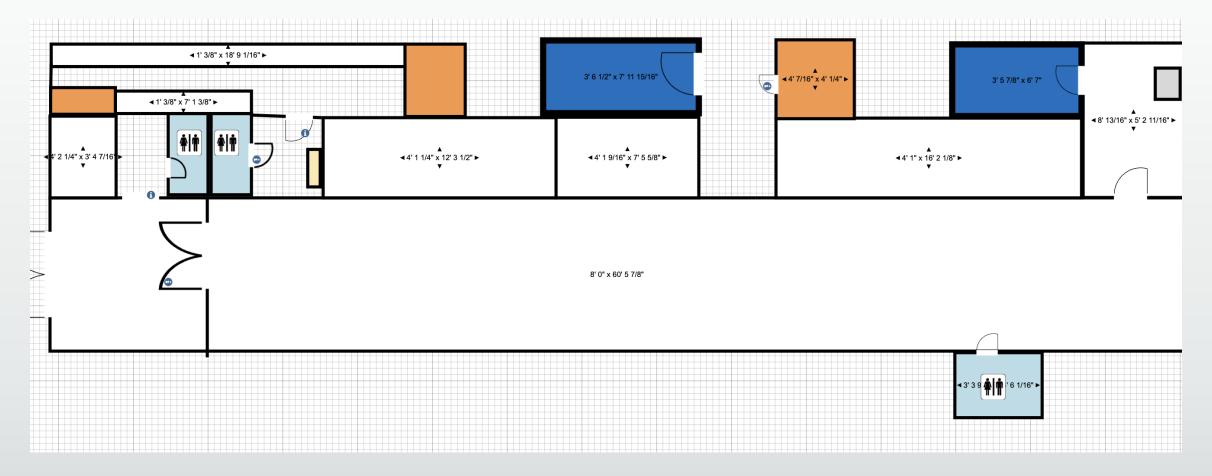


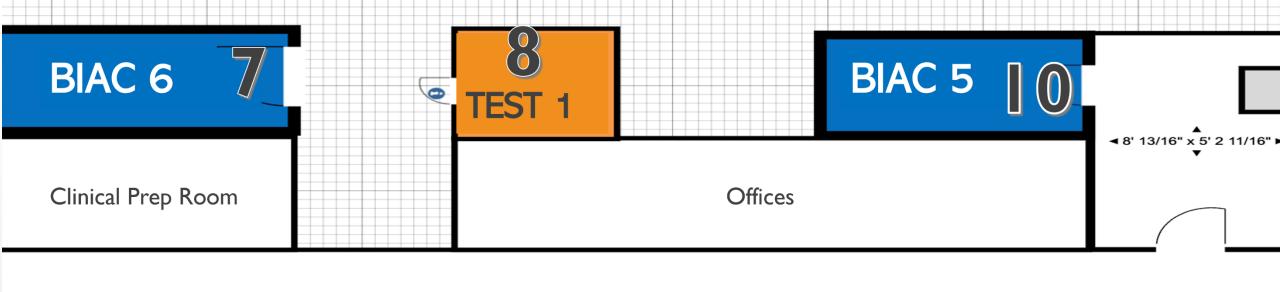


6) DHNI

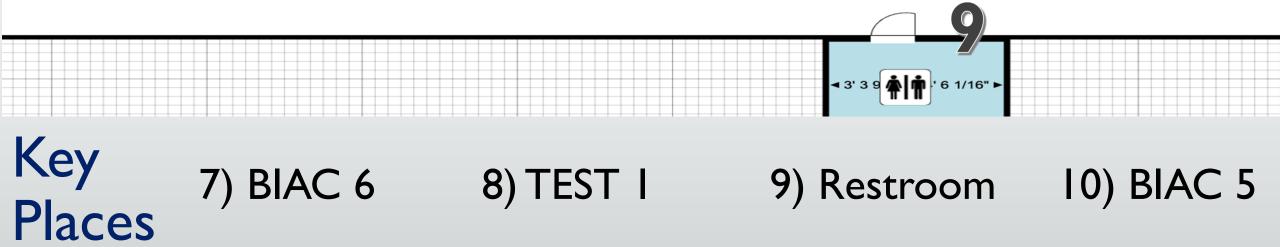


Overview of the Scanner Hallway





8' 0" x 60' 5 7/8"



9) Restroom

10) BIAC 5

8) TEST I

7) BIAC 6



BIAC 6 Suite



BIAC 6 Scanner



8) TEST I





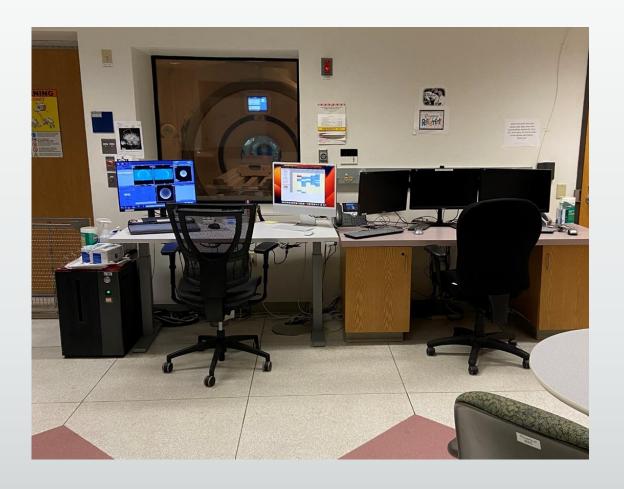
10) BIAC 5

(Hallway Entrance)



10) BIAC 5 Suite

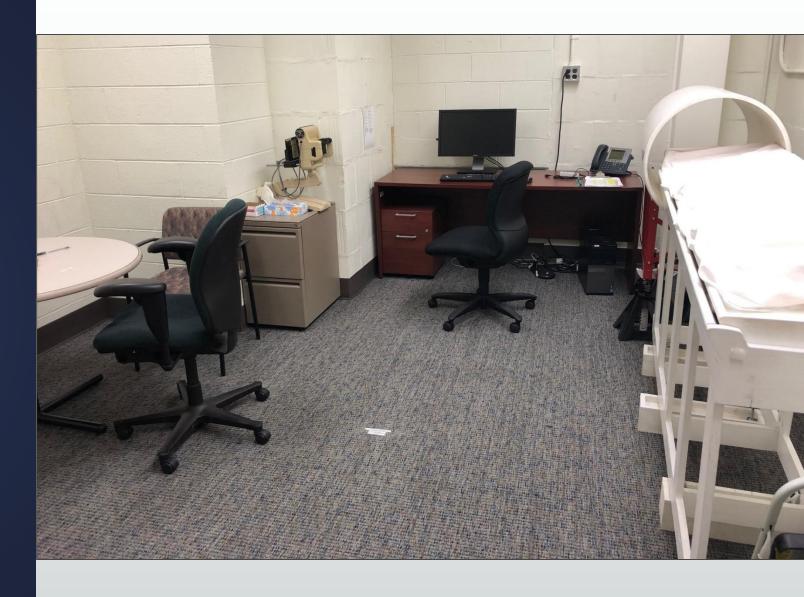




BIAC 5 Scanner



DAV I*



*not located in the MRI hallway

Facilities Overview

- Lockers
- Test Rooms
 - MOCK I
 - DHNI
 - TEST I
 - DAV I*

- Scanners
 - BIAC 5
 - BIAC 6

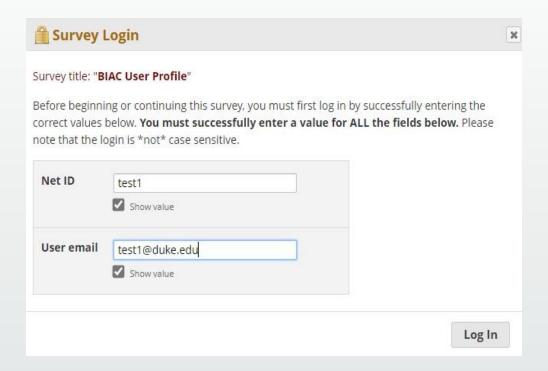
Accounts and Access

To request access...

- Email <u>biac-newuser@duke.edu</u> with your general access request and include:
 - a) Email
 - b) NetID
- 2) BIAC will then create your record in REDCap
 - a) *If you need Level I Access, a New User Orientation will also be set up at this time
- 3) Once your record is created an email will be sent from biacnewuser@duke.edu to the one you previously provided
 - a) Click on "BIAC User Profile" or the link to begin the survey
 - a) Login in using your NetID and email

5) If you requested Level I Access, an additional email will be sent titled, "Level I Access Survey"

- a) *DO NOT begin this survey until you have:
 - Scheduled a New User Orientation
 - ii. Completed the MRI Safety Quiz
 - iii. Completed the MRI Level I Access Signature Sheet
 - iv. Completed the MRI Subject Screening form
- b) This survey is where you will upload both documents and confirm you have completed the safety quiz
 - i. The safety tutorials, safety quiz and both documents can be found here: Safety | The Brain Imaging and Analysis Center (duke.edu) or https://www.biac.duke.edu/research/safety
- c) **the login for this survey is your NetID and email
 - i. You may return to this survey, you will just need to log back in each time



- Once you have completed the "BIAC User Profile" survey, the "Level I Required Training and Documents" survey (only if need Level I access), and completed the New User Orientation your sponsor will be contacted to confirm your access request
- 7) Once your sponsor confirms, access will then be provided

**Once you have gained access, please email biac-help@duke.edu with any questions or to fix any problems with access

Access FAQs

- Q:What is Level I Access? Do I need it?
- A: This access is for those who plan to bring participants to the scanner suites and/or use the test rooms. For Level I Access you will to complete the New User Orientation, the MRI Safety quiz, the MRI Subject Screening Form, and the MRI Level I Access Signature Sheet.
- Q: How do I schedule a New User Orientation?
- A: Email <u>biac-newuser@duke.edu</u> and request a New User Orientation session. All sessions are currently taught over Zoom for approximately, 1.5 hours.
- Q: I already have data access but need to get scheduling access, who do I email?
- A: Email biac-help@duke.edu with your access request with your sponsor CCed so your request can be confirmed.

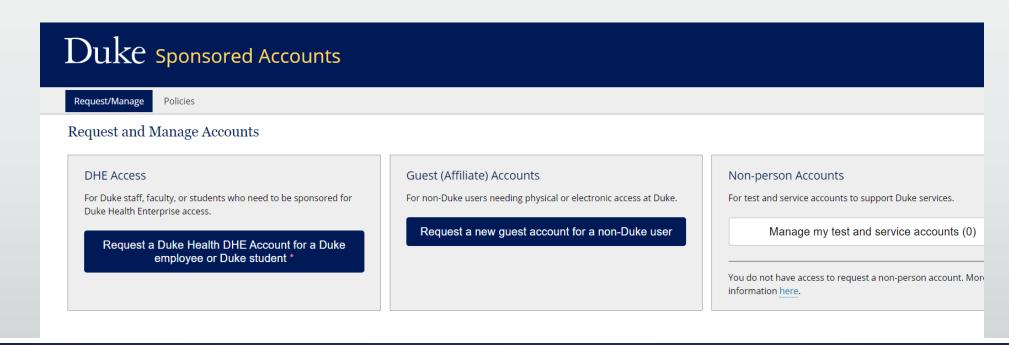
FAQs Continued

- Q: Can I access the REDCap surveys from anywhere or do I have to be on the Duke network?
- A: The BIAC User Profile survey and the Level I Access survey through REDCap can be taken anywhere. You will just need to login into the quiz using the NetID and email you previously provided

- Q: I now have access to the BIAC Scanner Schedule, but I cannot login to view it...
- A: Make sure you are on the DHE network or on a DHE computer. If you are working remotely, you may need to request DHE access.

DHE Access

- Not the same as your Duke Account
- To get DHE Access
 - Need to have someone with a DHE appointment (faculty/staff) sponsor you at this site: <u>Sponsored Accounts (duke.edu)</u>



DHE Account Request Form

Request a Duke Health DHE Account for a Duke employee or Duke student

1. Select DHE account type*	•
O Collaborator	
O Contractor	
O Duke Health Employee	
O Student, non-SoM/SoN	
Student, SoM/SoN	
O Training	
O Volunteer	
O Other	
2. Set Account Preferences	②
User Information	
NetID of user needing Duke Health DHE Account*:	
Doning in this case is a second of the case of the cas	
Business justification*:	
☐ User is a minor (less than 18 years old)	
Account Length	
Account(s) will expire on 04/29/2024 unless renewed.	
Or, choose an earlier expiration date.	
□ I agree to the terms of DHE account sponsorship.	
	Submit

Scheduling a Scan

Step-by-step

Scheduling

- Most often, the experimenter (i.e. the person running the subject) schedules a session on a BIAC scanner
- It is the expectation that you have a participant when you reserve a slot
- Last minute scheduling
 - If scheduling a scan less than 24 hours before their start time or on the same day, please email BIAC-Schedule@duke.edu to ensure coverage will be provided

How far in advance can you schedule?

Experiment Information for Demo.01

Go back to main calendar view. Show all experiments user "jel76" has access to.

Summary

This experiment is currently valid.

This experiment's scheduling window allows you to schedule through 7/5/2023.

This experiment has 269 incomplete calendar entries (see below)

You may contact the <u>BIAC Scientific Review Committee</u> to request more time or to <u>renew your experiment</u>. See SOP109: Approval for BIAC Scanner Use for more details.

Experiment	Scanner	Investigator	Responsible Investigator	Department	Start Date	End Date	
Demo.01		Allen Song	Allen Song	BIAC	12/1/2000	1/1/2024	Demonstrations using MR facilities

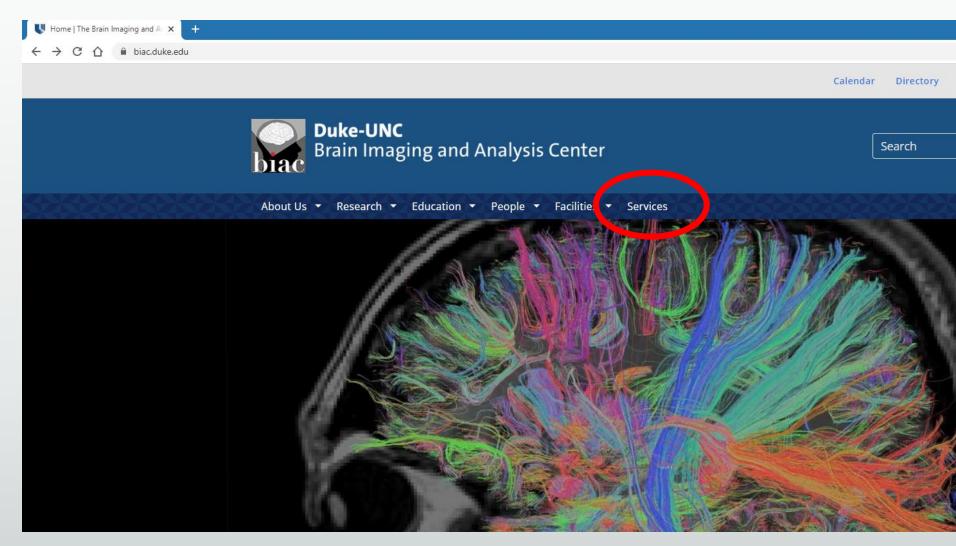
							Scheduling Window (5/3/2023 - 5/24/2023)						
Experiment	Time Allocated (hours)	Time Left (hours)	Time Used (hours)	Lost Time [Claimed] (hours)	Total Time (hou	s)	Window Size (days)	Max Study Size (hours)	Max Weekly Time (ho	u 🛕	Window Size (days)	Max Study Size (hours)	Max Weekly Time (hours)
Demo.01	1000	190.5	809.5	8.5 [8.5]	818		21	4	None	X	42	4	6

2 windows:

- 21 days out
 - No limit on number of weekly hours, but can only schedule 4 hours at a time
- 42 days out
 - Weekly limit of 4 hours (can be increased if needed)
 - Can schedule 4 hours at a time

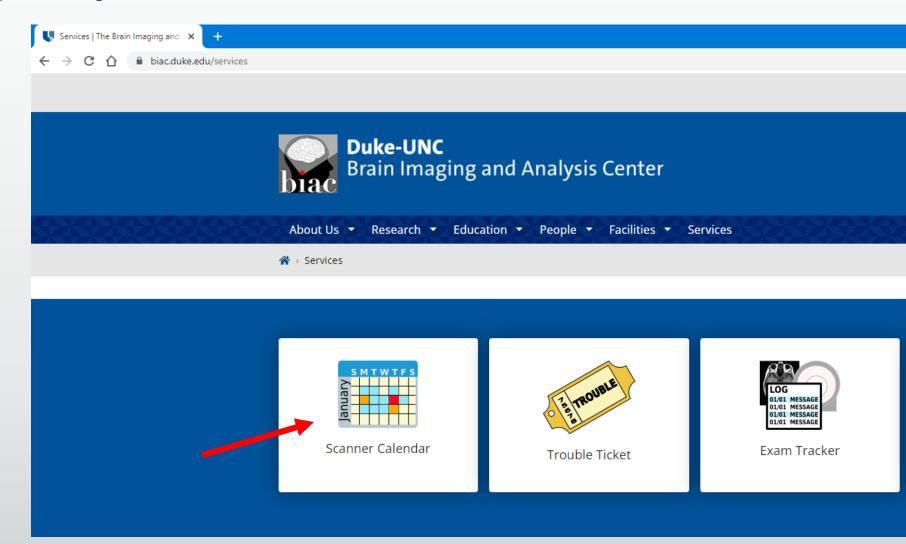
Scheduling Step 1: Locate the calendar page

- Go tohttps://www.biac.duke.edu/
- Click on the "Services" tab



Scheduling Step 2: Access the Calendar

- Once in the Service tab, click on the Calendar icon
- *Must be on the Duke Hospital (DHE) network or computer to access the calendar



BIAC Scanner Schedule



Experimenters must complete all calendar entries for their experiments.

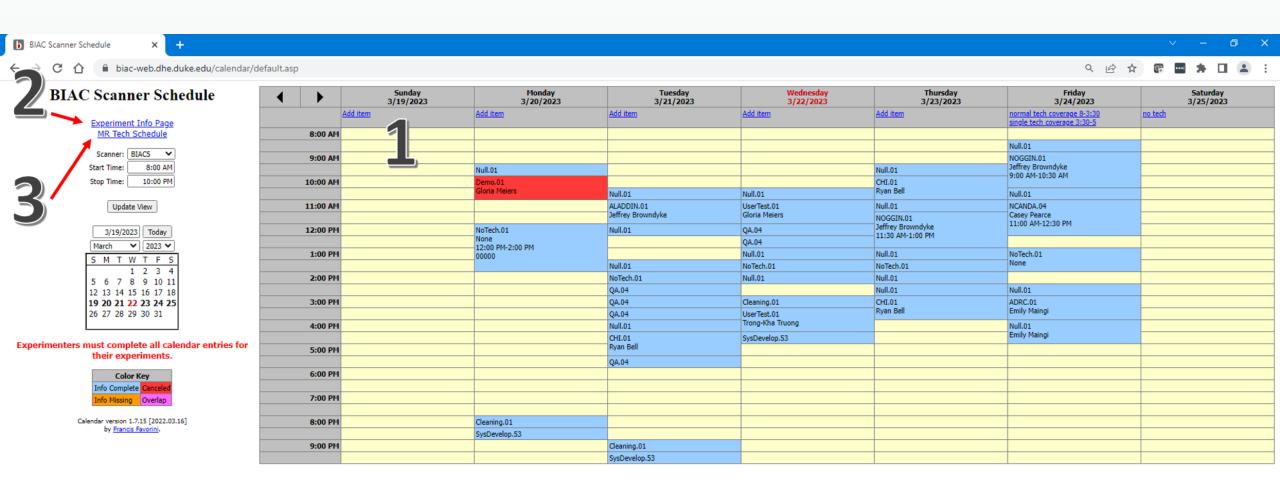
5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Color Key Info Complete Cancele nfo Missing Overlap

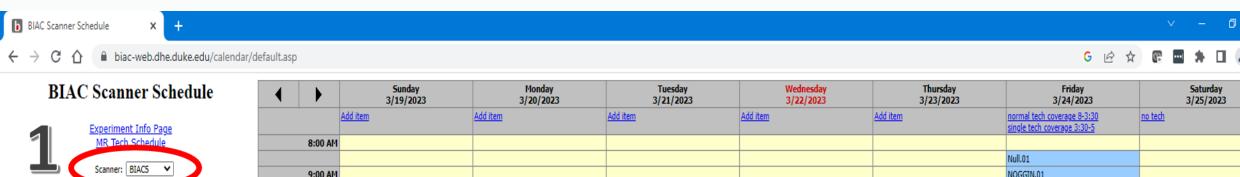
Calendar version 1.7.15 [2022.03.16] by Francis Favorini.

_		3/19/2023	3/20/2023	3/21/2023	3/22/2023	3/23/2023	3/24/2023	3/25/2023
		Add item	Add item	Add item	Add item	Add item	normal tech coverage 8-3:30 single tech coverage 3:30-5	no tech
	8:00 AM							
							Null.01	
	9:00 AM						NOGGIN.01	
			Null.01			Null.01	Jeffrey Browndyke 9:00 AM-10:30 AM	
	10:00 AM		Demo.01			CHI.01		
			Gloria Meiers	Null.01	Null.01	Ryan Bell	Null.01	
	11:00 AM			ALADDIN.01	UserTest.01	Null.01	NCANDA.04	
				Jeffrey Browndyke	Gloria Meiers	NOGGIN.01	Casey Pearce 11:00 AM-12:30 PM	
	12:00 PM		NoTech.01	Null.01	QA.04	Jeffrey Browndyke 11:30 AM-1:00 PM	11:00 AM-12:30 PM	
			None -12:00 PM-2:00 PM		QA.04			
	1:00 PM		00000		Null.01	Null.01	NoTech.01	
				Null.01	NoTech.01	NoTech.01	None	
	2:00 PM			NoTech.01	Null.01	Null.01		
				QA.04		Null.01	Null.01	
	3:00 PM			QA.04	Cleaning.01	CHI.01 Ryan Bell	ADRC.01	
				QA.04	UserTest.01	Ryan Bell	Emily Maingi	
	4:00 PM			Null.01	Trong-Kha Truong		Null.01 Emily Maingi	
r				CHI.01 Ryan Bell	SysDevelop.53		Emily Maingi	
	5:00 PM							
				QA.04				
	6:00 PM							
	7:00 PM							
	8:00 PM		Cleaning.01					
			SysDevelop.53					
	9:00 PM			Cleaning.01				
				SysDevelop.53				

BIAC Scanner Schedule



Scheduling Step 3: Select the scanner and choose an open time slot



Update View

10:00 PM

	3/2	23/2	023	T	Today				
M	arch		~	20	2023 🕶				
S	М	Τ	W	Τ	F	S			
			1	2	3	4			
5	6		8						
			15						
			22			25			
26	27	28	29	30	31				

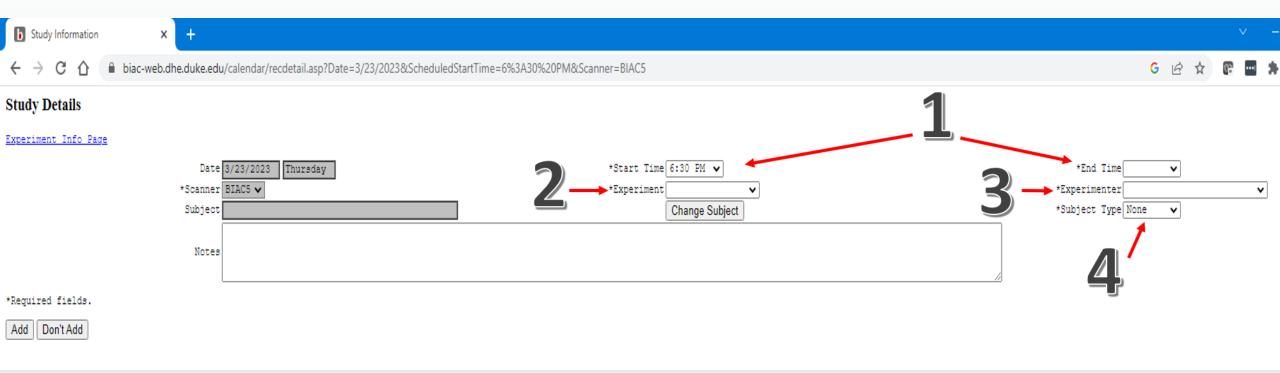
Experimenters must complete all calendar entries for their experiments.



Calendar version 1.7.15 [2022.03.16] by Francis Favorini.

	Sunday 3/19/2023	Monday 3/20/2023	Tuesday 3/21/2023	Wednesday 3/22/2023	Thursday 3/23/2023	Friday 3/24/2023	Saturday 3/25/2023
	Add item	Add item	Add item	Add item	Add item	normal tech coverage 8-3:30 single tech coverage 3:30-5	no tech
8:00 AM							
						Null.01	
9:00 AM						NOGGIN.01 Jeffrey Browndyke	
		Null.01			Null.01	9:00 AM-10:30 AM	
10:00 AM		Demo.01 Gloria Meiers			CHI.01 Ryan Bell		
		Gioria Meiers	Null.01	Null.01		Null.01	
11:00 AM			ALADDIN.01 Jeffrey Browndyke	UserTest.01 Gloria Meiers	Null.01	NCANDA.04 Casey Pearce	
					NOGGIN.01 Jeffrey Browndyke	11:00 AM-12:30 PM	
12:00 PM		NoTech.01 None	Null.01	QA.04	11:30 AM-1:00 PM		
		12:00 PM-2:00 PM		QA.04	Canceled		
1:00 PM		00000		Null.01	Null.01	NoTech.01	
			Null.01	NoTech.01	NoTech.01	None	
2:00 PM			NoTech.01	Null.01	Null.01		
			QA.04		Null.01	Null.01	
3:00 PM			QA.04	Cleaning.01	CHI.01	ADRC-01	
			QA.04	UserTest.01	Ryan Bell	Emily Maingi	
4:00 PM			Null.01	Trong-Kha Truong		Null.01	
			CHI.01	SysDevelop.53		Emily Maingi	
5:00 PM			Ryan Bell				
			QA.04				
6:00 PM					1		
					Free Slot		
7:00 PM							
					<u> </u>		
8:00 PM		Cleaning.01			_		
		SysDevelop.53					
9:00 PM			Cleaning.01				
			SysDevelop.53				

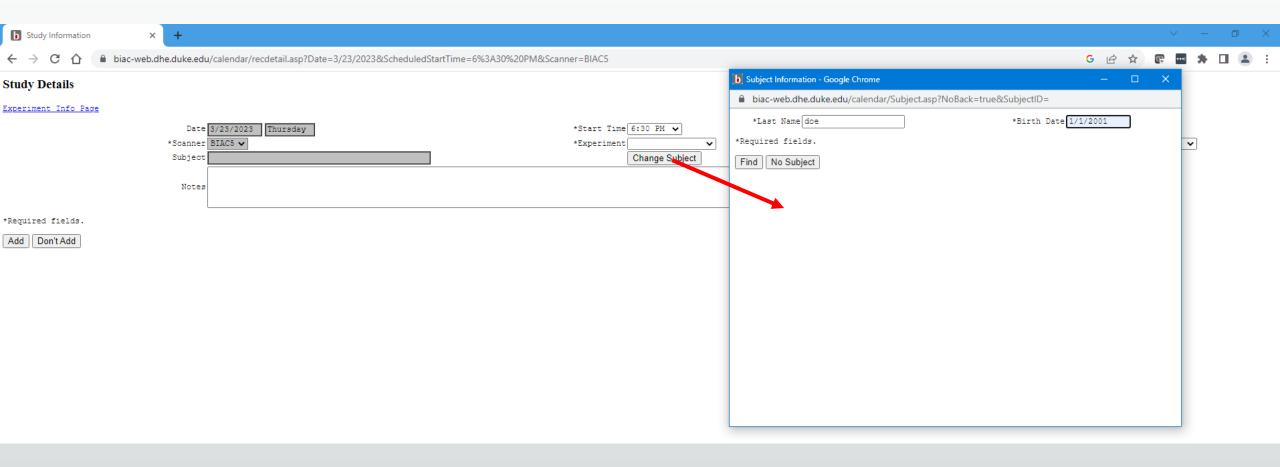
Scheduling Step 4: Enter Study details



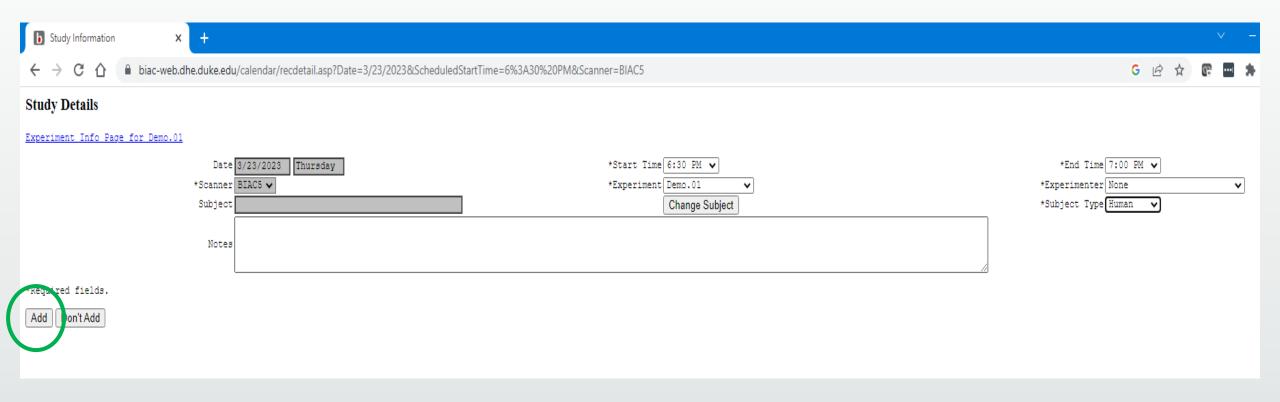
- Fill out start and end time of scan
- 2) Experiment

- 3) Experimenter
- 4) Subject type

Scheduling Step 5: Enter Study details — Patient Information

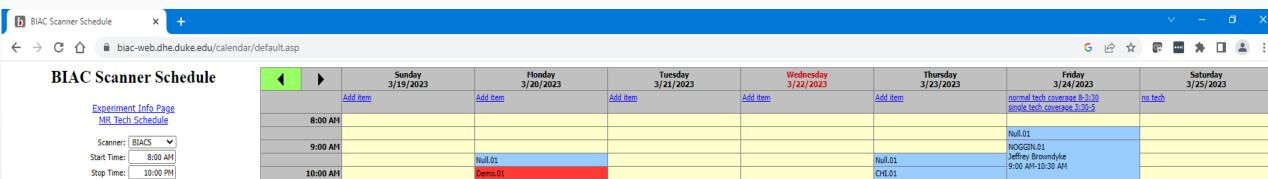


Scheduling Step 6: Save



Once all the required information is selected from the drop downs, click "Add" to save the scan on the schedule

Scheduling Step 7: Make sure the scan is on the schedule



Update View

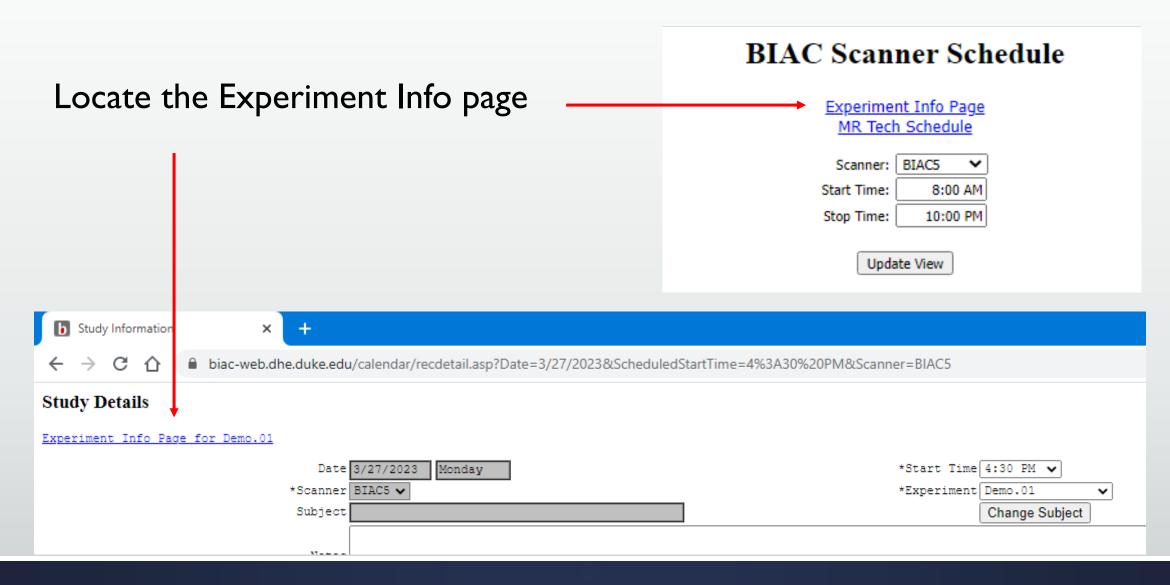
Experimenters must complete all calendar entries fo their experiments.



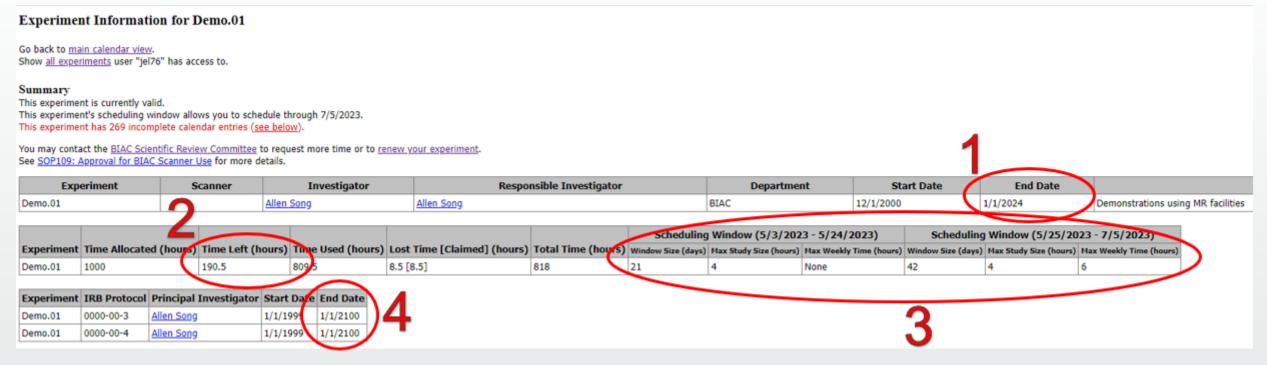
Calendar version 1.7.15 [2022.03.16] by Francis Favorini.

← →	Sunday 3/19/2023	Monday 3/20/2023	Tuesday 3/21/2023	Wednesday 3/22/2023	Thursday 3/23/2023	Friday 3/24/2023	Saturday 3/25/2023
	<u>d item</u>	Add item	Add item	Add item	Add item	normal tech coverage 8-3:30 single tech coverage 3:30-5	no tech
8:00 AM							
						Null.01	
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		Null.01			Null.01	Jeffrey Browndyke 9:00 AM-10:30 AM	
10:00 AM		Demo.01			CHI.01	5.00 AIT-10.50 AIT	
		Gloria Meiers	Null.01	Null.01	Ryan Bell	Null.01	
11:00 AM			ALADDIN.01	UserTest.01	Null.01	NCANDA.04	
			Jeffrey Browndyke	Gloria Meiers	NOGGIN.01	Casey Pearce 11:00 AM-12:30 PM	
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		None		QA.04	Canceled		
1:00 PM		12:00 PM-2:00 PM 00000		Null.01	Null.01	NoTech.01	
			Null.01	NoTech.01	NoTech.01	None	
2:00 PM			NoTech.01	Null.01	Null.01		
			QA.04		Null.01	Null.01	
3:00 PM			QA.04	Cleaning.01	CHI.01	ADRC.01	
			QA.04	UserTest.01	Ryan Bell	Emily Maingi	
4:00 PM			Null.01	Trong-Kha Truong		Null.01	
			CHI.01	SysDevelop.53		Emily Maingi	
5:00 PM			Ryan Bell	-,12333,233			
			QA.04				
6:00 PM							
					Demo.01		
7:00 PM							
8:00 PM		Cleaning,01					
		SysDevelop.53					
9:00 PM			Cleaning.01				
2.00111			SysDevelop.53				

What to do if you can't schedule your scan



Experiment Information Page



- I. Has your experiment expired?
- 2. Has the experiment run out of hours?
- 3. Are you outside of the scheduling window?
- 4. Is the IRB protocol expired?

IRB Renewal: Calendar Entries

- Incomplete calendar entries will cause your BIAC experiment to be ineligible for renewal
- Experiment info page will show all incomplete entries
 - This page also provides the link to the steps to take to renew your experiment when the time comes
 - Link: https://www.biac.duke.edu/research/st arting-research-biac

Please fix the following incomplete calendar entries!

Experiment	Date	Start	End	Scanner	Experimenter
Demo.01	1/27/2023	4:30 PM	5:30 PM	BIAC5	Todd Harshbarger
Demo.01	1/5/2023	2:30 PM	5:30 PM	DHN1	Rachael Wright
Demo.01	11/15/2022	3:30 PM	4:30 PM	BIAC5	Ryan Bell

Experiment Information for Demo.01

Go back to main calendar view. Show all experiments user "jel76" has access to.

Summary

This experiment is currently valid.

This experiment's scheduling window allows you to schedule through 7/6/2023.

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Scheduling a Null

Step-by-step

Null.01

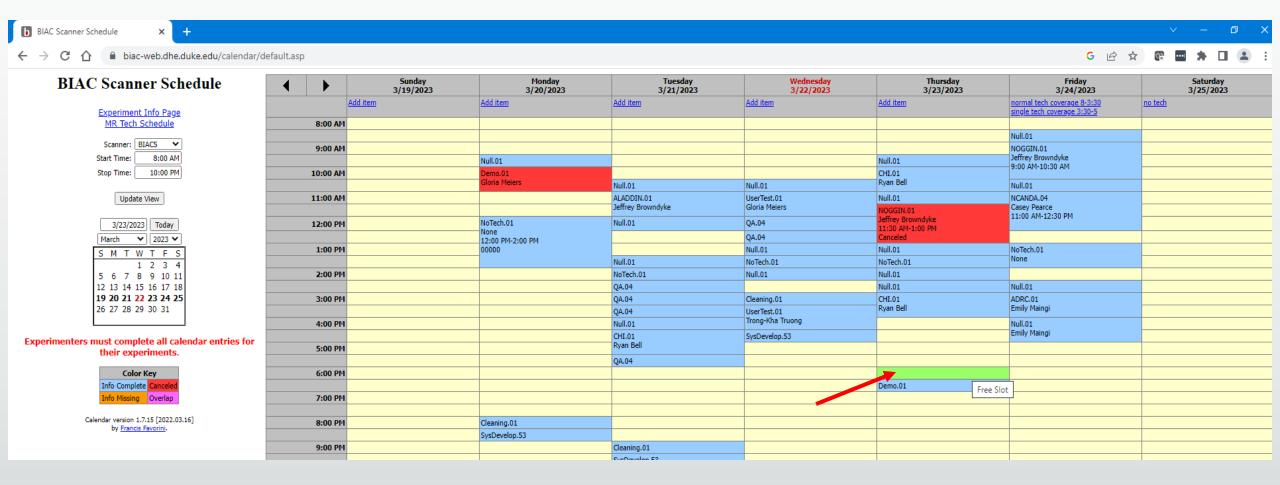
- When to use:
 - To avoid double booking when single tech coverage
 - To schedule the required 30-minute cleaning session before the scan
- When not to use:
 - To book a Usertest
 - To book a paid scan
 - When multiple techs are available

*In the event of a double-booking, the study that scheduled first (but failed to add a Null) will be rescheduled

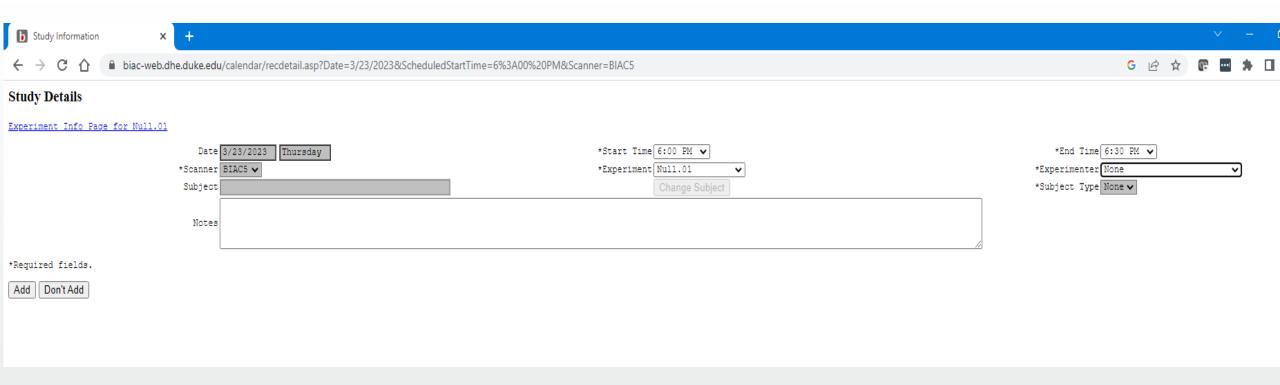
Null.01

- Scheduled the same as a scan
- DOES NOT contain participant information
- If you delete or cancel a scan, remove the Nulls as well

To schedule a Null for cleaning...

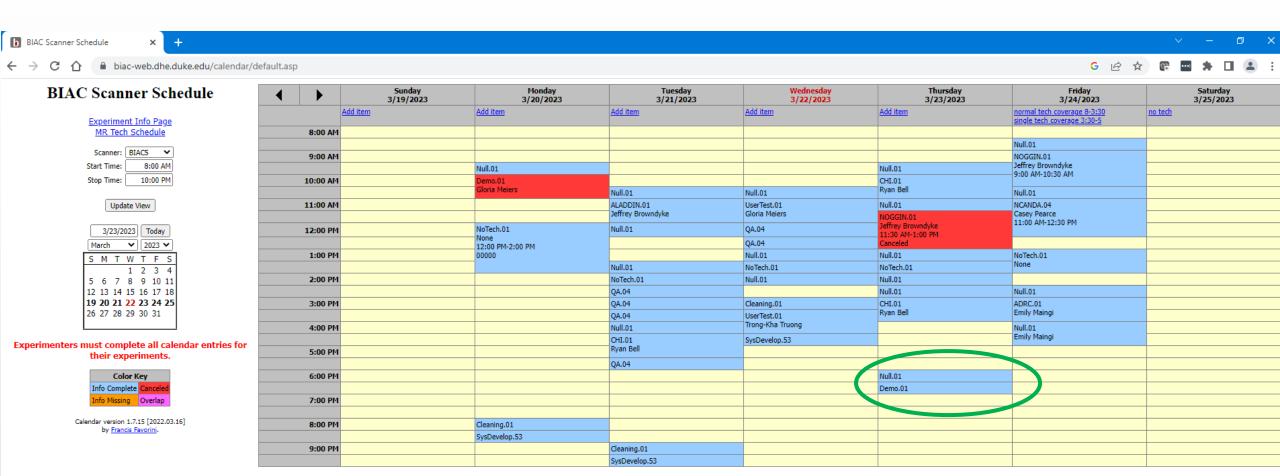


Click on the time slot right before your scan



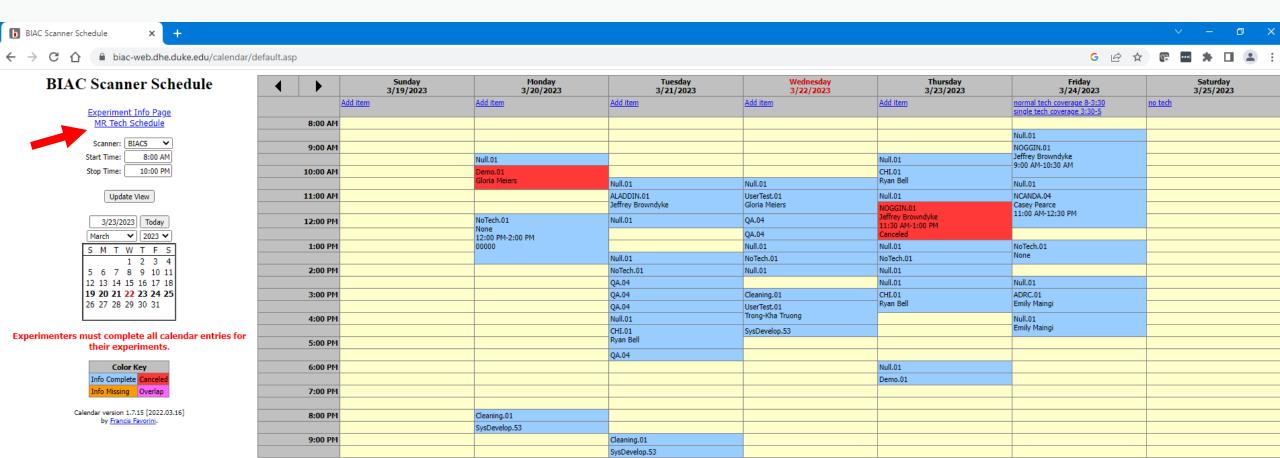
- 1) End time will be 30 minutes after your start time
- 2) Select "Null.01" for the Experiment
- 3) Select your name for the Experimenter
- 4) Click "Add" to save

*Nulls are not for scheduling participants so "Change Subject" and Subject Type" options will NOT be available



*Null.01 slots are only added to the slots BEFORE the scans, you do not need to add one after the scan

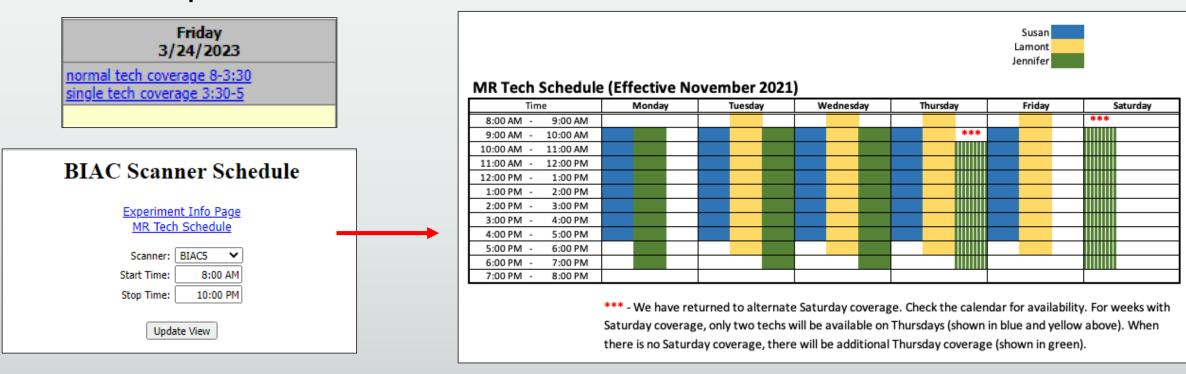
To schedule a Null during single tech coverage...



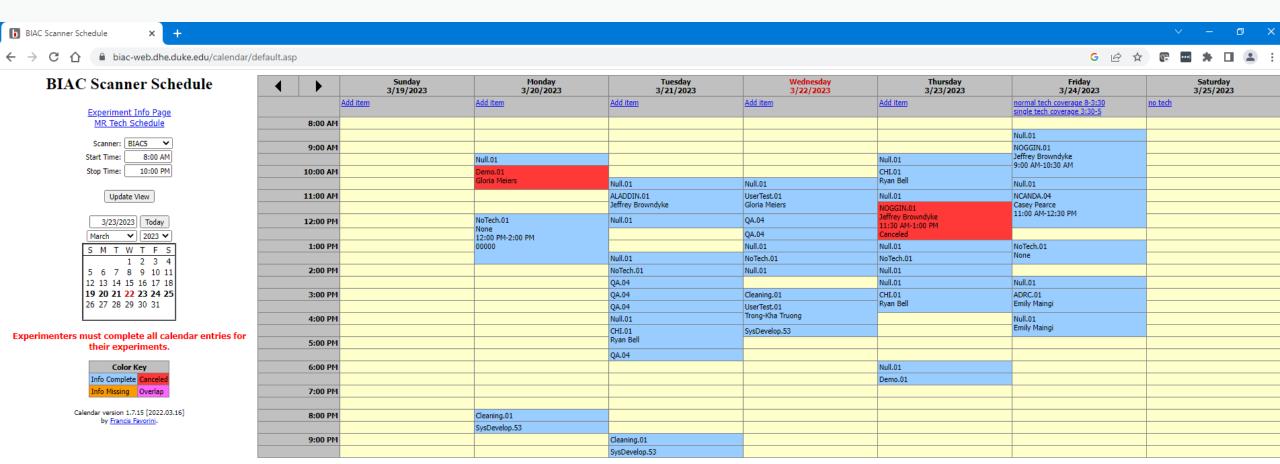
Check the MRI Tech Schedule to see normal coverage

MR Tech Schedule

- Normal tech coverage
- Be sure to check the notes (in blue) at the top of the scanner schedule to see exceptions to the normal tech schedule



To schedule a Null during single tech coverage...



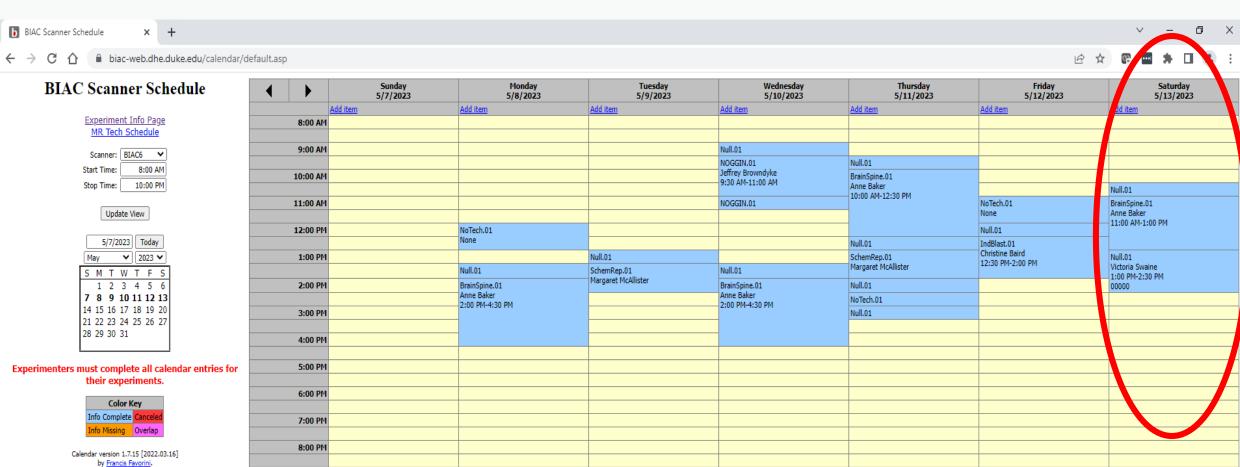
Book Null for both scan time and cleaning slot

To schedule a Null during single tech coverage...



Book Null for both scan time and cleaning slot

Single Tech Scheduling Example...Saturday



9:00 PM

Single Tech Scheduling Examples...Saturday



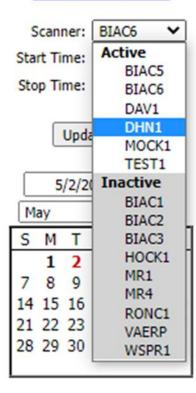
Scheduling a Test Room

To Schedule a Test Room...

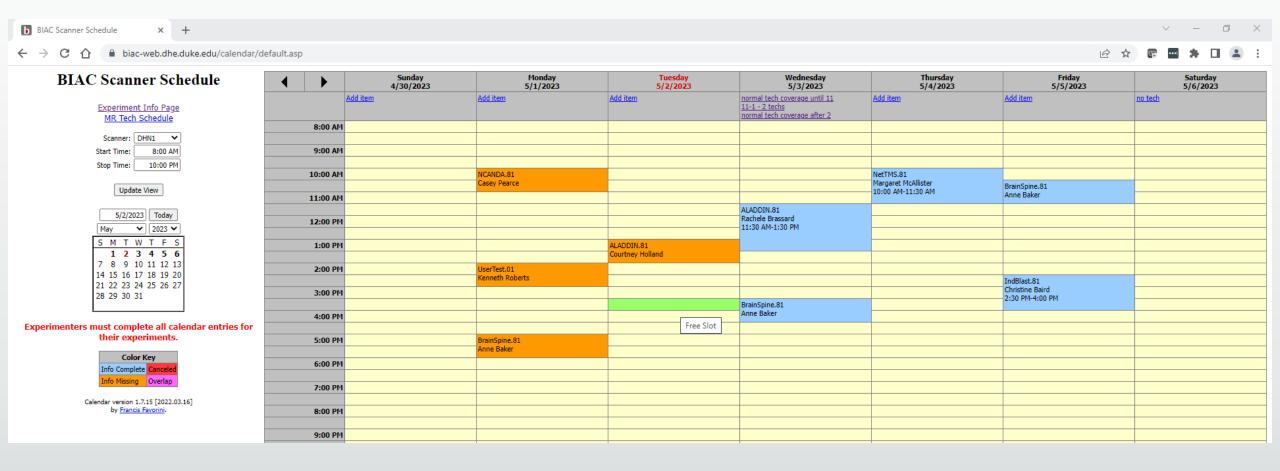
- Same as Null.01 or a paid scan
- DO NOT need nulls for the test rooms
- Do not need to book within tech hours
- If no longer need slot, please cancel or delete scheduled time
- No fee for the rooms or a cancellation fee
- **Must complete calendar entries for all test rooms used for renewal as well**

BIAC Scanner Schedule

Experiment Info Page MR Tech Schedule



Schedule just like a paid scan



*Do not need a Null – just need to schedule the time you need

Removing a scan

Cancelling and Deleting

Delete Study vs Cancel Study

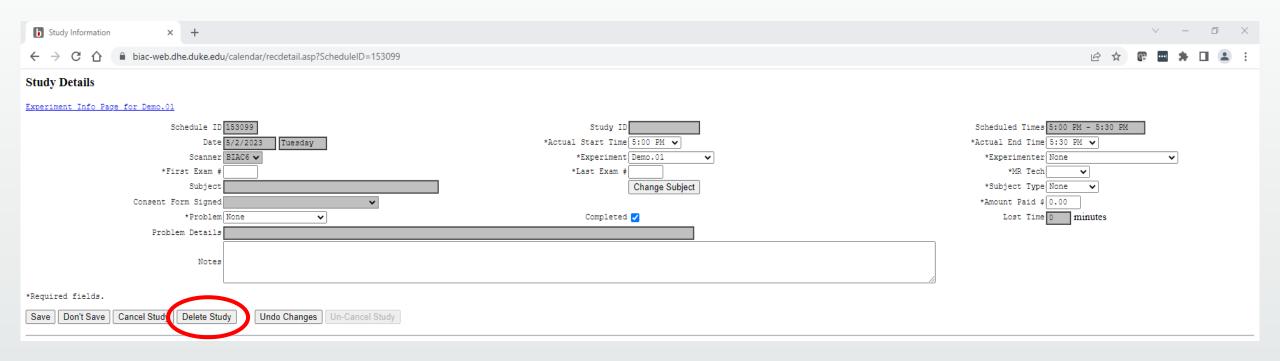
Delete

- More than 48 hours before the scan's start time
- No cancelation fee
- Completely removed from calendar

Cancel

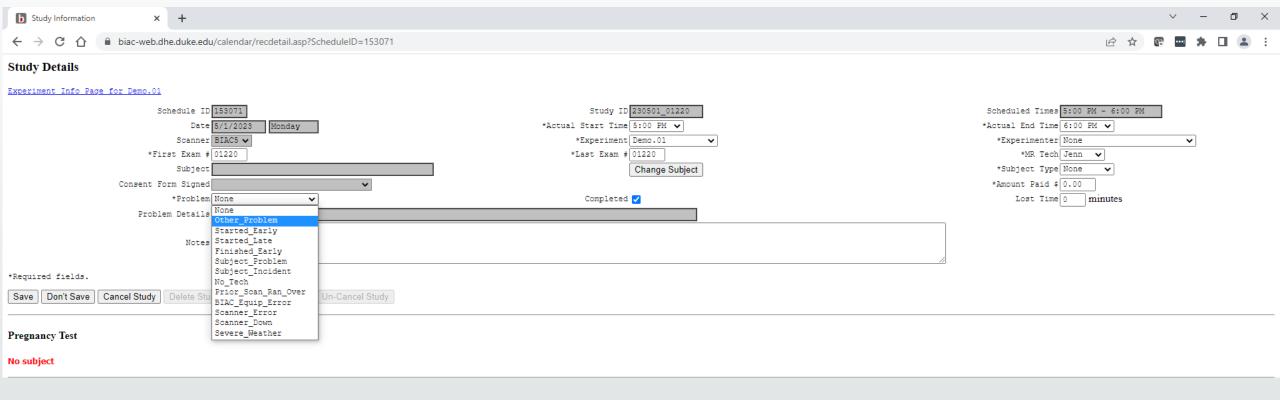
- Within 48 hours of the scan's start time
- Cancellation fee (\$160 an hour)
- Entry appears on the calendar in red

Deleting a Scan...



...Removes a scan from calendar completely

Cancelling a scan



Step I) Need to select a problem from the dropdown – be as accurate as possible

Cancelling a scan



Step 2) Type in problem details

Cancelling a scan



*Must click "Cancel Study" - Clicking "Save" will not cancel the scan

**If canceled – will appear red on the scanner schedule

Cancelling a scan – Subject Problem

- All problems involving the subject are a subject problem
 - Examples:
 - No shows or last minute cancellations
 - Implant not cleared and could not be scanned
 - Claustrophobia
 - Did not fit in the scanner
- Please be as accurate as possible and do not list subject problems as "Other Problem" or "Scanner Error"

Calendar Entries

Calendar Entries

- Who is responsible for completing calendar entries?
 - The experimenter running the study (NOT the MR Tech)

- What about if I use Mock I, Test I, DHN I, and DAV I?
 - Those entries <u>still</u> need to be completed!

*Incomplete calendar entries will cause your BIAC experiment to be ineligible for renewal

Calendar Items

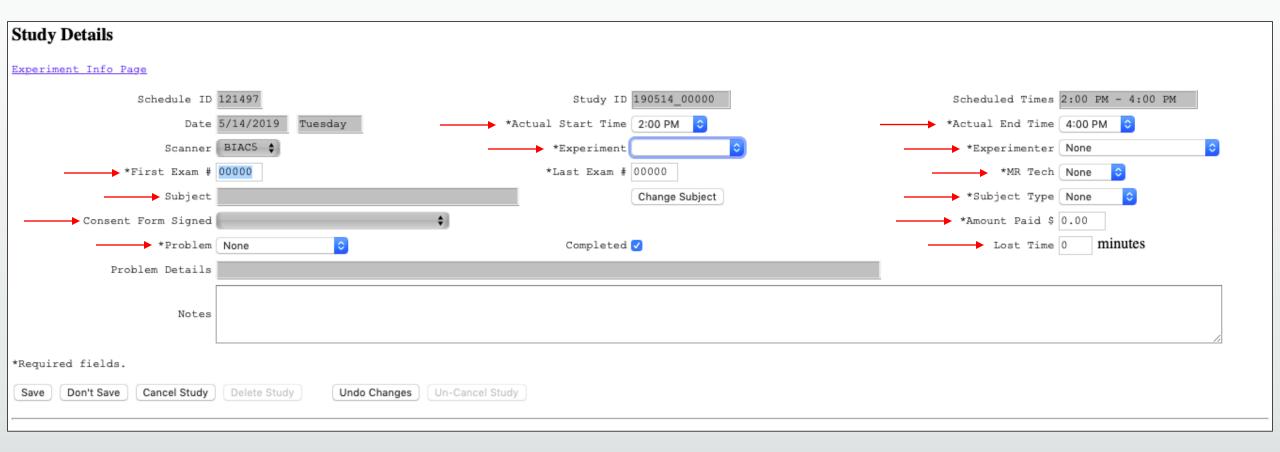
Completed before the scan

- Actual Start and End Times
- Experimenter
- Subject Name**
- Subject Type

Completed after the scan

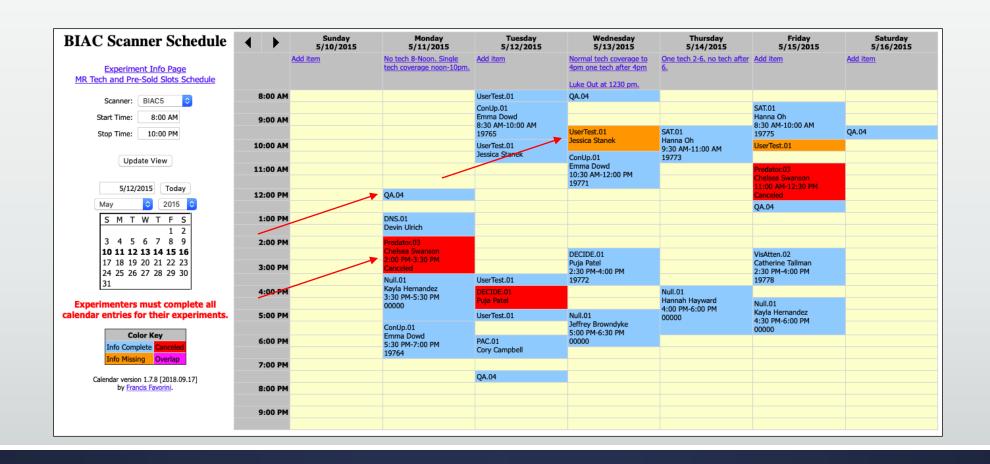
- Exam Number(s)
- MR Tech
- Consent Form Signed
- Problem (if applicable)
- Lost Time (if BIAC problem)

Calendar Entries: Completed Items



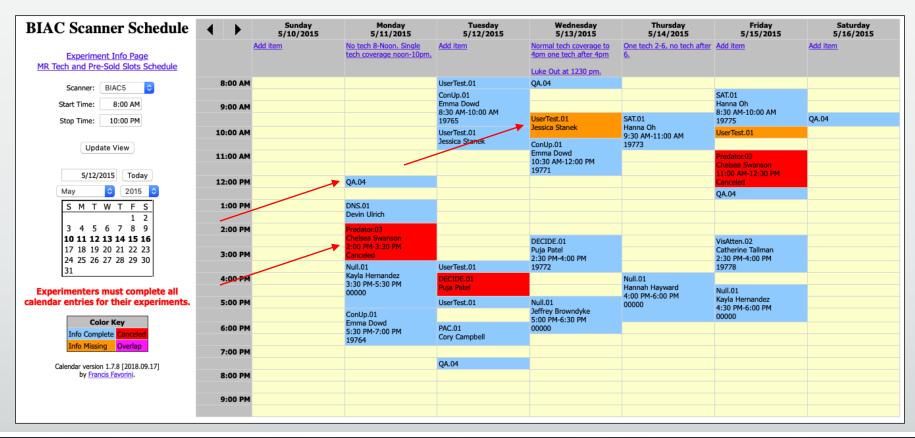
Calendar Entries

• What happens if calendar entries are incomplete?



Calendar Entries

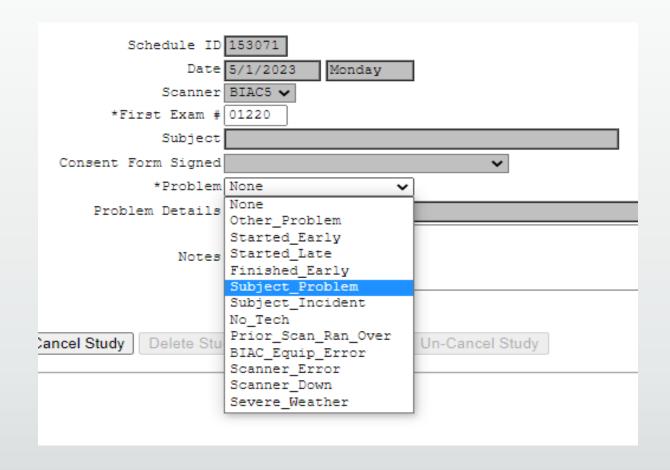
- What happens if calendar entries are incomplete?
 - Incomplete calendar entries will cause your BIAC experiment to be ineligible for renewal



Calendar Entries: Problems

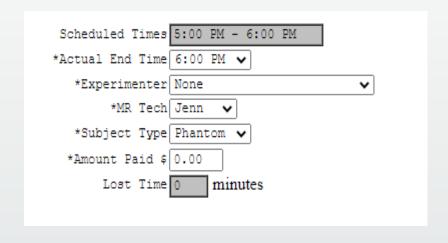
- Most Common:
 - Subject Problem

- Are not charged for:
 - No Tech
 - Scanner Error
 - BIAC Equipment Error
 - Scanner Down
 - Severe Weather



Claiming Lost Time

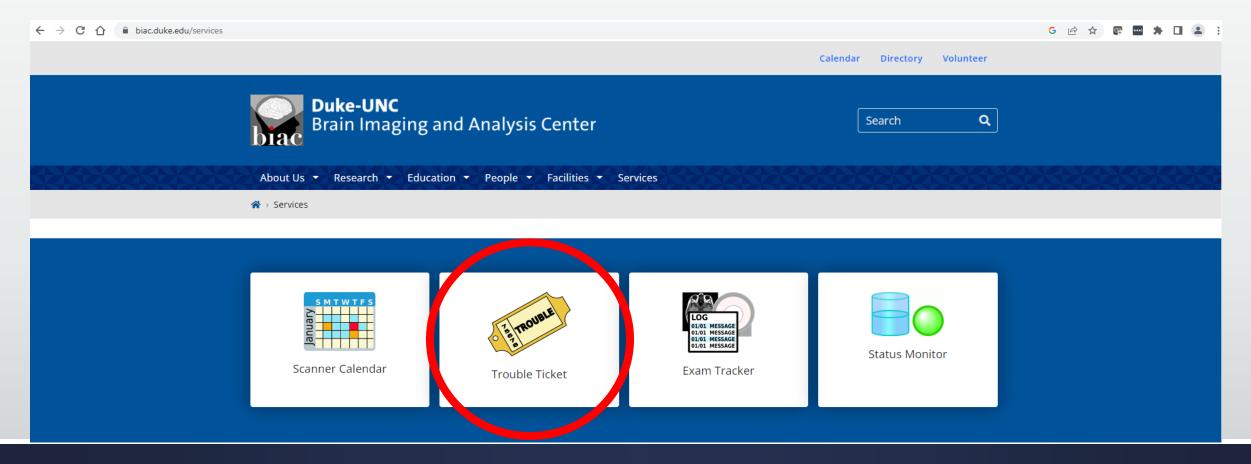
- Lost Time should only be claimed if you are unable to use all or any part of your data due to a <u>BIAC-related</u> problem
- BIAC will enter lost time for the following situations:
 - No Tech Available*
 - BIAC Scanner Down
 - Severe Weather (Duke Policy Activated)



If your scan encountered a BIAC problem, please be sure to submit a trouble ticket ASAP so that the problem can be investigated and avoided for future scans

Trouble Tickets

 Trouble tickets can be submitted by clicking on the "Services" tab on the BIAC Homepage or by visiting www.biac.duke.edu/services/



Common Scheduling/Calendar Errors

- Not knowing who is responsible for what
- Scheduled without subject
- Experiment has no hours left
- Experiment/IRB protocol has expired
- Improper Null.01 use
- Improper UserTest.01 use
 - This is NOT a placeholder for an experiment

- Incomplete calendar entries
 - Missing exam number
 - MR Tech not listed
 - Lost time not claimed properly
 - MockI/TestI/DHNI/DAVI entries are not completed
 - Consent form

Policy on Excessive Scheduling Errors

- If a user/scheduler fails to schedule Null.01 during single tech coverage or schedules all/part of their session outside of the normal or posted tech hours the following will happen:
 - Ist Offense: Scheduler gets notified about the policy and New User Orientation.
 - 2nd Offense: MR Operations Director, Dr. Todd Harshbarger, notifies the Scheduler and the Responsible PI about the severity of the situation, the second offense, and that on the third offense scheduling rights will be taken away.
 - 3rd Offense: BIAC Director, Dr. Allen Song, notifies the Scheduler and the Responsible PI that the third offense has occurred and that the scheduler's scheduling rights have been removed.

Protocol Planning

UserTest.01

- UserTest.01 = free testing time
- UserTest.01 = no MRI data, but you can...
 - Set up your protocol
 - Test scanner triggering
 - Time your task
 - See what your stimuli looks like inside the scanner
- UserTest.01 can be scheduled <24 hours in advance
 - Paid study CAN schedule over a User Test!
- We <u>highly</u> recommend scheduling a UserTest.01 prior to your first participant!

Scan Session: Planning your Time

- A scheduled session must include:
 - (I) Protocol time: the time it takes to run a protocol
 - (2) Breaks: if there is a short resting period between runs
 - (3) Set-up time: the time it takes to review the screening forms and getting the participant set up
 - (4) Exit time: the time it takes to get a participant out of the scanner

Typically allot 15 min beyond your protocol time

Data Quality and Movement

- When screening subjects before the MRI, incorporating a mock scan can help identify if subjects will be able to remain still for the duration of the scan
- Be observant of medical conditions that may cause greater than normal movement (ex. Bronchitis in the winter months or a common cold)
- Experimenters at the scanner should be observing data acquisition and noting if there are any artifacts
 - If subject movement remind subject to be still, or if it continues, end scan early and get a partial cancellation fee back
 - If artifact from MRI immediately submit a trouble ticket for review from BIAC Help

Data Quality and Movement

- Utilize free UserTest sessions on calendar to run through protocol multiple times before beginning data collection
- Consult with BIAC to ensure scanning protocol is correct before booking scanner time
- Data should be reviewed for QA as soon as possible after collection
- Utilize the online trouble ticket system to alert BIAC to potential issues with scanning or reach out to Dr. Todd Harshbarger
 - BIAC is not responsible for artifacts related to subject motion

Participant Screening and MR Safety

Pre-Scan Screening

- All subjects must be either phone screened or interviewed for MRI safety in person before being scheduled for a scan
 - Highly recommended to administer official BIAC MRI Safety Screening Form

 Any questions or concerns about MRI safety found in the initial screening should be addressed with Todd and the MRI Techs at least 48 hours before the scan

Pre-Scan Screening

MRI Techs typically are meeting subjects for the first time the day of the scan and are a last line of defense

- Responsibility to determine initial MRI safety and subject quality is up to individual lab faculty and staff (unless using BIAC volunteer registry)
- Thorough review of medical history
 - I. May require obtaining medical record authorization to review make and model of any implanted metal or part of medical history
 - 2. Emphasis on reviewing and researching any past surgeries as many subjects may not know they have implanted metal after certain procedures (i.e. wire sutures or a screw/pin)
 - 3. Even if implants are deemed safe for scanning, they may cause artifacts

Examples of Pre-Screening Resources

Phone Screening Script

BIAC Phone Screening

Good morning/afternoon, my name is Marissa Bruce and I'm calling from the Duke Brain Imaging and Analysis center.

Great. Would you be free to do the phone screening now?

Is there a better time for you to do the phone screening?

Part II: BIAC Research Summary

Our research uses functional magnetic resonance imaging to take pictures of your brain while you are doing a psychology experiment. We study the areas of the brain associated with things like memory, attention, and perception. We have a number of studies going on at any one time, and our studies are conducted at the MRI center at Duke Hospital.

If you participate in our studies, you will come to the MRI center and lie down on your back in a MRI machine (which is like a small open-ended tunnel)

The machine uses radio waves to take the pictures of your brain. The radio waves and magnetic fields used in MRI are not themselves harmful, but they do pose a risk in some cases, such as if you have a pacemaker.

Most studies take between 1-2 hours, and pay about \$20 per hour, but the duration and payment depends on the particular

In order to participate and be entered into our database (so that you can be contacted for our studies), the first step is a 5-10 minute phone screening and the second step is to come into the Duke Children's Hospital for a one hour compensated in-person screening. You will receive \$20 and a parking pass for the hospital garage. During the screening, we will collect a health history, have you fill out some questionnaires to see if you are eligible for our studies, and conduct an MRI simulation. Would you be interested in this screening?

Thank you for taking the time to reach out to us and have a great day!

Part II: Screening Questions

Before you can participate in the in-person screening. I need to go over a set of questions with you. If you do not want to answer a question, you do not have to answer it, but then you will not be able to participate.

1. Have you done any previous MRI studies or ever been in a MRI scanner?

- "Yes". Ask the subject when and where the session was conducted. Note: prior participation in MRI does not
- "No." Be especially careful with any subject who has not been in the scanner.

Revised: 03/04/2019

2. Do you have any of the following metal objects in your body?

- Implants: pacemakers, cochlear/ear, insulin pump, etc.
- Fragments: metal working, bullet/shrapnel, etc.

"Yes". If they have any implanted metal, then they should not participate in the study or go into the scanner room without approval from Dr. Song. Remember, the seanner room itself can be a dangerous environment for subjects with implanted metal (e.g., pacemakers), so it is important to screen these subjects ahead of time. [STOP SCRFFNING = CANNOT PARTICIPATEI

3. Do you have any of the following metal objects in your body?

Surgical: pins in bones, clamps, valves, catheters, etc.

"Yes". Inquire about the type of implant and the type of metal. If they have any implanted metal that is not MRcompatible then they should not participate in the study or go into the scanner room without approval from Dr. Song. Remember, the scanner room itself can be a dangerous environment for subjects with implanted metal (e.g., pacemakers), so it is important to screen these subjects ahead of time.

4. Have you ever worked with metal (e.g. grinding, fabricating)

"Yes". Ask the subject if he or she was ever around metal shavings. If "Yes". [STOP SCREENING - CANNOT

5. Have you ever had an injury to the eye involving metal or invasive eye surgery?

6. Are you pregnant or think you may be pregnant? (women only)

"Yes". ISTOP SCREENING - CANNOT PARTICIPATE!

7. Do you have any permanent makeup or tuttoos?

"Yes". [STOP SCREENING - CANNOT PARTICIPATE; tattoos below the neck are ok]

8. Do you have any body piercing that cannot be removed?

"No. I have piercings but they are removable." Tell the subject that they should leave all piercings and jewelry at home, or in lockers outside the MR center.

The following questions may preclude the subject's participation in some studies, or may suggest some potential

9. Do you have dental braces, dental implants, or a permanent retainer?

"Yes, I have permanent metal dental work." We currently do not run subjects with permanent dental work because of the potential for an imaging artifact. In addition, some permanent retainers are held in place by

"Yes, but it is removable." All removable metal dental work should be removed before entering the MR room. "Are fillings OK?" Gold and silver fillings are OK for entering the seanner room.

10. Do you feel anxious in small spaces? Would you classify yourself as being claustrophobic? (*emphasize*)

"Yes". Explain the MR environment to them, and describe the study. Tell them that they will in the scanner bore for at least 90 minutes, but will be able to talk with the experimenters in the next room. Let the subject make a decision about whether to participate.

11. Do you use any prescription medications, for example, anti-depressants, anti-auxiety or any hypertension

Because of the potential effects of some medications upon brain neuronal activity and blood flow, we also ask subjects about the drugs they might be taking

Revised: 03/04/2019

Part III: Result of Phone Screening

That is all of the questions. At this point, if you are still interested, we can schedule you for a visit to our MRI facility at Duke for the in-person screening.

If they do NOT qualify,

Unfortunately, you are not eligible to participate in our MRI studies. Because these studies are for research and of no medical benefit to you we must take additional precautions to ensure your safety. If you have any further questions or concerns, you can contact our director, Dr. Allen Song at 681-9337.

Part IV: Voicemail

This is Marissa Bruce from the Brain Imaging and Analysis Center at Duke. I am calling to conduct a quick 5 minute phone screening to see if you are eligible for our studies. If you would like, please give us a call back at 919.681.9344 any time Monday through Friday between 8am-4:30pm. If you prefer, please send an email to volunteer at b-i-a-c dot duke dot edu. That is v-o-l-u-n-t-e-e-r at b-i-a-c dot duke dot edu.

Thank you for your time!

Revised: 03/04/2019

Examples of Pre-Screening Resources

BIAC MRI Safety Screening Form

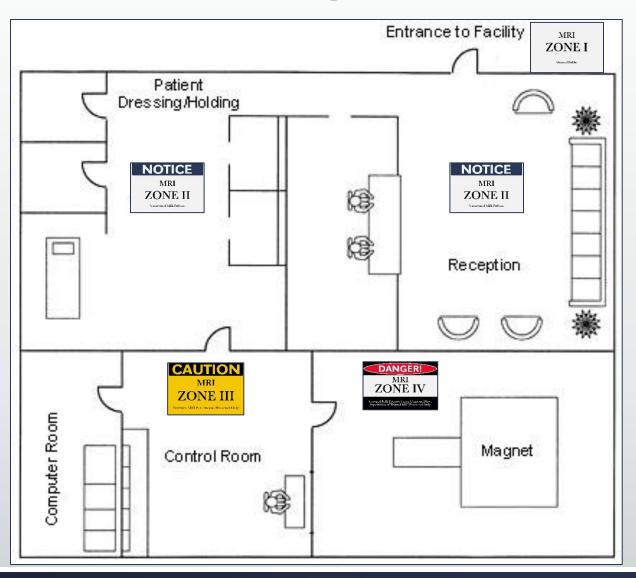
	MRI Safety S	creening			
	entering the MRI suite must fill out this aindications must be reviewed with the Safety Committee before being clear	individual's medical	record and the BIA		
Part	I: For all individuals ent	ering the sca	nner room		
Name	Name Birthdate				
Address	First name	M.I.	City		
StateZip Code	Phone (H)()	(W)()			
Have you ever had an inj (e.g. metallic slivers, shavin If yes, please descri		t		□ No	□ Yes
	ith metal (grinding, fabricating, etc.)?			⊔ No	□ Yes
Have you ever had surger If yes, please descri	y (including eye surgery)?			□ No	Yes
 Have you had any previo If yes, please list (n 	us MRI studies or been in a MR scanner nost recent first): Body part any problems?	Date	Facilit	□ No y	
Before you may	enter the scanner room, ye	ou must remo	ve all metalli	c object	ts.
	ts, including back pockets		ntain any metal (e		ipped)
	Wrist watch, any bracelets			devices	
Hair pins, clips, weav		☐ Pagers, cell pl			
☐ Pins or badges on shirt ☐ Dentures or removable reta					
Belt with metal (e.g.,	buckle)	☐ Necklaces, ch	ains		
Part	II: For all individuals er	ntering the sc	anner bore		
Are you claustrophobic	?			□ No	□ Y
2. Do you have an IUD or	diaphragm containing metal?			□ No	□ Y
3. Are you pregnant, experiencing late menstrual period, or undergoing fertility treatment?			ent?		□ Y
4. Do you currently have a	fever or other acute illness?			□ No	□ Y
	or other invasive medical procedures in	as much detail as p	ossible:		

	r blood?	□ No No ? - No	□ Ye Ye Ye
ry of stroke, seizures, brain tumo	or, head trauma, or other neurological disorder		
ry of stroke, seizures, brain tumo	or, head trauma, or other neurological disorder		
ory of stroke, seizures, brain tumo	or, head trauma, or other neurological disorder	? - No	- Ye
	•	? No	- Ye
s or contact lenses?			
TOT COMMENT INTO ST		□ No	∃ Y6
rescription (if known)			
athing disorder (e.g., asthma, apr	nea), heart condition, or movement disorder?	∟ No	_ Y
Weight	Handedness		
and the second			
Diame and an de-	Comm(s) halour the leaveling of con-		
implant or me	tal inside of or on your body.		
RIGHT	IN THE RIGHT		
	Weight WARNING: Cortain impaints, device, a. MRI, VIR ungingephy, functional on have any questions or concerns regular tools are supported by the System count. Please mark on the implant or me	Weight Handedness NARNING: Corrain implants, devices or objects may be harnedous to you and/or may inbeffice. MRI, MR angiography, functional MRI, MR spectroscopy). Do not enter the MR system roon to have any questions or converns regarding an implant, device, or on object. Consult the MRI SETORI: entering the MR system room. The MR magnet is Al WAYS on. Please mark on the figure(s) below the location of any implant or metal inside of or on your body.	Please mark on the figure(s) below the location of any implant or metal inside of or on your body.

ase indicate	if you have any of the following:	
Yes □ No Yes □ No Yes □ No Yes □ No	Aneurysm clip(s) Cardiac pacemaker Implanted cardioverter defibrillator (ICD) Electronic implant or device	If needed, please use this space to describe in detail any additional information related to potential metal fragments or implants in or on your body:
Yes □ No Yes □ No Yes □ No Yes □ No	Magnetically-activated implant or device Neurostimulation system Spinal cord stimulator Internal electrodes or wires	
Yes □ No	Bone growth/bone fusion stimulator Cochlear, otologic, or other ear implant Insulin or infusion pump Implanted drug infusion device Any type of prosthesis (eye, penile, etc.) Heart valve prosthesis	
Yes ⊔ No Yes □ No	Eyelid spring or wire Artificial or prosthetic limb	△ IMPORTANT INSTRUCTIONS △
Yes No	Metallic stent, filter, or coil Shunt (spinal or intraventricular) Vascular access port and/or catheter Radiation seeds or implants Medication patch (Nicotine, Nitroglycerine) Any metallic fragment or foreign body Wire mesh implant Tissue expander (i.e. breast) Surgical staples, clips, or metallic sutures Joint replacement (hip, knee, etc.) Bone/joint pin, screw, nail, wire, plate, etc. Dentures or partial plates Tattoo or permanent makeup Body piercing or jewelry Hearing aid (remove before entering MRI) Other implant	Before entering the MR environment or MR system room, you must remove all metallic objects including hearing aids, dentures, partial platess, keys, cell phone, eyeglasses, beeper, hair pins, barrettes, jewelry, body piercing jewelry, watch, safety pins, paperclips, money clip, credit cards, bank cards, magnetic strip cards, coins, pens, pocket knife, nail clipper, tools, clothing, with metal fasteners, and clothing with metallic threads. You will be asked to wear ear plugs to protect your hearing during the scan. Please consult the MRI Technologist or Radiologist if you have any question or concern BEFORE you enter the MR system room.
this form ar	the above information is correct to the best of my know d had the opportunity to ask questions regarding the in hat I am about to undergo.	
Signat	ure of Person Completing Form Signature of Person Sc	reening Subject/Patient Date

MR Safety

MR Safety: Zones



Zone I

All areas accessible to the general public

Zone II

 Areas between the public-accessible Zone I and restricted areas of Zone III and IV

Zone III

 Area where free access by unscreened non-MR personnel or ferromagnetic objects or equipment can result in serious injury or death

Zone 4

MR scanner room

MR Safety

- 24 hrs/day
- 365 days/year
- The magnetic field is on even when the magnet is NOT in use.
- Even if the electrical portion of the machine is off, the magnetic field is still up
- The MRI technologist has final say in who may be allowed to go into the operation and/or scanner room.





Persons with certain metallic, electronic, magnetic, or mechanical implants devices, or objects may not enter this area. Serious injury may result.

Do not enter this area if you have any questions regarding an implant, device, or object. Consult the MRI Technologist or Radiologist.



NO LOOSE METAL OBJECTS

Objects made from ferrous materials must not be taken into this area. Serious injury or property damage may result. Electronic objects such as hearing aids, cell phones, and beepers may also be damaged

MR Safety

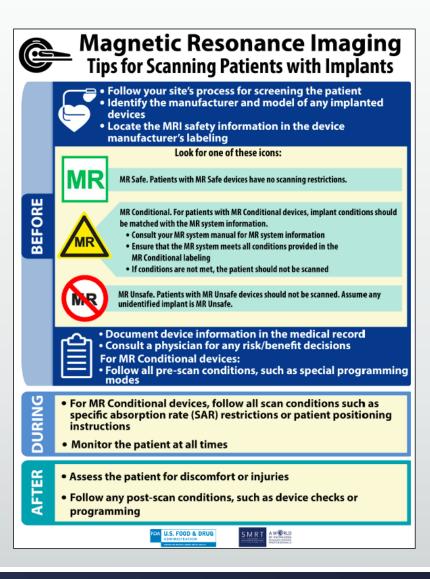
- The force of the field is measured in Tesla (T)
 - Our scanners are measured at 3.0 Tesla (T)
- The force of the field is greatest at the center of the magnet.
 - The magnetic FORCE INCREASES as you move closer to the center of the magnet
 - What is not attracted to the magnet outside the fringe field can be attracted to the magnet as you move closer to the center of the machine



Subject Safety is our #I Concern!

MR Safety: Medical Implants

- Medical Implants
 - Review Dr. Frank Shellock's MRI contraindication database: www.mrisafety.com
 - At least 3 days before your exam, email the device model and manufacturer of any medical implants to all 3 techs at BIAC-Schedule@duke.edu
 - They will reply via email regarding eligibility
 - It is the <u>Experimenter's</u> responsibility to get approval prior to the scan!



MR Safety: Pregnancy Tests

- Although BIAC no longer requires pregnancy tests, many studies still have this requirement in their IRB procedures.
- Female participants (12-55 years) must receive a urine immediately prior to each MRI Scan
- Very limited exceptions:
 - Females who have not yet menstruated
 - Post-menopausal females
 - Females who have had a hysterectomy
- Supplies are available at the scanners
- Experimenter should facilitate urine collection
- MR Tech will perform pregnancy test



Pregnancy Test Stations





Pregnancy Tests Update

- Since February, 2023, BIAC no longer requires pregnancy tests, so it is now up to each study to keep or get rid of this requirement
- If the study no longer wants to require pregnancy tests, then they must submit an amendment to their IRB
- If the study would like to continue requiring pregnancy tests, BIAC will still provide kits and testing

What to expect the day of the scan...

Day of Scan Procedure

Step 1: Escort subject to MRI hallway and ask them to place all belongings into lockers

Step 2: Ask subject to remove all metal objects from their person and place in locker (jewelry, bobby pins, etc.)

Step 3: Ask subject to pat and empty any and all pockets

All subjects should be MRI ready <u>before</u> entering the console room

Step 4: If scanning a woman of child bearing potential, conduct the urine pregnancy test

Step 5: Walk subject to console room and have them fill out the BIAC MRI Safety Sheet

Step 6: Ask subject to re-check for any metal on their person or in their pockets

Step 7: MRI Tech will review form and begin their scanning procedure

Scan Session: Visitors

- Visitors and family members are never allowed in the console room
- What are your options?
 - Schedule time in Test I, DHN I, or Mock I
 - Parent/guardian can wait in the Children's Hospital Lobby or the Main Entrance Lobby
- CANNOT leave family/visitors:
 - In the hallway
 - Console room



Scan Session: Hospital Courtesies

- At the hospital, patients and their transporters have the right of way
- Please be sure to wait if patients are in the middle of the MR hallway
- ID Badge must be visibly worn at all times

Scan Session: Experimenter Courtesies

- Please be sure to wait until the scan before yours is finished, and the participants have exited the console room before entering
- What are your options?
 - Schedule Test I/DHN I/Mock I* and wait in those rooms
- Please do not wait in the hallways
- Scans are <u>not</u> allowed to run over the scheduled time

Scan Session: Experimenter Courtesies

- Do NOT train/consent/test subjects in the hallways
 - This includes the table by BIAC 5
- If it is necessary to talk with a member from another lab, pull them aside and do not talk to them in front of their subjects
- Additionally, a subject may be from a sensitive or vulnerable population and require the undivided attention of the lab team.

Scan Session: Experimenter Courtesies

- After your session, please return all supplies, equipment, and furniture to where they should be so the room is ready for the next user
- If you have plugged in or reconfigured anything to a nonstandard configuration, please make sure that you have returned everything to standard configurations
- Fill out the sanitization sheet

SANITIZATION SIGN OFF SHEET DHN1

Please use the supplies provided to sanitize any surfaces used during your scheduled time.

After sanitizing the space, please complete this log (with your own pen):

DATE	TIME SANITIZED	STUDY NAME	EXPERIMENTER NAME (PRINT)	EXPERIMENTER INITIALS
7/19/2020	5:00 PM	Sample.01	Amanda Griffin	aeg

BIAC Resources

BIAC Resources: Stimulus Controls

• We have many peripherals available for you to use!

 Details instructions can be found here:

https://wiki.biac.duke.edu/biac:experimentalcontrol

BIAC Stimulus Control System Manual

Stimulus Control System Layout

- Organization diagram
- Hardware connected to each PC

Video display

- Using the video projector
- Using the DVD player
- Using the Video switch
- Using the Monitors

Audio

Using the audio headphones

EyeTracker

Eyetracking in the MRI scanner

Galvanic skin resistance (GSR)

· Recording GSR in the MRI scanner

Button Boxes

- Using the 8-button box
- Using the joystick button box

Head Tracking Device

Using the head tracker

Troubleshooting

Troubleshooting

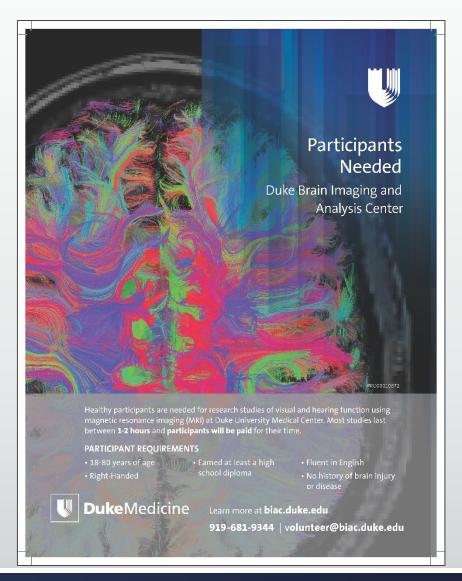
Table of Contents

- BIAC Stimulus Control System Manual
- Stimulus Control System Layout
- Video display
- Audio
- EyeTracker
- Galvanic skin resistance (GSR)
- Button Boxes
- Head Tracking Device
- Troubleshooting

BIAC Resources: Subject Recruitment

- BIAC maintains an active subject pool (~425 members)
- Healthy, "Normal" participants
- Criteria:
 - 18-80 years of age
 - Right-handed
 - Earned at least a high school diploma
 - English speaker (native/fluent)
 - No history of brain injury or disease
 - No anti-depressants, anti-anxiety, or hypertension medication use

**Currently not recruiting, but can still use



BIAC Resources: Using BIAC Subject Pool

If needed, submit IRB amendment to add BIAC Subject Pool Protocol (Pro00010672) to your protocol

 Note: protocol <u>must</u> be approved by the BIAC Scientific Review Committee prior to beginning recruitment If needed,
provide study
title, PI name(s),
and IRB number
to the BIAC
Research
Coordinator for
IRB submission

Once both protocols have been approved, submit either a "Behavioral Study Request" form or a "MRI Study Request" form to the BIAC Research Coordinator

Please confirm
that you have
requested
MockI/TestI/
DHNI/DAVI
on your BIAC
Research
Proposal if you
need a room for
consenting,
debriefing, or
behavioral tasks

Coordinator
will use the
provided
information to
contact eligible
subjects from
our subject pool

BIAC Resources: Using BIAC Subject Pool

- Please be aware that we schedule and recruit for many BIAC studies. Please provide enough time for IRB amendment approval and/or contacting participants if you need subjects.
- Please try to be flexible with your schedule, our scanners have extended hours Monday - Wednesday nights, plus availability on Thursday nights/Saturdays alternate.
- Keep in mind that many of our subjects are students, be mindful of the academic calendar (fall break, exams weeks, major holidays, spring break, etc.)

BIAC Resources: Subject Feedback

- Please let us know if a subject does not show for a scan as they will no longer be contacted for our studies
- Please let us know if a subject performs extremely poorly on a task, is unusually unmotivated, or falls asleep during the scan
 - We have a two-strike policy with subjects for instances like these, so the more feedback—the better our recruitment can be
- Please let us know if the subject has trouble laying still
 - Dental work may produce image artifacts

- Each month, we generate invoices for each experiment through the BIAC
 Scanner Schedule System
 - Invoices will be emailed on the Ist business day of the following month

- Calendar entries <u>must</u> be fully documented by the end of the last day of every month. Once the invoices are generated, changes cannot be made.
 - This includes making any lost time claims and/or cancellations

- Invoices are sent to the following individuals that were listed on the initial BIAC proposal form received by the Scientific Review Committee
- These individuals should review the invoices upon receipt and contact billing@biac.duke.edu to confirm the charges
- Payments will be processed within 2-4 days after the invoices are sent out
 - We will charge the last cost object (fund code) that we have on file for the study. If the funding source has changed, please notify BIAC as soon as you have the new fund code.
- Updating calendar entries regularly will avoid the need for corrections on the invoices.

BIAC Scanner Time Invoice

Please remit payment to:

Center Attn: Billing Campus Box 3918 Durham, NC 27710 Brain Imaging and Analysis 919-681-9337 919-681-7033 Fax billing@biac.duke.edu

Department BIAC

Responsible Investigator

Allen Song allen.song@duke.edu

Billing Contact Elena Musty

elena.musty@duke.edu

Brein Winsey										
Experi	ment					Cost Object Investigato				
Scanner	Date	Start	End	Exam(s)	CanceledL	ost Time	Overlap Credit	Amount Billed	Paid to Date	Amount Due
Current Charges										
BIAC6 15-					No	0 min.	0 min.	\$280.00	\$0.00	\$280.00
BIAC6 25-	Apr-2019	3:30 PM	4:30 PM	00645	No	0 min.	0 min.	\$560.00	\$0.00	\$560.00
Current charges through 4/30/2019 (2 stud Past Due charges (0 studies) Development funds contributed by BIAC Total for (2 studies)										\$840.00 \$0.00 \$0.00 \$840.00

Current charges through 4/30/2019 (2 studies) \$840.00
Past Due charges (0 studies) \$0.00
Development funds contributed by BIAC \$0.00

Total for Allen Song (2 studies) \$840.00

- Rates Effective July 1st, 2023:
 - Rate for Scans = \$640 per hour
 - Cancellation Fee Rate = \$160 per hour
 - Scans cancelled with less than 48 hours notice will incur the cancellation fee

BIAC Billing System: Helpful Definitions

- Lost Time: This is a credit for time/data lost due to a BIAC-related problem.
 The experimenter should claim this on the BIAC Scanner Schedule
- Overlap Credit: This is a credit granted when a paying study takes over a canceled slot and completes the scan
 - Non-Paying Studies:
 - UserTest
 - SysDevelop
 - SysService
 - QA
 - Demo

BIAC Billing System: Cancellations

- Canceled scans incur a fee at the rate of \$160/hour (effective 7/1/2023).
 - Please note that this charge will only apply to those sessions which are canceled <48
 hours of the session start time
- Sessions canceled with >48 hours notice, or due to scanner down time, will have no associated charges. If a BIAC MR Tech becomes unavailable for your scan, we will not charge you for the time.
- The cancellation fee can only be applied to the entire session
 - You will be charged the full rate for your scheduled time, even if you only use a portion of it.
- The earlier you cancel your study on the calendar, the more time another paying study has to take over the slot

• Q: I am at the scanner and my session ended and I need more time. What do I do?

• Q: I am at the scanner and my session ended and I need more time.
What do I do?

A: If the MR Tech and scanner are available (no other session booked), you may continue your scan by adding additional time to the calendar. If you do not add it, the MR Tech will and you will be billed appropriately. You can only add time in 30 minute increments. (i.e. If you schedule 30 minutes but need 45, you will pay for I hour. The time you schedule on the scanner should be adequate to cover time you enter the console room, until the time you leave. This includes the time for the subject to enter and exit the scanner.

• Q: I no longer need my full time slot, can I cancel a portion of my scheduled scan time for a reduced fee?

• Q: I no longer need my full time slot, can I cancel a portion of my scheduled scan time for a reduced fee?

 A: You can cancel the portion on the calendar, however you will not receive a reduced fee unless a paying study takes over your time slot (overlap credit will apply). If you scheduled time and run your study, you will be charged for the entire scheduled slot regardless of how much time you use.

• Q: My subject has an implant/device/object but says they have had a MRI scan since then. Do I still need to get the MR Techs to clear it before their scan? Even if the scan was done at Duke?

• Q: My subject has an implant/device/object but says they have had a MRI scan since then. Do I still need to get the MR Techs to clear it before their scan? Even if the scan was done at Duke?

- A:YES! You will still need to have the implant/device/object cleared by the MR Techs at least 3 days prior to the scan.
- A:YES! Both 1.5T and 3T scanners are used clinically, so implants/devices/objects that were at one time cleared for 1.5T have not all been cleared for 3T.

Next Steps...

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- Send NetID and email to <u>biac-newuser@duke.edu</u>
- 2. Complete the BIAC User Profile survey
- 3. Complete the Level I Access survey
 - Date of scheduled New User Orientation
 - Date completed MRI Safety Quiz
 - Upload MRI Level I Access Signature Sheet
 - Upload MRI Subject Screening form
- 4. Complete the New User Orientation session



5. Join the BIAC User Listserv

Forms and Safety Quiz

- Found at https://www.biac.duke.edu/research/safety
- Will submit these forms in the Level I Access Survey on REDCap

Safety

If you need access to the MRI suite, you must review the MRI safety materials and pass the safety quiz to demonstrate your understanding of the material covered. You must also complete, sign and date the MRI Screening Form and Level 1 MRI Access Signature Sheet and return them to the BIAC Main Office.

- SOP101: MRI Access
- SOP111: BIAC Safety Training
- MRI Safety Tutorial
- MRI Safety Video
- MRI Safety Quiz
- MRI Subject Screening Form (PDF)
- MRI Level 1 Access Signature Sheet (PDF)

BIAC User Listserv

- Join to stay up to date and receive any notices, policy changes, etc.
- To join:
 - Go to https://lists.duke.edu/sympa
 - Log in with Net ID and click "Search for lists"
 - Search "biac" and click the group biac-users@duke.edu
 - On the left side of the page, click "Subscribe"

biac-users - For anyone who uses the services of the Brain Imaging & Analysis Ctr.

biac-users@duke.edu

Subject: For anyone who uses the services of the Brain Imaging & Analysis Ctr.

Description: This list is for researchers who use the BIAC facilities. Operational announcements, service interruption notices, talk announcements, and other important messages that affect the general BIAC community will be sent through this listserv.

Questions?

Thank you for attending the BIAC New User Orientation!

