

HELLO!

Welcome! It looks like you recently joined the CHEN Lab or are interested in our lab. That's great! We're really glad to have you here and will do what we can to make your time in the lab amazing. We hope you'll learn a lot about psychology and neuroscience, develop new skills (coding, data analysis, writing, giving talks, etc), make new friends, and have a great deal of fun throughout the whole process.

This lab manual was inspired by Dr. Mariam Aly, and borrows heavily from hers (i.e., [this one](#)). It's also a work in progress. If you have ideas about things to add, or what to clarify, talk to Xi (the PI) or the lab manager.

When you join the lab, you're expected to read this manual. You're also highly encouraged to read it while deciding if you want to join the lab in the first place. You should always feel free to talk to Xi to clarify anything in the lab manual and let Xi know if she is not following through on some of the promises! This lab manual is intended to be a starting point for a positive mentor-mentee and lab experience — but, ultimately, positive experiences will also require active investment in, and refinement of, our one-on-one interactions over time.

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Expectations and Responsibilities

Everyone

Big Picture

Science is hard. But it's also fun. In the CHEN Lab, we want to make sure that everyone experiences a positive, engaging, hostility-free, challenging, and rewarding lab environment. To maintain that environment, we all have to do a few things.

- Work on what you're **passionate** about, work hard at it, and be proud of it. Be so proud of it that you have to suppress bragging (but it's ok to brag sometimes).
- Scientists have to be **careful**. Don't rush your work. Think about it. Implement it. Double and triple check it. Incorporate sanity checks. Ask others to look at your code or data if you need help or something looks off. It's ok to make mistakes, but mistakes shouldn't be because of carelessness or rushed work.
- If you do make a mistake, you should definitely tell your collaborators (if they have already seen the results, and *especially* if the paper is being written up, is already submitted, or already accepted). We admit our mistakes, and then we correct them and move on.
- It takes a lot of work to carefully design and execute a sound study. Before diving in, [have a look at these slides](#) prepared by Dr. Serra Favila. Then have a chat with Xi about other considerations that may be specific to your project.
- We all want to get papers published and do great things. But we do this *honestly*. It is never ok to plagiarize, tamper with data, make up data, omit data, or fudge results in any way. Science is about finding out the truth, and null results and unexpected results are still important. This can't be emphasized enough: ***no research misconduct!***

- **Support** your fellow lab-mates. Help them out if they need help (even if you aren't on the project), and let them vent when they need to. Science is collaborative, not competitive. Help others, and you can expect others to help you when you need it.
- **Respect** your fellow lab-mates. Respect their strengths and weaknesses, respect their desire for quiet if they need it, and for support and a kind ear when they need that. Respect their culture, their religion, their beliefs, their sexual orientation.
- If you're struggling, tell someone (feel free to tell Xi!). Your health and happiness come first. The lab looks out for the well-being of all its members. We are here to help. It's ok to go through hard patches (we all do), but you shouldn't feel shy about asking for help or just venting.
- If there is any tension or hostility in the lab, something has to be done about it immediately. We can't thrive in an environment we aren't comfortable in, and disrespect or rudeness will not be tolerated in the lab. If you don't feel comfortable confronting the person in question, tell Xi. In any case, tell Xi.
- If you have a problem with Xi and are comfortable telling her about it, do! If you aren't comfortable, then tell the lab manager (for smaller issues) or another member of the psychology department (for serious issues).
- Stay up to date on the latest research, by using Google Scholar alert and/or getting journal table of contents. Also consider following scientists in the field on BlueSky or Twitter (X).

Small Picture

There are a few day-to-day things to keep in mind to keep the lab running smoothly.

- If you're sick, stay home and take care of yourself. Because you need it, and also because others don't need to get sick. If you're sick, reschedule your meetings and participants for the day (or the next couple of days) as soon as you can.
- You aren't expected to come into lab on weekends and holidays, and you aren't expected to stay late at night. You *are* expected to get your work done on time.
- Show up to your meetings, show up to run your participants, show up to your classes, and show up to lab meetings. Come at least three days a week. You do not have to be in at 9am every day – just work the hours you need to work to get stuff done. (Note: the lab manager and full time RAs are expected to keep more regular hours than other lab members)
- Make sure the door to the lab is locked if no one is inside. Turn off the lights if you're the last one leaving for the day.
- Keep the lab tidy. Eating in lab is fine (except in the phlebotomy room), but clean up food waste, crumbs, spills. Put lab/testing equipment back where you found it. Keep the kitchen area clean. Do not leave dirty dishes/mugs in the sink. Clean the coffee machine after each use. Keep common areas uncluttered.
- Dress code is casual (and you can dress up if you want!) but not *too* casual. For example, when interacting with participants or presenting your work, don't wear pajamas and sweat pants.
- Be on time. Especially when you are running participants – in fact, show up 15-20 minutes early to set everything up. Older participants tend to arrive early. And be on time for your meetings: respect that others have packed days and everyone's time is valuable.
- Be respectful and grateful to participants. Participants are volunteers who devote their time to science. Some tasks they do in the study are tedious or challenging. Be understanding. We have participants of different age, with different mental status, and from different backgrounds. Be courteous to everyone. Take a look at [these slides](#) prepared by Alexis Juarez from UC Berkeley on interacting with participants in the Berkeley Aging Cohort Study (BACS).

Principal Investigator

All of the [above](#), and Xi promises to also...

- Support you (scientifically, emotionally, financially)
- Give you feedback on a timely basis, including feedback on project ideas, conference posters, talks, manuscripts, figures, grants.
- Be available in person and via e-mail on a regular basis, including regular meetings to discuss your research (and anything else you'd like to discuss).
- Give my perspective on where the lab is going, where the field is going, and tips about surviving and thriving in academia.
- Support your career development by introducing you to other researchers in the field, promoting your work at talks, writing recommendation letters for you, and letting you attend conferences as often as finances permit.
- Help you prepare for the next step of your career, whether it's a post-doc, a faculty job, or a job outside of academia.
- Care for your emotional and physical well-being, and prioritize that above all else.

Post-Docs

All of the [above](#), and you will also be expected to...

- Develop your own independent line of research.
- Help train and mentor students in the lab (both undergraduate and graduate) when they need it – either because they ask, or because Xi asks you to.
- Present your work at departmental events, at other labs (if invited), and at conferences.
- Apply for grants (e.g., NRSA, K99, organization/foundation fellowship). Though Xi will only hire you if she can support you for at least one year, it's in your best interest to get experience writing grants.
- Apply for jobs (academic or otherwise) when you're ready, but no later than the beginning of your 4th year of post-doc. If you think you'd like to leave academia, that's completely ok – but you should still treat your post-doc seriously, and talk to Xi about how to best train for a job outside academia.
- Challenge Xi when I'm wrong or when your opinion is different, and treat the rest of the lab to your unique expertise.

Graduate Students

All of the [above](#), and you will also be expected to...

- Develop your dissertation research if you are a PhD student. Your dissertation should have 2 to 3 studies that answer a big-picture question. Much of your work has to be done independently, but remember that others in lab (especially Xi!) are there to help you when you need it.
- Help mentor students in the lab when they need it – either because they ask, or because Xi asks you to. Mentoring experience is also important training. Mentees can also help you.
- Present your work at departmental events, at other labs (if invited), and at conferences.
- Apply for grants if you are a PhD student (e.g., NRSA or NSF grants). It's a valuable experience, and best to get it early.

- Think about what you want for your career (academia – research or teaching, industry, science writing, something else), and talk to Xi about it early to make sure you’re getting the training you need for that career
- Make sure you meet all departmental deadlines (e.g., for your exams and thesis) -- and make sure Xi is aware of them!
- Prioritize time for research if you are a PhD student. Coursework and TAing are important, but ultimately your research gets you your PhD and prepares you for the next stage of your career.
- You must attend lab meetings when your schedule permits and present at least once every semester.

Lab Manager

All of the [above](#), and you will also be expected to...

- Help new lab members adjust to the lab by answering questions they have that you can answer. If you can’t answer, direct their questions to Xi.
- Maintain IRB protocols for the lab (writing, renewing), archive consent forms, keep any required paperwork up to date and organized.
- Oversee the hiring, scheduling, and training of research assistants.
- Maintain the lab website and lab wiki, update the lab manual, add lab events to the lab calendars, check the lab e-mail address (chenlab.stonybrook@gmail.com; take care of any e-mails that you can, forward the rest to Xi).
- Give new lab members access to the lab wiki, lab GitHub, lab calendars, lab server, and make sure published projects are archived.
- Assist with the recruitment and scheduling of participants, keep track of participants retention, and organize participant appreciation events.
- Assist with data collection and analysis (behavior, fMRI, PET, and/or blood sample).
- Be in the lab on a regular basis -- more than other lab members, your presence in lab when others are around is essential. This means you probably shouldn’t work 7pm to 3am -- try 9am to 5pm or 10am to 6pm, with flexibility depending on your out-of-work schedule (e.g., doctor appointments).

Full-Time Research Staff

All of the [above](#), and you will also be expected to...

- Help new lab members adjust to the lab by answering questions they have that you can answer. If you can’t answer, direct their questions to Xi.
- Assist with the recruitment and scheduling of participants.
- Assist with data collection and analysis (behavior, fMRI, PET, and/or blood sample).
- Work on your own research project (developed with Xi’s help).
- Your research responsibilities will be similar to graduate students and lab manager, but your administrative duties may be different. Talk to Xi so you can be sure you understand your responsibilities.

Undergraduate Students

All of the [above](#), and you will also be expected to...

- Assist with recruitment and scheduling of participants.

- Assist with data collection and analysis.
- If you are working on your own independent project under the mentorship of another lab member, work on it.
- Develop your weekly schedule by talking to your mentor (post-doc mentor, graduate student mentor, or Xi). You should be coming in regularly and scheduling enough time to get your work done.
- If you are earning course credit for research, you must attend lab meetings when your schedule permits and present at least once during the semester.

Lab Resources

Wiki

The lab wiki is currently under construction. The link will be updated once it's ready. The lab wiki is, well, a wiki for the lab. It has a lot of the information that is helpful when you get started, including tasks that need to be done upon arrival, day-to-day housekeeping duties, forms and flyers, programming and stats tips, information about accessing the cluster and lab servers. Edit it when you obtain information that will be useful for others to know! Ask the lab manager to be added as a member.

Slack

Slack will be used as one of the means of lab communication. The best way to get in touch with Xi is via E-mail.

When posting messages or looking for updates, check the appropriate channel: *#general* for lab announcements, *#lab-meetings* for notes or communication related to lab meetings, *#papers* for sharing links to lab-relevant papers and discussing them, *#code-tips* for sharing wisdom on code writing or asking (and answering) the coding questions of others, *#fmri-methods* for sharing wisdom on fMRI data collection / analysis or asking (and answering) the fMRI questions of others, *#pet-methods* for questions and discussions on PET data collection / analysis, *#blood-methods* for plasma related questions and discussions, *#stats* to ask and answer questions about statistical analyses, and *#random* for non-work-related chatting that is best kept out of the work-related channels.

Try to keep each channel on topic, so that people can subscribe only to the channels that concern them. For messages to one person or a small group, use direct messages. If you have to send attachments (e.g., papers) or send messages that include out-of-lab recipients, use e-mail. If it's an emergency, e-mail or call Xi.

Full-time lab members should install Slack on their computers and/or phones. Part-time lab members should also check Slack regularly. You should of course feel free to ignore Slack on evenings and weekends – and Xi probably will, too!

Google Calendars

The lab has many Google calendars.

1. CHEN Lab – Events calendar: *used to keep track of lab events, including any lab meetings just for our lab and birthdays!*
2. CHEN Lab – Travel Schedules calendar: *used to indicate travel dates (e.g., “Xi away” for August 1-7), so that other people know when you aren’t available. You are not obligated to put down your travel*

dates, but they are useful for planning purposes (e.g., People will know not to schedule group meetings/testing if you are not around; or if Xi is writing a grant, it helps to know if you will or won't be available to provide data, etc). Putting your travel dates down also ensures that Xi won't bother you with e-mails or Slack messages during your time away!

3. CHEN Lab - Cognitive Testing calendar: *used to reserve time in the experiment running rooms*

Xi also has a personal calendar that you should check before proposing meeting times with her.

E-mail

There is a lab e-mail account that only the lab manager and Xi can access (chenlab.stonybrook@gmail.com) -- people may contact the lab (e.g., interested in participating in studies, inquiries about research opportunities) through that email address.

General Policies

Hours

Being in lab is a good way of learning from others, helping others, building camaraderie, having fast and easy access to resources (and people) you need, and being relatively free from distractions at home (e.g., your bed or Netflix). That said, hours in academia are more flexible than other jobs -- but you should still treat it as a real job (e.g., 40 hours/week for full time). My primary concern is that you get your work done, so if you find that you are more productive at home, feel free to work at home occasionally. If you have no meetings, no participants, and no other obligations that day, it might be a good day to work at home – but you can't do this all the time. Of course, if there are health concerns, working at home often is perfectly okay.

The only exception to this is lab managers and full time RAs, who must keep more regular hours and be in lab at least 4 days a week (excluding vacations, doctor appointments, family issues, etc). Lab managers are expected to be in about 8 hours a day, starting around 9am or 10am and ending around 5pm or 6pm.

I'm a night owl and sometimes work during the weekends. This means that I will sometimes send emails or Slack messages outside of normal working hours. For the most part, I try not to by schedule my emails to send later, but sometimes I do. I do not expect you to respond until you are back at work. I do not expect there to be cases when I suddenly and urgently need something from you over the weekend (e.g., for a grant deadline), but should I anticipate that happening, I will bring it up in advance so we can plan accordingly. All this said, I realize that being told you can ignore my messages might not take away the stress of *seeing* my messages if you check work email or Slack in the evenings or on weekends. If my off-hours messages are unwelcome and cause distress, please talk to me, and I will be better at not bothering you during your time off.

Although I sometimes work on weekends, I try to only do that when necessary. Please respect that by making sure to give me enough heads-up about impending deadlines so that I can get things done for you (e.g., write letters of recommendation, give feedback on manuscripts, etc) while maintaining my work/life balance. For more details, see [Deadlines](#).

Meetings

Biweekly Lab Meetings

Biweekly lab meetings (~1 to 2 hours each) are meant to be a forum for trainees to present project ideas and/or data to get feedback from the rest of the group. Projects at any level of completion (or even not yet started!) can benefit from being presented. These lab meetings can also be used to talk about methods, statistical analyses, new papers, and career development. For paper discussions, everyone must come to lab meeting having read the paper and prepared with comments and questions to contribute.

Each trainee (RA, students, post-docs) is expected to present at least once every semester, especially if you are taking research credits. These meetings are informal. Lab members are expected to attend every meeting (obviously, illnesses, doctor appointments, family issues, etc are a valid reason for missing a meeting).

Occasionally, we may have guest speakers or joint lab meetings with other labs – these may be combined with our biweekly lab meeting or an additional meeting. We will also use lab meetings (or ad-hoc scheduled meetings) to prepare for conference presentations and give people feedback on job talks or other external presentations.

Individual Meetings

Each trainee (RA, students, post-docs) mentored by Xi should develop your weekly schedule by talking to Xi at the beginning of each semester. Each trainee will have a slot set aside to meet with Xi. If scheduling conflicts arise (e.g., because of travel), we can try to reschedule for another day that week. If there is nothing to discuss, feel free to cancel the meeting or just drop by for a brief chat.

Post-docs and graduate students should also meet with their mentees on a regular basis.

Deadlines

One way of maintaining sanity in the academic work is to be as organized as possible. This is essential because disorganization doesn't just hurt you, it hurts your collaborators and people whose help you need. Be reliable. When it comes to deadlines, tell your collaborators as soon as you know when a deadline is, and make sure they are aware of it. Don't be afraid to bug them about it (yes, bug Xi as well).

Give Xi at least one week's notice to do something with a hard deadline that doesn't require a lot of time (e.g., reading/commenting on a conference abstract, filling out paperwork, etc).

Give Xi *at least* two weeks' notice (preferably more) to do something with a hard deadline that requires a moderate amount of time (e.g., a letter of recommendation, training plan for grant, etc).

If you want feedback on research and teaching statements, or other work that requires multiple back-and-forth interactions between you and Xi before a hard deadline, give her as much time as you can; at the very least three weeks.

For manuscript submissions and revisions (i.e., which either have no deadline at all or only a weak deadline), send drafts to Xi as soon as you have them, and bug her to give you feedback if she hasn't responded in two weeks – papers are important!

Presentations

Learning to present your research is important. Very few people will read your papers carefully (sad, but true) but you can reach a lot of people at conference talks and posters. Also, if you plan on staying in academia, getting a post-doc position and getting a faculty position both significantly depend on your ability to present your work. Even if you want to leave academia, presentations are likely to be an important part of your job. Additionally, every time you present your work, you are representing not just yourself but the entire lab.

It is therefore highly encouraged that you seek out opportunities to present your research, whether it is at departmental talk series and events, to other labs (within or outside of Stony Brook), at conferences, or to the general public. If you are going to give a presentation (a poster or a talk), be prepared to give a practice presentation to the lab at least one week ahead of time (two weeks or more are advisable for conference presentations, and *many* weeks ahead of time are advisable for job talks, which require much refining). Practice talks will help you feel comfortable with your presentation, and will also allow you to get feedback from the lab and implement those changes well in advance of your real presentation. Talk to Xi before you dive in if this is your first presentation or if you are not sure where to start.

Templates for posters will be available, and you can use those as much or as little as you'd like. Some general rules for posters should be followed: minimize text as much as possible (if you wrote a paragraph, you're doing it wrong), make figures and text large enough to see at a distance, make sure different colors are easily discriminable, etc. Other than that, go with your own style and make it pretty.

Recommendation Letters

Letters of recommendation are extremely important for getting new positions and grants. You can count on Xi to write you a letter if you have been in the lab at least one year (it's hard to really know someone if they have only been around for a few months). Exceptions can be made if students or post-docs are applying for fellowships shortly after starting in the lab.

If you need a letter, notify Xi as soon as possible with the deadline (see Deadlines for guidance), your CV, and any relevant instructions for the content of the letter. If the letter is for a grant, also include your specific aims. If the letter is for a faculty position, also include the position ads and your research and teaching statements if they are ready. In some cases (especially if short notice is given), you may also be asked to submit a draft of a letter, which will be modified based on Xi's experience with you, made more glamorous (people are much too humble about themselves!), and edited to add anything you left out that Xi thinks is important. This will ensure that the letter contains all the information you need, and that it is submitted on time.

Data Management

Storing Active Datasets

Lab data can be stored in:

1. Lab server(s): neuroimaging data, plasma data, cognitive data, psychosocial and health data, and (separately from all data and coded so that data are not identifiable) electronic consent forms, demographics forms
2. Cloud service (e.g., dropbox, google drive, etc) can be used to share **de-identified** small datasets and/or code with collaborators

Although the servers are backed up, the backup is only on-site – so make extra backups! Each lab member should back up raw data they work with on an external hard drive as well as the code needed to reproduce all analyses. Your local computers are not to store data (but having data in a Dropbox/Google drive folder synced to your computer is ok).

Data Organization

If you have already run several independent projects and have a data organization structure that works well for you, feel free to use it. If not (or if you are looking for a change), the following structure is recommended (based on [Neuropipe](#)):

- projectName/subjects
 - individual directories for each of your participants
 - projectName/subjects/{subj}/analysis
 - subject-specific analyses (e.g., 1st and 2nd level analysis – at the run level and experiment level)
 - projectName/subjects/{subj}/data
 - raw data for that participant, with the following directories...
 - behavioralData (for, well, behavioral data)
 - eyetrackingData (if applicable)
 - nifti (raw nifti files / raw MRI and fMRI data)
 - rois (participant-specific ROIs)
 - projectName/subjects/{subj}/design
 - timing files for that participant, with different directories for the different GLMs you're running (and the different runs in the experiment)
 - projectName/subjects/{subj}/fsf
 - if you're using FSL, put the .fsf files here. If you're using SPM or something else, save the files for setting up preprocessing and GLMs here
 - projectName/subjects/{subj}/scripts
 - Matlab, Python, R, or bash scripts that you used for that participant. You should keep the 'template' scripts elsewhere, but you can store scripts you modified specifically for that participant here
- projectName/scripts
 - template scripts and that you may modify for each participant, as well as scripts and functions used for all participants and group analyses
 - recommend making subdirectories for each type of analysis (e.g., behavior, pattern analysis, functional connectivity, univariate)
 - if you have scripts that are the same for each participant, you can have symbolic links for them in your participant-specific scripts directories
- projectName/results
 - figures with main results, powerpoint or keynote presentations, manuscripts if you wish
- projectName/notes

- detailed notes about the design, analysis pipeline, relevant papers, etc
- projectName/group
 - group analyses
 - recommend making subdirectories for each type of analysis (e.g., behavior, pattern analysis, functional connectivity, univariate)
- projectName/task
 - code for your behavioral experiment, stimuli, piloting information
 - if you are running your presentation code out of Dropbox, it will still be good to have a copy of the code here (but you can keep the stimuli only on Dropbox if you'd like)

When you leave the lab, your projects directories should be set up like this, or something similarly transparent, so that other people can look at your data and code. You *must* do this, otherwise your analysis pipeline and data structure will be uninterpretable to others once you leave, and this will slow everyone down (and cause us to bug you repeatedly to clean up your project directory or answer questions about it).

Archiving Inactive Datasets

Upon completion of a project, you must archive the datasets and back them up. This should be done in a number of ways. You are responsible for backing up your data continuously on the external hard drive. If you did not get an external hard drive and are actively collecting data or working on active projects, ask Xi for one as soon as possible (see *Storing Active Datasets*, above). After a project is completed and the paper is published in a peer-reviewed journal, move the project to the archive on the server.