

Peixoto Laboratory Manual

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Welcome!

It looks like you recently joined the Peixoto Laboratory in the College of Medicine at Washington State University. That's great! We're really glad to have you here, and will do what we can to make your time in the laboratory amazing. We hope you'll learn a lot about Autism Spectrum, Sleep, Learning, and how to generate and analyze genomic data to answer relevant biological questions. I hope you develop new skills (data analysis, writing, giving talks), make new friends, and have a great deal of fun throughout the whole process.

This laboratory manual was inspired by several others, and borrows heavily from them (e.g. [this one](#) and [this one](#)). It's also a work in progress. If you have ideas about things to add, or what to clarify, talk to me (Lucia, the PI) or the laboratory manager (Kris).

When you join the laboratory, you're expected to read this manual and [sign the form at the end of this document](#) indicating that you have done so.

Expectations and Responsibilities

Everyone

Big Picture

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

- We are a team. This means that you have people supporting you but also that we are counting on you to do your part.
- 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 data if you need help or if 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 other members of the lab (specifically me, the PI) and 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.
- We all want to get papers published and do great things. But we do this *honestly*. It is never okay 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.
- Support your fellow laboratory-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 laboratory-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, and their sexual orientation.
- If you're struggling, tell someone (feel free to tell me!). Your health and happiness come first. The laboratory 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 laboratory, 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 laboratory. If you don't feel comfortable confronting the person in question, tell me.
- Stay up to date on the latest research. Also, consider following scientists in the field on Twitter.
- Have a life outside of the laboratory, take care of your mental and physical health, and don't feel bad for taking time off work. Make sure you follow WSU HR policies though, and always check you have enough time to take off.

Small Picture

There are a few day-to-day things to keep in mind so that the laboratory runs 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. If you feel like you can work from home, do so. However, take sick days off if you need them (they are there for a reason).
- You *are* expected to get your work done (whatever time of day you like to do it).
- Show up to your meetings, show up to your classes, and show up to laboratory meetings.
- Be on time for meetings. If you are the person presenting, show up 15-20 minutes early to set everything up. Respect that others have packed days and everyone's time is valuable.
- **Being late and especially missing meetings is not tolerated.** I will keep track of when these things happen and bring it to your attention (and eventually HR) if it happens too often.
- Work the hours you need to work to get stuff done. However, remember that as a state employee you are expected to clock in at least 40 hours per week and turn in your time-sheets.
- Keep the laboratory tidy. Put laboratory equipment back where you found it. Keep common areas uncluttered. If you notice a supply is running low, please order more!
- Keep the office area tidy! YOU need to clean up food waste, crumbs, spills. (Janitors only takeout the trash). Being messy equates to being lazy and shows that you don't respect your coworkers.
- Respond to calendar invites when either Kris or I send them to you. If you have problems getting them please bring this up at lab meeting.
- When you want to take time off, please give a **two week's notice** and notify myself and Kris, as well as **add to the Peixoto lab Google drive calendar**.
- We want everyone to be successful. PLEASE ask for help when you need it.

Principal Investigator

All of the [above](#), and I promise to also...

- Support you (scientifically and 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 *Slack* on a regular basis, including regular meetings to discuss your research (and anything else you'd like to discuss). All trainees will meet once a week with me individually unless circumstances don't allow it.
- Provide the funding necessary to keep the laboratory going
- Give my perspective on where the laboratory 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
- Respect your emotional and physical well-being.

Graduate/Professional Students

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

- Develop your dissertation/scholarly project research. Much of your work has to be done independently, but remember that others in laboratory (especially me!) are there to help you when you need it
- Help mentor undergraduate students in the laboratory when they need it – either because they ask, or because I ask you to. Undergrads can also help you collect data.
- Present your work at departmental events, at other labs (if invited), and at conferences
- Apply for grants (e.g. NRSA, AHA, etc.). 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 me about it 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 I am aware of them!
- Prioritize time for research and balance it with your course-work.
- Submit a progress report once a month.

Laboratory Managers/technicians

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

- Help new laboratory members adjust to the laboratory by answering whatever questions they have that you can answer. If you can't answer, direct their questions to me
- Maintain protocols for the laboratory (IACUC/IRB, writing them, renewing them), biosafety training forms, keep any required paperwork up to date and organized
- Assist laboratory members with data collection and analysis
- Be in the laboratory on a regular basis -- your presence in laboratory 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)

Undergraduate Students

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

- Assist other laboratory members with data collection and analysis (unless you are working on your own independent project under the mentorship of another laboratory member, in which case you should work on that)
- Develop your weekly schedule by talking to your senior mentor within the lab. You should be coming in every week, and scheduling enough time to get your work done.
- You must also attend laboratory meetings when your schedule permits, present at one of these laboratory meetings, and submit a write-up of your research by the end of the semester/summer

Post-Docs

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

- Develop your own independent line of research and have open discussions about overlaps with the lab research program.
- Outline an Individualized career Development Plan (IDP), set goals for your career development, and meet with me every 3-4 months to discuss progress towards goals.
- Help train and mentor students in the laboratory when they need it – either because they ask, or because I ask you to.
- Submit a progress report once a month.
- Present your work at departmental events, at other labs (if invited), and at conferences
- Apply for grants (e.g., NRSA, K01, K99). Though I will only hire you if I can support you for at least two years, it's in your best interest to get experience writing grants – and if you get them, you'll be helping out the entire laboratory as well as yourself (because you'll free up funds previously allocated to you)
- Apply for jobs (academic or otherwise) when you're ready (with at least 2 publications from the lab), 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 me about how to best train for a job outside academia.
- Challenge me (Lucia) when I'm wrong or when your opinion is different, and treat the rest of the laboratory to your unique expertise

Code of Conduct¹

Essential Policies

The laboratory, and the university, is an environment that must be free of harassment and discrimination. All laboratory members are expected to abide by Washington State University policies on discrimination and harassment (executive policy 15), which you can (and must) read about: <https://oeo.wsu.edu/executive-policy15/>

The laboratory is committed to ensuring a safe, friendly, and accepting environment for everybody. We will not tolerate any verbal or physical harassment or discrimination based on gender, gender identity and expression, sexual orientation, disability, physical appearance, body size, race, or religion. We will not tolerate intimidation, stalking, following, unwanted photography or video recording, sustained disruption of talks or other events, inappropriate physical contact, and unwelcome sexual attention. Finally, it should go without saying that lewd language and behavior have no place in the laboratory, including any laboratory outings.

If you notice someone being harassed, or are harassed yourself, tell me immediately. If I am the cause of your concern, then reach out to the department chair or another trusted faculty member in the department.

Taking Photos & Videos

We respect the privacy and comfort of laboratory members by only taking photos or video recordings of them with their explicit knowledge and consent. This is especially important in situations where a laboratory member would otherwise not be aware of you taking a photo and therefore cannot object if they do not want you to. To avoid ambiguity about when a laboratory member is vs. is not aware of photos being taken, we ask that everyone obtain consent from laboratory members before taking photos or videos, and obtain consent again before posting any images on social media. This is done to respect others' privacy and acknowledge that people have varying degrees of comfort related to being photographed and especially with having those photographs shared on social media.

No photos or videos are allowed in the vivarium using your personal device. Any videos of animals cannot be shared outside the lab.

The goal of this is to foster an environment where everyone feels safe to be who they are, take risks, and have fun, without worry or self-consciousness. If someone wants to be photographed doing something fun or silly in laboratory events, and consents to be photographed, go ahead! Just please respect the privacy of those who do not want that.

Scientific Integrity

Research (Mis)conduct

The laboratory, and Washington State University, is committed to ensuring research integrity, and we take a hard line on research misconduct. We will not tolerate fabrication, falsification, or plagiarism.

A big problem is why people feel the need to engage in misconduct in the first place, and that's a discussion that we can have. If you are feeling pressured to succeed (publish a lot, publish in high impact journals), you should reach out to me and we can talk about it – but this pressure is something we all face and is *never* an excuse to fabricate, falsify, or plagiarize. Also, think about the goal of science and why you are here: you're here to arrive at the truth, to get as close as we can to facts. Not only is research misconduct doing you a disservice, it's also a disservice to the field. And it risks your entire career. It is never right and never worth it. Don't do it.

¹ This was adapted from the code of conduct found [here](#) and [here](#).

Reproducible Research

If you gave someone else your raw data, they should be able to reproduce your results. This is critical, because if they can't reproduce your results, it suggests that one (or both) of you has made errors in the analysis, and the results can't be trusted. Reproducible research is an essential part of science, and an expectation for all projects in the laboratory.

For results to be reproducible, the analysis pipeline must be organized and well documented. To meet these goals, you should take extensive notes on *each step* of your analysis pipeline (keep a lab notebook). This means writing down how you did things every step of the way (and the *order* that you did things), from any pre-processing of the data, to running models, to statistical tests. It's also worth mentioning that you should take detailed notes on your experimental design as well.

Reproducibility is related to replicability, which refers to whether your results can be obtained again with a *different* data set. That is, if someone ran your study again (with different cells), do they get the same results? If someone ran a conceptually similar study, do they get the same results? Science grows and builds on replicable results – one-off findings don't mean anything. Our goal is to produce research that is both reproducible and replicable.

Authorship

We will follow the APA guidelines with respect to authorship:

"Authorship credit should reflect the individual's contribution to the study. An author is considered anyone involved with initial research design, data collection and analysis, manuscript drafting, and final approval. However, the following do not necessarily qualify for authorship: providing funding or resources, mentorship, or contributing research but not helping with the publication itself. The primary author assumes responsibility for the publication, making sure that the data are accurate, that all deserving authors have been credited, that all authors have given their approval to the final draft; and handles responses to inquiries after the manuscript is published."

At the start of a new project, the student or post-doc taking on the lead role can expect to be first author (talk to me about it if you aren't sure). I will typically be the last author, unless the project is primarily under the guidance of another PI and I am involved as a secondary PI – then I will be second to last and the main PI will be last. Students and post-docs who help over the course of the project may be added to the author list depending on their contribution, and their placement will be discussed with all parties involved in the paper. If a student or post-doc takes on a project but subsequently hands it off to another student or post-doc, they will most likely lose first-authorship to that student or post-doc, unless co-first-authorship is appropriate. All of these issues will be discussed openly, and you should feel free to bring them up if you are not sure of your authorship status or want to challenge it.

Old projects

If a student or post-doc collects a dataset but does not completely analyze it or write it up within 3 years after the end of data collection, I will re-assign the project (if appropriate) to another person to expedite publication. If a student or post-doc voluntarily relinquishes their rights to the project prior to the 3-year window, I will also re-assign the project to another individual. This policy is here to prevent data from remaining unpublished, but is meant to give priority to the person who collected the data initially.

You are not allowed to work on data you collected in previous laboratories in the time you are being paid to work in this lab. Publication of results from other PIs cannot take priority over your results from this lab, they are not paying your salary, I am.

Animal and Human Subjects Research

In the lab we work with mice and human data. You are responsible for obtaining all required training to work in your project and be aware of the regulations regarding the data you use. You are responsible for reading the IACUC and IRB protocols that are relevant to your research, be aware of their expiration dates and work with Kris to submit updates and renewals.

General Policies

Hours

Being in the laboratory 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 and show up to the laboratory (at least, but not restricted to, 40 hours/week). 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, especially if you are writing grants or manuscripts. If you have no meetings, 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, and I expect to see everyone in the laboratory on a regular basis.

The only exception to this is laboratory managers / research assistants, who must keep more regular hours and be in laboratory 5 days a week (excluding vacations, doctor appointments, family issues, etc.) as other lab members often depend on them.

For students, I understand having to be away for classes, but show up to the laboratory on a regular basis when you don't have those obligations.

To encourage laboratory interaction, try to be in most weekdays during 'peak' hours (assuming no other obligations) – e.g., between 10am and 4pm.

I am often asked how many hours a student/post-doc is expected to work. There is no easy answer, as what matters is your **productivity**, particularly in the form of good scientific papers. However, if you informally survey the faculty in academia, most will tell you that they worked a minimum of 60 hours/week in graduate school (including time working from home). No one told us to work those hours, but we enjoyed what we were doing enough to want to do so. You were all admitted to the lab because you expressed the ambition of becoming a scientist.

You may be concerned about the market for post-docs and faculty positions. Yet the market is no worse or better than it is has been for at least a decade or two. The people who will get the best jobs are the type of people who always get the best jobs, those with a truly exceptional level of dedication, who seize ownership of their research and careers, and who fix problems instead of blaming others for them. Please talk to me about identifying a career trajectory that maximizes your potential and that fits your individual aspirations.

Timesheets need to be finished in the first week of the month. Paper timesheets need to be brought to the first lab meeting of the month to be signed, copied, and turned in.

PI Office Hours

In addition to weekly meetings (see below), and occasionally dropping by the laboratory, you can usually find me in my office from 10am-3pm. If my door is open, feel free to ask for a chat. I will always say yes, though sometimes I can only spare a couple of minutes. If my door is closed, assume that I am either gone, in a meeting in my office, or do not want to be disturbed (writing a grant or manuscript) – so please send a message (Slack) rather than knocking. There are no limits to contacting me through Slack – do it freely without concern about odd hours. I will respond as soon as I can, but I cannot guarantee response between 6pm-7am or on the weekends.

Meetings

Weekly Laboratory Meetings

Weekly laboratory meetings (~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 laboratory meetings can also be used to talk about methods, statistical analyses, new papers, and career development. For paper discussions, everyone must come to laboratory meeting having read the paper and prepared with comments and questions to contribute.

At lab meetings, we will discuss lab business for 15 minutes, and then each lab member (that is not presenting) will give a 5-minute overview of what they are working on. This will be followed by an in depth presentation by a lab member. If you do not have data to discuss when it is your slot, please plan to present a paper relevant to your project.

These meetings are informal, and you can do what you wish with your slot – just be prepared to contribute something substantive. Laboratory members are also expected **to attend every meeting** (obviously, illnesses, doctor appointments, family issues, etc., are a valid reason for missing a meeting) as well as to be active participants. Students are encouraged to attend as often as possible (assuming it fits in their course schedule).

Occasionally, we may have joint laboratory meetings with other faculty in the department – these may be combined with our weekly laboratory meeting or an additional meeting. The expectation is that you will go to those meetings and be an active participant.

Texting for fun, checking E-mail, Facebook or other social media while your colleagues are presenting their work is unprofessional and won't be tolerated.

We will also use laboratory meetings to prepare for conference presentations and give people feedback on job talks or other external presentations.

Individual Meetings

At the beginning of each semester, we will set a schedule for weekly meetings. Each full-time laboratory member (graduate students (including rotation students), post-docs) will have a one-hour slot set aside to meet with me each week. If scheduling conflicts arise (*e.g.*, because of travel), we can try to reschedule for another day that week.

Post-docs and graduate students should meet with their undergraduate mentee or rotation student on a regular basis if you are supervising one.

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. When it comes to deadlines, tell your collaborators as soon as possible when you know when a deadline is, and make sure they are aware of it the closer it gets. Don't be afraid to bug them about it (yes, bug me as well). Missing deadlines when collaborating shows a lack of respect for your colleagues.

Give me 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 conference abstracts, filling out paperwork, etc.).

Give me **at least** two weeks' notice to do something with a hard deadline that requires a lot of time (*e.g.*, a letter of recommendation).

For manuscript revisions and invited paper submissions (which have hard-ish deadlines), give me as much time as you can (**3 weeks or more**), because these will require multiple back-and-forths.

For manuscript submissions (*i.e.*, no real hard deadline), you can still bug me to give you feedback if I haven't responded in a week or two – papers are important!

If you are planning a grant submission, you should schedule a meeting with to discuss a time-line 6 months in advance if it is your first grant application, or 4 if you have submitted at least two grant proposals.

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 to stay in academia, getting a post-doc position and getting a faculty position both significantly depend on your ability to present your data. 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 laboratory.

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, 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 laboratory 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 laboratory and implement those changes well in advance of your real presentation.

Some general rules for posters should be followed: minimize text as much as possible, make figures and text large and easy to see at a distance, label your axes, and make sure different colors are easily discriminable. Other than that, go with your own style.

I am also happy to share slides from some of my talks if you would like to use a similar style. You'll get a lot of feedback on your talks in any case, but other people's slides might be helpful to you as you are setting up your talk. As with posters, feel free to go with your own style as long as it is polished and clear.

Travel

If you plan to present your work at a conference, you must obey by the following rules when it comes to travel reimbursement:

- You are required to present new work at a meeting. I may present the same work again at another meeting if I am invited too.
- You are responsible for submitting the WSU travel request form completed, with estimates of travel costs to Kris for review a minimum of 3 months from the travel date.
- I will cover one trip per person per year, depending on your productivity. But I require that you apply to a travel fellowship or otherwise contribute in some form to reduce your conference fees (if you don't get a discount it is OK, it is the effort that matters). Please cc Kris when you apply.
- If your trip exceeds \$2000, I will not cover per diems (I hope I can be more generous in the future, but I have to watch out for the financial health of the lab to make sure you have the resources you need to actually do your work)
- You are required to share a hotel room with another colleague. If you want your own room, you will need to cover the difference.
- I will not cover a room rate higher than the maximum allowed by WSU.
- I will not cover late registration fee, you need to register by the early date.

Remember that the department admin assistant can book flights and pay for registration beforehand, but hotels and meals have to be reimbursed after return. Booking a flight within 2 months of travel usually results in higher rates, so I will require that you book your flights at around the 3 month mark.

Recommendation Letters

Letters of recommendation are extremely important for getting new positions and grants. You can count on me to write you a letter if you have been in the laboratory 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 laboratory. Remember I can only write a letter of recommendation if I can recommend your work to another colleague and I can only talk about the accomplishments I have witnessed you achieve.

If you need a letter, notify me 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. 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 my experience with you and anything else that has to be added. This will ensure that the letter contains all the information you need, and that it is submitted on time.

Open Science

We're all for open science, so laboratory members are encouraged (well, required) to share their data (or code, if applicable) with others, whether they are in the laboratory or outside of it. Within laboratory, you can share your data whenever you like. **Outside of the lab, you need to check with me before you present any work that was generated in the lab or share any data with collaborators.**

We will also share our work with the world as soon as we ready, which means preprints! The laboratory policy is to upload a preprint of a manuscript simultaneously with initial submission to a journal. The preferred preprint server is [bioRxiv](#).

Funding

Funding for the laboratory currently comes from my start-up package from WSU, a K01 career development award from NIH/NINDS, my accrual account, as well as, some other smaller grants. If you need to buy something, place the order in Quartzy. If it costs more than \$1000, you need to bring it up at lab meeting and justify why you need it and why it is the best option. At some point, you will likely be asked to provide a figure or two for a grant I am writing, and/or provide feedback on the grant. Relatedly, you are entitled to read any grant I have submitted, whether it is ultimately funded or not. Aside from being a good opportunity to learn how grants are written, this will also allow you to see our vision for the laboratory in the years ahead. Feel free to ask me to see any of my grants.

Laboratory Manual Signature Form

I confirm that I have read the laboratory policies laid out in the Peixoto Laboratory manual. I have raised any questions or concerns about them with Dr. Lucia Peixoto, and those discussions have alleviated my concerns and answered my questions. I agree that I will abide by the policies set forth in the manual.

Printed name: _____

Laboratory Role: _____

Signature: _____

Date: _____