**Likhtik Lab Manual**

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# Welcome to the Likhtik Lab!

If you are reading this manual, you have most likely joined the Likhtik Lab in the Biology Dept. at Hunter College, City University of New York. We’re happy to have you on the team and will do what we can to make your time in the lab rewarding. We hope you’ll learn a great deal about biology and neuroscience, grow and develop new skills (histology, electrophysiology, coding, data analysis, writing, giving talks, summarizing data and your ideas), make new friends, discover new findings about the brain, and enjoy the process.

This lab manual was inspired by several others, and borrows heavily from them (e.g., [this one](https://github.com/alylab/labmanual), and [this one](https://docs.google.com/document/d/1L1DhF3gKZKVGb_MDEmdqvBwm5thWiqyMy8AS_kzJnSM/edit)). If you have ideas about additions or clarifications, please talk to me (Katya, the Principal Investigator) or the lab manager.

When you join the lab, you’re expected to read this manual and [sign a form](https://forms.gle/SktfXC8cjGokNxeK9) indicating that you have done so.

This lab manual is licensed under a [Creative Commons Attribution – NonCommercial-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/). If you’re a PI or a trainee in a different lab and want to write your own lab manual, feel free to take inspiration from this one, and to cite us.

*Big Picture*

Doing science in the lab is hard because there are many moving pieces, physical and mental. There are many things to learn, and to learn how to troubleshoot, how to think about, and how to document your work. There are obstacles, and stumbles, sometimes experiments don’t work, and sometimes we take detours as we follow the data and make hypotheses. Sometimes our hypotheses are wrong.

But this process is also inspiring and fun. We learn new techniques, we expand our toolbox, we find out new things about the brain and behavior, sometimes the experiments support our hypotheses, sometimes we stumble into new and really interesting findings that we didn’t expect, we take beautiful pictures of the brain, and we record beautiful neurons as they fire. As all this happens, it’s important that we work together as a supportive team where 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.

**Big Picture Responsibilities and Expectations**

Everyone

* Be proud of your work. Be so proud of it that sometimes you have to brag.
* Maintain an organized and clean lab space. All the lab equipment is used by everyone, so every time you are disorganized, it affects everyone else as well. If you leave a mess, this means that someone else will have to clean up after you before starting their experiment. If you’ve used up the whole supply of a particular item but didn’t reorder it, that means someone else will have to order it and delay their experiment. In the same way that you don’t want to do this for other people, they don’t want to do it for you.
* Don’t rush your work, it will lead to careless mistakes that can reverberate for a long time. We have to be careful. Think about it. Think about how you are implementing it. Think about why you’re implementing it. Double and triple check it. Incorporate sanity checks into your workflow. Ask others to look at your code or data if you need help or if something looks off. It’s very possible other people have gone through the same questions and have come up with some solutions of their own. Things have to make sense, ask questions if they don’t. It’s ok to makes mistakes, but mistakes shouldn’t be because of carelessness or rushed work.
* If you do make a mistake, you must tell your team/lab mates (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 openly and honestly, and then we correct them and move on. This is crucial at every step.
* Stay up to date on the latest research, by using RSS feeds, getting journal table of contents, consider following scientists in the field on Twitter, there is a lot of announcements regarding new work.
* Keep open channels of communication. If something is running low, tell everyone on the WhatsApp chat and order it on Quartzy. If there is an issue with the equipment, tell everyone in the chat. If you just saw a mouse walking by and eating our snacks, let us know.
* No academic misconduct. 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 to the best of our ability and instrumentation. Null and unexpected results are still important. This can’t be emphasized enough.
* 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. There is room for everyone. Help others, and you can expect others to help you when you need it.
* Thank your fellow lab-mates when they have helped you. If they did something for you when they were in lab and you weren’t, if they gave you advice, if they connected you to a friend, if they organized a seminar, built a shelf, setup a program, shared figures or data with you, made your day more pleasant, or any other way that they have supported your work, great and small.
* 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 background, their beliefs, their identity.
* If you’re struggling, tell someone (feel free to tell Katya!). 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 with your fellow lab mates. A lab community is priceless. These are relationships you are likely to keep for many years to come.
* If there is any tension or hostility, in the lab, something has to be done about it immediately. We can’t thrive in an uncomfortable environment, and disrespect or rudeness will not be tolerated in the lab. More often than not, hostility comes from a lack of communication or misunderstanding. **To Do:** Talk it out to clear the air, tell Katya, and we will work out issues by talking to each other.
* If you have a problem with Katya and are comfortable telling her about it, please do so. If you are an undergraduate research assistant and you aren’t comfortable, then tell the lab manager or a graduate student, or another member of the Biology Department. If you are a graduate student and aren’t comfortable, you can speak with another graduate student, a graduate student representative, a Student Liaison of the CNC program (currently, Dr. Hysell Oviedo), or you can go to <https://www.gc.cuny.edu/biology/student-resources>, scroll down to the “Report A Conflict” section, and send an email to the Biology Program. If you are graduate student, an undergraduate student, or the Lab Technician/ Manager, you are welcome to speak with the Chair of the Biology Dept. (currently, Dr. Ben Ortiz), the Graduate Deputy Chair (currently, Dr. Patricia Rockwell), or another member of the Biology or Psychology department that you are comfortable with. All faculty email addresses are found on the Hunter and GC Departmental pages.
* Work hard and play hard. Make sure to have interests outside of the lab, take care of your mental and physical health, and don’t feel bad for taking time off work.

**Smaller Picture - Responsibilities & Expectations**

Everyone

* 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 experiments for the day (or the next couple of days) as soon as you can, and let everyone know. Check if you can have someone else help you run an ongoing experiment when you are sick.
* 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 (whatever time of day you like to do it).
* Be on time. Show up to your meetings, show up to run your experiments, show up to your classes, show up to lab meetings, and show up for seminars on time. Respect that others have packed days and everyone’s time is valuable. If for some reason you are running late, make sure to email the person to tell them in advance. They may want to cancel the meeting or move it to another time.
* Show up for your commitments. You do not have to be in at 9am every day, but you do have to work the hours you need to work to get things done.
* Put lab equipment back where you found it. Keep common areas uncluttered. There are lots of small parts everywhere. This goes for perfusion hood, workshop, behavioral room and ephys rigs, IHC space, sterotaxes, conference table, the printers, traveling laptops, etc.
* 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 and should be done in our lab conference room. However, clean up your food waste, crumbs, and spills. If there are snacks set out in the common room, and you’re the last one to leave, please put them in the fridge or the closing shelves in the room. We don’t want the building mice to have our lab as their main snack stop.
* Don’t leave the coffee pot dirty. If you made coffee, make sure either you clean the coffee pot before you leave or someone else has agreed to do it.

Principal Investigator

The responsibilities that everyone else abides by, and expect me to:

* 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)
* Discuss, and help develop your project
* Help write and prepare your project for publication
* 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, graduate school, a faculty job, a job outside of academia.

Post-Docs

The responsibilities that everyone else abides by 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 I ask or because they ask)
* Present your work at departmental events, at other labs (if invited), and at conferences
* Apply for grants (e.g., NRSA, K99). Though I will only hire you if I can support you for at least one year, it’s in your best interest to get experience writing grants – and if you get them, you’ll be helping out the entire lab as well as yourself (because you’ll free up funds previously allocated to you)
* 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 absolutely fine – 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 (Katya) when your opinion is different, and treat the rest of the lab to your unique expertise and insight.

Graduate Students

The responsibilities that everyone else abides by you will also be expected to:

* Develop your dissertation research. Your dissertation should have at least 3 substantial experiments that answer a big-picture question that you have. Much of your work has to be done independently but remember that others in lab (especially Katya!) are there to help you when you need it.
* Help mentor undergraduate students in the lab when they need it – either because I ask you or because they ask. Undergrads can also help you collect data for your project, and mentoring undergrads is rewarding in itself.
* Present your work at departmental events, at other labs (if invited), and at conferences
* Apply for grants (e.g., NRSA, NSF grants). It’s a valuable experience, and best to get it in early.
* Think about what you want for your career (academia – research or teaching, industry, science writing, public advocacy, something else), and talk to Katya 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 Katya is aware of them!
* Make sure you know where your salary is coming from each semester. Sometimes the salary is coming from The Graduate Center, sometimes it’s from TAing and my grants, sometimes it’s from your grants. It’s important to know this information every year.
* Prioritize time for research. Coursework and TAing are important, but ultimately your research gets you your PhD and prepares you for the next stage of your career.

Lab Manager/ Technician

The responsibilities that everyone else abides by and you will also be expected to:

* Help others in the lab with their project and/or work on your own project (developed with Katya’s help).
* Place orders that are put through Quartzy, initiate and maintain conversations with various distributors regarding pricing/ products, etc.
* Invoicing: via the RF System, and P-card reconciliation via Concur
* Maintain the breeding in the animal colony (in consultation with Katya) and keep the colony information up-to-date on Softmouse.
* Monthly and bi-weekly inventory checks to keep stocks of necessary items from being depleted.
* Keep an up-to-date list of reagents in the fridges (-80, -20, 4).
* Help new lab members adjust to the lab by answering whatever questions they have that you can answer. If you can’t answer, direct their questions to other students or to Katya.
* Oversee the training of undergraduate research assistants
* Maintain the lab wiki page, update the lab manual, add lab events to the lab calendars, check the lab e-mail address ([katyalikhtiklab@gmail.com](mailto:katyalikhtiklab@gmail.com); take care of any e-mails that you can, forward the rest to Katya)
* Give new lab members access to the lab accounts such as the [likhtilab@googlegroups.com](mailto:likhtilab@googlegroups.com), [katyalikhtiklab@gmail.com](mailto:katyalikhtiklab@gmail.com), our WhatsApp Group, Lab Wiki, GitHub, lab calendars
* Assist lab members with data collection and analysis
* 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).

Undergraduate Students

The responsibilities that everyone else abides by and you will also be expected to:

* Assist other lab members with data collection and analysis (unless you are working on your own independent project under the mentorship of another lab member, in which case you should work on that)
* Develop your weekly schedule by talking to your graduate student mentor. You should be coming in every week, and scheduling enough time to get your work done, attending and participating in the weekly lab meetings.
* If you are earning course credit for research, you must also attend lab meetings when your schedule permits, present at one of these lab meetings, and submit a write-up of your research by the end of the semester
* If you are not currently earning course credit for research, you are not required to submit a write up, but you may still be doing an informal presentation at lab meeting.

**Code of Conduct[[1]](#footnote-1)**

Essential Policies

The lab, and the university, is an environment that must be free of harassment and discrimination. All lab members are expected to abide by the Hunter College policies on discrimination and harassment, which you can (and must) read about [here](https://www.hunter.cuny.edu/diversityandcompliance/non-discrimination-policies).

The lab is committed to ensuring a safe, friendly, and accepting environment for everybody. We will not tolerate any verbal or physical harassment or discrimination on the basis of 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 lab, including any lab outings.

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

Taking Photos & Videos

You cannot share or post photographs of your mice in experimental conditions of any kind to social media or sharing sites. If you are giving a talk to a scientific audience at a conference, a video of an image of a mouse may be used during your presentation to illustrate a technique or a behavioral paradigm.

Please respect the privacy and comfort of lab members by only taking photos or video recordings of them with their explicit knowledge and consent. This is especially important in situations where a lab 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 lab member is vs is not aware of photos being taken, we ask that everyone obtain consent from lab 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.

Katya manages the lab website and take pictures at lab events or of life in the lab. These pictures are taken with the explicit awareness of everyone, and if you feel that you do not want to have your picture posted on the website, please let Katya know.

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 at lab events, and consents to be photographed, by all means go ahead! Just please respect the privacy of those who do not want that.

# Scientific Integrity

*Research (Mis)conduct*

The lab, and City University of New York, is committed to ensuring research integrity, and we take a hard line on research misconduct. We will not tolerate fabrication, falsification, or plagiarism. Read CUNY’s policies on the conduct of research carefully (main page [here](https://www.cuny.edu/research/research-compliance/), institutional policy [here](https://www.cuny.edu/research/research-compliance/research-integrity/), more information [here](https://www.cuny.edu/research/)).

Think about why people feel the need to engage in misconduct in the first place, which is a discussion that we can have. If you are feeling pressured to succeed (publish a lot, publish in high impact journals, submit findings to a conference), you should reach out to Katya 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 get as close as we can to facts about the brain and behavior. 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.

*Reproducible Research*

If you gave someone else your raw data, they should be able to reproduce your results exactly. 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 lab.

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. 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. Additionally, your code should also be commented, and commented clearly. We all know what it’s like to sit down, quickly write a bunch of code to run an analysis without taking time to comment it, and then having no idea what we did a few months down the road. Comment your code so that every step is understandable by an outsider. Finally, it is highly encouraged that you use some form of version control (e.g., Git in combination with GitHub) to keep track of what code changes you made and when you made them, as well as sharing code with others. The lab’s GitHub is https://github.com/Likhtik-Lab.

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 a different group of subjects), 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*

Like other labs, 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 Katya about it if you aren’t sure). Katya will typically be the last author, unless the project is primarily under the guidance of another PI and Katya is involved as a secondary PI – then Katya will be second to last and the main PI will be last. Students 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, Katya 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, Katya 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.

Animal Research

Adherence to approved IACUC protocols is *essential*, and non-adherence can lead to severe consequences for the entire lab (i.e., we may lose permission to continue research). All lab members must read and comply with the IACUC protocol.

Lab members must complete [CITI Training](https://www.citiprogram.org/) and save their certificate. To be added to an existing IACUC, talk to the lab manager or to Katya and present them with your CITI certificate. You *must* ensure that your study falls within the approved IACUC protocol before you begin (which means that you discussed it with Katya and submitted an IACUC protocol that got approved, or your name was added to an existing or amended IACUC protocol).

**Lab Resources**

NAS (Network Assisted Storage)

We have a 16TB, mirrored NAS that is accessible via VPN or from all computers in the lab. This is a crucial resource for data storage. When you are collecting data (e.g. recording electrophysiology / video on the rig computers in Room 910), don’t keep your data on those computers, transfer all video/ electrophysiology data to the NAS and to your computer/portable hard drive and delete it off the working computers in 910. That means that there are 2 copies of your data, your personal hard drive and the NAS. If you don’t have a personal hard drive, let the lab manager or Katya know and we will get you one. If you keep your data on the recording computers, it will clog those computers and they will either fail in mid-experiment or will not start recording new data. We don’t want to ruin anyone’s experiment. Please clear your data off.

If you are imaging on the SP8, the Olympus Bx53, the Nikon A1, don’t keep your data on those computers either, transfer it to the NAS and your hard drive. You should have a folder with your name on the NAS, and in that folder there will be different project folders, each with subject numbers for collected data.

Wiki

The lab wiki is <http://likhtiklab.com/wiki> . Ask Katya for the password. The wiki is always a work in development, where we try certain organizational aspects and they stick and work well, others less so. Currently, it has the following information:

*Tutorials & Training* (Matlab tutorials from our bootcamps, MedPC tutorial, Ethovision tutorial),

*Libraries*: Published papers from the lab, link to GitHub Scripts (in dev.), Scientific Reads (in dev., this is meant to be a list of links to various lab member libraries, such as Mendeley, etc),

*Protocols & Manuals*: IHC- Immunohistochemistry concentrations calculations sheets and protocols, Microscope Guides - excitation/emission filter information for our Olympus BX53 microscope, and the Nikon A1 confocal microscope in Belfer,

*Inventory*: Virus and Antibody inventory, Optic Fiber and Omnetics boards counters, surgery supplies log which is especially important to keep up for anything that’s running low, general lab supply inventory check list,

*Tool*s: STL files for 3D printing various items, and will have all the necessary files (gerber, etc) for printing our customized EIB boards,

*Event Announcements*: Flyers with seminar series for the semester.

WhatsApp

WhatsApp is used as the primary means of lab communication. There are several groups on WhatsApp, and we form new project-based or interest-based (e.g. Grad Students) groups as the need arises. Please use this means of communication for quick questions, to let the rest of the lab know when something has been delivered to the lab, if you want to share a new paper that you ran across while reading, or just to let people know that you brought snacks.

Dropbox

As Hunter students, faculty, and staff, we have unlimited Dropbox accounts. We will use these to store and share data.

GitHub

The lab’s GitHub <https://github.com/Likhtik-Lab> and it has not been developed. The goal is to put up finalized code and data with the world. Only share data after you’ve spoken to Katya (we don’t want to share the data too soon, before you’ve had a chance to look at it thoroughly yourself). When you share code, make sure it’s *flawless*, because we don’t want to distribute buggy code to the world! Have other lab members check it if possible. Ask the lab manager or Katya to get access to the lab’s GitHub.

Google Calendars

The lab has many Google calendars that help organize your time on the various stations. Please book your time, so that others can organize their time as well.

1. *Likhtik Lab General calendar*: used to keep track of lab events, including any lab meetings, and birthdays!
2. *Behavioral Room calendar*: Reserve space for your behavior & physiology experiments. Do this early so that people can plan experiments in advance. Make sure you specify which room you are reserving (front or back).
3. *Surgery Setup calendar*: Reserve time for any surgeries you are planning to do, and make sure you specify if you are going to use Stereotax 1 (Manual) or Stereotax 2 (Digital).
4. *Perfusion Hood calendar*: used to reserve time for perfusions.
5. *Cryostat Calendar* (Burghardt Lab): This is a calendar for the cryostat that we use in the Burghardt lab on the 6th floor, and that we share with her lab members. Please put your name down for the time you are planning to use it to cut brains.
6. *IHC*: Use this calendar to block out time that you will be running IHC using the counters in 908.
7. *Episcope*: Use this calendar to block out time that you will be using our epifluorescence microscope in Suite 809.
8. *Laptop Checkout*: There are 3 laptops that you can “checkout” for remote use, 2 Lenovo ThinkPads (“McQueen” and “Gareth”), and 1 Mac. Please put on the calendar the days that you are taking one of these. These should be used first and foremost for data analysis.

BioImaging Facility Calendar

If you are planning on using IMARIS, SP8, A1 or any other Biolmaging equipment, please use this calendar: [**http://bookit.hunter.cuny.edu**](http://bookit.hunter.cuny.edu/) . Using these machines comes with a per hour use fee that is charged to Katya’s grants. Please be mindful of this when using these resources, and make sure to take your name off the calendar if you will not be coming to use your booked time. This will free up the equipment for other members of the Biology Dept.

E-mail

We have a lab listserv for sending e-mails to the entire lab when necessary (likhtiklab@googlegroups.com). Contact the lab manager or Katya to get added to the lab listserv.

There is also a lab e-mail account that typically only the lab manager and Katya can access ([katyalikhtiklab@gmail.com](mailto:katyalikhtiklab@gmail.com)). This is primarily used for vendors or other business-related emails.

**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. That said, hours in academia are more flexible than other jobs -- but you should still treat it as a real job (40 hours/week) and show up to the lab. My primary concern is that you get your work done, so if you find that you are more productive at home (lab-mates can be chatty sometimes), feel free to work at home occasionally. If you have no meetings, no experiments, no procedures, 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 lab on a regular basis (but see [Noise Policy](#NoiseLevels)).

The only exception to this is lab managers / research assistants, who must keep more regular hours and be in lab 5 days a week (excluding vacations, doctor appointments, family issues, etc). I expect lab managers / research assistants to be in about 8 hours a day, starting around 9am or 10am and ending around 5pm or 6pm.

For graduate students, I understand having to be away for classes and TA-ing, but show up to the lab on a regular basis when you don’t have those obligations (but see [Noise Policy](#NoiseLevels) for more details).

To encourage lab interaction, try to be in most weekdays during ‘peak’ hours (assuming no other obligations) – e.g., between 11am and 4pm. This is not a hard rule, you can work at home occasionally (see [Noise Policy](#NoiseLevels) for more details), and I understand other obligations. But keep it in mind.

I’m a night owl and sometimes work during the weekends. This means that I will sometimes send emails or WhatsApp messages outside of normal working hours, and sometimes very late at night. For the most part, I try not to, but sometimes I do. I do not expect you to respond until you are working. 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 WhatsApp in the evenings or on weekends. If my off-hours messages cause distress, please talk to me, and I will minimize emailing during your time off.

Noise Policy

I love when lab members get along and want to spend time with one another. This is a critical aspect of a productive, friendly, and positive lab environment. But I also realize that you are all very busy and want to have a place to focus and work quietly.

However, when someone is trying to work and there are people talking loudly nearby, this can be an unwelcome distraction. Motivated by these concerns, I have devised a set of policies so that you can all work effectively. These policies do not preclude socializing at specific, agreed-upon times (e.g., lunch, happy hours); in fact, please do! These policies also do not preclude meeting with one another to discuss research, classes, life, etc; again, please do! Also, please remember we have a socializing conference room in the lab just for this puprose, you can always use it. Policies to keep in mind:

**Policies**

1. General quiet time: Quiet time is between 9am and 5pm in the lab. Please respect other people's needs to work quietly in lab during those times by lowering your voice and generally keeping noise to a minimum. If you do need to talk, do it quietly and/or set up a meeting in our conference room.

2. Headphones rule: If someone is wearing headphones, respect their need for quiet. Do not tap them on the shoulder to talk. Do not talk loudly next to them. Exception: if there is a fire alarm or other emergency and they are not aware, do alert them for their own safety.

3. Flexible work locations: Feel free to work from home, a library, or anywhere else when Policies 1 & 2 aren't enough, or you just need a day of privacy. It’s nice having people around to help each other and for us to talk in person, so do not work from home *all* the time, but do so when you need to.

PI [Office](#HumanSubjectsResearch) Hours

In addition to weekly meetings (see below) you can find Katya in her office, and about the lab. Her door is almost always open; if it is, feel free to ask for a chat. She will always say yes, though sometimes she can only spare a couple of minutes or might ask you to let her finish typing a sentence. If her door is closed, assume that Katya is either gone, in a meeting in her office, or does not want to be disturbed – so please send a message (WhatsApp or e-mail) rather than knocking. If you need to take something out of the office (e.g. anesthetics) and the door is closed, send a WhatsApp message, asking if you can come in.

[Ordering](#Hours)

We use Quartzy to place orders. The Lab Technician/Manager will check orders twice a week, on Tuesdays and Thursdays after 3pm, and will place any orders. If you have an emergency order, please let them know that there is something that needs attention sooner. In general, please keep channels of communication open about items that need to be ordered, if we are running low on something, etc. Let everyone know via WhatsApp, place the order, let people know that the order has been placed.

Receiving Packages

When orders arrive, we are typically notified either by the Biology Department office or by Receiving. An email is sent out notifying us when packages arrive, or Katya gets a phone call from Receiving. Packages can be picked up either from the table near the Biology Office, where you can sign for them on a clip board as you pick them up, or on C-level at the Receiving window. Katya puts all lab members on the list of those who receive the “you’ve got mail” email. The reason is to make sure that the packages get picked up and put away as soon as possible. Oftentimes, the packages are perishable (e.g. antibodies) and need to be picked up and put in the fridge. Other times, we want to make sure the package doesn’t get lost or get picked up by anyone else. The first person responsible for picking up packages is the Lab Technician, but if they can’t or are busy, they will let everyone know via WhatsApp, and whoever is in lab, needs to go and pick up. If you pick up a package, please open the box, see what it is and let people know via WhatsApp, this is an item that was ordered by someone which means that they are waiting for it. You can either put it away yourself if you know where it goes, or you can put it on the Lab Technician’s desk, and they will put it away.

Meetings

*Weekly Lab Meetings*

Weekly lab meetings (~1.5-2 hours each) are meant to be a training forum, a time to share ideas, a time to discuss lab logistics and solutions to technical problems, a time to present papers on interesting and relevant new research, and a time for trainees to present project ideas and/or data to get feedback from the rest of the group. Projects at any level of completion (even not yet started!) can benefit from being presented. These lab meetings can also be used to talk about methods, statistical analyses, ethics in research, and career development. For paper discussions, everyone must come to lab meeting having read the paper and prepared with comments and questions to contribute. Some weeks we may explore a particular issue and have people read different papers – in that case, come to lab meeting having read your paper and be prepared to summarize it for the group.

Each trainee (RA, students, post-docs) is expected to present at least once, and usually twice every semester. These meetings are informal, and you can do what you wish with your slot – just be prepared to contribute something substantive. Lab members are also expected to attend every meeting (obviously, illnesses, doctor appointments, family issues, etc are a valid reason for missing a meeting). Undergraduate students are encouraged to attend as often as possible (assuming it fits in their course schedule).

Occasionally, we may have joint lab meetings with other faculty in the department, or another faculty member may join our lab 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. In the summer, there are typically fewer lab meetings given the shifting schedules. The lab meeting agenda is sent out by Katya about once every month to two months.

*Individual Meetings*

At the beginning of each semester, we will set a schedule for weekly meetings. Each full-time lab member (RAs, graduate students, post-docs) will have a one-hour slot set aside to meet with Katya. 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.

Katya will meet with undergraduate students at least every other week (or according to need); post-docs and graduate students should meet with their undergraduate mentee 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. 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 the closer it gets. Don’t be afraid to bug them about it. Bug Katya as well, there is a good chance she doesn’t remember about your deadline.

Give Katya *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 Katya *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).

If you want feedback on research and teaching statements, or other work that requires multiple back-and-forth interactions between you and Katya 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 Katya 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 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 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 CUNY), 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.

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 and easy to see at a distance, label your axes, and make sure different colors are easily discriminable. Make sure to use our general style (see template), but you can play with it to your liking.

Katya is also happy to share slides from some of her 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.

Recommendation Letters

Letters of recommendation are extremely important for getting new positions and grants. You can count on Katya 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 Katya as soon as possible with the deadline (see [Deadlines](#Deadlines) for guidance), your CV, and fill out this recommendation request form: <https://forms.gle/fhtG6ZdFvXDYCeLw7>. In that form you will see spaces to put information that you would like me to highlight in this letter, and any other relevant information. Make sure to fill that out.

If the letter is for a grant, also include your specific aims. If the letter is for a faculty position, also include your research and teaching statements. If this letter is for a post-doctoral position, also include information about the PI and the reason you are interested in this PI. 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 Katya’s experience with you, made more glamorous (people are much too humble about themselves!), and edited to add anything you left out that Katya 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 one of three places:

1. Lab server(s) – NAS: Electrophysiology, behavior, images, etc.
2. Shared Dropbox folders through Hunter (no limits on storage). These can be used to share datasets and/or code.
3. Your Hard Drives.

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

*Data Organization*

Please name your animals with your initials and a number (e.g. KL001). If you have already run several independent projects and have a data organization structure that works well for you, feel free to use it. It needs to include the information below. If you don’t have a structure or if you are looking for a change, the following structure is recommended:

* projectName/BehProtocols
  + Detailed description of animals used: Strain, sex, age, origin
  + Detailed description/ schematic of behavioral protocol that includes all relevant information, including stimuli used (CS, US, objects), ambient conditions (e.g. light levels), contexts, order of stimulus presentation, MedPC scripts used, Ethovision setups, etc.
  + Description of any manipulation done to the animals such as viral injections (which virus, how much, where – including Bregma locations, and when), stress (conditions, protocols used).
  + List of subject group treatments (e.g. which received which viral injection, which stimulus types were the CS+ and CS- for each subject, which subject was male/ female, etc).
* projectName/RecordingProtocols
  + Schematic of your recording locations and channels used (e.g. BLA LFP in channel 1, BF LFP in Ch.2, IL single cells in channels 3-32).
  + Outline of recording parameters (sampling rate, open channel or filtered)
* projectName/ImagingProtocols
  + If imaging, include a list of imaging parameters (objective & microscope used, how many slices per region were used, how many z-layers in an optical stack with what z-steps), how many colors were used and what was imaged.
  + Include antibody staining protocols used (has to include antibody, concentrations, etc, see our antibody protocol templates).
* projectName/subjects
  + individual directories for each of your subjects
  + projectName/subjects/{subj}/analysis
    - subject-specific analyses (e.g.,behavioral analysis, physiology analysis, histology)
  + projectName/subjects/{subj}/BehDay/data
    - raw data for that participant, with the following directories…
      * behavioralData video files
      * electrophysiologyData raw recordings
  + projectName/subjects/{subj}/Histology
    - electrode/optical fiber placement data, injection site data
  + projectName/subjects/{subj}/scripts
    - Matlab scripts that you used for that subject. You should keep the ‘template’ scripts elsewhere, but if you modified the script specifically for this subject, you can store that here.
* projectName/scripts
  + template scripts and those you modified 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, video cutting, power, coherence, batch processing, PSTHs, cross-correlateions, phase locking, etc).
  + if you have scripts that are the same for each subject, 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, video cutting, power, coherence, batch processing, PSTHs, cross-correlateions, phase locking, etc).

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*

Before you leave, or upon completion of a project, you must archive old datasets and back them up. We will develop the instructions for this when we reach our first inactive dataset ☺

Open Science

We’re all for open science, so lab members are encouraged (and in fact required) to share their code and data with others, whether they are in the lab or outside of it. Within lab, you can share your code and data whenever you like. But do not share your code or data with the outside world until you think (and Katya agrees) that the lab has finished working with it. This gives us an opportunity to work with the data to meet our needs (including grant needs!) before releasing it for other people to use. Generally, we will try to make our data and code publicly available within one year of publishing the results (longer if work on the dataset is ongoing, faster if the journal requires us to already have it available). Currently, the best option for sharing smaller datasets might be the [Open Science Framework](https://osf.io/), and the best option for sharing ephys data might be the Neural [Data Without Borders](https://www.nwb.org/) (let the lab know if you find others).

We will also share our work with the world as soon as we ready, which means preprints! The lab policy is to upload a preprint of a manuscript simultaneously with initial submission to a journal. The preferred preprint server is [bioRxiv](http://biorxiv.org/). We will also put PDFs of all our papers on the lab website, and you should share PDFs of your paper with whoever asks.

**Funding**

Funding for the lab currently comes from Katya’s grant funding. If you need to buy something, or have to charge a grant for something, let Katya know and she will oversee the process.

At some point, you will likely be asked to provide a figure or two for a grant Katya is writing, and/or provide feedback on the grant. Relatedly, you are entitled to read any grant Katya has 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 her vision for the lab in the years ahead. Feel free to ask Katya to see any of her grants.

1. This was adapted from the code of conduct found [here](http://ivory.idyll.org/lab/coc.html) and [here](https://github.com/memobc/memolab-manual). [↑](#footnote-ref-1)