

HAINER LAB HANDBOOK

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INTRODUCTION

A major goal of the Hainer lab is to foster an environment of consistent scientific excellence and personal development. This will support every lab member in reaching their full potential and helps us have fun while doing great science. We want you to be happy and productive while you are here. This lab manual is a first point of reference for current lab members as we strive to achieve these goals, and it serves as a general introduction for prospective members. Having a lab manual helps us communicate with each other. It reminds us of ideas that are core to the lab culture and tidbits of information that might otherwise become lost.

To begin, the Hainer lab is committed to fostering inclusivity in our pursuit of scientific discovery. In our pursuit of knowledge, we encourage an environment of collaboration, open communication, and trust, which welcomes diversity and respects differences of opinion. It is these principles that allow us to discover new ways of thinking and behaving which lead to innovation and scientific success.

WELCOME!

This section is the on-boarding guide where you can find information for how to ensure that you are properly set up to participate in the lab. If you have any additional questions, feel free to ask anyone! We're all happy to help. Our lab website is: hainerlab.com

Upon arrival, things to get access to:

Hainer Lab OneDrive

- Accessed through my.pitt.edu; you will be invited to join
- Protocols, analysis pipelines, forms, databases, etc. are all kept on our shared OneDrive

Hainer Lab Slack

- Download the Slack Application on your mobile and computer
- Use for important lab and personnel-related updates and communication

Hainer LabArchive Electronic Notebook

- Access LabArchive through Pitt; you will be invited to join

Training

- Please make sure you take all the applicable training to work in the lab and that you are up to date on your conflict-of-interest form. Training includes chemical and safety, bloodborne pathogens, formaldehyde safety, and dangerous goods shipping.
- You may need to update things, such as training or COIs periodically. Please do so whenever you are informed, and let Sarah know if you have any questions.

Server Access

- All genomic data is analyzed and stored on the Pitt CRC (<https://crc.pitt.edu>) computer cluster and specifically, the HTC server. Once you are ready to analyze data, you should get access to the server by discussing with Sarah.

Important locations

- Lab: 527/535 Langley Hall

- Lab Annex: 543 Crawford Hall
- TC room: 563 Crawford Hall
- Freezers/ice: 511 Langley Hall
- Main Office: 234 Langley Hall
- Fiscal Office: 220 Langley Hall

Relevant People:

- Dave Malicki: Building Manager [malicki[at]pitt.edu]
- Dan Lloyd: Building Support [djlst17[at]pitt.edu]
- Eric Polinko: IT Support [epolinko[at]pitt.edu]
- Pat Dean: Purchaser [patdean[at]pitt.edu]
- Matt Rager: HR [msr53[at]pitt.edu]
- Lynn Rago: Staff Manager [lmr26[at]pitt.edu]
- Deanna Wolkiewicz: Main Office Manager [dmd75[at]pitt.edu]
- Jeffrey Lawrence: Department Chair [lawrenc[at]pitt.edu]
- Valerie Oke: Department Vice Chair [voke[at]pitt.edu]

GENERAL POLICIES

Safety

Safety is the first and foremost priority. If there is a serious emergency such as a fire, injury, etc., call 911. Then immediately call campus police (412-624-2121) and Sarah (215-565-6758). A complete list of contact information of all lab members can be found on the lab wall. Here is a list of Pitt specific safety numbers: <https://www.safety.pitt.edu/emergency-contacts>. Any safety concern should be brought up to Sarah right away. If you see something that is not right, speak up, right away! Your help in keeping the lab safe is critical. Currently, Dave Klein serves as our safety officer, so if you have any (non-emergency) questions, please consult Dave. For example, to discuss how to dispose of chemical waste or when to work in the chemical hood. It is Pitt's policy that all workers in the lab are covered by health insurance. Please make sure you are either personally enrolled or covered by your family plan.

Code of Conduct

All members of the lab, along with visitors, are expected to abide by this code of conduct. All members are expected to help ensure a safe work environment for everybody. The lab is dedicated to providing a harassment-free experience for everyone, regardless of gender, gender identity and expression, age, sexual orientation, ability, physical appearance, body size, race, ethnicity, or religion (or lack thereof). **We do not tolerate harassment of lab members in any form.** Sexual language and imagery are generally not appropriate for any lab venue, including lab meetings, presentations, or discussions. However, do note that we work on biological matters so work-related discussions of, e.g., animal reproduction, are appropriate. Harassment includes offensive verbal comments related to gender, gender identity and expression, age, sexual orientation, ability, physical appearance, body size, race, religion, sexual images in public spaces, deliberate intimidation, stalking, following, harassing photography or recording, sustained disruption of talks or other events, inappropriate physical contact, and unwelcome sexual attention. Members asked to stop any harassing behavior are expected to comply immediately. We expect members to follow these guidelines in all in-person, phone, or online communications, lab-related events, university events, conferences, etc. If you are being harassed, notice that someone else is being harassed, or have any other concerns, please contact Sarah immediately. If you feel that another lab member is not following the code of conduct outlined here, then in a polite, neutral, and professional manner address this with the individual (if you feel comfortable doing so). However, if you do not feel comfortable doing this, or find it ineffective, inform Sarah. If Sarah is the cause of your concern, please seek help from another PI in the department (such

as Karen Arndt [arndt[at]pitt.edu] or Miler Lee [lee[at]pitt.edu]) or discuss the issue with HR (Matt Rager [msr53[at]pitt.edu] or Lynn Rago [lmr26[at]pitt.edu]).

Implicit Bias

Implicit bias refers to the attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner. These implicit associations cause us to have feelings and attitudes toward others based on characteristics such as race, ethnicity, age, and appearance. These associations develop over the course of a lifetime, beginning at a very early age, through exposure to direct and indirect messages. **We all have implicit biases.** The first step is recognizing this. Once we do, we can take active steps to correct and avoid the negative impact these biases might pose to ourselves and others. We encourage you to assess your own implicit biases using the Implicit Bias test (<https://implicit.harvard.edu/implicit/takeatest.html>). Please let Sarah know if you feel she or anyone else in the lab is acting towards you or someone else in a biased or unfair way.

Research Integrity

We expect lab members to be honest in scientific communications both within and outside the lab. We expect that lab members will design experiments in a manner that minimizes both bias and self-deception. We expect that lab members will keep agreements, be careful, and share their code and results openly with the scientific community. We expect that credit will be given where credit is due, including in scientific writing. Plagiarism is not tolerated, and it is your responsibility to know the definition and scope of plagiarism. **It is never okay to 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. **Research misconduct is completely unacceptable!** While a full enumeration of ethical considerations is outside the scope of this document, please don't hesitate to raise any questions or concerns that you have at any point with Sarah. Any perceived cases of scientific misconduct by lab members should be brought to Sarah's attention immediately in a private meeting. If you are concerned about Sarah's practices, please bring it up with Dr. Jeffrey Lawrence, who is the Chair of the Department. More information about the Research Integrity Office at Pitt can be found here: <http://rcco.pitt.edu/rcco-offices/research-integrity>. Research misconduct, as described by the NIH, can be found here: https://grants.nih.gov/policy/research_integrity/overview.htm. Research misconduct is defined as "fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results".

WELLNESS POLICY

We are all here to grow as scientists. However, that should never come at the cost of your well-being. **Your mental and physical health are an important consideration in all that you do while in the lab.** Moreover, success should not come at the cost of maintaining your interests/hobbies or healthy relationships in your life. In fact, you are more likely to be successful if you take care of yourself and give time to the things outside of work that matter to you. Below are some general guidelines on well-being, but every situation is unique, and Sarah is always open to discussion on this topic, so don't hesitate to ask.

Mental and physical health concerns: If you are not feeling well, either physically or mentally, take the time that you need to seek out help and take care of yourself. If you are struggling with depression or anxiety and wondering what to prioritize – it is your health. If you have an acute situation that requires help, take the day off with no questions asked. If you are going to be out for an extended time or miss a group meeting, just give Sarah a heads up so that she knows you are okay – no need to give details if you don't want to, it is sufficient to email and say that you have a "personal emergency" or any other phrasing you are comfortable sending Sarah. If you need to take more substantial time off, you can work with Sarah to facilitate this.

Being an undergraduate, technician, graduate student, or postdoc is stressful. We all care about you and are here to support you – just let us know how we can help.

Personal emergencies: You can share as much or as little detail as you are comfortable sharing with Sarah. These situations are inherently stressful, so make sure you are taking care of yourself.

Work-life integration: Being ambitious and hard-working are part of our lab culture (and science in general), but it should come from a perspective of driving yourself out of the fun of pushing your limits and exploring what you are capable of. The key is to know your limits. Managing your motivation and work habits while integrating your interests and commitments outside of work is key.

Imposter syndrome: Imposter syndrome can be defined as persistent thoughts and feelings of self-doubt and a fear of being unmasked as a fraud, academically or otherwise inferior. Those of us that suffer from imposter syndrome (which could be any of us) have the inability to value and incorporate their abilities, skills, and accomplishments into their mind and perceive themselves as significantly more inferior than others do. First, we tend to see others successes and not their non-successes. Second, there will always be someone who has accomplished more than you. **Do not compare yourself to others. Everyone is different.** More importantly, do NOT compare yourself to the cumulative successes of multiple people in your cohort. Remember, we are all on a growth trajectory and the people we look up to were once where we are now. All of us are doing the best job we can, which is all we can really hope for. Although we should aim to minimize feelings of self-doubt, such lingering feelings can be channeled into productivity. They can motivate us to strive for more than mediocrity and to get outside of our work and see it from another point of view. Make room for improvements and challenges. Keep a record of your successes, no matter how small—use it as positive reinforcement when times get tough. While rejections are inevitable, the Hainer Lab is committed to providing opportunities that will challenge you in a constructive way.

SCIENTIFIC DISCUSSION

The Hainer lab is an Open Science, supportive environment. We want every member to succeed in their scientific research. **That means you should feel comfortable asking any member of the group any questions.** Discussing your results – both positive and negative – can be beneficial to your career. You can learn from others' mistakes and from their successes. You can also expand your knowledge base by understanding every lab members' research project. You should be able to describe your colleagues' projects in a couple sentences to other scientists. If you can't, we recommend setting up a meeting with your lab mates to learn more about their research. Everyone should freely share their research progress (both successes and failures) with all lab members, and in fact, with anyone within the Department.

WORKING IN THE HAINER LAB

Work Ethic

Serious scientific research endeavor is hard work. It requires attention to detail, dedication, and perseverance. These qualities are not measured by the number of hours you physically stay in the lab. Rather, **it is measured by your ability to stay focused, to plan your experiments, to manage your time, to execute an experiment properly, analyze the resulting datasets rigorously, and to finish a research project.** An important way to drive your project forward is to work smart. This means being efficient with your time - prioritizing your experiments and other duties. All trainees should consider multiple strategies and select the best one. Think out loud. Ask your peers and mentors for advice. Discuss with the lab. Use your colleagues and mentors

as resources. Effective time management is also key. Work productively but be realistic about your responsibilities and the time that you will take to complete and schedule accordingly.

Work Hours

The Hainer lab does not institute fixed work hours. **We expect all to be self-motivated** and for the number of hours worked to rarely be an issue. If Sarah has to start keeping track of your hours or monitoring your time, there is a problem. A flexible time schedule is one of the many perks of our lifestyle. We ask, however, that we all be in the lab the majority of the business workday (9-5) so that **interaction with colleagues** can occur for their and your benefit. In other words, we ask that people do not routinely spend the bulk of their workday outside those hours. Staff members are expected to work 37.5 hours per week and have consistent work hours on weekdays. This will help support ongoing projects and facilitate interactions between lab members. Ultimately, what is most important is that you maintain a good level of productivity.

All new members are expected to first start with a ~9–5 schedule. Eventually, you may find that your schedule becomes more dependent on the demands of your experiments, and after some time and independence, this schedule can be modified to suit your working style. All graduate students and postdocs are expected to take responsibility for their projects and career development. To provide some specifics, if interested, graduate students and postdocs are advised to work consistently in the lab for at least 8 hours per day on weekdays. Long hours, working at home, and (sometimes) working on the weekend is part of the life of a scientist. A schedule that works for others may not work for you. Productivity requires both hard work and thoughtful planning and design. While we will not clock your hours, whether you are putting in sufficient time to accomplish all your work will be noticed. Please also respect others' time. Communicate to other lab members if you will be late to a meeting or late using equipment that they are planning on using next.

Weekends are primarily for relaxing and recharging, and we believe strongly in achieving a healthy work-life balance. However, there will be times where weekend work is required to keep projects moving forward, or where sample analysis/writing must take place on the weekends. In addition, cell culture work generally needs to be maintained with short work times over weekends (this can be coordinated with other lab members).

Research is not generally a regular 9–5 job and being in lab 40 hours is not the same as working 40 hours. While you are in the lab, we expect you to do work directly related to lab (both bench work and dry work). This means doing homework, web surfing, checking social media, and generally distracting yourself from the lab are not good practices (although totally fine during incubations and short break periods). If certain tasks (data analysis, coding, writing, etc.) can be done more efficiently outside of the lab, you are more than welcome to do so. If you are unproductive in the lab, please go home or find something else to do to recharge and refocus. If you need more things to do, please let Sarah know. Importantly, if you are unhappy in the lab or uninterested in the work, please discuss with Sarah as you may consider leaving the lab.

Planned Absences

Please let Sarah know if you will be out of the lab for more than one day and the duration of and general reason for that absence (e.g., vacation, conference, etc.). Of course, emergencies come up, and please take care of you and your loved ones' health. You do not need to tell Sarah or the lab any specifics of a personal situation. For planned absences, please notify the lab by writing on the whiteboard in the break area (Example: "Sarah traveling March 1-6, Conference"). This is so that if someone is not here, we know that it is not because of an accident and we can also plan conversations appropriately, know when you're back to find samples, etc.

Lab Meetings

Overview: Lab meetings rotate between data meetings and journal club meetings.

Attendance: We expect all to attend our lab meeting as well as the joint lab meeting (to be attended by everyone except undergraduates) when in town, though will be understanding of extraordinary circumstances. Please be on time, to be respectful to the presenter.

Presenting: Everyone should present at least 1 lab meeting per semester. If you are presenting, please arrive early to put your presentation on the screen.

Opening: We typically open the lab meeting with positive notes from the week, discussion on any lab issues (e.g., with the TC room, equipment, and other shared resources), important news, and upcoming events. Please let us know at this time if there is any lab business you think is necessary to discuss with the group.

Participation: During lab meetings, everyone should **generate at least 1 question** that they had during the presentation. These could be words you don't know, a concept you don't understand, experimental clarification, data interpretation – anything! Also, don't be shy about sharing ideas or questions – others may have the same questions, and 'silly' ideas often help the creative process. Likewise, please be mindful that everyone in the room deserves an equal opportunity to talk. Some are more reticent to do so and need some space to offer an opinion. Please don't dominate the conversation and feel free to continue giving input after the meeting, one-on-one with the speaker.

Journal club meetings: One lab member is assigned to select the paper. However, every lab member should thoroughly read the paper. The lab member in charge of selecting the paper will give a brief verbal introduction of the paper. Then we will do a roundtable discussion of the paper, where an individual lab member will volunteer to present a figure. We will discuss as a group the entire paper.

Nonconventional lab meetings: Once per month, we meet in an informal way to discuss career development aspects (such as practice elevator pitch, CV review, etc.) or social justice conversations at the intersection of STEM. In addition, in December or January we use this meeting for a State of the Lab meeting where Sarah discusses the current status of the lab. This includes a review of the anonymous lab survey that generally occurs in early-mid December.

Practice Talks

We always look forward to providing feedback on practice talks, as it is fun to see your hard work presented in this way. Unless you have given the exact same talk before (in recent time), please schedule yourself a practice talk before any known commitments (conferences, Pitt seminar, etc). You will also be responsible for reserving a room (see someone in the main office for help with this). If you know of your talk far enough in advance, we will put it on the lab meeting schedule.

Please print out copies of your slideshow prior to your practice talk, as it will be easier for everyone to write notes on this to provide feedback.

Seminars

Seminars can be enlightening for both the scientific content (even if unrelated, it can either expand your scientific knowledge or provide new thoughts for your own science) and as an example of a presentation (whether good and bad). Therefore, **we recommend and support attendance** to Monday Departmental and Friday MCDB seminars to all lab members. Additional seminars throughout the week should likely be attended only if of interest (ex: Tuesday Magee Women's Research seminar series, Wednesdays E&E program seminars). Finally, monthly PITNAC (First Fridays at 3:30) and bi-annual Chromatin Club (December/May) should be attended, if possible.

Training Others

Once you yourself are trained and settled in the lab, you will likely assist, or solely, train new members entering the lab, including (but not limited to) rotation students, new hires, and/or undergraduates. Sarah will always support training of new lab members, but if you are in charge of training someone, please carefully introduce them into the lab, show them where reagents and items can be found and train them on lab skills. Importantly, everyone enters the lab at a different ability level and therefore there is no one right way to train people. Some people will need direct

monitoring to set up experiments and some people will just need to be shown items and equipment. More often than not, the more junior a new person is, the more time needs to be spent training them. So make sure you dedicate enough time for sufficient training. Also, you will want to make sure you coordinate times to do lab experiments when you are both available. And training is more than showing new people how to pipette and do experiments; it is discussing results, discussing project background, showing how to analyze datasets, and perhaps assisting to put together a presentation. We cannot emphasize enough that the time put in to helping to train new members at the beginning really helps in their development and settling into the lab. Be welcoming, be supportive, answer questions, and help encourage the new lab member to become a great member of our lab and enhance their scientific skills.

Intralab events

Within our lab, we organize occasional events to permit causal and social interactions within the lab. While attendance is not required, we strongly encourage all lab members to attend when possible, and, when applicable, bring significant others/families

DATA MANAGEMENT

Lab Data

Each lab member should **back up raw data as well as metadata** (see below) needed to reproduce all processing/analyses. **Never delete original Fastq files!!!** Lab data should be stored in at least two of the following places: 1) local hard drive, 2) external hard drive, and 3) CRC server. You should not manipulate any datasets. Please make a local copy on your computer/your server space and work off from that. Your experimental notes and analysis codes are a crucial resource for the lab. They must be available upon request and usable for verifying data in any publication, should questions arise. Good practice is to save fastq files and the accompanying scripts you used for analysis in the same folder (on the CRC server and on the local or external drive). Then, once you have completed analysis, intermediate files can be deleted to save space, but those can be regenerated easily following scripts already made. Be sure to compress (zip) the fastq files once you have completed initial analyses. Before you leave the lab for good, or upon completion of a project, you must archive old datasets and back them up. Please discuss with Sarah if you have any questions.

Notebooks

In the Hainer lab, we keep Electronic notebooks through LabArchive as well as keeping paper notebooks during experimentation. Never discard paper notebooks, and make sure your Electronic Notebook is 100% accurate, up to date, and complete. The paper notebooks are meant to supplement and be used during experimentation. The Electronic notebook is meant to be your legal, binding document of your faithful work.

Keeping a complete and accurate record of experimental methods is a vital part of science. Your laboratory notebook is a permanent record of what you did and what you observed in the laboratory. Learning to keep a good notebook now will establish good habits that will serve you throughout your career. **Please see our advice on our shared OneBox on how to keep a good notebook, and also feel free to look through other lab members notebooks as examples.** Your notebook should be as detailed as possible, recording what you do, why you did it, what the results are, and your interpretation of the results. A good test of your work is the following question: could someone else, with an equivalent technical background to your own, use your notebook to repeat your work, and obtain the same results? For that matter, could you or another lab member come back six months+ later, read your notes, and make sense of them? If you can answer yes to these two questions, you are keeping a good notebook. In addition to key experimental conditions, date, time of experiment, name of the experimenter, should be recorded for post hoc analysis to determine if they contribute to the observed results. You should

record your mistakes and difficulties performing the experiment—you will frequently learn more from these failures, and your attempts to correct them, than from an experiment that works perfectly the first time. If you make a mistake, do NOT obliterate it! You and others may need to read your mistakes later—perhaps you were right the first time! Use a single cross out and EXPLAIN why it was an error. It is extremely important that your notebook accurately records everything you did.

My general guidelines are:

1. Use a separate folder for each project.
2. Date every experiment.
3. Indicate the overall purpose of the experiment.
4. Record full details of materials and methods.
5. Include all “back of the envelope” calculations (i.e., don’t use the back of an envelope, paper towel, etc.) so that these can be checked if there is a problem (ranging from how you made a 10 mM stock of some reagent to how you made a reaction mix).
6. For any experiments requiring antibodies, record the catalog and lot number you use for every experiment.
7. Go back after the results are obtained and present the results and/or refer to any electronic database with the results. Include all original data (e.g., gel photos, plots, etc.).
8. Describe your conclusions – write this for your, my, and future lab-workers’ benefit. Talk to us! State lessons learned, even if negative.

OVERALL: Your notebook should be so clear that anyone in the lab (today or in 5 years) could go into your notes and replicate your experiment exactly, clearly understanding what you did, how you did it, and why. **Notebooks are extremely important.** **You should be writing in them every day.**

Mistakes

Make mistakes, it's okay! If you don't make mistakes, especially when new in the lab, you are probably not real! That being said, mistakes can be often avoided by being careful. Efficiency is important, but it's okay to be slow, especially when you are learning. Do not rush your work. Think about everything. Read through the procedure ahead of time to make sure everything is working and in place. Plan ahead to avoid mistakes. Determine how you can make an experiment easier to avoid common potential mistakes. Sarah and senior lab members can provide advice in this regard; you can learn from our prior mistakes. Double and triple check all your analyses and data. Incorporate sanity checks. Ask others to look at your code or data. We admit our mistakes, and then we correct them and move on. What matters is how you deal with screw-ups and what you learn from them. Furthermore, it is an excellent opportunity for you to identify supportive people in the lab that will help you succeed during your research career. Utilize your environment, work hard, and ask lots of questions. **Do not try to cover up or deny a mistake.** If you've made an error in experimental execution, make sure to record it in your lab notebook in detail and bring it up at lab meetings so others can learn from each other's mistakes. If you do make a mistake, tell your collaborators (if they have already seen the results, and *especially* if the paper is being written up, is already submitted, or is already accepted).

Open Science

We are all for open science, so lab members are encouraged (well, required) to share their code and data with others. These should always be shared with members of the lab, and for people outside the lab, share upon publication or when permitted by Sarah. Do not share code, protocols, or results with people outside the lab without discussion with Sarah. 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 make our data and code publicly available. We will also share our work with the world as soon as we ready, which means preprints! The lab will have a policy to upload a preprint of a manuscript simultaneously with submission to a journal, for most studies. The preferred preprint server is bioRxiv. We have been putting PDFs of all our papers on the lab

website, and you are more than welcome to share PDFs of your preprints or published papers with whoever asks.

RESEARCH PHILOSOPHY

Teamwork

The Hainer Lab is committed to fostering a supportive research environment. This is essential for doing amazing science. We should all be motivated by a collective mission, not just personal gain. Always remember that the success of the lab as a whole is due to your success. We all bring our own expertise and strengths—our successes are shared as a team. **Together, we exceed the sum of our parts.** Work in the lab is most effective and productive when members have distinct, clearly defined projects/roles, yet are still sufficiently interrelated so that no one is working in a vacuum. This way, everyone in the lab can consult with and motivate each other.

Collaborations

The Hainer Lab members have a wide range of expertise and experience. We hope to foster an environment in which everyone can freely discuss and learn from each other. Importantly, collaborating can accelerate scientific progress. Although technicians, graduate students, and postdocs should be leading a main project, **we encourage people to take on collaborations to enrich their experience.** From a short-term perspective, they help the project to get done more quickly and everyone to be in more papers. From a long-term perspective, it develops leadership skills and allows everyone to be exposed to alternative technical and scientific styles. Ongoing, open communication about authorship and contributions is a must, and strong moral fiber in all participants is always expected. All collaborations should be discussed and agreed upon with Sarah and the lab member(s) involved in the collaboration to help support a successful endeavor.

Competition

Even when a formal collaboration is not appropriate, communicating about progressing projects helps to inform future decisions and prevent redundancy, thereby expediting the discovery of new information and increasing efficiency as a greater scientific community. In environments where **trust, openness, honesty, and mutual support are held as the highest values, competition can occur in a fun and productive way that is exciting, but not stressful.** The degree of competition is an inverted U-shaped curve. Without any competition, it is difficult to focus and prioritize. When competition is too intense, quality can be sacrificed for speed. But when there is a healthy balance of friendly competition, you have peers who can inspire you to raise your standards to the next level.

Rejections

Successes in both grant and papers involve a noisy, stochastic system. Only a small number of people are making decisions; ONE bad vote is sufficient to tank your applications and papers. Accordingly, everyone gets rejections; a lot. And **it never feels good, but it feels better if you accept it as inevitable.** Forget the failures/mistakes of the past and press on to the greater achievements of the future. Be sad for a day. Get up and take action the next. You are allowed to take a day off, no questions asked. Do something nice for yourself. Giving yourself permission to indulge in your feelings fully (in a reasonable way) is important and healthy.

Conferences

Conferences are an important part of scientific career development and an avenue for networking with peers as they allow us to increase the lab's and individual researcher's visibility, get feedback on research results, seek new collaborations and update ourselves with what is going on in the field.

It is expected that graduate students and postdocs attend conferences to learn about the field and also present their research. It is possible that technicians and/or undergraduates may attend as well, pending their experience, research interests, etc. If you are interested in attending a conference, please speak to me! There are travel grant opportunities if the lab is unable to fund your conference attendance. That being said, if the lab does fund your attendance to a conference, it is expected that you will present your research at the conference. Therefore, it is typical that within the first couple years you may not attend a conference, and then for the last couple years you will. In general, attending one conference per year once you have data that is ready to present is reasonable.

Environmentally Sustainable Science

We are committed to minimizing the carbon footprint of our laboratory and office spaces, department, and university. The environmental sustainability areas that we can contribute to as researchers are in energy conservation, freezer management, water conservation, chemical waste, waste reduction, recycling, inventory management, and outreach. We recycle all paper used in our office space. We also minimize printing on paper (and if needed, print double-sided) and encourage electronic notetaking and recording of specific experimental steps and calculations taken during your research activities (although some notes on paper may be necessary during experimentation). Before leaving the laboratory spaces please ensure that water taps, light switches, and unused instruments are off, especially if you are the last person leaving the lab or office space. Deionized water comes out of a tap, but it is not free, and it requires a huge investment of time, energy, and water to make. Please close the cell culture fume hood (shut the sash) if you are the last person in the lab using it for the day in the lab. Chemicals also impact the environment. We minimize use of chemicals/reagents that are toxic to the environment as much as possible. We utilize reusable glass pipettes within the lab and reserve the single use disposable serological pipettes for sensitive experiments (e.g., tissue culture). When ordering reagents and other materials for your research, please consider whether the item is in fact needed, do not over-order items in large quantities. Vendors that utilize environmentally sustainable packaging will be prioritized. The most energy-intensive pieces of equipment in most biology labs are the low-temperature (-20°C) and ultra-low temperature (-75°C) freezers. Freezers deliver a double environmental negative: not only are they voracious energy users, they also pump out excessive heat. We will defrost our freezers regularly and you are expected to assist and participate in these activities.

Styrofoam boxes can be recycled in our department! Please collect them at the back of the lab, and when we collect enough someone can take them down to the Langley garage.

SARAH'S COMMITMENT AND EXPECTATIONS OF HERSELF

It's an honor for me to coach and mentor an amazing team of people who together drive our innovation and accomplishments. My commitment to you is to make the Hainer lab a great and fun place to do science. Importantly, **I am invested in your success**—the ability to graduate or move to a new position both in and outside of academia. I will provide an environment that is intellectually stimulating, emotionally supportive, safe, equitable, and free of harassment. Regardless of your personal and academic backgrounds, you can count on me to: 1) coach and mentor you with your career goals, laboratory success, and personal health as the top priorities; 2) tailor my mentoring to each individual (and it helps if you communicate your needs/desires to me); 3) advocate for you throughout your career and help you envision, implement, and communicate your research; 3) foster an environment where people are able to give and receive feedback; 4) allow you to pursue the research that most interests you within the framework of our lab's funded goals; 5) help cultivate your career development and move on to bigger and better goals whatever they may be; 6) help cultivate positive working relationships between all members of the lab; 7) help facilitate clear communication between all members of the lab; 8) delegate responsibility and accommodate everyone's best interest; 9) listen to your feedback and

concerns, be sensitive to your needs, and handle any issues that may arise; and 10) care about not only your research, but you as a person.

A two-way feedback culture is supercritical to a successful lab environment! I am a fan of the “mentoring up” concept, where feedback is given to the mentor from mentees. **I am ALWAYS open to feedback to improve yours or others experiences.** To that end, we run an annual survey to gather feedback, however, you do not have to wait until December! Please provide Sarah with any feedback at any time. We all thrive when our environment is happy, comfortable, and supportive. Thus, any issues, even seemingly small things, should be dealt with swiftly. If you have any questions or concerns—my door is always open (metaphorically)! You are open to communicate with me at any time of day or any day of the week (via Slack or Text). You can expect that I will respond to you in a timely fashion, especially during normal working hours. I also attend to Text/Email/Slack during the evenings and weekends and will likely respond to you then as well, though this may be slower. Of course, in any workplace, conflicts will arise. This is unavoidable and understandable. What we can do, is control how we respond. If, for any reason, you feel the lab is not a healthy, happy, and productive environment, please tell me ASAP. Do not wait to discuss these issues with me for fear that it will bother me. It won't. **It is very important to me that everyone in the lab is happy and productive.** No issue is too small. I'd much rather help manage a conflict/issue when it is in its infancy than later on when it has become unwieldy. Please also come to me if you are having issues with individuals outside our lab. I can help to manage these issues, or guide you to the appropriate resources to deal with this within the Department and University. I hope to be a life-long mentor to the extent you choose to engage me in that role.

If I am not fulfilling these expectations, please feel free to let me know! Communication is important in every relationship, including the mentor-mentee relationship.

Feedback

We will perform an anonymous survey once per year to gather feedback on Sarah and the lab environment (usually done toward the end of the year). Sarah will present the results in the annual State of the Lab nonconventional meeting. Sarah will do her best to address the needs and requests associated with this process.

Review of Documents

Peer-review is a valuable way to get feedback. We encourage lab members to look over each other's documents before (or after) they are sent to Sarah. This method is a great way to gain a breadth of insight.

Sarah requests the following lead-time prior to deadlines:

Conference abstracts: please send draft to Sarah 1 week prior to deadline

Grants applications: please send a draft to Sarah at least 10 days ahead of the deadline. Sarah will likely ask to see a second draft prior to the deadline. Longer grants (5+ pages) may require more lead-time.

Paper drafts: Sarah is happy to look over portions of papers (figures, methods sections, or results sections, for example) and of course will read over full manuscripts (multiple times!). In general, Sarah will strive to get comments to you in less than a week of receipt (although exceptions occur). Paper drafts will require multiple revisions and iterations and we will work together to generate the final product.

Letters of Recommendation

For the first time a letter is requested, please give Sarah at least 2 weeks' notice.

For subsequent letters that are very similar to previous letters (in their purpose), please give Sarah at least 1-week notice.

For all letters, please send an email containing the following:

- A link to the application/job/fellowship description
- The due date **in bold** in the body of the email
- Any specific awards/accomplishments that you would like Sarah to highlight in the letter
- CV/resume
- An unofficial transcript (for grad students and undergraduates)

Sarah will notify you when the letter is submitted. If you have not heard from Sarah 2 days prior to the due date, please feel free to check in with a reminder email.

EXPECTATIONS OF ALL LAB MEMBERS:

In the Hainer Lab, we want everyone to be honest, hungry, humble, and happy. **You are expected to bring your enthusiasm and curiosity to the lab.** We ask everyone to have a proactive attitude and to contribute to the Hainer Lab. As a member of the lab, you are expected to participate fully in the team, both intellectually and operationally. It is up to you to make the most of all the training and opportunities you are given.

Lab members come from diverse personal and academic backgrounds. **We require all lab members to treat each other with respect and dignity.** Disrespectful behavior, harassment in any form, or scientific misconduct of any kind will not be tolerated. It is common courtesy to keep common spaces clean and organized. Please use individuals' pronouns. If you use a shared piece of equipment, clean it and return it to the common area after use. Do not hoard common equipment and reagents. If you use up common supplies and solutions, please refill them and/or list them on the whiteboard. Mistakes and accidents happen in the lab, and that's ok. If you break something, say something. By saying something, you alert people of what happened and allow others to learn from the situation. Most conflicts arise when people feel that they are losing appreciation, affiliation, autonomy, status, and/or role. If there are any confusions, please do not assume anything and bring them to Sarah's attention immediately.

Please discuss any issues with neutral, professional, and proactive communication and be kind and respectful to others at all times. Acknowledge responsibility for your actions and avoid providing excuses for your behavior. If you have created an issue or conflict, attempt to solve it before it affects other's work in the lab. If you do not know how to fix an issue that has arisen, ask for help. Do not wait for someone else to notice the issue, as it may negatively affect lab research. Make smart choices. Be respectful, be kind, be safe, be proactive!

Chores:

Chores are a requirement of all lab members. We are all responsible for maintaining a safe and well-equipped laboratory setting so we can perform great science. Please check the chore list (posted on the door between Langley 527/535). Remember that chores are a **PRIORITY!** If you do not complete your chores, that can negatively impact others progress. Chores will be rotated approximately every 6 months. If you are assigned a chore that you are unsure how to complete, please ask Sarah or another member of the lab. Frequently, we will write a chore that needs to be completed on the whiteboard outside of Sarah's office, so please check that location regularly. Finally, if something needs to be done, please feel free to kindly request the person in charge does it. If issues arise in completion of chores, please do not hesitate to speak with Sarah.

Fellowships:

Sarah encourages all lab members to apply for fellowships, if they are eligible. Please see information in below sections for more information. Importantly, international lab members are not eligible for as many fellowships as domestic lab members, and this will **NOT** be a consideration when joining the lab.

Expectations of Undergraduates:

We expect undergraduates to work 8-10 hours per week during the school year and ~20 hours per week during the summer. Typically, undergraduates join the lab and during the first semester, exclusively performs chores and attends lab meeting. This allows the new lab member to learn about the lab runnings and scientific interests. During this time, new undergraduates are also encouraged to chat with current lab members one-on-one about their projects and can also watch current lab members perform experiments, as it fits in the new undergraduates' schedule. As long as things go well, after this first semester, about 10% of the students' time should be devoted to lab meeting, 10-20% devoted to lab chores (depending on the week), and the remaining 70-80% should be split between research, reading papers, and preparing presentations (depending on the week). Importantly, during the academic year, undergraduates are not expected to attend the weekly joint lab meeting, but rather only attend the Hainer lab meeting. In the summer, undergraduates are encouraged to attend both lab meetings, but are still not required to attend the joint lab meeting. Especially during the first few semesters of doing research, undergraduates will be paired with a more senior member of the lab to learn the project and associated experiments. This lab member will serve as a personal mentor. While Sarah is available, the first point person should always be this lab member. Due to this close mentorship, schedules should be arranged with the person mentoring you.

All undergraduates are encouraged to apply for fellowships during their time in the lab. There are many options within the University of Pittsburgh including: there are [three summer fellowships available within the Department of Biological Sciences](#), where applications are typically due at the end of February; the University [Brackenridge Fellowship](#) is a summer fellowship available for any student who is a member of the honors college and is typically due at the beginning of March; the [Summer Undergraduate Research Award](#) is a summer fellowship for any undergraduate and is typically due in early March; the [Chancellors Undergraduate Research Fellowship](#) is a Fall or Spring fellowship available to any honors college student involved in research who has 3.25 GPA or above and is typically due in early May. Any other fellowship applications are also encouraged!

Expectations of Rotation Students:

During your rotation, you will likely be paired with a current lab member and this is your point person for all training and scheduling. However, please feel free to ask questions of any lab member. Your direct mentor will likely have experience in the project you are working on (or it may be an aspect of that person's project) and therefore not only the schedule and experimental design and execution will be discussed with this mentor, but also the scientific background. We suggest that you speak with this person daily (especially during the first half of the rotation) and schedule at least a day in advance for planning purposes.

In addition, you will meet with Sarah generally once per week to formally discuss the project background, progress, and any other project-related aspects. At least once in a five-week rotation and twice in a ten/fifteen-week rotation you will do a one-on-one journal club with Sarah during one/two of these meetings.

You will be expected to present your rotation project (background, experimental set up, results, and conclusions/future directions) at the end of your rotation. This may be a formal departmental seminar (for MCDB and HMB students) or as a lab meeting (for ISB students). For those not giving a formal departmental seminar (and often have shorter 5-week rotations), the lab meeting presentation will be similar to data lab meetings and should include detailed background. For students giving a formal departmental seminar (often have longer 10–15-week rotations), you will give a lab meeting halfway through your rotation and then a practice talk toward the end of your rotation. I strongly recommend making adjustments to your background and other slides between your lab meeting and practice talk as well as preparing slides in advance of the practice talk to share with your direct mentor and/or Sarah to get feedback before the formal practice talk. If you would like, we can schedule additional practice talks.

We expect rotation students to be in the lab when they do not have classes, during normal business hours. You are training, so your schedule needs to overlap with those training you (to be worked out on a daily/weekly basis with the person/people training you). Classwork is

imperative, but should be done during breaks in experiments, in the evening, and on weekends. When heavy classwork weeks arise, lowering experimental load is perfectly fine. **You are trying to get a sense of the lab, and we are trying to get a sense of you**, so being in the lab is essential for these two evaluations to happen.

Do not give yourself excuses to be mediocre. However, the rotation is short (generally five-ten weeks) and likely not long enough to produce meaningful datasets. Give yourself permission to make minor progress. It is okay to mess up in lab, and more likely than not, you will. You are still learning. But try not to make the same mistake twice. Don't be afraid to ask for help or advice! Importantly, use this opportunity to explore what you found fun to do or learn. Part of your job as a rotation student is to demonstrate your potential value to the lab. So be a good lab citizen and demonstrate your value as a colleague. Lab members have a lot of say in who will get an offer to join their lab. I also strongly encourage you to set aside time to speak with many lab members one-on-one about their project(s) and experiences in the lab. This can give you a good gauge on potential projects you will have and the lab environment which you may not entirely experience, especially if your rotation is 5-weeks.

Expectations of Technicians:

Technicians are required to work 37.5-40 hours a week. The majority of these hours should overlap with regular business hours, so that interaction can occur between you, Sarah, and other lab members. Your hours should be broken as such: 5-10% of time spent at lab meetings (typically 2-3 hours per week), ~15% devoted to lab chores and lab organization, and the remainder of your time should be spent on research, reading papers, and preparing presentations (depending on the week). Technicians run an independent research project and are often involved on collaborative projects as well. However, the main focus of your research time should be spent on your main research project(s).

When you first start, you will typically meet with Sarah one-on-one weekly to review your project, any questions you have, and go over your data. In addition, when you first start, you will be expected to send Sarah a “weekly plans” document every Friday that briefly outlines your plans for the following week as well as what you accomplished the week prior (in a table format within word works well, but however you prefer). Sarah will review and provide feedback before Monday. This document will allow you to get clear feedback on your plans and keep Sarah up to date. Once you are more experienced, it is up to you if you want to continue sending this planning document every week to Sarah.

Importantly, you are a mentee/trainee, and I will support your career development as best as possible, whatever your future goals. We will complete an annual IDP, as with all other lab members, and you are encouraged to attend research seminars and/or career development seminars. In addition, if it matches your interests, you are encouraged to present your data, when mature, to local (PITNAC or chromatin club, for example) or national audiences (conferences). Your feedback is also essential for our continual development.

Expectations of Graduate Students:

A PhD is a self-driven academic position. Your work hours and expectations are entirely dependent on your own drive (although attendance to meetings and some overlap with other lab members is required). That being said, Sarah expects graduate students to put in a minimum of 40 hours a week, as you will never complete your PhD if you do not. But this isn't always pipetting – planning projects, reading papers, designing experiments are essential to driving your research forward. Once your comps are completed, you should be fully immersed in your project(s) and spend your hours thinking about and performing work towards the goal of obtaining your PhD.

When you first start, you will typically meet with Sarah one-on-one weekly to review your project, any questions you have, and go over your data. In addition, when you first start, you will be expected to send Sarah a “weekly plans” document every Friday that briefly outlines your plans for the following week as well as what you accomplished the week prior (in a table format within word works well, but however you prefer). Sarah will review and provide feedback before Monday.

This document will allow you to get clear feedback on your plans and keep Sarah up to date. Once you are more experienced, it is up to you if you want to continue sending this planning document every week to Sarah.

Graduate students are required (by programs) to have at least one accepted first author publication before defending. All students are expected to prepare and assemble drafts of figures and texts during manuscript preparation. All figures will be made using Adobe Illustrator or Inkscape. Each student will be assigned (or help to develop) at least one project that will lead to a first (or co-first) authorship position.

Importantly, you are a mentee/trainee, and I will support your career development as best as possible, whatever your future goals. We will complete an annual IDP, as with all other lab members, and you are encouraged to attend research seminars and/or career development seminars. In addition, you are encouraged to present your data, when mature, to local (PITNAC or chromatin club, for example) or national audiences (conferences). Your feedback is also essential for our continual development.

Sarah encourages all graduate students to apply for fellowships. Below is a table of some fellowships, but if you know of others, I encourage you to evaluate and apply. In addition to the National grants listed below, there are a few Pitt internal grants, including some T32s and the Mellon (which only MCDB students are eligible for).

GRANTS	WEBSITE
NIH F31	https://researchtraining.nih.gov/programs/fellowships/F31
NSF GRFP	https://www.nsfgrfp.org
USDA NIFA	https://nifa.usda.gov/funding-opportunity/food-and-agricultural-sciences-national-needs-graduate-and-postgraduate
DoD NDSEG	http://ndsegfellowship.org
American Heart Association AHA	https://professional.heart.org/professional/ResearchPrograms/ApplicationInformation/UCM_443316_Predoctoral-Fellowship.jsp
Ford Foundation	http://sites.nationalacademies.org/pga/fordfellowships/index.htm
AAUW American Fellowship	https://www.aauw.org/resources/programs/fellowships-grants/current-opportunities/american/dissertation-fellowships/
DoE Computational Science Graduate Fellowship	https://www.krellinst.org/csgf/
HHMI Gilliam Fellowship	https://www.hhmi.org/science-education/programs/gilliam-fellowships-advanced-study
Cystic Fibrosis Foundation Student Traineeship Award	https://www.cff.org/Research/Researcher-Resources/Awards-and-Grants/Training-Awards/Student-Traineeship-Award/
Graduate Women in Science	https://www.gwis.org/page/fellowship_program
Smithsonian Institution Fellowship Program (SIFP)	https://www.smithsonianofi.com/fellowship-opportunities/smithsonian-institution-fellowship-program/
Keystone	https://www.keystonesymposia.org/ks/Online/Diversity/Underrepresented_Trainee_Scholarships.aspx
Children's Tumor Foundation	https://www.ctf.org/research/young-investigator-award-yia
Foundation for Pierre Elliott Trudeau Foundation	https://www.trudeaufoundation.ca/scholarship
Embassy of France in the U.S.	https://www.chateaubriand-fellowship.org/Eligibility-Guidelines-STEM
Department of Defense	https://www.grants.gov/view-opportunity.html?oppld=329511

Computational & Information Systems Lab	https://www2.cisl.ucar.edu/siparcs/cisl-outreach-diversity-and-education-code-intern?utm_source=SIParCS+Info&utm_campaign=6088d03820-EMAIL_CAMPAIGN_2017_12_04&utm_medium=email&utm_term=0_cb3603773c-6088d03820-133414381
American Epilepsy Society	https://www.aesnet.org/research/funding_for_junior_investigators/Pre_Doctoral_Fellowships
US Department of Energy (DOE)	https://www.krellinst.org/csgf/
Autism Speaks	https://science.grants.autismspeaks.org/uploads/helpdocs/2021_Predocctoral_Fellowship_RFA.pdf
The Harry Frank Guggenheim Foundation	https://www.hfg.org/emerging-scholars
NIH R36	https://grants.nih.gov/grants/guide/pa-files/PA-18-765.html
PhRMA Foundation	http://www.phrmafoundation.org/awards/pre-doctoral-fellowship-awards/health-outcomes/
Society of Women Engineers	https://swe.org/scholarships/
Association of Public Health Laboratories (APHL)	https://www.aphl.org/fellowships/pages/bioinformatics.aspx
American Heart Association (AHA): Student Scholarships in Cardiovascular Disease	https://professional.heart.org/en/partners/awards-and-lectures/student-scholarships
NIH F31 - Promote Diversity in Health Related Research	https://grants.nih.gov/grants/guide/pa-files/PA-20-251.html
National Academies and National Research Council (NRC)	https://sites.nationalacademies.org/PGA/RAP/index.htm
Hertz Foundation	https://www.hertzfoundation.org/the-fellowship/
American Association of University Women	https://www.aauw.org/resources/programs/fellowships-grants/current-opportunities/american/
Department of Energy	https://science.osti.gov/wdts/scgsr

Expectations of Postdoc Fellows:

A postdoc is also self-driven academic position. Your work hours and expectations are entirely dependent on your own drive (although attendance to meetings and some overlap with other lab members is required). That being said, Sarah expects postdocs to put in a minimum of 40 hours a week, as you will never complete your training if you do not. But this isn't always pipetting – planning projects, reading papers, designing experiments are essential to driving your research forward. From the beginning, you should be fully immersed in your project(s) and spend your hours thinking about and performing work towards the goal of obtaining your next position.

Postdocs are expected to have at least one accepted first author publication before leaving the lab. All postdocs are expected to prepare and assemble drafts of figures and texts during manuscript preparation.

Importantly, you are a mentee/trainee, and I will support your career development as best as possible, whatever your future goals. We will complete an annual IDP, as with all other lab members, and you are encouraged to attend research seminars and/or career development seminars. In addition, you are encouraged to present your data, when mature, to local (PITNAC or chromatin club, for example) or national audiences (conferences). Your feedback is also essential for our continual development.

Sarah encourages all postdocs to apply for fellowships. Below is a table of some fellowships, but if you know of others, I encourage you to evaluate and apply.

GRANTS	WEBSITE
NIH F32	https://researchtraining.nih.gov/programs/fellowships/F32
Helen Hay Whitney	http://hhwf.org/research-fellowship/
Damon Runyon	https://www.damonrunyon.org/for-scientists/award-programs
Jane Coffin	https://www.jccfund.org/fellowship-information/
Leukemia and Lymphoma Society Fellow	https://www.lls.org/research/career-development-program
HHMI Hanna H Gray	https://www.hhmi.org/programs/hanna-h-gray-fellows-program
Life Sciences Research Foundation	http://www.lsf.org
Cancer Research Institute	https://www.cancerresearch.org/scientists/fellowships-grants/post-doctoral-fellows
American Cancer Society	https://www.cancer.org/research/we-fund-cancer-research/apply-research-grant/grant-types/postdoctoral-fellowships.html
American Heart Association Postdoctoral Fellowship	https://professional.heart.org/professional/ResearchPrograms/ApplicationInformation/UCM_443314_Postdoctoral-Fellowship.jsp
Leukemia and Lymphoma Society Special Fellow	https://www.lls.org/research/career-development-program
Alex's Lemonade Stand Young Investigator Grant	https://www.alexlemonade.org/grants/program-areas/early-career-research-programs
American Heart Association Career Development Award	https://professional.heart.org/professional/ResearchPrograms/UCM_495968_Career-Development-Award.jsp
NIH K99	https://grants.nih.gov/grants/guide/pa-files/PA-19-130.html
Lymphoma Research Foundation Postdoc fellowship	https://www.lymphoma.org/researchers/grants/
Burroughs Wellcome Fund Career Awards	https://www.bwfund.org/grant-programs/interfaces-science
NSF Postdoctoral Research Fellowships in Biology	https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503622
L'Oréal USA For Women in Science	https://www.lorealusa.com/csr-commitments/l%E2%80%99or%C3%A9al-usa-for-women-in-science-program
Keystone	https://www.keystonesymposia.org/ks/Online/Diversity/Underrepresented_Trainee_Scholarships.aspx

MANUSCRIPTS, AUTHORSHIP, AND RESPONSIBILITIES

Typically, each study will take 3-4 years to complete.

General Principle and Responsibilities

Authorship is the primary mechanism for determining the allocation of credit. Authorship assigns ownership, responsibility, and accountability for the content and integrity of scholarly work and intellectual products. Authorship should be limited to those who have made a scientific contribution(s) to the concept, design, execution, or interpretation of the research study. Authors should ensure that care and effort have been taken to determine that all the data are complete, truthful, accurate, reasonably interpreted, and retrievable for reanalysis. Authors should ensure that in-house developed reagents and codes used in the study are fully tested and are in a distributable format. The Hainer Lab is dedicated to producing robust, reproducible science. Data manipulation of any kind will not be tolerated. If you see someone doing this, please contact Sarah immediately.

Raw data should be made available from every manuscript. Sequencing data, for example, should be uploaded to GEO before the manuscript submission.

Arrangements and Expectations

To reflect our mission of teamwork, all lab members are encouraged to collaborate and have the opportunity to receive co-authorship that reflects their contributions. Each of our research papers should ultimately tell a compelling story—and this story is the principal, tangible result of the group's work.

The team member who is most familiar with the project details and most likely to have the deepest and broadest perspective—should be the first author. The first author is expected to commit to completion of this project including assisting in the response to the reviewer which may span beyond their tenure in the lab. It is most effective if the same person serves as the first author from the project's launch to publication. While the first author is expected to shepherd the paper to completion, it may not be possible for one person to oversee the whole project. If the original first author must step down, a replacement will have to be elected. The project/manuscript should be 'owned' by that person going forward. First author(s) should be responsible for the bulk of the data acquisition, analysis, figure preparation, and writing (cover letter, main text, figure legends, and response to reviewers). Co-authors are expected to contribute scientifically and participate actively in helping the other authors in the writing, editing, and proofing of the manuscript at all stages. While we generally err on the side of generosity, gift authorship will not be considered.

Authorship will be discussed on the outset and throughout project development. Negotiation of authorship (both inclusion and order) should be open, professional, and respectful. Any changes in authorship should be approved by the original authors. If you need clarification on authorship issues, please talk to Sarah. Anyone who fails to fulfill the minimal requirements will not be considered for authorship.

Examples of Authorship Assignments

Deciding: Collection of vital data (e.g., key and initial observations, traces/images for figures), conceptualizing, designing, and refining research, provision of resources necessary for the study. **Sufficient:** the conception of the study, processing and interpretation of data, designs of the study, provision of specialized expertise, novel reagents and analyses. **Necessary but Insufficient:** discussing the results and implications, reviewing, editing, and critiquing the manuscript at any stage. **Insufficient:** technical services, editorial assistance, formatting of manuscript, literature search, general training/supervision of junior researchers, gifting of purchased or generated reagents (unless, for the latter, essential for the study and not previously published). Importantly, final decisions regarding authorship ultimately rest with Sarah and/or other corresponding authors.

BioRxiv Policy

As soon as we are convinced that a manuscript is ready for submission, we will likely upload it to a preprint server (bioRxiv, pronounced bio-archive) at the same time or shortly before we submit to a journal. We will do this for several reasons: 1) It expands the audience that will see our papers since bioRxiv is free for everyone to access. 2) It allows us to get feedback from a MUCH wider audience than the three reviewers that will review our paper at the journal. 3) It establishes priority. A bioRxiv submission is given a digital object identifier that is searchable and citable so this significantly reduces the chance that you will get “scooped” during the long process that the paper is under review at the journal. 4) It demonstrates productivity. Submitting a finished manuscript to bioRxiv is infinitely more substantial than something you list as “in preparation” on your CV. “In preparation” is ignored by many, while a bioRxiv preprint can be considered as productivity if you are applying for a grant or for a job. 5) There are a lot of other philosophical reasons involving taking our careers back from the publishers and giving access to science back to the taxpayers that are paying for it, but that’s a rant for a different day.

DEPARTING THE LAB

Leaving a lab can be difficult for a variety of reasons. Sometimes lab funding dictates when a lab member must leave, and any kind of changes in lab funding that may affect your position will be communicated as far in advance as possible. Your well-being is the primary concern, and Sarah will make every effort to communicate if funding changes will affect your employment or if performance is becoming an issue (see Expectations section) for more information on what Sarah expects from you and what you can expect from me). Most likely, you're moving on to an exciting next stage of your career and we want to make that as easy as possible. If this is the case, to ensure a smooth transition, please let Sarah know as soon as possible when you will be moving on. Ideally, if we communicate well and organize things properly you should not worry about having to answer questions from us about where things are or how you did a certain experiment. In addition, we want to make sure that all your work here is properly acknowledged, that we do not waste any samples or reagents, and that we go through all the proper administrative items that need to be addressed. Ideally, you are handing over your project(s) to a current lab member. In this case, Sarah and all parties of interest should sit down and discuss the status of each project, the location of any relevant supplies/samples/resources, and the current state of contributions to the project.

Notebook

You should ensure that all your lab notebooks are accessible to everyone in the lab and are up-to-date and organized. This includes having detailed protocols that you developed/pioneered, or protocols that were developed by others, but you are the sole user, written and deposited in the LabArchive for everyone to access. You must leave original paper notebooks in the lab, but you are welcome to make copies of these and to take a PDF copy of your LabArchive notebook. After you leave the lab, you will not have free access to the LabArchive, so if you want to have protocols or certain items stored there, make sure to take them prior to leaving the lab. We are happy to send information in the future, but it's easiest for you to organize that prior to leaving.

Reagents

If you have boxes in the freezers/fridges, please consolidate these down to what is essential going forward for the project. Please discuss this with Sarah and/or lab members who will continue on your project(s). It is also your responsibility to make sure all your bench and desk space is organized and cleaned. If you have solutions or consumables that are half used, please first ask if someone in the lab wants them and, if not, then discard them appropriately. If you have any questions about if something should be thrown away, feel free to ask. In addition, please catalog what you are leaving behind and make sure that tubes are labeled appropriately (i.e., coherent identifying information, dates, etc.). This information should be available either in your LabArchive notebook or on a shared drive.

Contact after leaving

If you feel comfortable doing so, provide the lab with your personal/new contact information going forward. This allows us to stay in touch and ensure that your data/previous work goes to good use and is properly acknowledged. After leaving the lab you are always welcome to contact Sarah about the status of a project, how your contributions have changed over time, and when you can expect to see a finished product from your non-complete work. Lastly, we are interested to see where all trainees end up in life. Please stay in touch; we would love to hear from you!