

Chen Lab

Laboratory Manual

Expectations, policies, and resources

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We are located on SFU Burnaby campus on the traditional and unceded territories of the Musqueam, Squamish, Tsleil-Waututh, and Kwikwetlem Nations.

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Chapter 1

Welcome to the Chen Lab

1.1 Welcome!

Welcome to the Chen lab! We are delighted to have you join us. This manual was written to help you understand expectations in the lab, and to act as a resource to help answer common questions that arise as a new lab member.

Please read the sections applicable to you before your first day of active lab work. In chapter 2, you will find an onboarding checklist to complete in the first few weeks. If anything is unclear, do not hesitate to ask.

1.2 General lab information and resources

We have a Chen lab OneDrive which includes:

- Lab meeting schedule
- Lab ordering log
- SOPs and protocols
- Resources (chemical hazard manual links, biosafety manual links, etc)

For questions regarding graduate studies, please refer to the Graduate Student Handbook: <https://biscgrads.blogspot.com/p/graduate-student-handbook.html>

The BISC staff page includes a list of people around the department who can help you with different problems: [Link to page](#)

If you ever feel unsafe or which to report an incident to a person, contact campus security: Non emergency: 778-782-7991 Emergency (call 911 first): 778-782-4500

1.3 Lab Values and Culture

In this lab, we strive to produce rigorous, reproducible science through collaboration and creativity. We are committed to building an inclusive and respectful work environment. Our core values include:

- **Scientific rigour.** We record data meticulously and interpret results honestly. As much as possible, we value learning through experience, and we accept that

the learning process is very messy. Do not be afraid to make mistakes, and do not be afraid to document them. Reproducible and productive science requires that we are transparent about what we have tried or done.

- **Open communication.** We share progress, problems, and ideas freely. Not everyone learns things at the same time, or shares the same set of "common knowledge". Do not be afraid to ask about things you do not know, and feel free to share your unique (and sometimes unusual) ideas with the group.
- **Mutual respect and inclusion.** Every lab member's contributions and time are valued, and different types of expertise and perspectives should be respected. We encourage mutual respect and understanding of each others' lived experiences.

The Chen lab is committed to providing a safe, respectful, and inclusive environment for all students, employees, and visitors. We have a strict zero-tolerance policy for bullying, harassment, and discrimination in any form. Every individual is entitled to be treated with dignity and respect

If you are experiencing bullying or harassment, please reach out to bhinfo@sfu.ca to get support or report an incident. If you are comfortable, please let me (Melissa) know as well- I acknowledge that interpersonal conflicts can be uncomfortable to discuss with people within the lab (including your PI), but I will do my absolute best to listen, provide support, and help resolve conflicts while exercising discretion.

1.4 Shared lab chores

In this lab, it is expected that all individuals contribute to ensuring the lab is clean, organized, and running smoothly. Tasks that are shared among lab members include:

- Autoclaving Level 2 waste
- Re-ordering items that are running low (tubes, tips, plates, bleach, gloves)
- Refilling MilliQ water carboy
- Autoclaving pipette tips
- Maintaining a small stock of commonly used reagents (Non-perishable buffers, aliquots of molecular grade H₂O)
- Tidying the lab, putting away dried glassware, etc

You are welcome to use media and consumables on the "shared" lab shelf- but this also means you should contribute some items when you are making things for yourself (e.g. make a whole L of TAE buffer even if you only need 50mL). When preparing things to share, remember to record how you prepared them in your lab notebook and put your initials and date on all items.. If you are conducting a large project that requires lots of resources, **always** plan to make enough supplies for yourself and do not rely on shared stocks. Communicate with the lab whether there are certain stocks you are reserving for yourself. You will have individual bench space where you can store these items so they are not used by others.

Chapter 2

Onboarding checklist and safety training

[✓] Checklist

This is a general checklist for all lab personnel. Postdocs, PhD, MSc, and undergrads may have additional checklist items to complete (See respective sections below).

- ☐ If you are a grad student, postdoc, or other long-term employee remind Melissa to request lab keys for you. Keys are picked up from DISCOVERY 1, Rm 1300, they will notify you when it is ready. **Check hours of operation before going
- ☐ Complete safety training (see table below); **send certificates to Melissa**
- ☐ Complete part 2 of the Safety Orientation in person (Appendix A)
- ☐ Consider signing optional NSERC Consent form (Appendix B)
- ☐ Send Melissa your emergency contact information so she knows who to contact if there is ever a serious incident in the lab or in the field
- ☐ Send Melissa a headshot and short blurb about who you are, what you're working on, website, etc to put on the lab website
- ☐ Sign up for SFU alerts (<https://www.sfu.ca/sfualerts>) (for weather alerts, incidents, etc)
- ☐ Obtain new SFU ID (if coming from non-SFU institution) at Maggie Benston Centre (or other pop-up location if at beginning of school year)
- ☐ Sign up for in-person facilities tour / training session (will receive email about the timing) for both Biological Sciences (BISC) and Molecular Biology and Biochemistry (MBB) departments.
- ☐ Sign up for the lab Slack (ask Melissa if you didn't receive an invitation)
- ☐ Obtain access to lab OneDrive (lab meeting schedule, order logs, locker access, resources, and more). You must use your SFU email to access SFU's OneDrive account.
- ☐ Register for CCDB (Compute Canada database), which provides you access to Alliance Canada's remote computing cluster.
- ☐ Request access to Science Stores for purchasing

SFU Lab Safety Training Requirements

Training	Link	Required For
General Training		
SFU Safety Orientation	sfu.instructure.com/enroll/YXTRE6	Everyone
Respectful Working and Learning Environments	sfu.instructure.com/enroll/KPCW4T	Everyone
Office Ergonomics Training	sfu.instructure.com/enroll/GCB93X	Everyone
Laboratory & Chemical Safety		
EHS Safety Essentials (1) Safety Essentials Training (2) Laboratory Safety Training (incl WHMIS) (3) Biosafety Training	https://www.sfu.ca/srs/work-research-safety/research-safety/lab-safety-training.html	Undergrads, grad students, postdocs, employees
EHS Chemical Storage Refresher	sfu.instructure.com/enroll/JBT3B8	Grad students, postdocs, employees
Biosafety Emergency Response Refresher (<i>annual</i>)	sfu.instructure.com/enroll/H9JLL8	Grad students, postdocs, employees
PHAC General Safety for Containment	https://trainingformation.phac-aspc.gc.ca	Undergrads, grad students, postdocs, employees
PHAC Module: Containment Level 2	https://trainingformation.phac-aspc.gc.ca	Undergrads, grad students, postdocs, employees
Optional Training		
SFU Asbestos Awareness	sfu.instructure.com/enroll/GHD4LE	Our building is old. Recommended by EHS.
3D Printer Safety Training	sfu.instructure.com/enroll/FD6LCL	For those who will use the 3D printer in the lab.

General Safety Info: <https://www.sfu.ca/srs/work-research-safety.html>

Chapter 3

Lab Operations and General Policies

3.1 Hours of Operation and Access

The SSB building is open Monday-Friday, 7am-9pm. After-hours access requires a FOB. For safety reasons, I strongly encourage lab work to be done within working hours (8:30am-5pm). If working after-hours, please consider having a "lab buddy" with you so that you are not working alone, or use the SFU Lone Worker Program (<https://www.sfu.ca/srs/work-research-safety/general-safety/working-alone-or-in-isolation/lone-worker-program.html>).

Access to the lab is by key only, and the main lab locks automatically. If you lock yourself out, the General Biology office can help.

3.2 Communication

3.2.1 Day-to-day Communication

I work 10am-3pm, and then late evenings (as a result of daycare and commute). Please do not feel obligated to respond to my emails if they are sent at odd hours of the night. For non-emergency issues or questions, the best way to reach me is by email (melissa_y_chen at sfu.ca). I am also active on the lab Slack. My personal cell is posted in the lab for urgent matters (not posted here since this is a public document). If there is ever an incident in the lab or you feel unsafe, please do not hesitate to call me.

The lab Slack is meant to facilitate communication between lab members, but it should not be an expectation that lab members actively monitor Slack during all hours of the work day. The Slack channel is great for asking general lab general questions, communicating via "chat" in a centralized app, and to share cool resources or papers you find. If you have an urgent request, you are welcome to use Slack to ask your lab members for help, but be aware that it should not be the expectation or responsibility of other lab members to respond to your requests right away.

I encourage you to spend time in the lab (and the department) in-person. There is something unique and special about interacting with your lab mates and colleagues face-to-face that is not easily replicated by digital communication. Of course- indi-

viduals often have obligations outside of the lab that may prohibit them from being present every day and that is perfectly okay- but consider coming in to work in-person even if you are just doing "computer work" that day.

3.2.2 Meetings

Meeting	Purpose	Frequency	Day/Time
Lab meeting	Round table, and rotating schedule of presentations, data discussion, and journal club	Weekly	Determined at the start of each semester. See the OneDrive lab meeting schedule
PI one-on-one	Individual progress check and check-ins. Discussion topics can range broadly.	Weekly or bi-weekly	Determined at the start of each semester

Table 3.1: Recurring laboratory meetings.

All lab members are expected to attend the lab meeting unless they are traveling or ill. In-person attendance is required unless prior notice is given.

3.3 Lab Notebooks

Lab notebooks will be provided, but you are welcome to use your own if you prefer a specific style. The purpose of lab notebooks is to keep a record of the work you do in the lab so that your findings can be replicated by others. These records are also useful for yourself when you are looking back at what you did, and writing out the methods section of your papers. Lab notebooks should be kept in the lab. Entries should include:

- Date (recommended format: YYYY-MMM-DD)
- Objective of the experiment
- Detailed protocol with added notes if any additional changes were made
- Reagent concentrations and sources, if applicable
- Raw observations and instrument outputs (numbers, gel photos, exported files)
- Analysis steps and preliminary interpretation

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- Brief next steps

Lab notebooks help track issues/challenges with data. Please keep them in the lab after you leave, as they can help future lab members troubleshoot questions they have about shared reagents you may have made; data you've generated; or materials you've collected.

3.4 Data Management

3.4.1 Storage and Backup

Raw data can be stored on your personal computer, but a copy of your raw data (not processed) must be stored either in a shared OneDrive folder accessible to the lab OR on the lab computer. The exception to this rule is if the data are proprietary (e.g. work was done for an industry partner under and NDA), in which case data storage will be discussed on a case-by-case basis.

For your own benefit (and sanity), it is highly recommended that you store all data, scripts, and manuscripts in at least two places.

3.4.2 Data Sharing and Publication

Upon manuscript submission, raw data and code must be deposited in a repository of your choice (Dryad, ENA, SRA, Zenodo, Github etc). Please verify with the PI that all data are okay to be publicly released before doing so.

If you participate in a coding-heavy or bioinformatics based project, it is expected that any code/scripts/programs referenced in a publication are contained within a shared repository between you and the lab (<https://github.com/ChenLabSFU>). This is to ensure that code is accessible after trainees leave the lab.

3.5 Authorship and Publications

Authorship should be an early discussion in any project. For dissertation work, "chapters" of your dissertation will usually become first-author publications for the student writing the dissertation. Postdocs will typically be first-authors of the projects they lead. The PI is usually the last (and corresponding) author. In rare instances, a postdoc may serve as co- or sole corresponding author, but this should be discussed prior to submitting a manuscript as it is best for corresponding authors to be accessible via the email published with the manuscript if readers have any questions related to the work. When a postdoc leaves the lab and does not continue in academia, this can be problematic because they may longer be involved in the research sphere.

Authorship is given to those who contribute to the conception/design or data acquisi-

tion/analysis of key experiments such that without their contribution, the paper would not take the same shape as it has. All co-authors are expected to help revise the manuscript prior to publication by submitting feedback when manuscript drafts are circulated. All co-authors must approve of the final version and be accountable for their work. Co-authors must be given at least 1 week to review a manuscript drafts.

Chapter 4

Safety, Ethics, and Compliance

We are a **Containment Level (CL) 2 lab**. We do not typically deal with any Risk Group (RG) 2 pathogens, but since we work with environmental isolates (and therefore hypothetically could inadvertently isolate RG2 bacteria), we are automatically CL2.

This means no food or drink are allowed in the lab. You may store your beverages and food on the white shelf outside the lab door; or we have a shared locker in the SSB hallway. Click [here](#) for locker information and access instructions.

4.1 Laboratory safety

Below is the general safety website where you can find contacts, reporting forms, and a link to the safety training tracker.

<https://www.sfu.ca/srs/work-research-safety.html>

All members must complete mandatory safety training (see onboarding checklist in Chapter 2) beginning any wet-lab work. Certificates must be sent to Melissa.

4.1.1 Incidents and accidents

Please report any incidents OR near-misses to <https://www.sfu.ca/srs/contact/report/report-incident.html>- this system is NOT to assign fault, but rather document events so that we can see patterns of incidents through time and create protocols to prevent them from happening in the future.

4.1.2 Working Alone

If you're working alone, you can call 778-782-7991 to let them know so they can check up on you. You can also dial this number to ask for a walking companion if you are working late at night and would like someone to help walk you to your car / bus stop. Here's a link to SFU's working alone policy: <http://www.sfu.ca/policies/gazette/general/gp39.html>.

4.1.3 Personal Protective Equipment (PPE)

In the lab, there are protective safety goggles/glasses and shared lab coats that you are welcome to use. You are also welcome to bring your own, but they should stay in

the lab (and not taken home every night). I would recommend poly-cotton lab coats with metal buttons (rather than plastic) so that they are autoclavable. You should sterilize lab coats before taking them home to launder. Do not take lab coats home to launder if you have spilled chemicals on it; or if you have used it to work with any DNA-intercalating substances (Ethidium bromide, SYBR, etc). SFU Science Stores can connect you with professional laundering services- please discuss with Melissa if you require professional lab coat cleaning.

Long hair should be tied back. Avoid wearing contact lenses when doing wet lab work if possible, as they can melt to your eye if exposed to certain chemicals.

4.1.4 How do I do a technique/protocol?

The Appendix C contains links to both standard and lab-specific Standard Operating Procedures (SOPs). All links redirect to the labs OneDrive, which are only accessible via your SFU email. Please ensure you are trained on the appropriate SOP before attempting a technique. This includes hazardous materials handling and waste disposal.

4.1.5 Emergency Procedures

- **Fire:** Pull alarm, evacuate via stairwell (never elevator), assemble at the appropriate muster point (Muster Point Map).
- **Chemical spill:** Refer to SDS. Small spills: use spill kit in safety cabinet underneath fume hood. Large/unknown: evacuate and call campus security (778-782-4500).
- **Injury:** There is a basic first aid kit in the lab on the shelf above Winona (the computer). Report all injuries acquired during lab work through the incident reporting system within 24 hours, even if minor.
- **After-hours emergency:** Campus security: 778-782-4500. My personal cell is also posted in the lab- please text or call me if something happens, even if you think it might be silly. I would rather laugh about it later than cry.

4.2 Research Ethics and Integrity

Any suspicion of data fabrication, falsification, or plagiarism must be reported immediately to the PI or, if the PI is implicated, to the department head. The lab operates a zero-tolerance policy for research misconduct.

4.2.1 "AI" and LLM policy

I (Melissa) am of the opinion that "AI" (most commonly referring to large language models, such as ChatGPT, Claude, Gemini, Copilot, etc) can be a useful tool, but

that it should not be used as a displacement for learning and idea generation, and that it should **never** be used without extensive editing and screening. For example, using AI to generate drafts/outlines of new SOPs is an acceptable use of the tool, as long as SOPs are thoroughly edited for content. In contrast, using AI to generate outlines for writing (yes, even outlines- not just drafts) for academic writing (dissertations, manuscripts, etc) is **NOT** acceptable because an important part of science is learning how to organize your thoughts and communicate them in a clear and concise way. The act of iteratively re-working written drafts (including outlines) is an essential part of this learning process. When you graduate/move on from the lab, it is your own decision whether you want to incorporate LLMs into your writing process, but while you are in the Chen lab it is my expectation that you are here to learn, and writing (from start to finish) is part of that learning process.

The same policy applies to coding. It is very easy to "vibe code" (ie, use generative AI tools to create code, then use it to trouble shoot and refine its own code) your way through your degree/postdoc, but the point of doing an MSc, PhD or Postdoc is to learn. You are in an extremely privileged and unique time and place in your life where you are given time and space to *learn*. Thus, while I cannot realistically monitor or police whether you heavily rely on AI tools to create code for you, my official stance on using AI to generate code is that you should not do it because it takes away your opportunity to actually learn how to code. Again, it is entirely up to you whether you want to incorporate these tools into your workflow after you graduate or leave the lab, but while you are in a space of learning, I kindly ask that you do that.

Finally, it is **formal and mandatory lab policy that data, images, or content from other people (lab mates, collaborators, students) are NEVER uploaded to any AI agent**. Do not upload raw data to be analyzed. Do not upload images that contain faces of other people. Do not share any written content (manuscript drafts, grant proposals, student written responses) with any agent. This is extremely important- some of the data may be proprietary or contain (unknowingly) sensitive information. You do not know (or have control over) how AI companies use the data you upload, no matter how many "promises" they make about their security and discretion.

Some examples of **appropriate** AI use:

- Using suggestions from (for ex) Copilot to edit your writing (e.g. synonym suggestions, grammatical mistakes, etc)
- Generating drafts/outlines of "boilerplate" text, such as for writing out protocols, as long as you edit for content thoroughly
- Using it to help explain a concept you don't understand- but make sure to check what it says is supported by primary sources that you find independently
- Helping you format tedious things (e.g. make a large table in latex; citations, etc), as long as you do not upload/submit private or proprietary data.

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- Asking it to help troubleshoot coding issues (which is different than just "vibe coding")

Some examples of *inappropriate* AI use:

- Generating outlines or drafts for academic writing (manuscripts, dissertations, proposals)
- Uploading your (or anyone else's) data into an AI tool
- Uploading anyone else's writing into an AI tool (especially grant proposals and manuscript drafts)
- Using it to conduct a literature search for you. I think it might be okay to ask it for a summary of a field you are unfamiliar with, but you should then search for peer-reviewed papers on the ideas and topics yourself so that you can get a "realistic" view of the state of the field.
- Asking it to create an analysis plan for you (again- part of the learning process is to think through this yourself)

4.3 Conflict of Interest

Declare any potential conflicts of interest to Melissa promptly, including paid consulting, equity interests, or relevant affiliations/collaborators. One of the main funding sources of this lab is NSERC (the Natural Sciences and Engineering Research Council of Canada), which recently implemented a new policy on "Sensitive Technology Research and Affiliations of Concern". Under this policy, the lab is not permitted to work or be affiliated with any Named Research Organization if our research falls under one of their identified Sensitive Technology Research Areas.

Chapter 5

Undergraduate Researchers

5.1 General policies

Undergraduates will be directly supervised by any one of: a graduate student, a post-doc, an Research Assistant, or Melissa. Weekly meetings between undergraduates and their supervisor are strongly encouraged. Undergraduates are only expected to work their required hours in the lab (see table below), but students are welcome to use any extra desk space in the lab to work on their project or studies between classes (reminder: no food or drink in lab). Undergraduates are also welcome to use the shared lunch area outside the lab in SSB- if asked, identify yourself as a DS/ISS/USRA/WS student working in the lab, as typically undergraduates are asked to use the lunch area on a different floor.

For safety reasons, undergraduates are not typically allowed to work alone in the lab. Please coordinate with your direct supervisor about lab access and appropriate work hours.

5.2 Expectations

Position type	Time commitment	Lab meetings
Directed Studies (BISC 498/499)	[Part time] Approximately 3 hours per credit per week. For a typical 3-credit course, expect to spend 9h a week working on your BISC498/499 project.	Required (if schedule allows)
ISS (BISC 490/491/492W)	[Full time] (35-40h per week). Some work may be completed remotely depending on project requirements, but as with all lab members, in-person work days are highly encouraged.	Required
USRA	[Full time] Minimum of 35h/week for 16 weeks (NSERC requirement). You are permitted to take no more than 2 courses during the semester you hold your USRA, which is subject to approval by Melissa	Required
Work-Study	[Part time] Maximum 140h per semester (approx 9h per week)	Required (if schedule allows)
Other	Varied	Required (if schedule allows, not req for volunteers)

Note that for paid positions, time spent in lab meetings is considered paid work.

5.3 Conferences and travel

Typically, undergraduates do not attend conferences or engage in travel outside of their required research (e.g. traveling to a field site). There are sometimes exceptions: for example, if an ISS Student completes a high-level project and there is funding available, they may be eligible to attend a local conference.

5.4 Authorship and Recognition

Undergraduate students who make substantial intellectual contributions to a publication will be considered for authorship. At minimum, significant contributions will be acknowledged in any resulting publications. Discuss expectations with your mentor and the PI early in your project.

Chapter 6

Graduate Students

6.1 General information

Graduate students should refer to the Graduate Student Handbook regarding program requirements and deadlines. This section specifically covers Chen-lab-specific graduate student policies and expectations.

6.2 Expectations

6.2.1 Hours and work-life balance

Both MSc and PhD students are expected to engage in full-time research during their degree. This equates to approximately 40 hours per week, but can vary based on time of semester, teaching duties, project phase, etc. Remember that **a graduate degree is a marathon and not a sprint**. There will likely be times where you will be extremely busy, or be required to work unusually long hours- but please remember it is okay (and necessary) to take breaks for your mental and physical health, and that you can decide what type of work-life balance works for you.

6.2.2 Vacation and days off

You do not need to track vacation or days off. Please let Melissa know when/if you plan on taking vacation so she knows you are okay (and haven't just disappeared), and to re-schedule any meetings/events. It is your responsibility to ensure your research, teaching, and trainees are not impacted while you are away. A "typical" amount of vacation would be 1-2 weeks per semester, or approximately 4-5 weeks per year.

6.3 Stipends, Funding, and Finances

Funding for Graduate student stipends come from the following sources:

Automatic graduate fellowship	\$4000 per year (guaranteed for 2 and 4 years, respectfully, for MSc and PhD subject to satisfactory progress). See 4 at https://www.sfu.ca/biology/graduate/current/financial/funding-policy.html for details.
Teaching Assistantships	Minimum once (5.17 BU) per year; subject to change based on funding availability. See below.
Major scholarships	E.g. NSERC CGRS-Master's, NSERC CGRS-Doctoral, Departmental Entrance Awards. Students are required to apply for all NSERC opportunities for which they are eligible. The scholarship deadlines are in the Fall each year, and you should plan for 2-3 rounds of revision on all submitted proposals. Please keep this timeline in mind.
Industry funded projects (uncommon)	E.g. MITACs
Melissa's Lab Grants	I try my best to set aside enough funding to support students for their entire degree; however since these grants are pooled with equipment/consumable expenses, sometimes there are unexpected expenses that reduce the amount of money available to fund stipends.

Students are strongly encouraged to apply for external fellowships. Melissa will support all applications through feedback on proposals and letters of reference.

6.3.1 Teaching Assistantships

All graduate students are expected to TA at least once a year (1 semester; 5.17BUs). Melissa may ask you to teach twice a year if unexpected lab expenses reduce the amount of funding available.

Teaching can be highly rewarding, but is also immensely time consuming. Make sure you are tracking your hours properly, and set strict boundaries for yourself in terms of hours, student availability, etc. I highly encourage setting email expectations for students early on in the semester- for example, some strategies I have used in the past include:

- Explicitly communicating the hours during which I would respond to emails (e.g. 9am-5pm, Mon-Fri)
- Setting a time frame in which students should expect a response (e.g. within 48h- do not email twice if shorter than this)

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- Setting a policy in which I do not answer ANY emails about a project/quiz/exam within 24h of it being due.

6.3.2 Publications and co-authorship

MSc students are expected to have at least one manuscript submitted for publication before graduation. PhD students are expected to have at least one data chapter published before graduation.

Authorship agreements should be discussed with Melissa and any co-authors will in advance of publications to reduce confusion and misunderstandings of duties. Generally, if you are the leader of a project (you designed, directed the execution of, and analyzed an experiment), you should expect to be first-author of the associated manuscript. Some exceptions may include: if your data is combined with a larger project to reach a higher impact journal; or if you leave the lab without drafting any manuscript and indicate no intention of participating in the writing of the manuscript in the future. I encourage lab mates to collaborate and invite each other to be co-authors on each others' papers (should also be discussed with Melissa).

If there are unfinished projects (of any stage) when students leave the lab, it is expected that students will prepare and submit "information packages" to Melissa, which outline what work has been done, where to find the data, how to read/interpret the data, and what work still needs to be completed. You should provide your name and long-term contact information with this package. Students who have made significant contributions to any publication will be invited to be a co-author, and providing a well documented data package is a convenient way to demonstrate your contributions to a paper that uses your work.

6.4 Research Expectations

By the end of your degree, graduate students are expected to be able to design, plan for, execute, and analyze research projects (mostly) independently. This may include administrative work such as budgeting, ordering, tracking inventory/supplies, and managing your own deadlines.

What constitutes "satisfactory research progress" will change depending on the intensity of your project; course load; teaching load, and others. Long-term timelines are something that should be discussed directly with Melissa at (minimum) the start of each year. A good rule of them is two "big" commitments per semester. For example, a productive semester might look like:

- Taking 1-2 graduate courses and planning out an experiment (comprehensive literature search, pilots, purchasing reagents/consumables)
- Teaching (5.17 BU) and taking 1-2 graduate courses with small amounts of lab

work

- Teaching (5.17 BU) and executing a large experiment

6.4.1 Mentorship opportunities

It is not required of graduate students to directly mentor undergraduate students, but if you would like to or if you need extra hands to execute an experiment, speak with Melissa. With enough advance notice, it is possible to arrange for BISC 498/499, Work-Study, USRA, or paid research assistants (subjective to funding availability) to help with your research. If you request undergraduate help, it is your responsibility to onboard, train, and manage work schedules of those students.

6.5 Requesting feedback, references, or help

6.5.1 Feedback on drafts

Students are strongly encouraged to solicit feedback from Melissa and other lab members on their writing (abstracts, proposals, manuscripts, statements, etc) well in advance of any deadlines. A two week turnaround is a reasonable amount of time for most writing, unless a tighter deadline has been discussed prior. In general, when asking for feedback it is best practice to include:

- Your requested return date (When you would like feedback by)
- The "hard" deadline (when you need to submit by, so they understand the degree of flexibility in their deadline)
- What type of feedback you are looking for (Is this a first draft and you are looking for big-picture comments only since it has not been proof read thoroughly? Or is this version7-final3-actualfinal and you are looking for proof reading only?)

You should expect feedback on any drafts sent to Melissa within 1 week (unless otherwise discussed).

Tip: When requesting feedback from co-authors, it is wise to provide a "please respond by" deadline (in the email subject line and in bold in the email body) so that if there is no response from certain co-authors you can confidently move forward with the understanding they have nothing to say about the manuscript. Providing co-authors 2 weeks for feedback is typically sufficient.

6.5.2 Requesting references

When making reference/referee requests, please be sure to provide:

- Information about what you are applying for
- Date you would like them to submit their reference by

-
- Materials about you to help them write their reference (Transcripts and CV at minimum- you could even provide materials to remind them of specific events you would like them to write about. For example, when asking for teaching references I highlight all the courses on my CV where I taught for that referee so they can easily "remember" when we worked together)

Remember that references sometimes say no for many different reasons. It might be they are too busy to write a good reference; or maybe they have a conflict of interest; or they feel they are simply not the right person to provide a reference for you at this time. Try not to take it personally.

6.5.3 Requesting help from others

It is important to be gracious when asking for help. Try to remember to include any deadlines you are working within (e.g. Can this wait until next week? Or do you have perishable samples that you need to deal with today?) so they can triage their email inbox as necessary. Remember to clean up after yourself if borrowing other peoples' space and equipment. Write down in your lab notebook who helped you and when, so that you can acknowledge them appropriately in manuscripts / presentations / etc.

6.6 Transition to PhD from MSc

MSc students who wish to transfer directly to the PhD program may do so subject to departmental regulations and funding availability. Please refer to the graduate student handbook for regulations and deadlines, and discuss with Melissa directly.

Chapter 7

Postdoctoral Fellows

7.1 General expectations

Postdocs should set a good example for other lab members. This means being an active participant in the lab and during lab meetings; contributing to lab chores; helping other students on occasion; and maintaining good lab and safety practises. In general, postdocs are expected to work independently. They should be able to design, lead, and execute their own projects without significant oversight from Melissa. Postdocs are also encouraged to meet with Melissa at least monthly (or up to weekly) to discuss project ideas and progress.

7.2 Appointment Terms

Postdocs can expect to receive 1-2 year appointments with an approximate wage of \$60,000 / year with benefits. (See the SFU benefits page) All contract specifics are negotiated on a case-by-case basis, and exact salaries are dependent on the funding source they are being paid out of.

Postdocs do not need to track vacation or days off. Please let Melissa know when/if you plan on taking vacation. It is your responsibility to ensure your research, teaching, and trainees are not impacted while you are away. A "typical" amount of vacation would be 1-2 weeks per semester, or approximately 4-6 weeks per year.

7.3 Funding

Postdoctoral fellows are strongly encouraged to apply for external fellowships (e.g., NSERC CPRA). Melissa will support applications with letters and feedback on proposal drafts. Specific expectations for individuals will be discussed with Melissa directly, as the terms of different postdocs will vary. Below are general expectations for all Postdocs, which are not necessarily inclusive of all expectations.

7.4 Research Independence and Project Ownership

Postdocs are expected to:

-
- Take primary intellectual ownership of their project(s).
 - Lead manuscript preparation from conception through submission.
 - Provide mentorship (formal or informal) and training opportunities for others in the lab. Postdocs do not need to directly mentor any other lab members, but it is expected that you are open and willing to sharing your expertise with others.
 - Apply for all external funding sources, if eligible
 - Postdocs who are interested in the academic path should also develop an independent research vision that aligns with but extends beyond the lab's existing work

7.5 Publication and Intellectual Property

Postdocs are expected to publish (on average) 1 first author manuscript every 1-2 years, and should expect to be co-author on other manuscripts within the lab as a result of their contribution to other projects. Manuscripts arising from work done in association with the Chen Lab must be approved by the PI before submission. Typically, Melissa (PI) will be last and corresponding author on manuscripts generated from work in the lab in order to ensure the point of contact for the paper remains available in future years. In some circumstances, postdocs may take the role of corresponding author but this must be discussed with Melissa in advance.

Intellectual property generated using lab resources belongs to the Chen Lab. Any interest in shared IP should be discussed with Melissa well in advance of the start of a project. Note that IP ownership and inventor status (credit for discovery) are different: while postdocs do not typically own IP generated using resources from the lab, they will receive credit as either the main or partial project leader/inventor and can indicate this on their CV. Data and biological samples generated in the lab remain with the lab upon departure; postdocs may request copies with PI approval.

7.6 Career Development

I (Melissa) will actively support your career transition. All postdocs should expect to have (at least) annual meetings to discuss your career goals, which include whether you are targeting an academic, industry, government, or non-profit career track. During these meetings, we will also discuss what specific skills and experiences you would like to gain during your postdoc.

Appendix A

Safety training

[Link to form](#)

Appendix B

Consent to Provide Limited Personal Information About Highly Qualified Personnel (HQP) to NSERC

[Link to NSERC sheet](#)

Appendix C

Protocols

Below are links to common protocols used in the lab. Please note that all documents are stored on the Lab's private OneDrive, and will only be accessible through your SFU email.

[Links to be updated]

- Chlorine Gas Sterilization
- MYCroplanter setup
- Biosafety Cabinet
- Laminar
- Centrifuge
- Media, buffer, reagent recipes
- Gel electrophoresis