Kia ora! Nau mai haere mai.

Hello! Welcome.

Thanks for joining the Bioluminescent Superbugs Lab at the University of Auckland. Kia ora! We're really glad to have you here and will do what we can to make your time in the lab fantastic. We hope you'll learn a lot about scientific research and microbiology and develop new skills, and by that we don't just mean how to safely work with harmful microbes and do your lab-based experiments, but also how to analyse and interpret data, and how to present your research in lots of different ways, including writing, making posters, and giving talks. We also hope you'll make new friends, and generally have a great time being part of our lab.

When you join the lab, you're expected to read this manual and sign the register indicating that you have done so. Our lab manual outlines the philosophies behind why the lab runs the way it does, our expectations of you, as well as what you can expect of me and your fellow lab members. We've also gathered together lots of relevant material that will help you navigate your way through the lab and your project. This manual is a living document, so if you have ideas about things to add, or think something needs clarifying, raise it with Siouxsie.

Index

Part 1

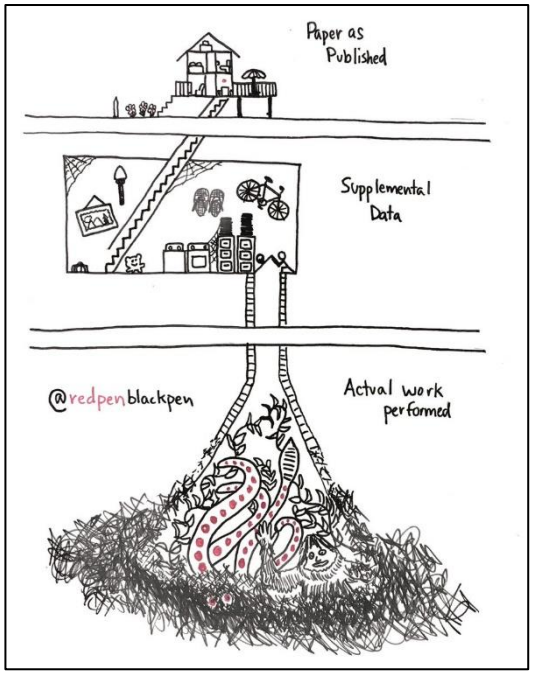
Lab philosophy and values

Open access and open research

The first of the Bioluminescent Superbugs Lab's guiding philosophies is that, as a lab that is entirely funded by either the tax-payer or by donations from the public[1], **the public have a right to know what we do with their money**. This means that public engagement is very important to Siouxsie, and that the lab will often be involved in events where we do demonstrations or talk with people about our work. But she also believes that our responsibilities extend beyond this kind of engagement and that we should be making our processes and data publicly available too.

So, what does this look like in practise? Siouxsie has signed the Cost of Knowledge boycott of Elsevier and has pledged that all papers describing our research will be published open access, preferably under a Creative Commons CC-BY licence. She has also pledged to put our manuscripts up on a preprint server (bioRχiv or PeerJ Preprints) so that we can receive feedback from a wider range of peers than just those our manuscripts are sent to during the peer review process.

But as you'll soon find out, a lot of what goes on in the lab doesn't end up going in to your thesis, or into a journal article. @redpenblackpen have summarised this beautifully in cartoon form. If the house represents your main results, the basement is the other details that go into your article or thesis that support your main results.



But there will be plenty of experiments that don't work that remain hidden away in your lab books. Imagine if you'd known those things weren't going to work because someone else had already tried them and showed they were a dead end? In other words, shouldn't we also be revealing the monsters that live under our basement?! This way of doing research is called open research or open science, and the Bioluminescent Superbugs Lab is currently transitioning into being an open research lab. This means we are still working out the best way for us to properly document our projects and manage our data to make it available to others.

For more information on open research and why it is so important to Siouxsie, please watch this video.

[1]Even if you are paying fees as a Masters student, the reality is that your fees don't cover the costs of your research project, so you will be being supported in many ways by public funding.

The importance of being kind

The second of the Bioluminescent Superbugs Lab's guiding philosophies is summed up as: **everyone here is smart and kind, don't distinguish yourself by being otherwise**.

We all have a choice about how we behave and how we can interpret the actions of others. What Siouxsie asks is that you strive to be kind. To be clear about what she means by being kind, she is using the definitions that appear on Wikipedia: kindness is a behaviour marked by ethical characteristics, a pleasant disposition, and concern and consideration for others, not in return for anything or for the advantage of the helper. Siouxsie wants everyone in the Bioluminescent Superbugs Lab to try to be kind and empathetic, to think kind thoughts, and to try to avoid assumptions and jumping to conclusions. She doesn't want people to gossip, or tease, belittle, or ignore others. Remember, no act of kindness, however small, is ever wasted. You don't know the impact that small act may have on those around you.

For more information on the Kindness in Science movement, please check out this website.

Making invisible labour visible and ensuring everyone 'chips in'

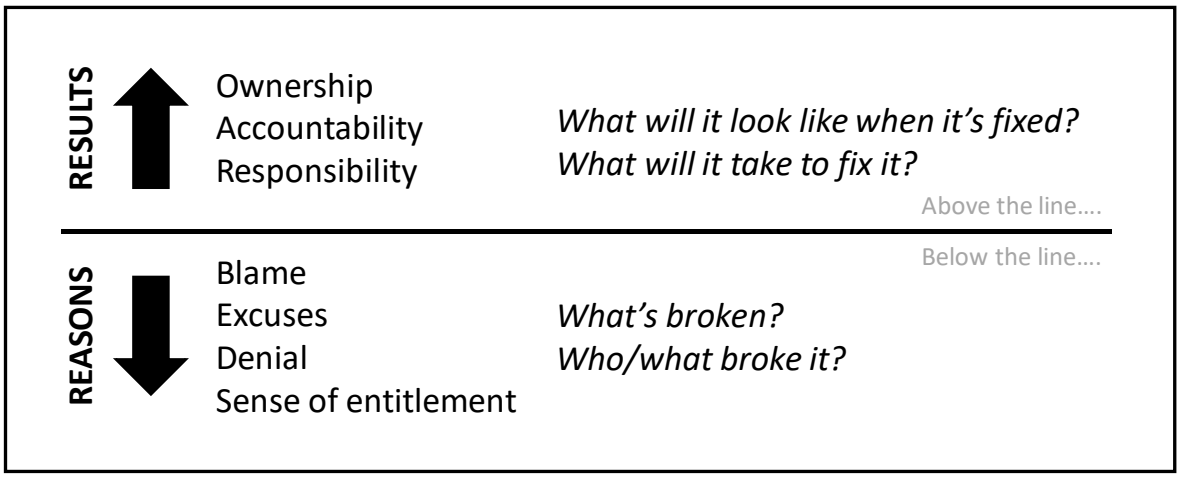
The third of the Bioluminescent Superbugs Lab's guiding philosophies is that it is important that we **all strive to chip in so that we are not reliant on the 'invisible labour fairies'**.

In a shared work space such as ours, there are a lot of things that need to be done to keep things running smoothly. Whether it's noticing that things are running low and letting Siouxsie know what needs ordering, making sure the bins aren't overflowing, or taking time to answer people's questions. This labour needs to be done by all of us, yet what can often happen in a shared work space is that a small group of people end up doing the majority of these jobs almost invisibly.

While we have rosters for many lab tasks, we all need to take responsibility for noticing what needs to be done and doing it and ensuring that no labour performed by others is invisible. So, when you see something that needs to be done, don't walk on thinking someone else can do it. And when you someone doing something for the good of everyone, thank them, and offer to help.

Living above the line

The fourth of the Bioluminescent Superbugs Lab's guiding philosophies is to **strive to live above the line** and is summed up in the diagram below. It may look like it comes straight out of the pages of a self-help manual, but don't let that put you off!



The idea is that instead of focusing on laying blame or making excuses (behaviours listed below the line) we take ownership and personal responsibility for our part in what went wrong and focus on fixing the problem (behaviours above the line….).

Let's be clear though, when Siouxsie says 'fixing the problem', this is entirely context dependent and should not involve anyone taking on more responsibility than is appropriate. So, if you accidentally drop or damage a piece of equipment, fixing the problem in this context means letting the Lab Manager know so that they can arrange for the equipment to be checked over. If on the other hand, a relationship is breaking down in the lab, fixing the problem means reflecting on what you may have inadvertently done to contribute to that breakdown and what you can do to help repair it.

If you are in any doubt about what is the appropriate level of responsibility, please come and discuss the issue with Siouxsie.

For more information on living above the line please watch this video.

Code of Conduct

The Bioluminescent Superbugs Lab is committed to the open exchange of ideas, the freedom of thought and expression, and respectful debate. This requires that we recognise the inherent worth of every person, that we foster inclusion, dignity, understanding, and mutual respect, and that we embrace diversity. All members of the lab, along with visitors, are expected to agree with the following code of conduct. We will enforce this code as needed. We expect cooperation from all members to help ensure a safe environment for everybody.

The Quick Version

The lab is dedicated to providing a harassment-free experience for everyone, regardless of gender, gender identity and expression, age, sexual orientation, disability, physical appearance, body size, race, or religion (or lack thereof). We do not tolerate harassment of lab members in any form. We also do not tolerate those behaviours which some people don't think of as harassment, such as gossiping, teasing, ignoring, belittling, or the formation of 'cliques' within the lab. Sexual language and imagery are generally not appropriate for any lab venue, including lab meetings, presentations, or discussions.

The Less Quick Version

Harassment and hostile behaviour are not welcome in the Bioluminescent Superbugs Lab. This includes speech or behaviour (including in public presentations and on-line discourse) that intimidates, creates discomfort, or interferes with a person's participation or opportunity for participation. We aim for the lab to be an environment where harassment in any form does not happen, including but not limited to harassment based on gender, gender identity and expression, age, sexual orientation, disability, physical appearance, body size, race, colour, national origin, ancestry, or religion (or lack thereof). Harassment includes but is not limited to: verbal comments that reinforce social structures of domination (related to gender, gender identity and expression, sexual orientation, disability, physical appearance, body size, race, age, religion, etc); gossiping about, or belittling or ignoring people; sexual images in public spaces; deliberate intimidation, stalking, or following; harassing photography or recording; sustained disruption of talks or other events; inappropriate physical contact; unwelcome sexual attention; and advocating for or encouraging any of the above behaviour.

Members asked to stop any harassing behaviour are expected to comply immediately.

Siouxsie expects lab members to follow these guidelines at any lab-related event or an event where they are representing the lab.

If you are being harassed, notice that someone else is being harassed, or have any other concerns, please contact Siouxsie immediately. If Siouxsie is the cause of your concern, Dr Monica Gerth at Victoria University of Wellington is a good informal point of contact; she does not work for Siouxsie or the University of Auckland and has agreed to mediate.

This code was adapted from the policy developed by Te Pūnaha Matatini.

Scientific integrity and research conduct

The Bioluminescent Superbugs Lab is committed to ensuring research integrity, and we take a hard line on research misconduct. We will not tolerate fabrication, falsification, or plagiarism. Read the University of Auckland's policies on the conduct of research carefully (here).

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

Reproducible and Replicable Research

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

For results to be reproducible, your processes must be organised and well documented. To meet these goals, you should take extensive notes on each step of your research journey. This means writing down how you did things every step of the way and the order that you did things. It also means getting video footage if possible/appropriate.

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

Authorship

Regarding authorship of scientific publications, the University of Auckland policy is guided by the Vancouver Guidelines that are published by the International Committee of Medical Journal Editors. The Vancouver Guidelines specify that all listed authors should have made a significant contribution to the work and that authorship credit should be based on:

1. "substantial contributions to conception and design of the work, or the acquisition, analysis or interpretation of data for the work AND
2. drafting the work or revising it critically for important intellectual content AND
3. final approval of the version to be published AND
4. agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved."

Therefore, all authors should meet conditions 1, 2, 3 and 4, and all people who meet conditions 1, 2, 3 and 4 should be listed as authors. This means that acquisition of funding, collection of data, and provision of routine technical help, does not constitute authorship, and that those who have contributed in other ways should be listed in an acknowledgements section, with their role described.

However, it has always been Siouxsie's philosophy that if a piece of work couldn't have happened without someone's input then they should be listed as an author. This means that if you get help from someone, whether they are within the lab or outside it, it is important that you let Siouxsie know so that she can make sure that they are properly credited when it comes to writing up the work.

Currently, in the biological and medical sciences, where someone's name is in the list of authors is important. Generally, the first author is the person who took the lead role in generating and analysing the work being reported and the last author is the Principal Investigator. Because a paper may report the work of several people's projects, we will discuss who did what to determine the author order. In some cases, it may be that co-authorship is more appropriate. All of these issues will be discussed openly, and you should feel free to bring them up if you are not sure of your authorship status or want to challenge it.

Expectations and Responsibilities

In the Bioluminescent Superbugs Lab, we want to make sure that everyone experiences a positive, engaging, hostility-free, challenging, and rewarding lab environment. Everyone's responsibilities:

- Be kind. Be mindful of how your actions will impact on others. Don't jump to conclusions.
- Strive to be positive, proactive, and productive.
- Be careful. Don't rush your work. Think about it. Double and triple check it. Carelessness or rushed work leads to mistakes, which can be dangerous to your, and your lab mates', health.
- Ask others if you need help. Think about who might have the most knowledge about what you need help with. Check the skills register. When you are given advice, listen. It's not ok to ask everyone's opinion and then follow the advice that sounds closest to what you wanted to do.
- It's ok to make mistakes. We've all made them. If you do make a mistake, you should tell Siouxsie. We admit our mistakes, and then we correct them and move on.
- If you injure yourself in the lab, or have a near miss, you need to let Siouxsie know. We'll fill out the official forms and see what we can learn to avoid it happening again.
- If you're sick, stay home and take care of yourself. It's important you get better, but it's also important that you don't make other lab members sick. Let someone know that you won't be coming to work, so we don't start to worry about you.
- You aren't expected to come into lab on weekends and holidays, and you aren't expected to stay late at night. There may be times when you need to work longer hours, but those occasions should be rare. You are expected to manage your time to get your work done.
- Keep meticulous lab notes. Document everything in a way that makes sense not just to you.
- No academic misconduct. It is never ok to plagiarize, tamper with data, make up data, omit data, or fudge results in any way. Science is about finding out the truth, and null results and unexpected results are important.
- Support your fellow lab-mates. Help them out if they need help (even if you aren't on the project). Science should be collaborative, not competitive. Help others, and you can expect others to help you when you need it.
- Respect your fellow lab-mates. Respect their strengths and weaknesses, respect their desire for quiet if they need it, and for support and a kind ear when they need that. Respect their culture, their religion (or lack thereof), their beliefs, their sexual orientation.
- If you're struggling, tell someone. Siouxsie would certainly like to know. Your health and happiness are important. The lab looks out for the well-being of all its members. We are here to help. It's ok to go through hard patches (we all do), and you shouldn't feel shy about asking for help or just venting.
- If there is any tension or hostility in the lab, something must be done about it immediately. We can't thrive in an environment we aren't comfortable in, and disrespect or rudeness will not be tolerated in the lab. If you don't feel comfortable confronting the person in question, tell Siouxsie. In any case, tell Siouxsie.
- Stay up to date on the latest research, by using RSS feeds and/or getting journal table of contents. Also consider following scientists in the field on Twitter.
- Have a life outside of the lab, take care of your mental and physical health, and don't ever feel bad for taking time off work.

Siouxsie's responsibilities as the Principal Investigator

Siouxsie is an Associate Professor on a 40:40:20 academic contract. This means that she is contracted to spend 40% of her time on research, 40% of her time on teaching, and 20% of her time on service. Her contract is also split 60:40 between FMHS's Dept. of Molecular Medicine and Pathology, where the lab is located, and the Dept. of Physics in the Science Faculty on the city campus.

The 40% of her time that she spends on research includes: writing grants and securing funding to pay for the work we do; writing regular grant reports as required by our funders; supervising and mentoring everyone in the lab whether they are visitors, undergraduate or graduate students, postdocs, or technicians; writing applications to the relevant internal/government committees/agencies to get permission for our work from a biological, GMO, and ethics perspective; ensuring the lab complies with all biological safety, GMO containment, health & safety, and ethics rules and regulations; analysing data; writing papers; and anything else related to running a research lab. The 40% of her time that she spends on teaching includes: developing and delivering undergraduate and postgraduate teaching; setting and marking essays, assignments, and exam questions; supervising and mentoring undergraduate and postgraduate students; and anything else related to teaching.

The 20% of her time that she spends on service includes: making contributions to the local, national, and/or international research community in areas of direct relevance to the research we undertake, or within the wider context of academia/research; acting as a critic and conscience of society; engaging/communicating with the various publics to contribute to an informed and scientifically literate society. Currently Siouxsie is co-Deputy Director of Te Punaha Matatini, a Centre of Research Excellence based in the Physics Department (which has bought Siouxsie out of some of her teaching); an elected councillor of the Royal Society Te Apārangi; a member of the Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART); a member of the NZ Ministry of Health's Health Antimicrobial Resistance Committee (HARC) tasked with delivering the governments' Antimicrobial Resistance Action Plan; and a member of the NZ Ministry for the Environment's Freshwater Technical Advisory Group. She is also a Section Editor for the open access journal Peer J and regularly reviews papers and grants for national and international journals and funding agencies. She also write a regular science column for Stuff, has a fortnightly radio slot, and is often asked to speak to community groups about our work and antimicrobial resistance in general.

You can expect Siouxsie to do her best to:

- support you - scientifically, emotionally, and financially;
- be available in person and via e-mail on a regular basis, including regular meetings to discuss your research (and anything else you'd like to discuss);
- give you timely feedback on your work, conference posters, talks, manuscripts, figures, grants;
- help you work towards your career goals, whether they are inside or outside of academia;
- support your career development by introducing you to other researchers in the field, promoting your work at talks, writing recommendation letters/references for you, and letting you attend conferences as finances permit;
- resolve disputes within the lab;
- care about your emotional and physical well-being.

Post-doc responsibilities

If you are a post-doc, Siouxsie expects you to:

- identify and develop research projects with her help;
- run lab meetings when she is away;
- provide scientific and technical leadership within the lab;
- train and mentor other lab members when they need it;
- take responsibility for a piece of equipment in the shared lab, including training new users;
- take responsibility for a specific lab task, whether it's booking meeting rooms, organising a roster, or dealing with orders as they arrive;
- keep meticulous records of every aspect of your project(s);
- keep your bench and the lab clean and tidy, and do the jobs you are rostered to do on time;
- know what approvals you are working under, and any restrictions;
- attend and present at lab meetings, journal clubs, departmental seminars, and conferences;
- provide constructive feedback of lab members' research plans, methods, and data;
- challenge Siouxsie when she is wrong or when your opinion is different;
- ask for help when you need it;
- identify what training you need, and talk to Siouxsie about how to get it;
- define your career goals and work towards them;
- pursue independent projects and collaborations that further your own career goals;
- apply for grants;
- submit a weekly report.

Technical staff responsibilities

If you are a technician, Siouxsie expects you to:

- identify and develop your research project with her help
- provide technical leadership within the lab;
- train and mentor other lab members when they need it;
- take responsibility for a piece of equipment in the shared lab, including training new users;
- take responsibility for a specific lab task, whether it's booking meeting rooms, organising a roster, or dealing with orders as they arrive;
- keep meticulous records of every aspect of your project(s);
- keep your bench and the lab clean and tidy, and do the jobs you are rostered to do on time;
- know what approvals you are working under, and any restrictions;
- attend and present at lab meetings, journal clubs, and conferences;
- attend departmental seminars, even if you don't think they are relevant;
- provide constructive feedback of lab members' research plans, methods, and data;
- challenge Siouxsie when you think she is wrong or when your opinion is different;
- ask for help when you need it;
- identify what training you need, and talk to Siouxsie about how to get it;
- define your career goals and work towards them;
- submit a weekly report.

PhD student responsibilities

If you are PhD student, Siouxsie expects you to:

- identify and develop your research project with help from Siouxsie and your other supervisors;
- meet graduate school reporting requirements (and make sure she is aware of deadlines);
- train and mentor other lab members when they need it;
- take responsibility for a piece of equipment in the shared lab, including training new users.
- take responsibility for a specific lab task, whether it's booking meeting rooms, organising a roster, or dealing with orders as they arrive;
- keep meticulous records of every aspect of your project;
- keep your bench and the lab clean and tidy, and do the jobs you are rostered to do on time;
- know what approvals you are working under, and any restrictions;
- challenge Siouxsie when you think she is wrong or when your opinion is different;
- ask for help when you need it;
- identify what training you need, and talk to Siouxsie about how to get it;
- attend and present at lab meetings, journal clubs, and conferences;
- attend departmental seminars, even if you don't think they are relevant;
- provide constructive feedback of lab members' research plans, methods, and data;
- apply for travel grants;
- define your career goals and work towards them;
- submit a weekly report.

Masters student responsibilities

If you are Masters student, Siouxsie expects you to:

- identify and develop your research project with help from Siouxsie and your other supervisors;
- meet graduate school reporting requirements (and make sure she is aware of deadlines);
- train and mentor other lab members when they need it;
- take responsibility for a specific lab task, whether it's booking meeting rooms, organising a roster, or dealing with orders as they arrive;
- keep meticulous records of every aspect of your project;
- keep your bench and the lab clean and tidy, and do the jobs you are rostered to do on time;
- know what approvals you are working under, and any restrictions;
- challenge Siouxsie when you think she is wrong or when your opinion is different;
- ask for help when you need it;
- identify what training you need, and talk to Siouxsie about how to get it;
- attend and present at lab meetings, journal clubs, and conferences;
- attend departmental seminars, even if you don't think they are relevant;
- provide constructive feedback of lab members' research plans, methods, and data;
- apply for travel grants;
- define your career goals and work towards them;
- submit a weekly report.

Undergraduate student and visitor responsibilities

If you are a visitor, intern or Honours student, Siouxsie expects you to:

- identify and develop your research project with help from Siouxsie and your other supervisors;
- meet graduate school reporting requirements (and make sure she is aware of deadlines);
- keep meticulous records of every aspect of your project;
- keep your bench and the lab clean and tidy, and do the jobs you are rostered to do on time;
- know what approvals you are working under, and any restrictions;
- challenge Siouxsie when you think she is wrong or when your opinion is different;
- ask for help when you need it;
- attend and present at lab meetings and journal clubs;
- attend departmental seminars, even if you don't think they are relevant;
- provide constructive feedback of lab members' research plans, methods, and data;
- define your career goals and work towards them;
- submit a weekly report.

Hours

Being at work/in the lab is a good way of learning from others, helping others, building camaraderie, having fast and easy access to the resources (and people) you need, and being relatively free from distractions at home. That said, hours in academia are more flexible than other jobs -- but you should still treat it as a real job (approx. 40 hours/week[1]) and show up to work.

Siouxsie's primary concern is that you get your work done, so if you find that you are more productive doing your writing or data analysis at home feel free to work at home occasionally. If you have no meetings or lab work to do, it might be a good day to work at home – but please don't do this all the time; Siouxsie expect to see everyone in work on a regular basis.

To encourage lab interactions, try to be in most weekdays during 'peak' hours (assuming no other obligations) – e.g., between 11am and 3pm. This is not a hard rule, you can work at home occasionally, and Siouxsie understands that you may have to leave early or come in late because of other obligations, be they childcare/other caring responsibilities, or things like dentist/doctor's appointments.

Due to the way Siouxsie balances her work and life commitments, she often works in the early morning and/or late evening. This means she will sometimes send emails or Slack messages outside of normal working hours. She does not expect you to respond until you are back at work. If Siouxsie's off-hours messages are unwelcome and/or cause distress, please talk to her.

[1]Unless your contract says otherwise, or you are working/studying part-time, or a doing an internship/Honours degree with specified hours.

Holidays and 'mental health' days

To be productive and stay focused and interested in your project, it is important to take time off to relax and recharge your batteries. If you are on a contract (generally post-docs and technicians), the amount of holiday time you are entitled to is stipulated in your contract. It is very important that you take this holiday, and the University has an online tool for you to request and record the days you want to take off. You MUST take your full allowance and record it on this tool. If you don't, when your contract ends Siouxsie has to pay you any time you haven't taken. Siouxsie can't afford to do this, and it will cause her a great deal of stress and anxiety, so please take your holiday.

Generally, PhD and Masters students don't have a specified length of time they should take as holiday, but 4-5 weeks per year is appropriate and in-line with people on contracts. You should always discuss with Siouxsie first if you are planning on taking time off.

Siouxsie is supportive of people taking off occasional 'no questions asked' mental-health days when, for whatever reason, you feel like you can't face being at work. If you feel you need one, let Siouxsie know you are taking one. She will keep a rough track of them, only as they can be a sign that there is an underlying issue that needs to be properly addressed.

Weekly reports

Everyone is expected to file brief(ish) weekly reports on what they've been up to; you are expected to spend time reflecting on what you've done and what your results mean before moving on to the next experiment. Done correctly, these reports provide both you and Siouxsie with context and trajectory going forward and means that in-person meetings can focus on specific issues rather than be more general reporting.

Filing weekly reports is part of being a lab member. **Repeated failure to file weekly reports may be taken to imply that you no longer wish to be a member of the lab.** Note also that it is not Siouxsie's job to remind you to submit weekly reports.

Weekly reports should include:

- what you've been working on, including progress made, any obstacles encountered and/or overcome – you should include copies of the relevant pages from your lab book/Benchling;
- what your plan for the upcoming week is;
- deferred items and upcoming issues;
- long term goals you are working towards;
- anything else you want Siouxsie to know, including personal issues.

Where bits of the weekly report can be copy-pasted from the previous week, please feel free to do so.

Weekly reports should be filed weekly, and generally by 9am on a Monday. If you are taking time off, then note that in advance and don't submit weekly reports during that period.

Lab Communication

Slack

Slack is used as the primary means of lab communication (superbugslab.slack.com). You should install Slack on your computer and/or phone. You should of course feel free to ignore Slack on evenings and weekends.

When posting messages or looking for updates, check the appropriate channel:

- #general for lab announcements,
- #meetings for notes or communication related to lab or individual meetings,
- #fridaypapers for sharing links to papers we discuss at the Friday meeting,
- #gmo for alerting Siouxsie when you've either made a new GMO or made a new vial of an existing GMO,
- #ordering for alerting Siouxsie and the rest of the lab to the fact that you have something that needs ordering, or that an order has arrived and its location/bar codes if necessary,
- #citrobacter for everyone working on *Citrobacter rodentium*,
- #mycobacteria for everyone working on Mycobacteria,
- #teamfungi for everyone working on the fungal antibiotic discovery project,
- #icmpdatabase for everything related to our online fungi database,
- #chemistry is for communicating with Team Fungi people in Chemistry,
- #random for non-work-related chatting that is best kept out of the work-related channels.

Try to keep each channel on topic, so that people can subscribe only to the channels that concern them. For messages to one person or a small group, use direct messages.

Google Calendars

Bioluminescent Superbugs Lab calendar: used to keep track of lab events, including any lab meetings just for our lab, and birthdays!

Travel Schedules calendar: used to indicate travel dates (e.g., "Siouxsie away"), so that other people know when you aren't available. You are not obligated to put down your travel dates, but they are useful for planning purposes.

Freeze-drier calendar: used to indicate when the freeze-drier is needed/in use.

Meetings

Just as important as doing experiments is thinking about your experimental design, reading relevant papers, and taking the time to properly document your data and think about and discuss your results with others.

Monday Lab Meetings

The Monday lab meeting (~1 to 1.5 hours) is meant to be a forum for everyone to present project ideas and/or data to get feedback from the rest of the group. Projects at any level of completion (or even not yet started!) can benefit from being presented. These lab meetings can also be used to talk about methods, ways of presenting data, and statistical analyses. We have a roster for this, and details will appear on the lab Google calendar, but feel free to bring some data even if you aren't up that week and we can make time for you. Lab members are expected to attend every meeting. Obviously, illnesses, appointments, family issues, etc, are a valid reason for missing a meeting but you must let Siouxsie know.

These meetings are an opportunity for other lab members to ask you questions about your project/data and to offer constructive criticism/feedback. Check out the handy guide on the next page for giving and receiving feedback. It's okay not to know the answer to someone's question, but if you don't it's an indication that you need to go and do some thinking. Thank your lab mate for their question, admit you don't know the answer and tell them you will go away and think about it. Be prepared to answer the question at a later date!

Friday Lab Meetings

The Friday lab meetings (1-2 hours) are for discussion of interesting papers people have been reading, more formal presentations, training sessions, and lab discussions. Each week, everyone must come to the lab meeting having read a relevant paper and be prepared to summarise it for the group. You should also post a link to your paper on the #fridaypapers Slack channel.

Individual team meetings

Once a fortnight, people working on related projects will meet together with me to discuss how things are going. Depending on my teaching schedule the time of these meetings may change from semester to semester. If scheduling conflicts arise (e.g., because of travel), we will try to reschedule for another day that week. Details will appear on the lab Google calendar.

My Office Hours

If you need to have an individual meeting with Siouxsie and she is on the FMHS campus and in her office, feel free to stop by for a chat. She will almost always try to make time, though sometimes she can only spare a couple of minutes and will arrange to meet you a more convenient time. If she's not in her office, send her a message on Slack to make a time to see her.

Monthly Swiles talks

The first Friday of the month we have a joint meeting with the Swift group in which people do short presentations (approx. 20-30 minutes). There is a roster for this, and details will also appear on the lab Google calendar.

Giving and receiving effective feedback

(This guide is adapted from that written by Dr Julie F. Charbonnier [@modernecologist] which appeared online here)

Feedback from other scientists is what can take your ideas to the next level and ultimately make you a better scientist. We are the sum of our closest mentors and peers that challenge us and force us to grow, and this growth comes from compassionate but tough criticism. There seems to be an unwritten rule in academia that whoever receives feedback should have "thick skin" and just take whatever feedback comes their way. This should NOT be the case. Feedback is a joint communication, an exchange, where both receiver and giver have responsibilities to uphold. Giving feedback is not a free pass to be cruel or critical - it's an opportunity to contribute to another person's development by challenging and encouraging them with focused and detailed questions. Likewise, the person that receives feedback should contribute by asking follow up questions, asking for clarification, and actively listening. Keep in mind many people are uncomfortable receiving critical feedback on their ideas, particularly if they have been working on something for a long time.

How to give constructive feedback:

Ask what to focus on. Don't be afraid to ask what the person wants you to focus on or where they need the most help. If handed a manuscript, ask what journal it will be submitted to. If asked to listen to a practice talk, ask about the audience. Often, knowing context will enable you to focus on the most important part of the work.

Be as clear as possible. When giving feedback, give concrete examples of where improvement is needed and explain why it's important to you. Often, people might disregard feedback if they don't understand why it matters. For example, you can say "As an ecologist, I needed to hear more about the environmental conditions to interpret your results."

Provide genuine positive feedback wherever possible. This will enable the person to see where their strengths are.

Be direct. In meetings, women will start off their comments with filler words, "Well, maybe it's just me…" or, "Maybe I've misunderstood." State your opinion clearly and stand by what your feedback. The message will be clearer and you will not undermine your own opinion.

Be constructive and kind when giving negative feedback. If you are passionate about something, it's ok to say so as long as you can constructive and helpful. For instance you may say, "I'm passionate about not using this kind of analysis with such low sample sizes, I can send you sources that explain in detail why it's incorrect."

Read the feedback receiver. If you sense that the receiver is not paying attention or getting upset, then your feedback is no longer helpful. No matter how well-meaning, precise and constructive the feedback is, if the person is disengaged, it simply won't matter. Ask the person if they want to take a quick break or come back to a specific section.

Be heard. Unfortunately, if you have to give feedback in a group setting, you may be interrupted or have difficulty getting a word in. It's perfectly appropriate to follow up afterwards, in person or via email, and share your feedback.

How to ask for feedback:

Be specific and clear about what you want feedback on. Because everyone is pressed for time, others will be grateful they know where to invest the most time.

Guide the discussion. Especially in meetings with multiple people, a group can get stuck on one part of your work. Take control and redirect. “I've gotten enough feedback on the introduction and will incorporate that before I continue on, but for the sake of time let’s move the discussion to the experimental design”.

Actively listen and don't interrupt. It’s normal to be nervous or jittery when receiving feedback, so you might be tempted to interrupt whoever is talking, especially if they have misunderstood or misinterpreted your work. Let them finish, and then calmly say, “Let me clarify, what you are saying was addressed….” Instead of putting the person on the defensive, letting them finish their thought sets the tone for a calm and respectful conversation.

Take notes. People that don't take notes seem disinterested. Even if the feedback is terrible, jotting down key points makes you seem engaged and like you are taking the feedback seriously. It can also help ground you if feedback turns nasty, and force you to stay calm, rather than interrupt or react immediately.

Ask for clarification. Often, feedback is vague or unclear. Don't be afraid to say so in a respectful manner and guide the person. “I know you said I was talking too fast during the presentation, but was there a specific part where I sped up?” Often, people need to be prompted to elaborate on what they mean. This approach allows you to get more helpful feedback while also gently teaching others what kind of feedback that is most helpful to you.

Thank everyone afterwards and follow up. If someone gave you feedback, follow up. A quick email that updates the person while thanking them will go a long way and will make them want to help you again.

Reading/resources list

(Siouxsie has copies of the books in her office so feel free to ask to borrow them)

Antibiotic resistance and infectious diseases:

- Antibiotic Resistance: The End of Modern Medicine? – Siouxsie Wiles (https://www.bwb.co.nz/books/antibiotic-resistance)

Decolonising science:

- An introduction to the concept of decolonising science: https://theconversation.com/decolonise-science-time-to-end-another-imperial-era-89189
- The Immortal Life of Henrietta Lacks – Rebecca Skloot (http://rebeccaskloot.com/the-immortal-life/)

Unconscious bias:

- Do this test: https://implicit.harvard.edu/implicit/
- An introduction to unconscious bias - https://blog.bulletproof.com/unconscious-bias/
- Why Science is Sexist – Nicola Gaston (https://www.bwb.co.nz/books/why-science-is-sexist)

Active listening:

When interacting, people often "wait to speak" rather than listening attentively. Active listening is a structured way of listening and responding to others. It involves paying attention, withholding judgment, reflecting, clarifying, summarising and sharing. The following are excellent resources explaining how to become a better active listener:

- https://www.ccl.org/multimedia/podcast/the-big-6-an-active-listening-skill-set/
- http://psychology.wikia.com/wiki/Active_listening

Statistics and data presentation:

- Replicates and repeats - http://embor.embopress.org/content/embor/13/4/291.full.pdf
- Beyond bar and line graphs - https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.1002128
- Error bars - https://www.nature.com/articles/nmeth.2659
- Statistics for biologists - https://www.nature.com/collections/qghhqm