Fletcher Lab Manual

Welcome to the lab!

We're really glad to have you here, and will do what we can to make your time in the lab amazing. We hope you'll learn a lot, develop new skills, make new friends, and have a great deal of fun. Together, we strive to do high-impact science that makes the world a more sustainable and just place.This lab manual gives you some background on our group and the research process. **It is a living document.** We edit it together once a year and welcome suggestions throughout the year.

Mission and values

The Fletcher Lab aims to advance water resources management to promote resilient and equitable responses to a changing world.

Research. We advance socio-technical computational methods to 1) understand the water and climate risks that threaten people and the environment and 2) develop systems-based engineering and policy solutions.

Teaching. Teaching is a core mission of university life and we work to become better teachers and learners. We practice generosity in sharing our time and expertise with one another.

Collaboration. We respect what each of us bring to collaborative work and also recognize limits of our expertise and areas for growth. We give and value constructive feedback, embrace failure as a part of growth, and practice accountability and empathy.

Impact. Our research is problem-driven from the beginning. We value input, outreach, and partnerships as a part of the research process to enable real-world impact.

Equity. Justice, diversity, equity and inclusion are central to our work in the lab and beyond. We invest in learning about and systemic biases in science and our society and actively work towards dismantling systems of oppression.

Expectations and Responsibilities

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

- **Take ownership of our work.** Work on what you're passionate about, work hard at it, and be proud of it. The independence to work on problems that matter is the best part of academia. If you ever feel less than absolutely excited about your project, talk to Sarah. We all should actively think about ways to make our projects better and spin off new ideas. Sarah will work with you, but two brains are better than one.
- **Prioritize scientific integrity.** Be careful and don't rush your work. Double and triple check it. Incorporate automatic tests and sanity checks. Run it by other people. If you do find a mistake, tell Sarah and your collaborators right away, including for work that is already under review or published. We all want to get papers published and do great things. But we need to do this honestly.
- **Take care of ourselves.** Nothing is more important than your health and well-being. We all need a life outside of work to keep us healthy and happy. If you're struggling, tell someone. Feel free to tell Sarah! The lab looks out for the well-being of all its members. We all go through rough patches, and it's okay to ask for help.
- **Take care of each other.** We are committed to ensuring a safe, friendly, and accepting environment for everybody. If you notice someone is struggling, reach out. We will not tolerate verbal or physical harassment or discrimination of any kind. If you or someone else is being harassed, tell Sarah if you feel comfortable or another trusted faculty member.

As the PI of the lab, you can expect Sarah to:

- **Provide you with scientific guidance**. I will train you in practical research skills and also help you develop into an independent researcher who can ask important questions and chart a vision for the future of your research and field.
- **Provide you with professional guidance.** I will support your professional goals and help you prepare for the next step of your career. I will introduce you to other researchers, promote your work, and write recommendation letters.
- **Support your work financially.** While I expect you to participate in pursuing grants and fellowships, the final responsibility to secure funding is on me.

- **Be available for meetings and feedback.** I will give you timely feedback on project ideas, posters, presentations, manuscripts, figures, grants, and job applications. I will be available for regular meetings and respond to your messages.
- **Give credit where credit is due**, especially when presenting any work done in the lab.
- **Cultivate a culture of respect and transparency.** I will promote a healthy work environment, respect your time, and treat everyone equitably.
- **Be a life-long mentor** to the extent you choose to engage me in that role.

In return, I (Sarah) expect all lab members to:

- **Help mentor students in the lab** when they need it. You should be willing to answer questions and provide feedback on each other's research.
- **Respect my time.** While you are welcome to reach out to me any time, if there are other lab members or resources that can help you address an issue, seek those out first. This helps me focus my attention more effectively. That said, if you are spinning your wheels, you should never hesitate to reach out.
- **Meet all deadlines.** It is your job to keep track of your degree requirements and other research deadlines and make sure that I am aware of them. Please do not spring deadlines on me at the last minute (see deadlines policy below).
- **Support me in seeking out funding.** While it is ultimately my responsibility to secure funding for the lab, I expect you to help out by researching and applying for fellowships and supporting me in writing grants. It's also a valuable skill (and makes you more competitive on the job market), and it's best to learn it early.
- **Plan for your career** and talk to me about it to make sure you're getting the preparation and training you need to be successful.
- **Contribute to the lab group.** All members of the lab are expected to support lab activities through both formal roles and informal activity.

Additionally, I expect <u>postdocs</u> to:

- **Develop independent research.** We will work together to identify an area of mutual interest that supports lab objectives. It is your responsibility to identify important questions, know the literature, and identify appropriate data and methods, develop new skills as needed, and conduct research with minimal day-to-day oversight.
- **Train and mentor students**. Either because they ask, or because I ask you to. This may include undergraduate and graduate students.
- **Challenge me** (Sarah) when I'm wrong or when your opinion is different. You have unique and important areas of expertise, and I expect you to have your own perspective and discuss ideas with me as a collaborator.

Additionally, I expect <u>PhD students</u> to:

- **Develop your dissertation research**. Sarah and other lab members are here to help guide the direction of your project. Ultimately, however, a PhD requires you to develop your own ideas, typically resulting in three or four first-author publications.
- **Make sure you meet all departmental deadlines**. It is your job to know about your degree requirements -- and make sure Sarah is aware of them!
- **Prioritize your research above all other work**. Ultimately your research gets you your PhD and prepares you for the next stage of your career. After you complete your MS course requirements, research should take precedence over classes and service.

Lab Administration and Roles

All members of the lab are expected to pitch in on a day-to-day basis to support the function of our lab activities and infrastructure. Formal lab roles may include the following and assignments will be made and updated here on an annual basis. However, everyone is also expected to pitch-in informally as necessary. We aim for this work to be distributed equitably across the lab members; if you feel it is not fairly distributed, please talk to Sarah.

Being proactive in your role within the research lab is essential for our collective success. This includes actively suggesting new ideas or improvements related to your responsibilities and taking ownership of your role without unnecessarily and unintentionally burdening others. This proactive approach enhances our overall efficiency and effectiveness, reduces the need for constant reminders and deadline enforcement, and allows us to work cohesively towards our research goals.

Website manager: Riley and Mofan

- The website manager is responsible for keeping the lab website up to date. Tasks include adding new lab members to the “People” page, updating the publication list regularly, and writing approximately one news blog post monthly. It is the responsibility of the website manager to reach out to lab members to identify possible website content, at least once a month. The website manager will ask lab members to use the Asana project titled “Fletcher Lab Website Updates” to assign tasks and/or provide website content ideas to the website manager.
- Once a year, the website manager will complete a thorough review of the website, flagging any content that is out of data (including research summaries and teaching), and propose a plan to update it with Sarah.

Social event coordinator: Keani and Greta

- The social event coordinator organizes regular lab activities (lab lunches, happy hours, birthday celebrations, etc.), and special events (e.g. lab dinners, game nights, at least once a quarter).
- At the beginning of every quarter, the social event coordinator will propose some social activities and solicit feedback from the group on what type and how many activities to organize
- The social event coordinator will coordinate time (via when2meet), asking the group for their availability at least two weeks in advance of an event. The event coordinator is responsible for making sure the event happens but can assign tasks to other lab members for assistance.

Resource manager: Gina

- The role of the resource list manager is to curate and organize a repository of valuable research tools, services on campus, programming resources, and other essential assets for the lab's research teams. This repository should be easily accessible and streamline the use and discovery of tools and resources both within the lab and across the campus.
- The resource manager will update and organize the repository at least once per quarter, including asking group members for suggestions for additional resources and feedback

on the organization. Updates on new resources should also be communicated to the lab group on an as needed basis.

Retreat coordinator: Aniket
The retreat coordinator facilitates logistics and task distribution surrounding our annual retreat, which is usually held in September prior to the start of the Fall Quarter. The retreat coordinator is in charge of the following tasks:

- Early summer: finding a date and location based on lab members' availability
- 4 weeks prior: drafting a retreat schedule with input from lab members
- 2-3 weeks prior: distributing and communicating pre-lab retreat tasks, such as planning a session, putting together a research idea, etc.; also making a dinner reservation
- Week of: coordinating food orders for lunch and any last-minute logistics
- Post retreat: getting feedback from the group to inform future retreat planning

Lab Meeting Manager: Jenny

- Plan lab meeting content for the quarter (in consultation with Sarah)
- Manage lab meeting calendar on Asana
- Manage conference room booking / Zoom setup
- Make sure lab meeting prep materials and reminders (e.g. journal club paper) are sent out in advance
- Run lab meeting when Sarah is unavailable

Onboarding

First steps after joining the lab

Complete these onboarding steps when you start work in the lab:

- Ask Sarah to introduce you to your on-boarding buddy, who will help you navigate these steps and get integrated to the lab
- Read the Fletcher Lab manual (you're off to a great start!)
- Request access to lab tools (if you don't have it already):
    - Slack
    - Lab Google Drive
    - Lab Calendar
    - Asana
- Create your first Individual Development Plan
- Reach out to the website manager to add your picture and bio to the site
- Meet with Sarah to discuss initial research steps
- Meet 1-on-1 with all lab members (Link to: Coffee Chat Guide)

Becoming affiliated with the lab

Sarah is new to Stanford CEE and still learning the norms about graduate admissions. For now, there are four paths to join the lab - this is likely to change in the future. Sarah will make permanent PhD position offers during the spring quarter (i.e. aligned with external admissions decisions, so MS students considering other universities have all info they need at the same time)

1. **Direct-to-PhD CEE students can complete a rotation in the lab**: Sarah will only make this commitment if there is definitely a spot in the lab available, subject to a successful rotation period. Success means both making satisfactory progress on research and also identifying a dissertation area of mutual interest. These students all have fellowship funding, which will be used to support them during this period. These students are expected to function as full-fledged members of the lab. (i.e. required to attend lab meetings, join Slack channel, fulfill all expectations in manual, etc.)

2. **CEE MS students can participate in lab research projects**: This will typically be for academic credit via an independent study, though Sarah may also fund students for specific project work. Sarah expects MS students to take at least one class with her in advance. Because these positions are more temporary, and may not lead to a permanent position, these students are not expected to be fully participating lab members.

3. **E-IPER PhD students:** Are welcome to reach out to Sarah about being a co- first year advisor. Note that even though E-IPER students have full fellowship funding, Sarah still expects they will participate in lab research projects, develop expertise and use lab methods, and publish papers with the lab.

4. **Undergraduate students:** We love to host undergrads to collaborate with grad students and postdocs on research projects, both during the summer and during the school year. Please email Sarah with your resume and a brief description of your interests.

Equipment and Office Space

Office Space: In the group, we are fortunate to have access to beautiful, collaborative office space on campus. All PhD students and postdocs will have access to office space; MS students are not guaranteed desks due to dept space limitations. Desks will be rotated annually at the start of the fall quarter, with potential adjustments whenever a new person joins or leaves the group. Desk assignments are discussed and agreed upon together with a holistic process based on a priority system. The highest priority group will be senior members of the lab (PhD students in candidacy, or postdocs), followed by junior members of the lab. People that tend to come into the office more often also have higher priority. Additionally, priority rotates each time desks are assigned (e.g. second becomes first, third becomes second). Let Sarah know if you have any concerns about desk assignments.

We also encourage you to agree with your office mates on a set of “office rules” to make sure everyone who shares the office space can feel productive and comfortable. Examples include good practices around Zoom calls (e.g., find a conference room if your Zoom call is long or you are expected to speak often), and when to leave the door open. Unless in a meeting or in deep

“focus mode,” we encourage members to leave the office door open or cracked to signal other lab members that it’s okay to come in and chat about research or just say hi.

Every student with a desk in an office gets a key to that office. It is important to always lock the office door when the office is empty, as your office mates may have left their laptop or other precious items in the office. If extra keys to one office are available, it is good practice to place them in another office that belongs to the lab. This way, if you are accidentally locked out, other lab members may be able to help you.

Equipment: We do *just about all* of our meaningful work on computers. Everyone in the research group must have a functional computer capable of performing intensive computational modeling work. If you do not have a computer which meets that criteria, please reach out to Sarah and she will arrange to provide you with a working computer - please don’t be shy about this! If you do already have a computer you can continue to use, that will help the lab’s resources go farther.

PhD Student Academic Expectations

Identifying a Project

All students joining the lab for a rotation will start computational work on an initial project. Sarah will identify and scope the project with the student’s interests and experience in mind. It may be a portion of an existing project someone else in the group is leading. In parallel, the student and Sarah will start having discussions about longer-term dissertation topics.

It is important that the dissertation topic is something that both the student and Sarah are extremely excited about. Because of this, overlap in research interests is one of the most important aspects of PhD student recruitment. Sarah will only commit to advising a PhD student once they have narrowed in on a topic or set of topics for the dissertation. Note also that research topics are limited by funding availability. Sarah will try her best to match funding to dissertation topics, but students may need to be somewhat flexible in their dissertation topic, serve as a TA, or work on a separate project temporarily to address funding gaps.

Sarah welcomes new project ideas from students at any time! Every good idea was preceded by many duds, and the more people we have generating research ideas the better. Learning how to ask good research questions is a core part of PhD training in the Fletcher Lab.

If you’re not excited about your current research project, please talk to Sarah about it as soon as possible.

Qualifying Exam

Our research group uses the qualifying exam process detailed in this rubric. Currently, that structure includes a 15-page written thesis proposal and an oral exam presenting the proposal to the GQE committee. The CEE Grad Handbook provides a guide to departmental requirements, forms and procedures including information on the GQE and advancing to

candidacy. GQE examples from the lab and department are provided in the lab resources for reference.

Advance planning is essential! You should align with Sarah on topic, scope, and committee *at least* three months in advance of your target exam date. There is an Asana project template you should use to coordinate with Sarah on the preparation.

Post GQE progress

After advancing to candidate, the main way that students get feedback are:

1) Regular meetings with Sarah
2) The quarterly feedback process
3) Seeking out feedback from collaborators and/or committee members

Work Time and Productivity

You should treat your position in the Fletcher Lab as a full-time job. For graduate students, this job is divided between research and coursework: during the MS phase courses will take priority, and afterwards research should take first priority.

Success is not defined by the number of hours you work. Focus instead on effectiveness and output; improving your research productivity and efficiency is a critical part of your professional development. While we all sometimes work evenings and weekends (e.g. to meet deadlines), if you find yourself working every weekend, that is too much. If you are concerned about overwork and burnout, please let me know. We prioritize work-life balance. Scientific productivity is best maintained when it is balanced with a happy personal life.

Flexibility is one of the benefits of academic life. We strive to find a balance between the benefits of working in person (e.g. building a community, fostering conversations, asking and sharing immediate and informal feedback, separating life and work) with the benefits of remote working (e.g. more flexibility in work hours, no commute, and being able to spend more time with far away loved ones). We achieve that by making an effort to schedule meetings only on selected weekdays, and highly encouraging in-person office presence on those days.

In-person days will be updated every quarter, and currently are: Tuesday, Thursday, Friday

We also recognize the hardships of living and working far from family, friends, and loved ones. **You are allowed to work remotely for up to 4 weeks per year. The timing of your remote period must be approved by Sarah** , and you must still attend lab meetings by Zoom. Sarah will try her best to accommodate time differences, but ultimately if you are working remotely it is your responsibility to adapt your schedule.

You deserve time off during which you are not expected to check in or respond to email. **You may take 3 weeks of paid time off each year, in addition to official university holidays**. **Please request time off in advance and put it on the lab calendar**. Make sure that you meet

any agreed-upon commitments before you leave, and discuss with me in advance if this is not feasible. **School breaks (e.g., winter closure) are not automatic holidays**, though you may choose to take your vacations during these times.

These guidelines are meant to create a sense of calm about taking time away from work. If you need additional time off for any reason, including due to mental health concerns, please reach out to me. Please do not come into the office if you are feeling sick.

You can find more information about university guidelines on time off and sick leave here:

Postdoctoral Scholars:
https://doresearch.stanford.edu/policies/research-policy-handbook/non-faculty-research-appointments/postdoctoral-scholars#anchor-3518

Designated University Holidays are specified here:
https://cardinalatwork.stanford.edu/benefits-rewards/time-away/holiday-schedule

Graduate Students
https://adminguide.stanford.edu/chapter-10/subchapter-2/policy-10-2-1#anchor-23527

Meetings and Communication

Asana

This is a project management tool the lab uses to coordinate a number of activities (and Sarah uses for her own to-do list). Uses include:

- "Fletcher Lab Meetings" Project: Where we manage the weekly lab meeting schedule and activities
- "Advisee Reports and Requests" Project:
    - Each member of the lab has a task where they upload reports
    - When you need something from Sarah (e.g. a form, a letter, feedback on a document, etc.), assign her a task under "Advisee requests". Be sure to give her a due date (don't be shy - she'll just change it if she needs to). This way you can both be confident it's on her to-do list
- Managing long-term deadlines e.g. GQE prep, student presentation prep
- Assigning tasks to students to help Sarah with proposals and other projects

Weekly Progress Reports

Progress reports are a tool to help you to make productive use of your weekly meetings with Sarah. Sarah's time is a scarce resource, and it is your responsibility to make sure you use it effectively and efficiently whenever you meet with her. The reports support this in the following ways:

- Sarah reviews them in detail in advance of her meetings with you. This allows her to prepare for the meeting (e.g. look up details about research methods, think about research design questions) so she can give you the most useful feedback.
- The report allows for asynchronous sharing of administrative tasks and short updates with Sarah, which she can respond to offline. This allows the meeting to focus on important discussion topics like research and professional development.
- The report is a deliverable that you will use in the meeting to facilitate conversation about items you want feedback on.
- The report serves as a project management tool that allows you and Sarah to align and keep track of what you are working on, and agreed next steps

In order to achieve these goals, it is important that the report include the following. **Think about communicating to Sarah the information she needs to give you the feedback you need**

- A meeting agenda
- Updates on what you worked on last week, including the status of any items you agree to work on in your previous meeting
- Research content (or professional development content) that you want feedback on. For example, if you want feedback on choosing a research method, you should use your report to give Sarah background on: your research question, the status of current research design decisions, the specific methodological decision you want feedback on, proposed options you are considering, the pros and cons of each option etc.
- Proposed next steps for the following week

While your report does not need to be a polished document, because Sarah reviews it in advance, it needs to be clear enough that she can understand the key content independently when she reviews it. You can find some sample progress reports in the lab Google Drive folder. You are required to submit a weekly progress report by **Friday at 5 pm** in your Asana task.

Individual Meetings

At the beginning of each semester, we will set a time for weekly meetings. Early-stage PhD students should keep these meetings every week. More senior lab members can feel free to cancel meetings, but we should touch base at least every other week.

It is your responsibility to set the agenda, come prepared for each meeting, and lead the meeting. You can use your weekly progress report to guide the research discussion - feel free to update it with any new results. Learning how to do this effectively takes time and practice, and Sarah is here to help you learn how to make your meetings with her as productive as possible.

After the meeting, **please write out a short summary of the next steps we agreed on** for you to work on over the next week and add it to your progress report for the previous week. Please do this immediately after the meeting so we don't forget what was discussed.

Slack

We have a group Slack channel that we use to stay in touch, both on work projects and social. It is especially important to be active on Slack as this will be our primary day-to-day mode of building community and communication. Expectations include:

- **Be on Slack (green active status on) and responsive during work hours** (at least 10-4) when you're not in class or meetings
- **Update your status**. You should have an active status so others can tell you are available. If you're out sick or on vacation or gone for a large chunk of the day, change your status so we know
- When a request is made (e.g. to fill out a when2meet by a certain time), **react to the request** (e.g. give it a thumbs up), so that whoever makes the request can be confident that others have seen it and plan to complete it as requested
- If you make a request, **tag people** who need to see it
- However, it is everyone's responsibility to stay up to date on all our Slack channels. **Respond or react frequently** when people post something
- **Share a journal article** of interest to others in the lab at least once per week. Give a short description and tag people you think would be especially interested

Weekly Lab Meetings

Weekly lab meetings (1.5 hours each) are meant to be a forum for us to present project ideas and 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, statistical analyses, new papers, and career development. For journal club, everyone must come to lab meeting having read the paper and prepared with comments and questions to contribute.

Each lab member is expected to lead a lab meeting about once per quarter. Lab members are also expected to attend every meeting (obviously, vacation, illnesses, doctor appointments, family issues, etc. are a valid reason for missing a meeting).

The lab meeting agenda is available on Asana.

Behavior Expectations for Meetings

We strive to create an inclusive and growth-oriented lab environment that is welcoming for everyone. To achieve that goal, we ask all lab members to follow these guidelines for interaction during group meetings:

- Everyone should participate and, equally importantly, make space for others to participate
- Speak respectfully towards everyone
- Actively acknowledge/credit contributions from others
- Give positive feedback about research - the more specific the better

- Acknowledge our own limitations (e.g. lack of expertise on a particular topic)
- Push each other to do the best possible science
- Strive for a growth mindset
- Critique the science not the person - the more specific the better
- Be comfortable sharing intermediate results and receiving feedback
- Be comfortable asking for feedback and advice to other group members, and be helpful when someone asks you for advice

Quarterly Feedback

Each quarter students and postdocs should complete a quarterly feedback survey to discuss with Sarah in their one-on-one meeting with her. This is an opportunity to reflect on what went well, what can be improved, and how Sarah can better support you.

Deadlines Policy

Organization is essential not only for yourself but to work effectively with your advisor and collaborators. When it comes to deadlines, tell your collaborators as soon as you know when a deadline is, and make sure they are aware of it the closer it gets. Don't be afraid to bug them about it (yes, bug Sarah as well). You are ultimately responsible for keeping track of deadlines relevant to your research and degree.

Give Sarah at least one week's notice to do something with a hard deadline that doesn't require a lot of time (e.g., reading/commenting on conference abstracts, filling out paperwork, etc.). Give Sarah at least two weeks' notice (preferably more) to do something with a hard deadline that requires a moderate amount of time (e.g., a letter of recommendation). If you want feedback on research and teaching statements, or other work that requires multiple back-and-forth interactions, give her as much time as you can and at least three weeks.

We are all human, and sometimes we lose track of a deadline or something unexpected comes up. This should be relatively rare, but if it happens, we will do our best to be flexible.

Resources Overview

Provided in this section is a high-level description of our lab and research resources, as well as Stanford-wide resources. The complete resources section can accessed here: Resources.

Lab & Research Resources

Lab & Research Resources Overview:

- Computing & Programming: a repository of coding best practices, computing help and programming resources, debugging tips, useful repositories, and HPC cluster guides
- Conferences & Presentations: collection of past conference and poster presentations and conference resources (i.e., guidance on preparing and presenting research, attending conferences, and managing related logistics professionally and effectively)

- Lab Documentation : google sheet and PPTX presentation templates, sample progress reports
- Literature Review & Management : tools and practices for staying updated with scientific literature, including reference managers, search engines, and alert systems.
- Opportunities : list of fellowship, grant, and other funding opportunities as well as internship and career opportunities
- Paper Writing : resources on how to write papers, response-to-reviewers, and authorship guidelines
- Workshops & Seminars : repository of past lab workshops, meeting notes from previously attended workshops

Stanford Resources

Stanford Resources Overview:

- Disabilities : information on how students with disabilities at Stanford University can access accommodations
- Diversity & Access Office : information on how to report discrimination, harassment, or access resources through Stanford's Diversity and Access Office
- Mental Health : details on accessing mental health services at Stanford, including counseling, crisis support, and leave options
- Subscriptions : a list of recommended Stanford email subscriptions, covering topics from engineering to campus-wide technical and social events.
- Tutorials & Help Centers : guide to Stanford resources for academic support, career development, and technical assistance, including libraries, writing centers, and teaching resources.

Preventing and Addressing Discrimination and Harassment

Zero-Tolerance Policy

Our lab does not tolerate racism, sexism, or any other forms of harassment or discrimination. Sarah takes full responsibility for enforcing this policy as appropriate depending on the circumstances. Microaggressions rooted in a lack of awareness will be addressed through feedback in a private conversation and prescribed education materials. Repeated and intentional verbal or physical harassment or discrimination will result in termination from the lab.

Sarah very much hopes that anyone who is concerned about something that was said or done in the lab will come talk to her about it. This is the case even if Sarah is the source of your concern - she is an imperfect person and messes up sometimes. She welcomes your feedback and promises to take it seriously. That said, she understands that providing feedback anonymously can be more comfortable: here is a form where you can submit concerns or feedback to Sarah at any time without including your name. She will be notified by email when you submit a response.

We work towards creating an inclusive and welcoming environment so that these incidents don't happen in the first place. We regularly include readings on antiracism or inclusion in our regular journal club. We are working on identifying a required training program for the lab to do together and then for all new members to do upon starting. Finally, we include questions about inclusion and diversity in our interview process for joining the lab.

Lab Commitment to Be an Anti-Racist Group

The Fletcher Lab stands against anti-Black and anti-Indigenous racism, and all forms of oppression and discrimination. We commit to dismantling racism and educating ourselves to the best of our ability; this is an expectation for all group members. We currently aim to have two DEI-related journal clubs per year. Additionally, we take DEI work into account in lab roles. Group members who engage in DEI work outside of the lab group will have smaller lab roles to encourage their engagement in this important work.
We welcome any recommendations you may have for expanding and strengthening the resources and policies above.

Scientific process and values

Integrity

We are committed to ensuring research integrity, and we take a hard line on research misconduct. We will not tolerate fabrication, falsification, or plagiarism. A big problem is why people feel the need to engage in misconduct in the first place, and that's a discussion that we can have. Also, think about the goal of science and why you are here: you're here to advance knowledge. Not only is research misconduct doing you a disservice, it's also a disservice to the field. And it risks your entire career. It is never right and never worth it. Don't do it.

Reproducibility

Reproducibility and open science are core values in our lab. For results to be reproducible, everything must be organized and well documented. You should take detailed notes on each step of your analysis. This means writing down how you did things every step of the way. Your code should also be commented clearly. We all know what it's like to sit down, quickly write a bunch of code to run an analysis without taking time to comment it, and then having no idea what we did a few months down the road.

Open Science

Fundamentally, good science is open science. Being open with your work and making it available has numerous benefits to you as a researcher and to society as a whole. We aim to make code for all our projects available upon publication (e.g. through GitHub and/or Zenodo).

Further readings:

- Examples of effective data sharing in scientific publishing.

Authorship

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

References

This lab manual borrows heavily from excellent manuals created by Morgan Edwards, Meagan Mauter, Casey terHorst, Alex Konings, and Mariam Aly .