

Guidelines for a new Research Lab Manual

These guidelines accompany the Lab Manual Template and will help as you customize it for your own lab. They will also help when you review and revise it, at least annually.

Have this document open while you complete the template, it provides explanations and suggestions. *[The sections in square brackets in the Lab Manual are guidance or are to be replaced for your own use – they should all be removed/replaced as you create your own lab manual using this template].*

Table of Contents

1. INTRODUCTION.....	3
2. GENERAL LAB PRACTICES	3
2.1 TRAINING	3
2.2 OPEN SCIENCE	4
2.3 KNOWLEDGE MOBILIZATION & IMPACT.....	4
2.4 RECORD-KEEPING	4
2.5 SOCIAL ACTIVITIES	5
2.6 OTHER ITEMS.....	5
3. LAB AND INDIVIDUAL MEETINGS.....	5
4. LAB AND OFFICE SPACE	5
5. LAB COMMUNICATION.....	5
5.1 CALENDAR	6
6. CONFERENCES.....	6
7. RESEARCH DESIGN	6
8. WRITING AND AUTHORSHIP	6
9. EXPECTATIONS AND ROLES	7
9.1 SUPERVISOR ROLE	7
9.2 RESEARCH ASSISTANTS AND VOLUNTEERS.....	7
9.3 HONOURS STUDENTS	7
9.4 MSc STUDENTS	7
9.5 PHD STUDENTS.....	8
9.6 POSTDOCS AND STAFF SCIENTISTS.....	8

1. Introduction

Add a Land Acknowledgement and an EDI vision/mission statement.

A **Land Acknowledgement** pays respect to the Original Peoples of the territory upon which Western is physically located. It also recognizes the ongoing presence of Indigenous Peoples in educational settings. It is a way to declare the University's commitment to building on its relationships with and responsibilities to Indigenous communities.

There is support available at Western when creating a Land Acknowledgement; for example, <https://communications.uwo.ca/comms/land-acknowledgement/> includes multiple versions of Western's own Land Acknowledgement and specifically encourages further action and engagement with its 'More Than Words' guidance. Within BrainsCAN, you can also approach the EDI Committee for help.

Note also that some of your lab members may be unfamiliar with a Land Acknowledgement and the reason for it, especially international members. Consider using it as a topic of conversation at team meetings.

An **Equity, Diversity and Inclusion vision/mission statement** lays out your lab's commitment to practicing equity, diversity and inclusion (EDI) – the expected behaviours, philosophies and approaches to work. By creating a meaningful and authentic message, it supports positive working and learning relationships among the members of your lab, it engages those who care about EDI and it better integrates into your lab those people who feel that they need additional support. If someone is considering joining your lab, it will provide insight into your culture and what they can expect if they do join.

Ongig, a recruitment/hiring services company, has two really good pages to help you develop your EDI statement. They provide explanation and guidance on what to consider and critique some examples of real inclusion statements from public companies:

<https://blog.ongig.com/diversity-and-inclusion/10-examples-of-the-best-diversity-statements/>
<https://blog.ongig.com/diversity-and-inclusion/inclusion-statement-examples/>

Within BrainsCAN, you can also approach the EDI Committee for support.

2. General Lab Practices

2.1 Training

Review and add to the training required for all members of your lab.

The training courses listed are a good starting point but you may have other specific training material that you would like new members to complete – add them to this list.

Think broadly about training – are there subjects about which you would like all lab members to have a common understanding? The training that the lab values will convey something about the culture of the lab itself. Including EDI and other non-scientific-field-specific training in the lab manual will establish it as

important, encouraged and valued. BrainsCAN's EDI Committee can arrange individual lab EDI training sessions. You are able to mandate annual EDI training with these sessions.

See if one of the EDI in Research webinars is coming up (and if not, consider requesting one) – you will find more information here: https://brainscan.uwo.ca/about/equity_diversity_inclusion/edi_in_research.html.

The items from Western Libraries are essentially self-guided but the Library is also very willing to organize workshops when there are a number of students/labs who need training at the same time.

There are different ways to divide up training into different sections: technical/general, mandatory/optional, annual/once-only. Feel free to categorize according to what makes most sense in your lab. You may also wish to suggest optional training for lab members to consider – perhaps include them in an appendix so that this main section is only the mandatory training.

2.2 Open Science

Integrating best practices in Open Science can improve the transparency and reproducibility of a lab's research. This section of the lab manual is a good place to set basic standards for your lab's Open Science practices (such as "all graduate students must have an OSF profile") as well as aspirational goals that serve as a guide for how to conduct research. Create a record here of how Open Science practices may affect each part of your research cycle from project conception to analysis, write-up, publication and data archiving.

One aspect of Open Science is making papers available as preprints, such as on PsyArXiv, bioRxiv or preprints.org. Does your lab strive for this level of public access?

Other aspects of Open Science include sharing data/code in online repositories, registered reports, publishing papers as open access (typically for an additional fee) or in open access journals, and a general commitment to transparent and reproducible research practices.

2.3 Knowledge Mobilization & Impact

There are resources here at Western to support KMb/KT within research – in Western Research there is a Knowledge Exchange & Impact Manager, in BrainsCAN there is a Knowledge Mobilization & Impact Manager. Reach out to them as you plan grant applications as they can help, they have planning tools (Knowledge Mobilization Planning Tool from BrainsCAN, Knowledge Exchange Canvas from Research Western) and they can support researchers with strategies going forward.

2.4 Record-keeping

Detail common or standard processes for record-keeping in your lab, such as Dropbox, MS OneDrive or Google Docs.

Describe any lab-specific processes for writing papers and grant applications (particularly fellowship applications for graduate students), such as Google Docs. Share the location of any templates.

Describe any lab-specific reference management systems in use, such as Paperpile, Mendeley, Zotero or End Note.

Describe any project management systems in use, such as Trello, TeamGantt or Asana.

Describe any data management tools in use, such as Ripple or Red Cap.

2.5 Social Activities

Describe any common social activities for your lab, but consider cultural or other challenges that might be present; you need to strive for inclusivity. For example, if you have a monthly potluck, do you accommodate vegetarian or vegan choices, or other food restrictions, cultural periods or religious holidays marked with fasting?

2.6 Other items

Describe software, hardware or other resources that the lab uses or provides. Be sure to include how to reserve any resources and their locations.

3. Lab and Individual Meetings

Describe your lab meetings – duration, frequency, location, typical attendees. Does frequency, time or location change during the year, such as over the summer? Are they over Zoom currently?

While encouraging discussion at your lab meetings, don't be afraid to discuss career development or other topics such as diversity or inclusion, and other research outside of the primary focus of the lab that might impact how your work is done. Support interest in other areas by encouraging trainees to attend seminars and colloquia on a wide range of topics.

How are meeting announcements and agendas shared?

4. Lab and Office Space

Outline any collaborative rooms, testing areas or other space available to your lab and be sure to describe how that space is reserved. Describe what students can expect from their lab space – will a computer be provided, for example? Are there designated 'quiet hours' or areas where lively conversation is permitted/encouraged? Are there rules or regulations surrounding food and drink?

When describing key equipment or space, consider including photographs to either replace or supplement written descriptions.

5. Lab Communication

You are strongly encouraged to collaboratively create etiquette rules for communication so that all members understand the expectations for everyone using these various platforms. Decide which platform(s) (e.g., Slack, Microsoft Teams, Google Chat) will be the primary/preferred means of

communication for lab and research related issues. Note that MS Teams is available to faculty, staff and students through Western's Office 365 Microsoft Campus Agreement so requires no additional subscription for full features.

5.1 Calendar

Encourage openness and transparency. A suggestion:

We all contribute to manage a shared calendar at [location]. We will default to being open and transparent when using the calendar, sharing our schedules as much as is reasonable to the rest of the team.

When the subject of meetings, plans and appointments needs to be opaque, it is perfectly acceptable to block out time as 'unavailable' or similar in the shared/public calendar, since we are otherwise open with our movements and schedules.

Recognizing and celebrating events that are important to members of your lab can be a powerful way to build a cohesive and understanding team. This can include birthdays, notable milestones or personal and professional accomplishments.

6. Conferences

Provide suggestions where lab members can find out information on conferences relevant to your lab.

In consideration of EDI, perhaps provide reassurance that everyone in the lab will have equal opportunities for activities such as conferences, workshops, etc. As their leader, indicate that you will keep track of all of these activities (public on a shared document or just in your own records) and you have committed to ensuring all members are provided equal opportunities. This can be discussed on an individual basis if more opportunities are requested/needed or if there is a complaint of unfairness.

7. Research Design

Executing a study well is complicated – are there any resources that you can highlight that will help your lab members? For example, you might include information on where to find example protocols or template REB documents that have been previously submitted by the lab.

8. Writing and Authorship

In considering different ways to gain writing practice, be sure to include any 'Scientific Writing' courses or seminars offered in your department.

Describe any specific lab practices with the order of authorship in your lab. An example:

If the lab director designed the experiment and wrote much of the paper, they are first and corresponding author; if the trainee carried out the research under supervision but mostly/fully designed

the study and/or wrote much of the paper, they will be first author and the supervisor will be the last and corresponding author; PhD students publishing their dissertation research should be first and corresponding author.

Discuss whether or not preprints are encouraged in the lab and specify where they should be uploaded – bioRxiv, PsyArXiv or similar.

9. Expectations and Roles

When expanding on any departmental funding that may be available to members of your lab, try to address the following points:

- Is there funding available for the summer months?
- Is there a standing arrangement to fund attendance to at least one conference per year?
- Does the lab fund all research costs for trainees?
- Does the lab provide all computing resources?
- Does the lab cover publication, copying and printing costs?

Graduate student funding can vary substantially across departments and PIs are encouraged to be transparent about where student funding comes from and what scholarship/fellowship opportunities are available to their students.

9.1 Supervisor Role

An example of specific subject matter that the lab director is researching might be:

...to discover how people think, behave, how they learn and how conceptual structure influences thinking and behaviour.

A lab director can also be a resource when making career decisions. Expand on this point – for example, are you willing to act as a professional/academic referee and provide letters of reference? If so, what do you need to receive from the individual to provide such a letter? What are the timescales for a letter of reference?

9.2 Research Assistants and Volunteers

Expand on any responsibilities that a research assistant and/or volunteer will have in your lab, such as key access to specific facilities or any other details.

9.3 Honours Students

The lab might subsidize the cost of poster printing – if so, explain that here. Is there anything else relevant that your lab does for honours students?

9.4 MSc Students

Include a link to the department's general guidelines for master's students. Provide details for individual meetings with their supervisor/lab director – frequency, time and location.

9.5 PhD Students

Include a link to the department's general guidelines for doctoral students. Provide details for individual meetings with their supervisor/lab director – frequency, time and location. PhD students will have to choose an advisory committee – describe any specific requirements that will apply.

Consider making dissertations from prior students in the lab readily available to current students, such as through a lab Google Drive or similar.

9.6 Postdocs and staff scientists

Provide any additional information that will apply to these roles including policy on collaborations outside of the lab where appropriate.