# Healthy Headwaters Lab Manual

*Healing the HOMES - Huron, Ontario, Michigan, Erie, Superior - one headwater at a time ;-)*

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## Welcome!

Hello! Boozhoo! Kamusta! Bonjour! Kia ora! Konnichiwa! Welcome to the Healthy Headwaters Lab group. I’m so grateful and thrilled that you’ve joined the squad. You are here because you have an amazing skill set, personality and passion that align well with the lab and our mission. In your time here, I hope we can generate new exciting science and solutions for freshwater ecosystems and their restoration. We will do this by working in a highly-dynamic and interdisciplinary team in a supportive, respectful and productive way. Much of our work thinks globally, but acts locally, here in the Great Lakes. We will be undertaking research primarily in the real-world: on farms, forests, fields and a range of waterbodies from puddles, drains to rivers and coasts. Our work may take us to places all over the world, to help connect knowledge and solutions to freshwater issues affecting our planet.

This lab manual was created to give us a sense of collective purpose, outline a way of working together, and also reflect our values and mission. This lab manual a living document and so it may change a bit over time as we evolve but one thing is clear: you belong here. Welcome. Enjoy the ride.

Sincerely,

Catherine

## Acknowledgements

Our lab would not be here without

* Original owners of the Land / First Nations & Territories
* The University of Windsor
* GLIER
* Aly Lab Manual, @samuelmehr’s overview of lab manuals & other resources

## Our Lab Group Ethos - a living statement on how we roll

Our lab has a single mission: to restore freshwater ecosystems to full health and vitality – for ours and future generations. We do this by

* Mission statement?

## Code of Conduct[[1]](#footnote-1)

### Essential Policies

The Healthy Headwaters Lab, GLIER, and the University of Windsor are environments that should be free from harassment of any type, regardless of a person’s gender, gender identity and expression, age, sexual orientation, disability, physical appearance, race, or religious beliefs. The Healthy Headwaters Lab is committed to providing a safe and accepting space for all employees, students, and visitors. Please read the University of Windsor’s Harassment and Violence Prevention Policies (linked [here](http://www1.uwindsor.ca/safety/wpvh)).

If you or someone else is being harassed, please contact Catherine immediately. If Catherine is the cause of your concern, then please reach out to the GLIER Director or another trusted departmental member who can assist.

### Taking Photos & Videos

Out of respect for others, we only take photos of others (including lab members, collaborators, partners, or other members of the public) when we have explicit permission to do so. You must also have explicit permission to post pictures of others on social media (see the [Social Media](#_Social_media_platforms) section below).

### Scientific Integrity

Placeholder

### #KindnessInScience, Equity, Diversity & Inclusion

You’re in a lab group that is actively trying to change the culture of how we do science. The reason is simple – we are serious about achieving our mission (see above!). The reality is that science has historically been built on power dynamics that do not serve our mission, or enable us to address the larger challenges on our planet. You can read more about aligned issues such as the decolonization of science, underrepresentation of many peoples in science and intersectionality, privilege and wicked problems [Cat to add hyperlinks here]. One way we are addressing this is through Kindness in Science, an inclusive approach that fosters diversity, respect, wellbeing & openness leading to better science outcomes. As a member of this group, you will be exposed to this conversation, and movement. #KIS will provide our group with tools and approaches to help serve our mission, work together, and build a global community of allies. It also re-affirms what I/Cat believe about you: you belong here, you have much to offer, the world needs your skills and together we can arrive at long-lasting solutions for our planet.

* Mental health

Taking good care of your health and well-being takes practice. As a lab group, we support and encourage you to set in place structures and practices that ensure you have balance and achieve wholeness. We will support you to achieve your fullest potential but that means you need to know and understand your strengths, areas you are looking to improve, and be able to communicate clearly with the team about your needs. Mental health is one key aspect of graduate school and research that is often ignored, not discussed, or associated with shame. That is not the case here. Take the steps now, early and throughout your time in the lab to develop healthy habits. Use the resources available to you (for free!) at the university here [HYPERLINK] and also know that the lab (and Cat) is a safe space for discussing and addressing possible barriers to your success.

### Translation Ecology: Working with the community

Placeholder

### Open Science

Placeholder

## Expectations and Responsibilities

### Everyone

### Principal Investigator

### Post-Docs

### Graduate Students

Intro blah blah

Expectations of graduate students:

* Participate in regular [individual meetings](#_Individual_meetings) with Catherine

### Undergraduate Students

### Research Staff - Lab Manager, Community/Extension

## General Policies

### Hours

* Expectations for daily/weekly work. Core time for people to try to be working on campus (or in field): 10-3 T-Th?
* Policy on remote work?
* Vacation
* Sick leave policy? (here or a different section on leave? Could cover vacation, sick, mental health breaks, childcare, etc)

### PI Office Hours

* Cat, insert your office hour specifics here

### Meetings

Meetings will be generally scheduled between 10am and 3pm on Tuesdays, Wednesdays, or Thursdays, unless special circumstances require meeting outside those times. This allows more flexibility in work schedules for everyone in the lab.

#### Weekly lab meetings

We have weekly lab meetings that everyone is expected to attend (when not sick, on vacation, or in the field). The meeting purpose is to check on the status of ongoing work, plan future activities, and raise issues or concerns lab members may have so that we can address them. Lab meetings will be held at the same time every week during each term, but may be changed, if necessary, to accommodate certain events (conferences, meetings, etc.). Lab meetings will be noted in the [Google Calendar](#_Google_Calendars).

* “journal club” aspect to meetings?

#### Individual meetings

Placeholder, blah blah

### Deadlines

Placeholder

### Reference Letters

Placeholder

### Data Management

* Include how we deal with sharing data/code/materials – both within lab group and with external partners/collaborators
* How we do version control

## Fieldwork

* What to do know before, during and after

### Field activity plan

When working in the field, you must fill out a field activity plan and send it to Catherine **and**the lab manager.

### Lab Activities Inventory

(HealthyHeadwatersLab Dropbox/1.Healthy Headwaters Lab Activities INVENTORY.xlsx)

### Field work checklist

Please be courteous to others in the lab by leaving everything in a clean and orderly manner, and refilling stocks of consumables when necessary. If any items in the field kits are running low, please let the lab manager know before they run out, so replacements can be ordered. When using equipment outside of the lab, it must be signed out on the [equipment location sheet](https://app.asana.com/0/1128801752832452/1128801752832452) in Asana.

(include file address in Dropbox – that way we don’t have to update as many things!)

### Health and Safety

Health and safety in the field are paramount. Research is **never** worth risking injury. If you are ever in a situation in the field where you feel unsafe, immediately discontinue the fieldwork. You can contact Catherine or the project manager to discuss options for delaying or modifying the field work, depending on the situation.

Before going into the field, everyone must be trained…

## Wet Lab space

### Equipment and Supplies

Equipment and lab supplies are shared. If stocks of any consumable item are running low, please let the lab manager know *before* they run out. For supplies that expire after opening, please make sure they are clearly labeled with the date opened and the expiry date.

If any piece of equipment needs maintenance, please let the lab manager know as soon as possible, to minimize the time that it is unavailable for use.

When using equipment outside of the lab, it must be signed out on the [equipment location sheet](https://app.asana.com/0/1128801752832452/1128801752832452) in Asana.

### Health and Safety

Health and safety in the lab are paramount. Research is **never** worth risking injury. If you are ever in a situation in the lab where you feel unsafe, immediately discontinue the work and contact Catherine or the project manager to discuss the situation.

**Organic Analysis & Nutrient Facility**

**Jess O to fill out?**

## Lab Resources

### Asana

Asana is an organizational and task management tool that facilitates communication and collaborative work within the lab.

Asana conventions:

* Asana can pull files directly from a linked Dropbox account. When referencing files in tasks, attach the file through Dropbox. That way, people will be directed to the up-to-date file.
* Add the appropriate lab members as followers to tasks, so they can stay up to date on the status and discussion around it.
* Update due dates, even if you’re behind schedule! If you change the date, add a comment as to why the date has been changed.

For resources on Asana and how to use it effectively, check out resources here: <https://asana.com/guide>

### Wiki

The lab wiki is our shared collection of knowledge about how to get things done in the lab. The lab manual you are reading now is “top down”, in that I am writing the whole thing myself. By contrast the wiki is a shared resource to which everyone can—and should—contribute. A good rule of thumb is that if you need to figure out how to do something, someone else in the lab may someday need to do the same thing. Whenever possible please document what you figure out on the wiki, including updating old sections which may no longer be relevant. Please encourage each other (and those working with you) to do the same!

### Dropbox - for data and shared files

* Backing up files
* File naming convention

### GitHub - for R code

<https://github.com/>

The Healthy Headwaters Lab uses R and RStudio to conduct statistical analysis. As R is an open source resource, learning to use it during your time in the Healthy Headwaters Lab gives you a skill that continue be freely used after you move on, as opposed to other statistical software that may require a license.

You are expected to backup and share your code using GitHub. Always be sure to comment your code thoroughly so it can be easily understood by readers. The Healthy Headwaters Lab will maintain private repositories on GitHub for unpublished projects, then make these repositories public after publication. While repositories are private, they should be shared with other lab members (add them as collaborators) on request. Other lab members can create branches or other repositories as necessary if they need to adapt/edit your code.

### Zotero

Zotero is a free-to-use reference management software. Using a reference management program can make writing manuscripts and reports much more efficient, and helps you keep track of the resources you have used. Zotero has a plug-in for Word that allows you to insert citations in your text as you are writing. You are encouraged to use this, as it reduces the time you will spend cleaning up your file once it is written.

The Healthy Headwaters Lab has a shared Zotero library. To get access to the shared library, contact the lab manager or Catherine.

### Google Calendars

The Healthy Headwaters Lab calendar is connected to [healthyheadwaterslab@gmail.com](mailto:healthyheadwaterslab@gmail.com). Lab members should use the calendar to record planned absences from the lab, including field work, vacation, meetings, remote work, etc. When appropriate, details should be included in the calendar entry. Contact Catherine to be invited to share the lab calendar.

### E-mail

For general inquiries and to contact the lab group, email [healthy.headwaters@uwindsor.ca](mailto:healthy.headwaters@uwindsor.ca)

Data and Project Manager: Jess Ives – [jess.ives@uwindsor.ca](mailto:jess.ives@uwindsor.ca)

Community & Translation: Candy Donaldson – [candy@uwindsor.ca](mailto:candy@uwindsor.ca)

## Communications

### Ground rules

* Refer to the code of conduct.

### Public outreach

* Note that public outreach is an important part of working in this lab. Need to connect with people – gain public support, buy-in, and knowledge to build useful/needed work.

### Presentations

* Circulate abstract to all authors >1week before deadline
* Practice talks (expectations – 1 week before, or if new to presenting, 2 weeks before)
* Posters – circulate to authors >1week before printing deadline.

### Conferences

Conferences are a great way to present your work, learn about other research, and network with other researchers and practitioners. Attending conferences often will include making either an oral or poster presentation. However, you are an ambassador for the Healthy Headwaters Lab throughout the entire conference and are expected to act professionally.

#### Common conferences

The [International Association for Great Lakes Research (IAGLR),](http://iaglr.org/conference/about.php) is a multi-disciplinary annual conference that alternates between Canada and the US and is mainly focused on the Laurentian Great Lakes and their basins. IAGLR offers several student scholarships and travel support.

The [Society for Freshwater Science (SFS),](https://freshwater-science.org/annual-meeting-info) is an international society focused on understanding freshwater ecosystems. It holds annual conferences that are usually located in the US. SFS also offers several types of student awards and support.

Others?

### Social media platforms

* Healthy Headwaters social media
* Guidelines for lab members posting about healthy headwaters
* HHL website? Blog?

## Partners

* List critical partners of the lab and how they fit?

## Science stuff

### Water quality

### Microbial analysis

### Ecosystem science

### Field studies

### Publications

* How to deal with authorship
* Checklist of what to do before publishing a paper
* Policies on pre-prints?
* Referencing – make sure to reference things like R packages, not just papers!

### Reading list

* Blogs/papers/news articles?

## Finances

### Lab funding sources

* Major program funding (Cat)
  + University of Windsor start-up (2019-2021)
  + NSERC Canada Research Chair (2019-2024)
  + NSERC Research Frontiers (2019-2021)
  + NSERC Discovery Grant (2020-2025)
* Community awards / grants / collaborations (Candy leads…?)
  + DFO Nature fund with Walpole Island FN
* Student awards (Research, travel)
* International grants
  + DAAD for funding to/from Germany
* Teaching grants

### Student awards

* Research/travel – link to list of common ones?

### Reimbursements

* How to get reimbursed, vs what Cat or the lab/project manager can pay for directly (to avoid students ‘loaning’ money to the university while waiting for reimbursement!)
* Cover conference attendance for 1 (more?) conference/year
* Field work travel
* Society memberships? (1 per year? – I think this is a useful thing to cover, but maybe has some caveats around participation?)
* Office supplies (ask to be ordered by lab/project manager?)

## Fun stuff

## Resources

Websites & other people/places that we’ve referred to, borrowed from or are inspired by…

* <https://www.tepunahamatatini.ac.nz/>
* KindnessInScience.org

## Onboarding checklist

* Read the entire Lab Manual, and ask Catherine or the lab manager for any clarifications
* Contact Catherine or the lab manager to be invited to share the lab calendar
* Contact Catherine or the lab manager to be invited to join the lab Asana workspace
* Contact Catherine or the lab manager to be invited to join the shared Zotero library
* Contact Catherine or the lab manager to be granted access to the lab Dropbox folder
* Contact Catherine or the lab manager to be granted access to the lab GitHub
* Complete the required Health and Safety trainings
* Complete any required readings
* Keys
* Logistics for moving here

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Please give a signed copy of these expectations to Catherine after you have completed all of the items above. If you have any concerns, please reach out before signing.

I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ have read and agree with the expectations outlined here.

Signature:

Date:

1. Adapted from the Aly Lab code of conduct and codes of conduct [here](http://ivory.idyll.org/lab/coc.html) and [here](https://github.com/memobc/memolab-manual#code-of-conduct). [↑](#footnote-ref-1)