Lab Manual

adapted from Dr. Mariam Aly (here), Dr. Maureen Ritchey (found here), and Dr. Jonathan Peelle (found here).

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Introduction

It looks like you are interested in the T.-Cossa Lab within the Physics Department at the University of Ottawa! Whether you are already a member or are looking to become one, I hope this document will help clarify my role in the lab, my expectations of everyone else in the lab, as well as a variety of other topics from giving talks at conferences to data management and storage.

My lab is based on the idea that "nanopores" (very small holes in thin membranes) can help us "look" at individual molecules like DNA or proteins. The research we do relies on a patented technique that we developed to make these nanopores, and we hope to one day see these nanopores making big changes in fields like sequencing, diagnostics and information storage.

Our field of research is highly interdisciplinary, and I am always on the look out for talented individuals in fields such as physics, chemistry, molecular biosciences, engineering or computer science to join my team and I encourage anyone to reach out if they are interested. We are committed to fostering a diverse, inclusive, and equitable workspace where all lab members feel safe to collaborate and gain the knowledge and skills they need to not only succeed in their capacity as a student, but also as they move on to bigger and better things in their careers.

This Lab manual was inspired by the work of several other groups, chief among them that of Dr. Mariam Aly (here), Dr. Maureen Ritchey (found here), and Dr. Jonathan Peelle (found here). This document is meant to be a work in progress and as such will be updated on a regular basis.

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Expectations and Responsibilities

Everyone

Big Picture

- Communicate honestly, even when it is difficult. *Academic integrity is a top priority.*
- Research can be frustrating and demotivating at times, but overall, I believe it should be a rewarding and enriching experience. Make sure you are passionate about your work and proud of what you are doing. If you do not feel this way, please reach out to me so we can make a plan to get back on track.
- Ask *why?* about everything – from what your experimental results are telling you to general lab practices. If you do not know the answer, ask someone.
- Work independently when you can and ask for help when it is needed. Take it as a compliment when someone asks you for help and do so to the best of your abilities – they trust you and value your thoughts! Conversely, respect the time of others and try not to ask for help with questions you can easily find answers to on your own.
- Respect your colleagues – this includes their feelings, values, possessions, strengths and weaknesses, time, and needs. If you feel uncomfortable or feel like someone is not demonstrating the appropriate respect, please reach out and tell me, even if you do so anonymously.
- If you have an issue with me (Vincent) and feel comfortable telling me, do so. If you do not feel comfortable telling me, reach out to the lab manager (for smaller issues) or another member of the Department of Physics (for more serious issues)
- Double-check your work. Being a little obsessive is essential to good science. People make mistakes, it is a normal part of the scientific process. Double-checking your work will catch most mistakes before they affect your research.
- Share your knowledge. Exchanging knowledge and skills with your peers is the core of academic research.
- Science is a marathon, not a sprint. Take personal time and vacation when you need it and cultivate a life outside of the lab. Respect that other lab members also have a life outside of lab. We do not glorify workaholic behavior. There may be times that you have to work longer or harder to finish something, but this should be balanced out over time.
- Academia may feel different from other types of jobs, but it is still a job. You should treat coming into lab with the same respect that you would treat any other position.
- Nanoscale Biophysics and single-molecule science is cutting-edge and can be extremely rewarding. It can also be very difficult and discouraging. Remember to always make sure you are okay physically and mentally – and if you are feeling overwhelmed tell me *I'm feeling overwhelmed*. Whether by e-mail, Discord, or any other means, this phrase will mean you are top priority and will yield a response as quickly as possible. Your physical and mental health always comes first. Always.
- Have hobbies and a life outside the lab! A productive lab member is one who is happy and healthy. Do not be afraid to relax and take time off.

- I hold regular meetings, and pop into the lab when I can, but I cannot know everything you are up to. Speak up about your own needs and goals so we can work together to achieve them.

Small Picture

As a group we often share equipment, lab space, and results. To make sure this runs smoothly:

- Do not come into the lab if you are sick. Stay home and get healthy, and do not risk getting others sick.
- Take care of your physical and mental health. Making your best effort to be healthy will make you a better scientist and coworker. Should you find yourself in need of physical or mental health services please visit the following for more information about what is available to you as a student or staff member:
  - https://www.uottawa.ca/campus-life/health-wellness
- **If you are in urgent need of help visit this website**: https://www.uottawa.ca/campus-life/health-wellness/immediate-support
- You are not expected to come into lab on weekends and holidays, and you are not expected to stay late at night. You *are* expected to be working and/or reachable by Discord during core hours (11 am – 3 pm) unless you are in class or TAing.
- The dress code is casual. Jeans are fine. Pajamas are not. For your own safety, and for maintaining the quality of our work and space, indoor closed-toe shoes must be worn in the lab, long hair should be tied up, appropriate PPE should be worn. All other necessary precautions should be observed in accordance with health and safety regulations, standard operating procedures and manufacturer and/or supplier guidelines.
- Make sure the door to the lab is locked if no one is inside. Turn off the lights if you're the last one leaving for the day.
- Keep your desk reasonably clean and the common areas tidy. There is to be no eating or drinking in the lab, but we have ample space designated for such activities
- Avoid wearing strong perfumes/colognes/etc. in the lab
- Be on time for your meetings: respect that others have packed days and everyone's time is valuable.

Principal Investigator

Maintain core values of the lab, plus you can expect me to:

- Have a vision of where the lab is going.
- Support you (scientifically, emotionally, financially)
- Give you feedback on a timely basis, including feedback on project ideas, conference posters, talks, manuscripts, figures, grants, etc.
- 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 my perspective on where the lab is going, where the field is going, and tips about surviving and thriving in academia.
- Support your career development by introducing you to other researchers in the field, promoting your work at talks, writing recommendation letters for you, and letting you attend conferences as often as finances permit.
- Help you prepare for the next step of your career, whether it's a post-doc, a faculty job, or a job outside of academia.
- Care about you as a person and not just a scientist. I am happy to discuss with you any concerns or life circumstances that may be influencing your work, but it is entirely up to you whether and what you want to share. I can also provide information about campus health services upon request with no questions asked.
- If you need extra support related to time management and productivity, I will brainstorm solutions with you and share what has worked for me and for others.

Post-Docs

Maintain core values of the lab, and you will also be expected to:

- Develop your own independent line of research.
- Help train and mentor students in the lab (both undergraduate and graduate).
- Present your work at departmental events, at other labs (if invited), and at conferences.
- Apply for grants (e.g. NSERC). Though I will only hire you if I can support you for at least one year, it is in your best interest to get experience writing grants – and if you get them, you will be freeing up lab funds that will benefit the entire lab!
- Apply for jobs (academic or otherwise) when you're ready, but no later than the beginning of your 4th year of post-doc.
- Challenge me when I'm wrong (it could happen!) or when your opinion is different – I will always carefully consider your thoughts and appreciate importance of having multiple points of view when tackling problems.
- Treat the rest of the lab to your unique expertise! You are highly trained, and I put a premium on transferring skills to broaden each other's skill sets.
- Develop the new technical skills required to perform experiments.
- Know the safety hazards of your work and how to safely complete your tasks. Check before every new experiment to make sure nothing has changed that will affect your safety or results.

Graduate Students

Maintain core values of the lab, and you will also be expected to:

- Develop your thesis based on experiments performed in the lab. For Master's students, you should have at least 1 substantial experiment that answers a big-picture question (that can lead to a publication), and for PhD students, it should be at least 3. Much of the work

is to be done independently, but remember that others in lab are there to help you when you need it.

- Apply for external funding (e.g. NSERC, OGS, etc.). If you obtain external funding, you may be relieved of TAing duties in order to focus more on your research.

- Help other students (undergraduate or graduate) when they need it or when I ask you to. Keep in mind that people with different lived experiences bring different ideas.

- Stay sane. If you feel overwhelmed, make sure to reach out. I do not know everything that is going on in your life, so I can not know how you are feeling. Be patient with each other. You do not know everything that is going on in each other's lives as well.
- Think about what you want for your career (academia – research or teaching, industry, science writing, something else), and talk to me about it to make sure you're getting the training you need for that career.
- Make sure you meet all departmental deadlines (e.g., for your exams and thesis) -- and make sure I am aware of them!
- Prioritize time for research. Coursework and TAing are important, but ultimately your research gets you your degree and prepares you for the next stage of your career.
- Know the safety hazards of your work and how to safely complete your tasks. Check before every new experiment to make sure nothing has changed that will affect your safety or results.

Lab Managers & Research Associates
Maintain core values of the lab, and you will also be expected to:

- Work on your own research project (developed with my help).
- Help new lab members adjust to the lab by helping them get set up (keys, logins, etc.), providing them guidance on norms of the lab, introducing them to other lab members, training them on general equipment, etc.
- Provide general assistance to me for administrative tasks such as grant writing, budgeting, etc.
- Assist with recruitment and selection of new lab members.
- Help maintain the lab website, update the lab manual, add lab events to the lab calendars.
- Assist lab members with data collection and analysis.
- Be in the lab on a regular basis – more than other lab members, your presence in lab when others are around is essential. This means you probably shouldn't work 7pm to 3am – try 9am to 5pm or 10am to 6pm, with flexibility depending on your out-of-work schedule (e.g., doctor appointments)
- Know the safety hazards of your work and how to safely complete your tasks. Check before every new experiment to make sure nothing has changed that will affect your safety or results.

Undergraduate Students

Maintain core values of the lab, and you will also be expected to:

- Assist other lab members with data collection or analysis (typically you will be assigned to particular projects).
- Work with the lab manager and/or your research mentor to determine your weekly schedule. If you are not able to come in during your normal scheduled time, you must let the lab manager know.
- Try to be in the lab during regular hours (9am to 5pm or 10am to 6pm), so that others are around to assist you in your work when needed. Contact me or the lab manager if you need to adapt your work schedule (see Hours in the General Policies section below).
- If you are in lab and do not have a task to do, you should ask the lab manager or any other full-time lab member whether there is anything you can help out with. When in doubt cleaning up is always appreciated!

- Know the safety hazards of your work and how to safely complete your tasks. Check before every new experiment to make sure nothing has changed that will affect your safety or results.

Code of Conduct

Essential Policies

My lab is an environment that must be free from any form harassment or discrimination. As such, all lab members are required to abide by the University of Ottawa policies on discrimination and harassment (Policy 67, Policy 67a, and Policy 67b).

Each member must be committed to ensuring everyone feels safe and welcome regardless of their gender identity and expression, age, sexual orientation, disability, socioeconomic status, physical appearance, body size, race, national origin, or religion (or lack thereof). We will not tolerate any harassment, aggression, or violence of any kind including physical or verbal acts, written language, or pictures.

If you feel like you are being harassed, or if you notice someone harassing someone else, contact me immediately. If you do not feel comfortable contacting me you may also contact a senior member of the lab, or another trusted faculty member within the department such as the ombudsperson (https://www.uottawa.ca/about-us/office-ombudsperson), or someone from the Human Rights Office (https://www.uottawa.ca/about-us/respect)

Beyond the Policies

The policies listed above provide an important framework to ensure that everyone is safe and inclusive and understands what is expected of them in terms of contributing to a safe working environment. However, I expect all lab members to go beyond this – you must recognize how your words and actions can impact others and strive for personal improvement. A good resource is ==this table describing microaggressions== and how to identify them in academia. We are all part of the same team and I expect everyone to treat each other with the highest level of respect and that includes being transparent when things go right AND wrong. If something breaks, is spilled, etc. it is not a big deal, just make sure you are open and honest about it.

Scientific Integrity

Scientific integrity is paramount and must not be compromised for any reason. You have a responsibility to me, the institutions that support our work, and the broader scientific community to uphold the highest standards of scientific accuracy and integrity.

There is always pressure to obtain high-quality data and publish in high-impact journals, however this not an excuse for fabricating, falsifying, or plagiarizing any data, images or content. If you feel overwhelmed please speak with me, but under no circumstances are you to make misleading claims. Furthermore, incorrect data, whether it be intentionally misleading or misleading due to errors, is damaging for your career, my lab, and field as a whole. Double check your work frequently and discuss your work with others and encourage them to speak critically.

Reproducible and Replicable Research

Research must be both *reproducible* and *replicable*. To be reproducible you should be able to give your raw data to someone else and they should be able to reproduce your results *perfectly*. To achieve this, you must document your parameters, as well as any pre-processing of the data – if you remove data points you need to have a good reason why! To be replicable your research needs to be able to be performed by someone else from start to finish, and they should be able to obtain results that would allow them to draw the same conclusions you do.

Between collecting data, analyzing it, writing up the draft of a paper, and finally receiving comments back from editors and reviewers can take a long time. *Make sure you know exactly how you arrived at all your datapoints*. The feeling of having to re-do your data because you didn't have complete notes is one of the worst. Also, be organized and know where all your data is! "I don't remember" is not a valid defense for referees.

Our goal is to produce research that is both reproducible and replicable.

Authorship

We will follow APA guidelines with respect to authorship:

"Authorship credit should reflect the individual's contribution to the study. An author is considered anyone involved with initial research design, data collection and analysis, manuscript drafting, and final approval. However, the following do not necessarily qualify for authorship: providing funding or resources, mentorship, or contributing research but not helping with the publication itself. The

primary author assumes responsibility for the publication, making sure that the data are accurate, that all deserving authors have been credited, that all authors have given their approval to the final draft; and handles responses to inquiries after the manuscript is published."

The student or post-doc taking on the lead role on a project can expect to be first author on publications that result directly from that project. However, changes to authorship may occur if the project is assigned to someone else prior to publication, or if someone is not fulfilling the role as well as anticipated. Authorship is a topic that is to be discussed openly and often so as to manage everyone's expectations. If you have any issues or thoughts regarding candidacy or ordering of authors, reach out to me to discuss. You can rest assured that I will keep sensitive matters confidential.

I will typically be the final author on all papers generated within my lab. This does not mean that you should add me on to papers as a courtesy; it means that I expect you to include me in the process of discussion and writing in a way that merits authorship.

Patents

Our lab has previously been quite successful in the application and filing of patents. The situation and criteria for inclusion in each patent may be different than article authorship but in general we follow the guidelines described here:
https://www.uottawa.ca/research-innovation/innovation-support-services/intellectual-property.
This is further discussed below in the IP and Confidential information section. You can expect us to consider one of these two options regarding inventorship.

- Even split between all inventors. This would apply for IP that is a natural consequence of collaborative work for which a clear idea originator is hard to pin down.
- Original idea: 50%. Everyone else who worked on it split the remaining 50% evenly. This second option would apply in cases where someone advances the patentable idea at the start and then collaborates to make it happen.

Keep in mind, that the value of a patent may take years to become apparent (even if a patent is granted, its value can be challenged in court many years later), and that in many cases it would only represents a small part of a larger body of IP portfolio that enables an actual commercial product. In the end the patent may have more value for your CV to show your innovation prowess, over any hypothetical financial benefit.

Lab Resources

Discord

Discord is used as the primary means of lab communication. There is one main server for the lab (TCossaLab) and several other servers used for various projects. Within each group/subgroup there are typically a number of different threads(channels) that discus various topics – for instance

TCossaLab>Health-and-Safety is for just that. Please keep your messages relevant to the thread you are in. Full-time lab members should install Discord on their computers and/or phones. Part-time lab members should also check Discord regularly.

If your comment is directed at one person in particular make sure to notify them specifically (e.g., "*@Vincent.T-C I am requesting health and safety do a waste pickup today*")

Dropbox

The lab has a shared Dropbox account so you upload presentations, documents, precious data files, etc. and access them from any other computer. This is a shared space and as such everyone else in the lab will have access to anything you put up so make sure there is nothing private!

Box (Cloud Storage)

Through the University of Ottawa, the lab pays for cloud storage on BOX. This is the place to back up your data and archive it, but also possibly to transfer files between computers. Please report to me, or the lab manager, any issue uploading or downloading data. It is meant to be able to handle our large data volumes and large number of files, but I need to make sure it works for our purpose so that we do not pay for something we do not use (does it stall? take too long?). If you are using it for archival a good practice would be to combine your data files into a folder, Zip the folder, and then upload it as one.

Hard Drives & Backups

It is your responsibility to ensure all of your data is backed up properly. This means having 3 copies of all data, with one being physically remote from the other two. One copy should be on your computer, another should be on the BOX Drive, and the third can be on an external hard drive. Make sure you label the hard drives clearly. We have had multiple instances of this failing to happen and a multi-day long hunt for hard drives.

General Policies

Hours

One of the benefits of a career in academia is that the works hours are often more flexible than other kinds of jobs. Note that, however, it is still your job. If you are employed for 40 hours a week, you should be working 40 hours a week. This applies to lab staff members (the lab manager and other research associates) and postdocs. You are not required to work over-time. For graduate students, I recognize that you have other demands on your time like classes and TAing but I still expect that you will be regularly engaged in your research.

Lab staff members are expected to keep regular hours (e.g., somewhere in the ballpark of 9-5). Graduate students and postdocs have more flexibility. However, being in the lab is a great way to both help and be helped by others, and builds camaraderie. As such, I expect that all lab members

will be in the lab (or available on Discord, when working remotely), at minimum, most weekdays between 11am and 3pm.

Note that I sometimes work nights and weekends, and may send you Discord messages outside of normal working hours. If you respond during those times great, however I do not expect it.

Although I sometimes work weekends, I try to only do that when absolutely necessarily. Please respect that by making sure to give me enough heads-up about impending deadlines so that I can get things done for you (e.g., write letters of recommendation, give feedback on manuscripts, etc) while maintaining my work/life balance. For more details, see Deadlines.

PI Office Hours

In addition to weekly meetings (see below), and occasionally dropping by the lab, you can virtually always contact me via Discord. If I am able to respond I will but understand that I am often busy or in a meeting and might not have time even if I appears to be online. If it is urgent ping me twice telling me so, otherwise please be patient!

Meetings

Weekly Lab Meetings

Lab meetings will be held weekly and are to be no more than 2 hours in length. These meetings are a platform for all lab members to present their research, ask for feedback, or present a publication they find interesting. This is a time when you can have the floor in front of some very bright individuals, so if you are struggling to obtain results it might seem counterintuitive, but this is the exact time you should be presenting! Make sure to use best practices to ensure the lab meetings are efficient (i.e. if you're comparing two graphs, make sure the axes range is the same magnitude, make sure each slide has all the information necessary to understand it, etc.)

We do not schedule people in for pre-defined meeting times, so I expect that all lab members will volunteer on a regular basis. Lab members are also expected to attend every meeting (obviously, illnesses, doctor appointments, family issues, etc are a valid reason for missing a meeting). Undergraduate students are encouraged to attend as often as possible (assuming it fits in their course schedule).

Stand ups

Each week, we will have standup meetings where each lab member is expected to describe what they will achieve that week and reflect on was accomplished the week before. Note that this is not a list tasks you plan on doing at some point in the future – this is what you will be doing that week, so make sure it is reasonable. The purpose of this meeting it to help me keep up with what

everyone is working on and also to help you in setting and achieving reasonable short-term goals. Saying that you did not accomplish your goals for the week for various reasons is totally acceptable. This is an honest dialogue. I will not use this to judge your productivity (which is measured on a longer time frame).

Deadlines

If you need something from me by a particular deadline, please inform me as soon as you are aware of the deadline so that I can allocate my time as efficiently as possible. I will expect at least one week's notice, but I greatly prefer two weeks' notice. If you do not adhere to these guidelines, I may not be able to meet your deadline. Please note that this applies to reading/ commenting on abstracts, papers, and manuscripts, theses, in addition to filling out paperwork, etc. Reminder messages are appreciated.

Presentations

Learning to present clearly and effectively is a skill that will help you throughout your career, wherever it may take you. Very few business or academic leaders are poor presenters, and therefore I highly recommend that you take every opportunity to practice. It is important to note that every time you present your work you are representing not just yourself but also the lab (or the company) you work for. As a result, if you are going to give a presentation (a poster or a talk), be prepared to give a practice presentation to the lab at least one week ahead of time (two weeks or more are advisable for conference presentations, and *many* weeks ahead of time are advisable for job talks, which require much refining). Practice talks will help you feel comfortable with your presentation and will also allow you to get feedback from the lab and implement those changes well in advance of your real presentation.

Regarding poster presentations, please use the templates provided as it helps for a nice uniform team feel both at the conference, as well as when we hang them up for the rest of the Department to see. Some general rules for posters should be followed: minimize text as much as possible, make figures and text large (if this is your first time making a poster, make the figures and text much larger than you think) and easy to see at a distance, label your axes, and make sure different colors are easily discriminable (many people are colourblind!). Make sure to follow the guidelines for the posters of whichever conference you are presenting at (they typically have size suggestions or at least aspect ratios) and set your PowerPoint slide to be that large (if it isn't possible, at least get the aspect ratio correct). Also, set the DPI (dots per inch) for PowerPoint to 300. Google "dpi PowerPoint 300" for details. It involves going into the registry so if you do not feel comfortable with this contact one of the senior lab members (preferably not me).

I am also happy to share slides from some of my talks if you would like to use a similar style. You'll get a lot of feedback on your talks in any case, but other people's slides might be helpful to you as you are setting up your talk. Feel free to go with your own style as long as it is polished and clear. Copies of lab posters and presentations (including mine) can be found in the appropriate folder of the shared Dropbox folder.

Recommendation Letters

Letters of recommendation are extremely important for getting new positions and grants. You can count on me to write you a letter if you have been in the lab at least one year (it is difficult to really know someone if they have only been around for a few months). If you need a letter, notify me as soon as possible with the deadline (see Deadlines for guidance), your CV, the job for which you are applying, and any relevant instructions for the content of the letter. If the letter is for a grant, also include your specific aims. If the letter is for a faculty position, also include your research and teaching statements. In some cases (especially if short notice is given), you may also be asked to submit a draft of a letter, which will be modified based on my experience with you, made more glamorous (people are much too humble about themselves!), and edited to add anything you left out that I think is important. This will ensure that the letter contains all the information you need, and that it is submitted on time.

Data Management

Storing Active Datasets

Lab data can be stored in one of three places:

1. Internal Hard Drives – best for data that is being accessed regularly. For example, data being analyzed for an upcoming publication.
2. External Hard Drives – best used for backup of data that has already been analyzed or for transporting between computers. These should be *clearly* labelled and stored in a safe place.
3. Lab Dropbox – best used for smaller documents like PDFs, PPTXs, etc. It is a shared space so please make an effort to keep it organized and note that anything put on this Dropbox will be accessible to everyone in the lab.
4. uOttawa BOX Drive – best used for backup of data that has already been analyzed or for transporting between computers.

Remember – you should have three copies of all data that you feel is important. Two can be on local but physically distinct devices (e.g. internal drive and external drive) and one should be remote (e.g. Lab BOX Drive). This way even if there is a fire at BOX and your computer breaks down, you still have access to your external drive.

Intellectual Property & Confidential Information

We often collaborate with other groups and work with industry partners to both fund our research and to commercialize our discoveries and translate our proof-of-concept work into real-world applications. The lab has historically been successful in that area, and at the core of this success is Intellectual Property (IP) and careful handling of confidential information.

When you join the lab, you will be asked to sign a Non-Disclosure Agreement (NDA) since you will probably be exposed to confidential information in the course of collaborative research or industry-funded projects. The purpose of this document is to make you aware of your rights and responsibilities in relation to confidential information. Essentially, you are required to keep the results of your research private until given permission to disclose it publicly by any means, a responsibility that will persist for one year after your time in the lab ends. The intention is mainly to ensure that intellectual property can be managed carefully. Rest assured that while this confidentiality requirement may in some cases delay publications, it will never be used to prevent publication entirely, and under no circumstances will it slow down your graduation or prevent you from receiving appropriate recognition for your work. I realize that legal documents can be complex and intimidating. Feel free to come to me to discuss some clauses if you do not understand them or if you are ever unsure of your confidentiality responsibilities in a particular situation.

Intellectual Property developed by students, faculty, and researchers at uOttawa is governed by Policy 29, which you can find online here. uOttawa takes a university-owned approach to IP, which in a nutshell means that any intellectual property, including patents, data, and software developed in the course of your research belongs to uOttawa.

What you need to be aware of is that the lab will try to protect inventions and discoveries as much as possible, usually through patenting, and for that to occur, the key ideas cannot be in the public domain, meaning you cannot present them at a conference, disclose them in an abstract, or publish them in a peer-reviewed journal before the University and/or our industry partners have had a chance to decide whether or not intellectual property protection is needed and to submit a provisional application for patent in cases where it is deemed necessary.

In general, plan for up to 60 days of review time in order for everyone involved to do their job (uOttawa technology transfer agent, industry partner, patent attorney, co-inventors, etc.). You need to account for this when submitting abstract for conference, manuscripts for journal submission, and thesis for graduation. Of course, you will not be prevented from presenting and publishing, but you may have to accept some delays. In order to ensure timely review, be proactive about preparing conference abstracts, posters, and publications, and ensure that enough review time is available.

In cases where you think an idea may be patentable, the first step is to discuss this with me. We will prepare an invention disclosure to Innovation Support Services, who will ultimately make the decision on whether or not to patent an idea, possibly in consultation with the industry partner funding the research. If a patent is filed that ends up generating income, the uOttawa revenue sharing agreement is laid out in Policy 29. Not all patents generate income, but in each case, we negotiate a revenue sharing agreement between inventors to avoid conflict down the road. In my lab, everyone who contributes to development of the patented technology are included as named inventors on the patent, and revenue sharing is negotiated case by case.

Entrepreneurship

We are an entrepreneurial lab with a history of turning our research and inventions into startup companies and a network of people who can support you in that endeavor. If this path is of interest

to you, discuss it with me early so that we can tailor your projects and my mentorship toward making it possible.

Open Science

We're all for open science, so lab members are encouraged (well, required) to share their code and data with others, whether they are in the lab or outside of it. Within lab, you can share your code and data whenever you like. But do not share your code or data with the outside world until you think (and I agree) that the lab has finished working with it and we have ensured that any intellectual property and confidentiality considerations have been addressed. This gives us an opportunity to work with the data to meet our needs (including publishing, grant writing, and IP protection) before releasing it for other people to use.

Funding

Funding for the lab currently comes from a variety of streams including both governmental (e.g. NSERC Alliance, NSERC DG, NIH etc.) and industry grants. If you need to buy something, please use WorkDay within uOttawa portal and charge the appropriate grant. If you are unsure which grant to use, ask either the lab manager or me.

At some point, you will likely be asked to provide a figure or two for a grant I am writing, as well as contribute some text. These documents are important to the continued success of the lab, so please make them a priority.

Other resources available to you at the University of Ottawa:

Health & Wellness:
https://www.uottawa.ca/campus-life/health-wellness

Counseling:
https://www.uottawa.ca/campus-life/health-wellness/counselling-therapy

Ombudsperson:
https://www.uottawa.ca/about-us/office-ombudsperson

Harassment:
https://www.uottawa.ca/about-us/respect/harassment

Discrimination:
https://www.uottawa.ca/about-us/respect/discrimination

Human Rights Office:
https://www.uottawa.ca/about-us/respect

University of Ottawa Policies:

https://www.uottawa.ca/about-us/policies-regulations

https://www.uottawa.ca/about-us/policies-regulations