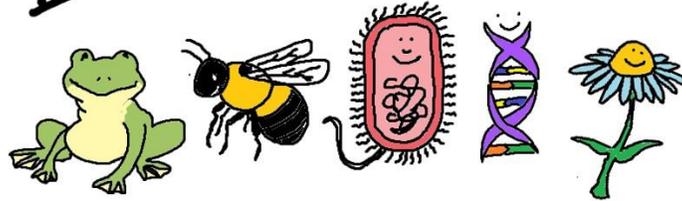


uOttawa Department of Biology: Graduate School Applications

DeMYSTiFieD



Hi there!

Are you interested in graduate studies in the Department of Biology at uOttawa? Graduate school can be an extremely rewarding and intellectually stimulating experience. There are opportunities to work in exciting environments and share experiences with like-minded colleagues. That said, the application process can feel overwhelming, with transcripts, resumes, reference letters, statements of intent, and research proposals to submit. This document was created by the Biology Department's Equity Committee to help you through the application process. Even if you are still early in your undergraduate career and you haven't totally made up your mind about graduate studies yet, it's still a good idea to know what is involved in the application process sooner rather than later! Keep in mind that your undergraduate academic performance and involvement in academia (i.e. work-studies, co-ops, honour's thesis etc.) will all be reflected in your grad school application so it's not a bad idea to be aware of what makes a strong application early on. It's also important to note that the process of putting an application together can start more than a year before you actually intend to start the program. This means that if you are planning to start grad school right after undergrad, you'll want to start working on applications at the beginning of fourth year or even earlier if possible.

This document includes information and advice relevant at each step of the application process from contacting a potential supervisor all the way to hitting "submit" in the application process. We cover tips on how to send emails to potential supervisors, asking for reference letters, preparing your CV (resume), applying for scholarships and awards, and writing letters of intent. There are also sample versions of application components in the Appendix of this guide. We hope this resource is helpful to you and eases some of the stress you might be feeling over applications. At any step along the way, make sure to contact the Science Graduate Office with questions about your application at gradsci@uottawa.ca. Also, if you have comments or feedback concerning the information in this document (e.g. errors or improvements to be made), contact the Biology Graduate Student's Association bgsa@uottawa.ca.

Good luck!

A brief note & disclaimer

This document is accurate at the time of writing (July 2020). Note that policies and requirements change over time so if you are ever in doubt about application requirements or scholarship information, make sure to reach out and ask! For the most up-to-date information on admission and program requirements go to: <https://catalogue.uottawa.ca/en/graduate/master-science-biology/#text> if you are interested in a Master's degree, and <https://catalogue.uottawa.ca/en/graduate/doctorate-philosophy-biology/#text> if you are interested in a Doctorate degree. Visit <https://www.uottawa.ca/graduate-studies/programs-admission/apply> for general application procedures. You can also contact the Science Graduate Studies Office at gradsci@uottawa.ca with questions.

As graduate student members of the uOttawa Department of Biology Equity Committee, we (the writers of this guide) are not administrative staff nor are we application review committee members. In other words, we have all gone through the experience of putting a grad school application together, BUT we are not necessarily experts about all the administrative details of the process. We hope the advice and suggestions in this document will help you navigate through the application process, but it is still **your responsibility to make sure you meet eligibility requirements, have all the required application documents, and submit your application by the appropriate deadlines. Always cross-reference the information you find here with the information from uOttawa's official webpages as deadlines and requirements can change.** URLs to official webpages will be provided in this document throughout the text and will also be listed again all together in section 9 (Useful links & resources).

All that aside, let's get to work!

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1 Types of programs offered

The Master’s (MSc) and Doctorate (PhD) programs offered by the biology department at the University of Ottawa are **research intensive**. This means that most of your time will be spent working on a research project that you design and carry out independently (with the help of your supervisor and other collaborators of course!). PhD students typically work on *several* projects over the course of their degree. Think about it as a huge blown-up version of an undergraduate Honour’s Thesis project that takes approximately two (for a Master’s) to four years (for PhD). You will need to take a few courses along the way but most of your time and effort will be focused on your independent research.

Two things to note:

- (1) **Degree specializations:** In addition to the standard graduate program in biology, the Department of Biology at uOttawa also offers four specialized programs for Master's students (one for PhD students). These include MSc degrees with specializations in Bioinformatics, Environmental Sustainability and Society & Policy. MSc and PhD degrees with specializations in Chemical and Environmental Toxicology are also offered. It is also possible to initially apply to the general biology graduate program and subsequently select a specialization after you begin the program (provided you do so relatively early on). You can peruse the various programs offered by the Dept. of Biology (along with those of other departments here): <https://catalogue.uottawa.ca/en/programs/>
- (2) **Course-based graduate programs:** While the Biology graduate program is research intensive, course-based graduate programs are available at the university (just not for Biology). Explore these options at: <https://catalogue.uottawa.ca/en/programs/>.

This document is meant to help you with your **application** to grad school so we won't dwell on all the details concerning what exactly you will be doing over the course of your degree. If you want more information on the specifics of what graduate studies are like in our department, check out the Graduate Studies Guidebook which was put together by the Biology Graduate Student's Association (available in French and English at: <https://www.uottawabgsa.ca/docs--files.html>). Also, we highly encourage you to reach out to your TAs about their experiences in research. Almost all TAs are graduate students in the department and will be happy to answer any questions you might have about graduate school (e.g. what do graduate students do all day, why they decided to pursue graduate studies, what are the challenges and highlights of graduate school etc. Also check out the [FAQs](#) section in this guide).

2 Admission Requirements

There are several requirements you will need to meet before being eligible for consideration for graduate school in the department of Biology. Make sure you take a good look at these before beginning your application.

2.1 MSc Admission Requirements

For the most updated info, go to: <https://catalogue.uottawa.ca/en/graduate/master-science-biology/#Admissiontext>.

To be eligible for the Master's in biology Program at uOttawa, you must:

- ✓ **Degree:** Have a bachelor's degree with a specialization/major in Biology (or equivalent)
- ✓ **Grades:** Have a minimum average of 70% (B) in your undergraduate degree
- ✓ **Academic excellence:** Demonstrate excellent academic performance in your previous studies; this can be reflected in the grades found in your transcript, as well as any relevant research, work, or volunteer experience that you can include in your CV (see section 3.5 on creating CVs)
- ✓ **Funding:** Meet the funding requirements (see our section on Scholarships 4)
- ✓ **Supervisor:** Identify at least one professor who is willing to supervise your research and thesis
- ✓ This is one of the **first steps** in starting an application! (See the application timeline 3.1 & Finding a Supervisor 3.2). It means that **before** you begin your application, you must already have spoken to a faculty member in the department and they must have agreed to take you on as a graduate student

Note that if you wish to begin graduate studies immediately after undergrad, you will not have completed your Bachelor's degree and you may not have the final marks for all your courses at the time of application. That is not a problem! Upon acceptance, you will just be required to submit your final transcript and proof of diploma by the end of the year once you receive these documents.

2.2 PhD Admission Requirements

This document will focus on the process of going from undergraduate studies to graduate studies so we will not cover the details of applying for PhD programs. If you are interested either in a direct-entry PhD program, or you are considering an accelerated PhD program (e.g. starting out with a Master's, and subsequently fast-tracking to a PhD without having finished your Master's), go to:

<https://catalogue.uottawa.ca/en/graduate/doctorate-philosophy-biology/#Admissiontext>. You can also consult the Graduate Studies Guidebook at <https://www.uottawabgsa.ca/docs--files.html>) for more information. Check out the [FAQs](#) for further details on this.

3 Application process

Check out uOttawa's website on the process at <https://www.uottawa.ca/graduate-studies/programs-admission/apply> and application deadlines at <https://www.uottawa.ca/graduate-studies/programs-admission/apply/specific-requirements>

Okay, so now you know a little about what graduate programs are offered and what you'll need to have in order to be an eligible candidate. Let's get into the details on how to build your application. Figure 1 shows a rough timeline illustrating the steps of the application process. You can find detailed descriptions of each step in this document.

3.1 Master's Students: application timeline

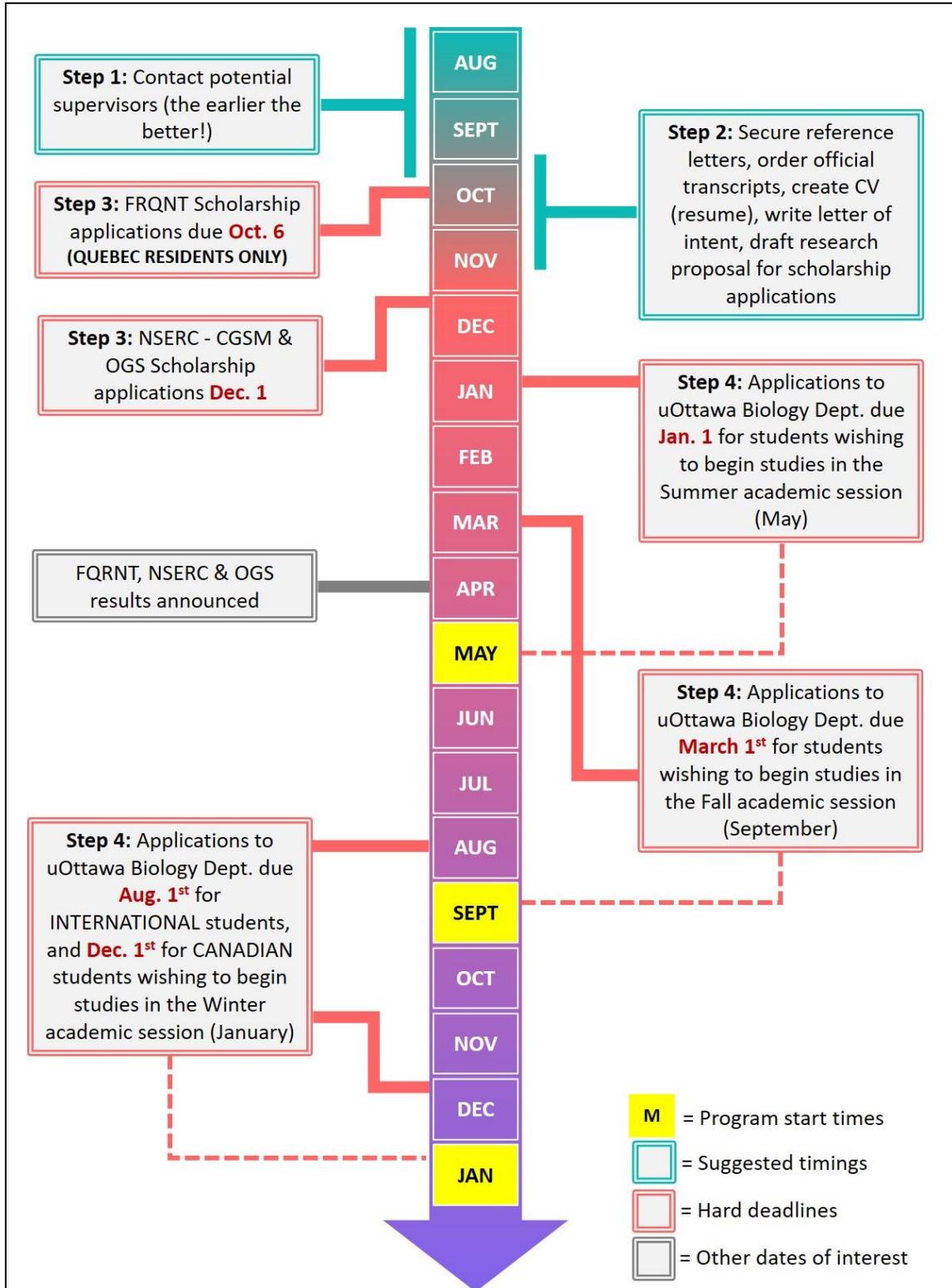


Figure 1. Typical timeline of the steps involved in applying for a Master's degree in the department of Biology at uOttawa. See main text for detailed descriptions of each step. **NOTE:** These dates are accurate as of JULY 2020 and may change from year to year.

Biology, Master's			
Degree Offered: MSc			
Application Deadline	Fall	Winter	Summer
Canadian Students:	1 March	1 December	1 January
International Students:	1 March	1 August	1 January

Apply now. Our departments often start examining applications when they receive them. In most cases, letters of offer to eligible candidates are sent within a few weeks of having received complete application packages.

The deadline for international students that would like to apply for the scholarship is December 1st, of every year. Decisions are taken in February of each year.

Figure 2. Screenshot of the webpage <https://www.uottawa.ca/graduate-studies/programs-admission/apply/specific-requirements> showing the application deadlines for Canadian and International Students applying to uOttawa's department of Biology. "Fall", "Winter", and "Summer" indicate the academic sessions you wish to begin your studies in.

3.2 Finding a supervisor

Check out uOttawa's website about finding supervisors: <https://www.uottawa.ca/graduate-studies/students/theses/supervision>

Graduate students work closely with 1 (sometimes 2) faculty members in the department who supervise their research. Supervisors can help students with designing projects, collecting data, providing feedback on writing etc. Your relationship with your supervisor will likely be **the most important factor contributing to your success and overall experience as a grad student and should be one of the very first steps in your application.** Make sure you take the time to find a potential supervisor whose interests match yours and whose supervisory style fits in with your learning style.

3.2.1 Identifying possibilities

If you don't already have a potential supervisor in mind, but you know you are interested in grad school in biology at uOttawa, start by reviewing faculty profiles from the department's website: <https://science.uottawa.ca/biology/professors>. The biology department has faculty working on various wide-ranging topics so you can narrow things down to your area of interest by searching for faculty represented by particular "Research Themes". Find out what you can about their research by exploring their personal websites (if they have one) and take a look at what current grad students in the lab are studying if that information is available. Peruse their most recent publications to see if their research interests match your own. It's perfectly normal to not completely understand a professor's research papers –they've been immersed in their research for a long time and have a lot of experience! Feel free to speak with professors whose research interests you (over email, after lectures etc.) if you have questions about their research or would like to know more. You can even contact current and past graduate students in labs you are interested in (their emails are often available on the websites of professors). Graduate students (your TAs) are equally happy to talk about their research and can provide you with some helpful insight from their experiences working with the professor you are interested in. Talk to them after lab sessions or send them an email! They will be more than happy to give you advice.

3.2.2 Contacting potential supervisors

How do I contact a potential supervisor?

Once you've narrowed down the possibilities to a shortlist of potential supervisors, contact them via email.

- **Be concise and professional:** Start your message with Dear Professor/Dr. (last name)
- **Be specific:** Tailor your email to the specific professor you are contacting (i.e. don't just send them a generic email that says "I would like to study biology in graduate school"). Explain that you are interested in pursuing graduate studies and why you are interested in the research conducted in their *specific* lab. Did you take a course that made you interested in their research area? Do you have experiences from volunteering, co-ops, work-studies or an honour's project? You can even mention a specific recent paper of theirs that you found particularly interesting to demonstrate that you have read their work. Supervisors want to know what made you choose their lab and why you are interested in their research, so make sure to let them know, and be enthusiastic!
- **Are they accepting new students?** Ask if they are accepting graduate students (if this is not indicated on their website) as professors on leave/retiring or who have very full labs are likely not accepting new students. You can get a sense of how active a professor is in research by seeing if they have published articles in recent years (but note that not all professors update their websites frequently so out-dated publications does not necessarily mean they are no longer active –try reaching out anyways!).
- **Give them your specific timelines:** Indicate when you are hoping to begin graduate studies and when you expect to finish your current degree.
- **Indicate that you wish to talk more:** Let them know that you are happy to discuss the possibility of joining their lab more via phone, skype, zoom, in-person etc.
- **Attach your documents:** Attach your (unofficial) transcript and CV along with your email and let them know you have done this
- **Follow up:** If you don't hear back from someone you emailed for more than 2 weeks, try emailing them again. Professors are busy people and emails can get lost in inboxes.
- **Check out template emails** to prospective supervisors and a document on how to write emails of interest (Appendix sections 10.1 and 10.2)

3.2.3 Replies from potential supervisors

The professors you contact may reply in various ways:

- **No response even after two emails...** You can try contacting a third time, but in this case, maybe it tells you that you may not want to work with a supervisor who does not check their email frequently...
- **"I am not currently accepting students"**. This may be for various reasons as listed above which probably has absolutely nothing to do with you
- **"Maybe you should check out Dr. XYZ's lab"**. Upon hearing your research interests and experiences, they may know of another supervisor in the department who may be a better fit for you
- **"Let's talk!"** See the below section on interviews.

3.2.4 Interviews with potential supervisors

If a professor is interested in taking you on in their lab, they may respond to your email by inviting you to an interview. Here are few ways to prepare yourself:

- **Familiarize yourself with their research:** Get a broad idea of the various research projects the professor is involved in. Skim through their most recently published papers and find out what projects current or past

grad students in the lab have done. Supervisors don't usually expect incoming students (especially if you only just finished undergrad) to know exactly what project they want to pursue, but you should definitely have a broad idea of what particular subject area in their lab you are interested in

- **Plan to ask questions:** During the interview, ask questions about their research if you have any. Having questions shows a professor that you're interested enough in their work to be curious about it!
- **"Interview" the professor too:** Note that while you may think that the main point of the meeting is for the professor to assess you, you should also be getting to know more about your potential supervisor and evaluating them to see if they will be a good match for you. Feel free to ask the professor about their supervising style. How often do they meet with their students one-on-one? Do they have periodic lab meetings? (i.e. periodic meetings where all the students in the lab meet together to discuss journal articles or their own research projects). What have their past graduate students in their lab gone on to do after graduation? Do they send students to conferences? What are their perspectives on equity and diversity?

IN BRIEF:

Steps to finding a supervisor:

- A. Identify possibilities
- B. Do your research! (read papers, contact past/current grad students etc.)
- C. Send an email
- D. Interview

3.2.5 Know what you need from a supervisor

Reflect on what you need in a supervisor: Are you an independent worker who prefers going to a supervisor only when you need their help? Would you prefer a more "hands-on" supervisor (or even having a senior graduate student/post-doc in the lab) who will work closely with you? This is by no means a universal rule, but very often, more 'junior' professors can have more "hands-on" supervision styles compared to their more senior counterparts. That said, once you have a good idea about what you need personally, a good first step is to reach out to the current and past students of the professor of interest. Ask them what they like most about being in Professor X's lab, whether there's anything they don't like about the lab etc.

3.3 Securing reference letters

Reference letters (a.k.a. letters of recommendation, letters of support etc.) mean a lot in your application both to the department and in scholarship applications (see Scholarships section 4). They are especially important in MSc-level applications as you are likely still quite new to research and will need someone who can comment meaningfully on your potential to succeed.

3.3.1 Who should reference letters come from?

You will generally need at least 2 'referees' to write reference letters. Referees should be people who know you well, and who have recognized credentials. Ideally, these should be **research professors** (e.g. your Honour's thesis supervisor) as they are likely the best suited to comment on your research abilities. If a past research supervisor is *not* a referee for you, this can actually raise some questions for reviewers. If you are for some reason unable to get a reference letter from a past research supervisor (e.g. maybe they're ill, unreachable by email etc.) make sure that you indicate somewhere in your application why this may be (indicate this information in your letter of intent or ask your other referee to comment on this). Note that application reviewers for both your application to uOttawa, and for scholarships are most often research professors themselves. Having a research professor write you a reference is ideal because they are most likely to be familiar with what the reviewers are looking for. That said, if you do not have a research professor who can be your reference, teaching-stream professors, post-docs, senior graduate students or employers who are prepared to advocate for you concerning your academic ability, potential, accomplishments, interests, work

habits and qualifications are also acceptable. If you do go the route of a non-research professor reference, make sure to use the other parts of your application (e.g. CV, personal statement etc.) to highlight and expand on your academic or research achievements and skills (e.g. writing, oral presentations, writing reports, being detail-oriented etc.)

3.3.2 How do I contact referees?

Reference letters take time to write so give your referees at least 4 weeks before application deadlines (the more time the better). Send your referees an email to let them know that you are applying for graduate school (or a scholarship) and ask them whether they would be willing to write you a reference letter.

How to contact a referee:

Here are a couple of elements to include in your email (see the sample email to a professor requesting a reference letter in the Appendix 10.3):

- Ask them if they are willing to be your reference
- Inform them of the application deadline
- Let them know that you enjoyed working with them (in whatever capacity that you did)
- Let them know that if they are willing to write you a letter, you will be happy to share your transcript, CV, and any other application information they need to use as a basis for their letter

Once your referee agrees to write you a reference, you should also feel free to let them know if there is anything specific you want them to comment on. For example, you may have wanted to write about something in your Letter of Intent but didn't have enough space (see section 3.6). You can ask your referee to comment on this in their letter. The content of a reference letter can be especially important if your grades aren't super high perhaps due to extenuating circumstances. Your referee can vouch for you, explain why your transcript is what it is, and highlight the work skills you have.

In terms of the actual application, in general, all you will need to do is enter your referee's email into the application portal. The portal will then provide your referee with the exact instructions as to what to write. Note that once your referee agrees to be your reference, you may need to remind them about application deadlines. If you do not hear from them a week before the application deadline (or you see in your application portal that the reference has not yet been completed), contact them again and give them a gentle reminder. You should be able to see in your application portal whether your referee has submitted their reference. Remind them again 3 days, and a day before the application deadline if they still have not sent in your reference.

3.4 Transcripts

You will need to submit **official and complete** transcripts from each university-level institution you have attended. These will be required for both the Department of Biology and to scholarship committees. If you did your undergrad at the University of Ottawa, you do not need to submit your transcript as it will automatically be sent to the grad office. If you did your undergrad (or any other degree) at a different institution, you will need make a request for your official transcript to be sent to the University of Ottawa. For major scholarships

such as NSERC CGS-M and OGS (discussed in section 4), you will need to obtain official copies of transcripts, scan and upload them to an online portal. There are specific instructions for how to do this which can be found in the scholarship websites. Make sure to read through these instructions carefully!

3.5 Preparing a curriculum vitae (CV)

You will need to submit a resume or curriculum vitae (CV) as part of your application to the Biology department. Note that this resume is **not the same as the Canadian Common CV** (see section 4.1.4.2) that you may also need to complete if you are applying for an NSERC scholarship. There is no set format for this resume (i.e. no template, set length, required components) but make sure your document is concise and clearly relays information. Most committees recognize that peer-reviewed journal publications from undergrads are rare, but you can also include major reports you completed for coursework or for your Honours thesis. (You can even specify that reports like this are unpublished by listing them under the sub-heading “Non-peer-reviewed reports”). Include any presentations you gave (e.g. Honours poster fair) and awards or recognitions you received (e.g. Honour Roll, entrance scholarships etc.). Most importantly, describe any research experience you have acquired (through volunteering in a lab, work-studies, co-ops etc.). Provide a brief description of your responsibilities in these experiences and highlight any skills you may have acquired along the way (e.g. ability to work outside, statistical analysis, writing, oral presentation skills etc.). It’s also a good idea to include non-school-related work experience, volunteer positions, other community involvement and your technical skills (i.e. excel, R, python, GIS etc.). Check out the sample CV in the Appendix of this guide (section 10.4). Also note that some of the information in the NSERC CCV section of this document (section 4.1.4.2) can be applied here too.

3.6 Writing a letter of intent

You will need to write a statement of intent as part of your application to the Biology department. In your letter, you discuss your research/professional interests, your future goals and career paths (at least some vague idea of them), why and how graduate school fits your goals, your knowledge, experience and accomplishments in the field you are applying to, and what you can potentially contribute to the program. Explain why you chose to study biology, how you have pursued opportunities to further your interest in the field (both through school and beyond) and what you have gained from those opportunities. Also use the letter of intent as an opportunity to discuss any extenuating circumstances you may have experienced during your degree. For example, if you didn’t have the highest grades during undergrad for a particular reason (e.g. health issues, taking care of family, extremely high course load, grievance etc.) you can highlight that here. There are many resources out there that can be helpful for writing your letter. It’s a good idea to start writing this early, and have friends, parents, classmates, TAs read over your writing. Check out the sample Letter of Intent in the Appendix (section 10.5) of this guide.

3.7 Submitting your online application

3.7.1 Filling out the OUAC part

Applications to the uOttawa graduate studies can be completed online through the Ontario Universities’ Application Centre (OUAC). You will need to create an OUAC account through: https://www.ouac.on.ca/apply/ottawagrad/en_CA/user/login. You will then need to fill out a number of details (e.g. program of interest, when you want to start your degree, personal & contact information, academic & professional background etc.). Make sure you fill out all the information carefully and completely! Double and

triple-check what you fill-out. Once you're happy with what you have filled out, you can click 'Review and Submit'. This will bring you to a page where you will be alerted if there are errors in your application (i.e. missing fields). If you're satisfied with what you have and you have no error messages, you can then click "I Verify and Agree". You will then be able to see every page of the application and will be directed to pay the \$110.00 application fee which will complete **the first part** of your submission process.

3.7.2 Submit your documents through uoZone

A few days after completing your admission application on OUAC and having paid the application fee, you should receive an email from the University of Ottawa which will contain your student number, and the login information for access to "uoZone" (uOttawa's student portal: <https://uozone2.uottawa.ca/>). Once you're logged into uoZone, find the "Applications" tab at the top of the page and you'll be able to access your current application by clicking on "Admission File". You will then need to go to "uoDoc: Upload Admissions Documents" (found in the "Applications" page) to upload your CV, letter of Intent, transcripts if you did not do your undergrad at uOttawa and results of language tests –e.g. TOEFL (see notes for International Students in section 5). You will also be able to enter the information for your referees (reference letter writers) through uoZone.

4 Scholarship applications

Because graduate students work full-time on their thesis research, every student is guaranteed an annual stipend for the expected duration of their degree (2 and 4 years for Master's and PhD students respectively). This stipend can come from your supervisor's research grant, your pay for work as a teaching assistant (TA), and hopefully(!) from external scholarships which will be discussed in this section. If you meet eligibility requirements (see below), most supervisors will *expect* you to apply for either or both of two main scholarships –the Ontario Graduate Scholarship (OGS) and NSERC Canada Graduate Scholarships. (Note that if you are an official resident of Quebec, i.e. you have a Quebec Health Insurance Card, you are also eligible for a Fonds de recherche du Quebec; FRQNT). Having a scholarship can be really advantageous as some professors may not be able to support you on their own research grants (they will let you know if that's the case). That said, definitely reach out to any/all the professors whose labs you're interested in whether or not you are eligible to receive a major scholarship. It's always worth a try! On top of that, you probably won't even know if you'll receive a scholarship when you initially contact a professor, so don't feel like you shouldn't apply to grad school just because of money. Go for it anyways!

For the purposes of this guide, we will focus on NSERC and OGS. We will also briefly touch upon FRQNT (for Quebec residents). **Note that there are many more scholarships you can apply for if you are not eligible for OGS or NSERC** (Check out Appendix B of the Biology Graduate Studies Guidebook: <https://www.uottawabgsa.ca/docs--files.html>). Go for them whether they are big or small as any scholarship can go a long way!

On top of this, note that if you have achieved a certain undergraduate academic average (usually 8-9.0/10), the department will automatically award you with an admission scholarship which you do not need to apply for

IN BRIEF:

The 5 W's of External Scholarships (OGS & NSERC)

Who?

Students with a GPA of 8.0/10 (A-) and above (also citizenship requirements for NSERC)

What?

Academic Merit Scholarships

Where?

Online portals

When?

Applications due 8 – 16 months before the beginning of your program (see Figure 1 timeline)

Why?

Get paid to go to school!
(Minimum of \$15 000 for a year)

(see: <https://www.uottawa.ca/graduate-studies/students/awards/admission-scholarship>). This scholarship is meant to cover the cost of your tuition.

4.1 Canada Graduate Scholarships (NSERC CGS-M)

CGS-M awards provide you with a \$17,500 scholarship for one out of the two years of your Master's program (non-renewable).

4.1.1 Eligibility

To be eligible for an NSERC CGS-M scholarship you must:

- ✓ **Citizenship:** Be a Canadian citizen or permanent resident of Canada
- ✓ **Time spent in studies:** Have completed as of December 31st of the year of application between zero and 12 months of full-time studies in:
 - The Master's program for which you are requesting funding (this will be the case for you if you are applying as an undergrad)
 - The direct-entry doctoral program for which you are requesting funding
 - The Master's program that was or will be fast-tracked to a doctoral program (i.e. if you want to start in the Master's program to see how you like grad school, but are considering fast-tracking to a PhD, you can request this funding for the first 12 months of your program)
 - *In other words, you can't have been in a Master's program for a long time already which is unlikely if you're in undergrad right now!*
- ✓ Have a **minimum GPA** of 8.0/10 (A-) in each of the last two years of full-time studies
- ✓ **Not have previously held a CGS-M**
- ✓ **Enrolment:** Either be enrolled in, have applied for, or will apply for full-time admission to an eligible graduate program

4.1.2 Deadline

You will need to apply for external scholarships in the fall of the academic year preceding your intended start time (see timeline section 3.1). For students wishing to start graduate school next September, this means applying the previous fall. For students who want to start in January, this means applying two calendar years before. (e.g. apply in Fall 2020 if you plan to begin your studies in September 2021 OR January 2022). The hard deadline in most years is **December 1st**. There are a lot of parts to this application (see below), so **START EARLY**.

4.1.3 Additional notes

- If you are considering more than one university for your MSc, you can indicate this in your online CGS-M application which allows you to add up to 3 universities (one graduate department per university) in the "Proposed Host Organization" section
- uOttawa also runs a yearly info session on applying for NSERC CGS-M (and OGS). This usually takes place mid-September so look out for emails about it!

4.1.4 Application Process

The application process takes place online using the research portal: <https://portal-portail.nserc-crsng.gc.ca/s/login.aspx> and you can find the NSERC's specific instructions here: https://www.nserc-crsng.gc.ca/ResearchPortal-PortailDeRecherche/Instructions-Instructions/CGS_M-BESC_M_eng.asp

A completed CGS M includes:

1. A complete 3-part online application:

- a. Identification (Your name, universities/faculties/departments you are applying to etc.)
- b. Lay summary of your research proposal (1800 characters; this is a very brief summary of your research project written in language that can be easily understood by non-researchers/scientists)
- c. Activity Details (a couple yes/no questions about whether your research will involve animals, human participants, stem cells etc.)

2. Research Proposal (1-page PDF attachment plus an extra page for references/bibliography)

3. Canadian Common CV (uploaded as a confirmation number)

4. All official transcripts (PDF attachments)

5. 2 completed reference assessments

Note: Check out the Securing reference letters section for information about reference letters.

Reference letters for NSERC – CGSM are filled out electronically. Once your reference agrees to doing this, you will have to enter their email address into your online application. Your reference will then be able to access the online form (which you will not be able to see).

The following sections will go over suggestions and tips for writing your Research Proposal and completing your Canadian CCV.

4.1.4.1 Outline of proposed research

If you're applying to NSERC CGS-M as an undergraduate, chances are, you won't have a clear picture of what your Master's research is going to look like. You might not even know who your supervisor will be and what your project will be about. This is perfectly normal! (Many students typically spend *at least* the first semester of your Master's degree figuring out what their projects will actually be). At the Master's level of NSERC (CGS – M), scholarship committees mainly use your proposal as an indicator of how well you communicate scientific concepts and whether you have some understanding of research methods. They may not be evaluating the feasibility of your "proposed research" at this stage and no one actually checks to see if your eventual thesis matches your NSERC CGS-M proposal. This means that you should feel free to use a proposal you wrote for your Honours thesis or for a major course project for this section of the application even though you may not be working on this project for your Master's thesis.

That aside, make sure you carefully go through the instructions for writing your proposal provided by NSERC. You will need to include the usual proposal elements (i.e. introduction/background, objectives and hypothesis, methods), but you'll also need to indicate why your research is important (i.e. its significance). Also, pay close attention to any formatting instructions on the website –the research proposal can only be 1 page in length and NSERC has a list of other very specific formatting requirements found here: https://www.nserc-crsng.gc.ca/ResearchPortal-PortailDeRecherche/standards_eng.asp Check (and double-check!) that your documents meet these requirements! You don't want your application to be rejected simply because of a formatting problem.

A couple little tips:

- **Write clearly:**

- Focus on the broad ideas of your research. Don't go into the nitty-gritties of the specifics of your methods or study organisms. Rather, provide just enough information for the reviewer to get a broad idea of what question you're interested in, your broad approach to answering this question, and why it's important. Make sure your methods are clearly linked to the questions you are asking
- Avoid jargon at all costs and spell out acronyms. Reviewers may not be experts in your field, and they may also be tired/distracted if they are reviewing 50+ applications. Make reading your proposal *easy*!
- You can bold-face **key words**, **research questions**, or ideas to make **important information** stand out
- **Respect your 1-page limit:**
 - Fill the space you have (it will look strange if you leave empty space)
 - If you're short on space, include in-text references as superscript numbers as this format takes the least space (you are expected to cite relevant literature throughout your proposal and references can be listed on a separate page)
 - A note on references: make sure to cite pertinent and relevant literature as this shows your reviewer that you are knowledgeable in your field. Don't neglect this part of the application even if it seems trivial!
- **Get help/advice/feedback:**
 - Ask your peers, TAs or current Honours supervisor to take a look at your proposal. Reading a 1-page document won't take long and getting some feedback from 4 to 5 different people can give you a good idea of main areas to improve on
 - You can also ask your potential supervisor for help (even if they are not your current Honours supervisor). They will also benefit if you win a scholarship so they should be happy to help!
 - If English is not your first language, there are many resources offered by the University to help with writing skills (e.g. Academic Writing Help Centre: <https://sass.uottawa.ca/en/writing>)
 - As of September 2020, recently graduated PhD candidate, Dr. Michael Country offered to help review and edit research proposals: contact him at mcoun059@uottawa.ca
- **Check out the sample NSERC CGS-M proposals** in the Appendix (section 10.6.1).

4.1.4.2 Canadian Common CV

A second major element of the NSERC CGS-M application is your Common CV (CCV). This is a web application that provides researchers with a single format to putting their CV (resume) information together for funding applications. The site for starting an account is here: <https://ccv-cvc.ca/indexresearcher-eng.frm> You'll find the exact instructions for filling this out in the NSERC CGS-M website (listed above). The CCV will require you to fill out information about your degree, scholarships, employment, presentations, community outreach etc. Take the time to look through each sub-section available in the CCV. You likely won't have something to fill out for every sub-section but make sure you **fill out as much as you can in as many sub-sections as possible**. Include volunteer positions, internships, non-academic work, involvement in sports, music, art, clubs, creative writing etc. even if you don't think they are directly related to research. Involvement in the community can show a reviewer that you have diverse interests and that you are capable of carrying out projects to completion, communicating ideas through writing and speaking, working well with others etc. all of which are important parts of research and can distinguish your application!

A couple of tips:

- **Make use of the space you are given:** The format of the CCV is unfortunately limited in that in some cases, it only allows you to list your accomplishments but doesn't let you give any description of them. For example, you may have been awarded a scholarship for a specific reason (e.g. academic excellence, community involvement, leadership etc.) which is important to make known to scholarship review committees. Even though the CCV doesn't explicitly provide a box for describing scholarships, you're allowed 250 characters for the name of the scholarship. Because of this, you can actually include some information about the award in the box used for the name of the recognition. (See Figure 3 below).
- **Don't repeat yourself:** In general, try not to repeat things in multiple places. For example, if you put down that you helped to mentor 1-year students in the "Mentoring Activities" sub-section, don't also put this down in the "Community and Volunteer Activities". In other words, each entry should be unique.
- **Include your Honour's thesis and any presentations you gave:** If you completed (or are working on) an Honours thesis, include information about this under the "Thesis/Dissertation" sub-section. You can also include presentations you gave (at a poster fair or at a conference/symposium large or small) under the "presentations" sub-section.
- **Go back to experiences from a reasonable number of years ago:** Your CCV should mostly reflect experiences from recent years, but having a few lines with accomplishments from the later years of high school (especially if you are currently an undergrad) can be helpful.
- **Note time commitments:** Be sure to indicate your involvement in clubs, committees, volunteering was weekly, monthly, a one-off event etc.)
- **Use the "question marks":** You'll notice small blue question mark icons on the CCV form beside sub-sections and text-boxes (see Figure 3). Click on these and pop-ups will appear that let you know what you should be putting into the particular sub-section or textbox.
- **Start early:** There are a lot of sub-sections to fill out in the CCV so be sure to start this early!
- **Proofread:** Double- and triple-check your work and have someone proofread this for you.
- **Check out the sample CCV** in the Appendix (section 10.4).

Recognitions

Done Undo

* Recognition Type Prize / Award ?

* Recognition Name Skippy Lou Community Award; awarded to a graduating undergraduate student who excelled academically in the Biology program and who contributed significantly to their community through outreach activities ?

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Figure 3. Here's one way to include a little more information in the CCV. There isn't a designated box to describe the nature of a scholarship, but you can take advantage of the fact that certain text boxes (e.g. boxes for the name of the award) have larger-than-necessary character limits and that you can put in extra information other than just the name of the award.

4.2 Ontario Graduate Scholarships (OGS)

Ontario Graduate Scholarships (and the Queen Elizabeth II Scholarships in Science and Technology) provide you with \$15,000 (\$5000 per term) for one of out of the two years of your Master's program (non-renewable).

More details at: <https://www.uottawa.ca/graduate-studies/students/awards/ontario>

4.2.1 Eligibility

To be eligible for an OGS you must:

- ✓ Be a Canadian citizen, permanent resident, or protected person (of the Immigration and Refugee Protections Act)
 - There are also a limited number of OGS international student awards for applicants who do not have a valid temporary resident visa or student study permit at the time of application
- ✓ Have a minimum GPA of 8.0/10 (A-) in each of the last two years of full-time studies

4.2.2 Deadline

For uOttawa, the deadline for OGS is the same as NSERC – CGS M. **DECEMBER 1st**.

4.2.3 Additional notes

Unlike NSERC – CGS M, you can't indicate that you are interested in more than one university through OGS which means you have to send separate OGS applications to each university you're interested in (check the specific deadlines for applications as they may vary across universities).

4.2.4 Application Process

The application process takes place online through the research portal:

Online portal: <https://ogs.fluidreview.com/?lang=en>

Specific instructions: <https://www.uottawa.ca/graduate-studies/ogs-and-qeii-gsst-application-portal-step-step-instructions>

A complete OGS application includes:

1. **Numerous online elements** to fill out (i.e. program of interest, current academic status, previous studies, previous awards)
2. **Research Proposal** (700 words, references/bibliography included in this word count)
3. **Research contributions**
4. **Significant accomplishments & special consideration** (500 words)
5. **Official transcripts** (PDF attachments)
6. **2 completed reference assessments** (recommendation requests)

For the Research Proposal part of this application, see suggestions in section 4.1.4.1. for NSERC – CGS M applications. The format is slightly different for OGS (it's 700 words including a bibliography instead of NSERC's 1-pager plus a separate page for references) but the content can be identical.

The following sections will go over suggestions and tips for the "Research contributions" and "Significant accomplishments & special consideration" sections

4.2.4.1 *Research contributions*

This section is filled out online. Again, scholarship committees recognize that it's unlikely for undergraduate students to already have publications (although it's fantastic if you do have one!), but there are still contributions you can touch on for this section (go through OGS's list on the application instructions webpage). Mention major presentations (oral or poster) you gave for an upper year course or for your Honours project at poster fairs and conferences (large or small). You can also mention major reports you wrote for courses. Just be sure to indicate that that reports like this are not peer-reviewed if hasn't been published.

4.2.4.2 *Significant contributions*

This section is also to be filled out online. In 500 words, list and describe any co-op/work-study/research assistant/volunteer/internship/professional experience positions you have had. You can also mention and describe your involvement in student groups and your community outside of school. You are also given 100 words for special considerations. Use this space to describe exceptional circumstances that may have affected your academic career (e.g. delays, part-time, leave-of-absences due to maternity/paternal leave, illness, trauma and loss, health-related family responsibilities, cultural or community responsibilities etc.).

4.3 **Fonds de recherche du Québec – Nature et technologies (FRQNT)**

FRQNT scholarships provide Master's students who are Quebec residents with \$17, 500 for up to two years. More details at: <http://www.frqnt.gouv.qc.ca/en/bourses-et-subventions>

4.3.1 **Eligibility**

To be eligible for an FRQNT you must:

- ✓ Be a Canadian citizen or permanent resident
- ✓ Have lived in Quebec for at least one year **and** be a Resident of Quebec (according to the Health Insurance Act and the Taxation Act; i.e. you have a Quebec health card)
- ✓ Have a minimum GPA of 3.55* (or equivalent) in your undergraduate degree (Note: this is according to FRQNT's website; at uOttawa a GPA of 3.55 translates to an A-)

4.3.2 **Deadline**

For uOttawa, the deadline for FRQNT is earlier than NSERC and OGS scholarships. The deadline is **OCTOBER 6th**.

4.3.3 **Application Process**

The application process takes place online through the research portal:

<https://frqnet.frq.gouv.qc.ca/researchPortal/faces/jsp/login/login.xhtml?site=null&chgl=y&lang=en>

We won't go into the details of the application here as they are similar to OGS and NSERC. In short, in addition to information about residency and your program of study, you'll be required to fill out information on your proposed research project, any awards you have received in the past, your research/work experiences and contributions, as well as your leadership and communication skills. You'll also need two reference assessments, and official transcripts.

5 **Notes for International Students**

If you are not a Canadian Citizen or a permanent resident, the process for applying to grad school in the Dept. of Biology at uOttawa isn't too different with the exception of a few things:

1. **Deadlines:** In general, most deadlines are the same, but some can differ depending on when you want to start your studies. Take a look at the Master's Students application timeline section 3.1 for specifics
2. **Eligibility:**
 - a. *Degree Equivalences:* You may need to check the admission equivalencies for the degree you received in your country <https://www.uottawa.ca/graduate-studies/int-equivalencies>
 - b. *Funding:* While international PhD students pay the same amount of tuition as domestic students, MSc tuition fees are unfortunately very high (upwards to \$28 000 a year). Because of this, if you are an international student intending to begin an MSc, you will need to provide proof of financial support (i.e. a stipend from your supervisor, as well as a combination of awards and scholarships)
3. **Language tests:** If your first language is neither French or English, and you were not educated in either of these two languages, you will need to submit a proof of linguistic proficiency (e.g. Test of English as a Foreign Language; TOEFL).
4. **Scholarships:** The NSERC CGS-M scholarship is not open to international applicants and OGS only has a few extremely limited and highly competitive awards for international applicants. However, there are many other scholarships that are open to everyone! Check out the links in the "Useful Links & Resources" section 9.2.
5. **Transcripts:** If your transcripts are not in English or French, you will need to provide a translation of the transcript either by the issuing institution or by a certified translator

6 Some final words

Phew, you made it through the guide! We hope this guide has been helpful to you and that you feel at least slightly less stressed about applications (or maybe you're a superstar and you're not stressed at all 😊). We recognize that this whole process can be time- and energy-consuming so remember to take care of yourself along the way. Carve out time for family, friends, going outside etc. and give yourself a (BIG) breather after you hit "submit". Also, if you're still on the fence about going to grad school, consider taking a gap year (or years) between your undergrad and applying for grad school. And if you are not successful in your application, you can always reapply in following years or to different schools. Whatever happens, just know that you are valuable for who you are –don't fall into the trap of defining yourself by your transcript and CV! Most importantly, at each step of the application process, don't hesitate to reach out for help. Find support in friends and family. Talk to your undergrad research supervisor or your course TAs. In many cases, TAs will be able to give you the most direct answers about what grad studies are like and how to get there. Get help where you need it, and good luck! You can do it!

7 FAQs

In September of 2020, a panel of graduate students from the Departments of Biology, Math, and Chemistry ran an online webinar for undergraduate students interested in applying to graduate school. Here were some of the questions that students asked during the session:

7.1 Finance questions:

Q: Does it cost money to apply to graduate programs? Is it a one-time fee or is there a fee for each program you apply to? I'm interested in multiple masters programs... Yes, there unfortunately is an application fee... The application fee for uOttawa's biology department is \$110.00 and you will likely have to pay for each additional application you make to other schools/departments (fees may vary).

Q: Can graduate students work outside of school or do they solely focus on their research and TA duties? In general, you don't have a lot of extra time (research is a full-time job on its own already!). That said, you are technically allowed to work a maximum of 10 hours a week. This includes TAing and any other part-time employment. This means that if you're not TAing for some reason during a given semester you are allowed to work another part-time job as long as you don't exceed the 10 hours/week maximum. This is just so that you can conduct quality research and submit your thesis in a timely manner. In general, if you are not the recipient of a major award (i.e. either OGS or NSERC), you will be required to TA. If you need to work more than 10 hours a week at a part-time job outside of your thesis, you should talk to your supervisor. Note that international students with student visas should double check whether their study permits allow them to work legally in Canada outside of the University.

Q: Is the amount of money received from stipends (or scholarships) and TAing enough to keep you going? In terms of funding, living on my stipend and TA contracts, I've found that I make enough to live and still be able to go out for a lunch/beer with my friends and enjoy a social life. Fancy things don't fit into this lifestyle, but you can still have a life outside of school!

Q: If you have an 8.0 (A-) average, is your tuition covered for 2 years? Yes, you would be eligible for the Admissions Scholarship, which covers tuition/fees. Check out: <https://www.uottawa.ca/graduate-studies/students/awards/admission-scholarship>.

Q: When would scholarship (FRQNT, NSERC & OGS) applications be due if I wanted to start my Master's in May 2021, September 2021, or January 2022? (It's September 2020 at the time of writing this question): For all three starting times, applications to FRQNT would be due October 2020, and applications to NSERC and OGS would be due in December 2020.

Q: What is different for international students? Do you still get paid for conducting research? International students are unfortunately not eligible for NSERC and the competition for OGS for international students is extremely high... That said, your supervisor is still required to pay you a stipend from their research grant, and you will need to TA in each semester. Because of this you should still be getting paid the same amount as a domestic student. Check out the BGSA grad guidebook for more details on this.

7.2 Graduate life questions:

Q: What are Master's courses like? How many do you take? Courses can definitely vary a lot. In many cases, they are actually cross-listed as fourth-year undergraduate courses, so it's very possible you've already taken a grad-level course! For example BIO4158 (Applied Biostatistics) is a hybrid undergrad-grad course. In other cases, courses that are geared specifically towards graduate students generally have very small class-sizes and often take the form of discussions, seminar presentations, and independent or group final projects. Here's a secret: most of the time students get A's in these courses because it's much easier to do well in these small class-size courses. Master's students in the biology program are required to take 2 courses (in addition to 2 semesters of a weekly seminar which is just a pass/fail requirement). Check out the BGSA grad guidebook for more details on these requirements.

Q: Do graduate students enjoy greater health benefits (e.g. insurance) than undergraduates? Hmm... we're not actually sure about the specifics of this but check out the "insurance" section of the Graduate Students Association of the University of Ottawa website: <https://gsaed.ca/en/home/>. You'll find a document summarizing what benefits grad students receive.

Q: How has your research changed due to COVID? It depended on what our specific research projects are like. For those of us who have computer-based modelling type projects, nothing really changed! Some of us who do

field work internationally had our field seasons totally cancelled. Those of us who do lab research couldn't work until the labs re-opened. We had to carefully schedule lab time with other graduate students to make sure the buildings stayed at their required capacities.

7.3 Program questions

Q: How do you fast-track to a PhD? And why did you choose to do so? The department has an “accelerated PhD” program. Essentially, you start as a Master's student, but you fast-track to a PhD program in your second year of graduate studies without having completed your Master's thesis. In principle, this fast-tracked degree should end up being about 5 years in length (a year shorter than doing a full 2-year Master's plus a 4-year PhD). The application process for a normal Master's degree and the accelerated program are exactly the same. Check out the BGSA grad guidebook for more info about this.

Q: I'm thinking of taking a gap year before grad school. When doing so, should we apply for a master's before finishing undergrad, then defer the acceptance or do we only apply before coming back to the university? Also, are our grades still applicable after a year off for the admission scholarships? With regards to the first part of your question, it's likely that you'll just need to apply before coming back to the university (i.e. no need to apply and then defer). For example, if it's currently September 2020, and you want to start graduate school in September 2022 (after a gap year), you should start preparing your application in September 2021. That said, contacting potential supervisors any time earlier than that can be a great idea. With regards to grades, yes, they'll still be applicable after a year off for admission scholarships. Check with the graduate office gradsci@uottawa.ca to double-check!

7.4 Supervisors & References

Q: Should we start searching for supervisors now even if we want a later start? Yes! It's a great idea to get started with contacting supervisors early even if you're planning to take a gap year. Professors may even appreciate you reaching out early because it could help them make plans. Just be sure to make it clear what your timelines are (i.e. when you're finishing your current degree and when you want to start).

Q: So to be able to apply for the external scholarships (e.g. NSERC or OGS) you need to have a supervisor before Dec 1st? No, the NSERC online application process will ask you list up to 3 institutions you're interested in attending, but you don't have to say anything about who will be supervising you. The OGS portal is specific to uOttawa but the application process also doesn't require you to have a supervisor already. You do need to have a supervisor who agrees to supervise you for your [application to uOttawa's Biology Department](#) by the time you apply. Also, you do need people to write you references for NSERC and OGS and research supervisors (e.g. professors who supervised your Honours thesis, co-op placement, work-study etc.) are best suited for this.

Q: Do reference letters need to be related to the program that you are interested in (e.g. for a microbiology program do you need a reference letter from biology professor)? Ideally, yes. A biology professor would be able to comment most meaningfully on your achievements, skills, and potential in biology-related work. That said, if this is really not possible for you, someone who is familiar with your work habits and achievements can work too. Overall, you want the application reviewers (whether it's for the department or for a scholarship) to know why you are suited to conduct research at the graduate level and your reference letter writers need to be able to speak to that.

Q: Do referees mind giving references for multiple applications? Probably not at all! (although we aren't professors ourselves so to be honest, we have no idea what they're thinking!). Most professors are probably really used to requests for multiple references, and it's usually pretty quick for them to re-use material for your

different applications. On top of that, if you're applying for a scholarship to fund your studies while you work in *their* lab, they'll *want* to support you (because it means your stipend won't have to come from their grants).

Q: How do I overcome the fear of feeling like a nothing when I send out emails to a prof? What helps me when applying to things is to remember that the worst thing that can happen is exactly the same thing that would happen if I don't go for it. So there's nothing to lose and everything to gain! And anyways, if a prof says "no", it's rarely ever a reflection of you –they may have too many students in their lab, they may not have enough funding, they may be going on sabbatical... etc. etc. etc.! So go for it! You can do it!

7.5 CGPA questions:

Q: If your CGPA is under the requirements, is there still a chance to get accepted into the program with good recommendations and letter of intent? Yes! BUT this means that having connections with a supervisor is absolutely critical. You need to show that you have research potential and that you are able to learn. This can be demonstrated to a prof through your experience volunteering in their lab, co-op, work-studies etc. If a professor can vouch for you and make the case that you're a dedicated/organized/hard-working person in their lab, this can go a long way especially if you don't have the best grades. In other words, having undergrad research experience can make a whole lot of difference. If you are still in undergrad now, reach out to professors and ask them if they have undergrad opportunities (paid or un-paid) in their lab. Very often, graduate students can use some help either in the field or in the lab. Some grad students could even use help running tedious computer processes. They'll get some help with their research, and you'll get some research experience that you can draw on in your application materials. You should also expand on your research potential and capabilities in your letter of intent. And if there's a specific reason why you didn't do well in certain courses (e.g. family, health reasons), mention this in your letter of intent.

Q: When grad schools look at your undergraduate CGPA, does that cumulative GPA take into account *all* courses (including electives) or only mandatory courses for your degree? Hmm... we don't actually know the answer to this one... You can try reaching out to the grad department gradsci@uottawa.ca to ask. Our guess would be that if you're a uOttawa student applying to the biology department for grad school, reviewers will mostly be interested in biology-related courses, but at the same time, high performance in other courses can look good too, especially if they imply that you have skills that would be useful as grad student (e.g. writing courses, statistics, computer-coding etc.).

7.6 Miscellaneous questions:

Q: How limiting is it when your honours project and your prospective grad program are quite different (e.g. I worked in a wet lab but am applying to a dry lab)? How do you convey to the professor that you do have the interest or expertise to take you on compared to another applicant? This is probably not limiting at all! Any research experience is great because many of the skills you need to succeed in research are pretty generalizable across disciplines (e.g. writing, at least some statistical knowledge, being organized, and detail-oriented, oral communication etc.). You can highlight these skills when communicating with your supervisor of interest.

Q: What advice do you have for a 4th year undergrad with no lab experience whatsoever. I don't have really good connections with any professors at uOttawa right now, and I feel like I am running out of time. Also the current COVID situation is making 10x harder as labs are closed. Don't give up! Email profs to see if their current grad students could use a volunteer. Even if labs are closed, it's possible profs or graduate students will have computer-work they need done, and experience doing that can go a long way for you! Familiarize yourself with the research of different profs and see what interests you. Just try what you can! And if things don't work

out, you can always wait a couple months (perhaps get some experience during that time) and apply at a later date.

Q: Would you recommend grad school with a thesis component if you don't plan on working in research at all in the future. Would it be worth it to go through just to have on a resume? To be honest, this probably depends on what you're hoping to do in the future... That said, the skills you will hopefully develop as a graduate student will definitely be transferable to many other forms of employment. Being able to carry out a major project from start to finish (e.g. design it, plan for it, carry it out, synthesize findings) is a huge accomplishment, and having a thesis component in your degree shows you're capable of that. You'll also hopefully come out with skills in oral/written communication, data analysis, field- or lab work etc. which can all be important depending on where you go!

8 Who to go to for help?

Got a question? Need help? There are people ready to help you out!

I need help with:		Ask:
Admission requirements, deadlines, scholarship requirements	→	Science Graduate Studies Office gradsci@uottawa.ca
Financial Aid/Scholarship Administrative questions	→	Financial Aid & Awards Services loansandawards@uOttawa.ca
Writing emails, letters of intent, CVs, research proposals	→	Honours research supervisor, TAs & other graduate students, family, friends, classmates
Questions about how grad school works, pros and cons of being a grad student etc.	→	TAs & other graduate students, professors

9 Useful Links & Resources:

Some of these links have appeared earlier in this document but here they are again along with a number of other helpful links:

9.1 Requirements & Application Procedures

uOttawa Master's of Biology Program & Admission Requirements:

<https://catalogue.uottawa.ca/en/graduate/master-science-biology/#text>

<https://catalogue.uottawa.ca/en/graduate/master-science-biology/#Admissiontext>

uOttawa Biology PhD Program & Admission Requirements:

<https://catalogue.uottawa.ca/en/graduate/doctorate-philosophy-biology/#text>

uOttawa General application procedures:

<https://www.uottawa.ca/graduate-studies/programs-admission/apply>

uOttawa graduate programs:

<https://catalogue.uottawa.ca/en/programs/>

uOttawa webpage on finding supervisors:

<https://www.uottawa.ca/graduate-studies/students/theses/supervision>

uOttawa Department of Biology Professors:

<https://science.uottawa.ca/biology/professors>

OUAC account set-up:

https://www.ouac.on.ca/apply/ottawagrad/en_CA/user/login

9.2 Scholarships

NSERC scholarship application online portal:

<https://portal-portail.nserc-crsng.gc.ca/s/login.aspx>

NSERC scholarship application instructions (CGS – M):

https://www.nserc-crsng.gc.ca/ResearchPortal-PortailDeRecherche/Instructions-Instructions/CGS_M-BESC_M_eng.asp

NSERC Canadian Common CV (CCV):

<https://ccv-cvc.ca/indexresearcher-eng.frm>

Ontario Graduate Scholarship Information:

<https://www.uottawa.ca/graduate-studies/students/awards/ontario>

Ontario Graduate Scholarship online portal:

<https://ogs.fluidreview.com/?lang=en>

Ontario Graduate Scholarship application instructions:

<https://www.uottawa.ca/graduate-studies/ogs-and-qeii-gsst-application-portal-step-step-instructions>

Fonds de recherche du Québec – Nature et technologies:

<http://www.frqnt.gouv.qc.ca/en/bourses-et-subventions>

Links for scholarships (including international eligible ones):

https://gsaed.ca/accordion_post/gsaed-scholarships/

<https://scholarships.uottawa.ca/p/a/18342/>

<https://www.uottawa.ca/financial-aid-awards/scholarships-and-bursaries>

9.3 Further support

Academic Writing Help Centre:

<https://sass.uottawa.ca/en/writing>

Biology Graduate Student's Association:

<https://www.uottawabgsa.ca/>

uOttawa Department of Biology Graduate Handbook (Biology Graduate Student’s Association):

<https://www.uottawabgsa.ca/docs--files.html>

10 Appendix (Sample application documents)

The following sections contain sample documents (emails to potential supervisors, CVs, letters of intent, NSERC application documents). Some of these are generic documents adapted from websites, while others were generously contributed from past and current students both within and outside of the department. Please be respectful of the latter and **do not copy them word-for-word!** Rather, use them as a template/guide/idea-starter as you think about your own application process.

10.1 Sample emails to potential supervisors

Sample email #1:

Here is a simple and generic example that you can tailor for your own purposes. This format may be most amenable if you are contacting a supervisor you have never worked with before. Notice how the student provides details about when they are finishing their current degree, when they want to begin their studies, and describes how their research interests align with the professor’s lab.

Dear Professor X,

I am currently a 4th year undergraduate student in the Department of Biology here at uOttawa, will be graduating next May, and am hoping to begin an MSc. in the department in September of 2021.

In one of my classes (X) taught by Professor X, I came across your recent article, “Publication X”. I was very fascinated by the results of this study and it led me to think of many possibilities for future research. (**Insert specific details about aspects of the Professor’s research that interest you and why you chose their lab**). I have been exploring graduate programs where I can explore this research area further. If you are currently accepting MSc students in your lab next Fall, I would be very interested in getting in touch either via email, phone, in person etc. I have also attached a copy of my CV and unofficial transcript for your convenience. I know you’re very busy so I appreciate any time you can give me. Thank you very much, and I look forward to hearing from you.

Sincerely,

Student X

Sample email #2:

Here is a second generic example that you can tailor for your own purposes that also may be more amenable if you are contacting a supervisor you have never worked with before. The student here touches on their research experience as an Honours student and how that relates to Professor X’s research, but you can tailor this to other experiences you’ve had (e.g. lab volunteer, co-op student, work-study etc.)

Dear Professor X,

I am currently a 4th year undergraduate student in the Department of Biology here at uOttawa, will be graduating next May, and am hoping to begin an MSc. in the department in September of 2021.

This past summer, I worked in Professor Z's lab with Graduate Student X on a project looking at XYZ. (**A very brief description of your project or what you did**). I am now further developing this project as part of my Honours thesis this school year. I mentioned my fascination with XYZ to Professor Z and he mentioned that I might be interested in joining your lab to further my interest in this as I know that some of the major research themes in your lab are XYZ and ABC –topics that I am extremely interested in and that my current Honours thesis touches on. If you are currently accepting MSc students in your lab next Fall, I would be very interested in getting in touch either via email, phone, in person etc. I have also attached a copy of my CV and unofficial transcript for your convenience. Thank you very much, and looking forward to hear from you.

Sincerely,

Student X

Sample email #3:

This excellent example was shared with the permission of Priya Vaidya from the University of Toronto. Priya had already worked with this professor for her Honours thesis and subsequently applied to their lab for an MSc. If you're not sure of your specific research interests, you don't have to go into as much depth as Priya does here (most supervisors won't expect this, especially if you have never worked with them before), but it's certainly a bonus if you can, as it shows that you're keenly aware of the professor's recent research.

Dear Professor X,

I was first interested in joining your lab for the EEB498 project course because of your lab's research in evolutionary ecology using plant models. Having worked on the nematode project for a few months now, I find myself even more immersed in the idea of determining variations of plant-organism interactions under natural conditions through both evolutionary ecology and genomics. I am considering applying to the M.Sc. program in the EEB department at UofT for next fall, and was wondering if you would be accepting new students to your lab. I am attaching my resume and academic history again to this email for your convenience.

I believe your recent publication, "Publication X" is a good representation of the type of research questions I have in mind for my Master's project. You and your co-author determine whether variation in nitrogen availability affects the symbiotic relationship between legume and rhizobia, and use genomics methods to assess genotypic variation in response to the varying environments. You found that varying nitrogen levels do not affect the legume-rhizobia symbiosis in terms of partner choice through quality and occupancy, but I would be very interested in conducting similar studies in other symbiotic systems to determine how highly associated organisms, like the legume-rhizobia systems, respond to environmental variation.

My own research interests involve a fusion of plant-animal interactions and evolutionary ecology, but I am also very much interested in genomics through this research project, as previously mentioned. I am most interested in questions that address genotype x genotype x environment interactions, and how these systems can be studied using various genomics methods. Specifically, I would like to study how plant-animal associations are affected by external abiotic or biotic stressors, and how this might affect their fitness responses.

The legume-rhizobia-nematode study we are currently working on addresses my research questions well, in that we are determining how the introduction of a biotic stressor, the parasitic nematode, might affect the legume-bacteria mutualism, and how much of the degree of response to nematodes is attributed to genetic variation. If you are planning on continuing with the nematode project in the next two years, I would be very glad and proud to invest more into this research. PhD Student X mentioned the possibility of further research into this field if we find a certain fitness effect of these nematodes on the system, such as introducing the nitrogen variation idea as an extra layer into the interaction. I would be very excited for the prospects in this direction, because it would further investigate the plant ecology and dynamics under more natural conditions.

Thank you very much for your time. I look forward to hearing from you.

Sincerely,

Priya Vaidya

Sample email #4:

This is another excellent example (names and identifiers removed) was shared with the permission of a graduate student in the department. Like Sample email #3, this student also already had a pretty good idea of exactly what their research avenue of interest was; however, they also draw on their experiences in the field and how those experiences relate to their interests. This can help indicate to the potential supervisor what skills you already have. This email example actually also has many great characteristics that you can draw on when you're writing your Letter of Intent.

Dear *Dr. X and Dr. Y*

I am writing to express my interest in the advertised MSc position in the department of Earth and Environmental Sciences at the University of Ottawa. I was first introduced to the idea of pursuing entomology as a career when I took *Introduction to Entomology* in junior year of my studies at the *University of X*. I spent that summer catching insects for the class' collection assignment and discovered a passionate curiosity for the tiny invertebrates. Since then, I have pursued further courses in entomology, as well as work experiences, that I believe will make me an excellent addition to your lab.

I am hopeful that a major in Environmental Sciences, where a systems-view approach to problems is emphasized, will allow me to bring a unique perspective to future projects. The capstone course for *University X's* Environmental Science program, *Course Title X*, involved a group project in partnership with a community interest group (the *ABC Conservation Society*). The society was concerned that an approved proposal to increase coal transport on a nearby railroad track would have adverse effects on the bog ecosystem. Therefore, we implemented a baseline soil survey to determine elemental and isotope composition and spatially compared this to soil standards using ArcGIS 10.1.1. This project strengthened my problem-solving skills, appreciation for group work, and ability to work with multiple stakeholders.

The more I learn about insects, the more I am amazed by their complex interactions with other organisms, their incredible diversity, and the dramatic impact they can have on humans. As part of the course *Course Title Y*, facilitated by *Dr. Z*, I led six hours of discussion on how climate change has affected the life cycle and population oscillations of the larch budmoth. This class allowed me to practice reading papers critically and give constructive feedback to my peers. During *Insect Ecology*, instructed by *Dr. A*, I investigated the validity of using museum data to predict a butterfly species' sensitivity to climate change and was able to give a class presentation on my results.

In addition to coursework, I have been employed in the fields of conservation, agriculture, and ecology, with the aim of determining what I would like to attain with an education in entomology. Working in integrated pest management was very eye-opening in that it exposed me to the economic impact of insect pests and how essential research is to the development of sustainable tactics to lessen these effects. Working as a Field Assistant for the “*University of X Lab in City A, Country B*” gave me an appreciation for the difficulties and rewards of conducting field research in insect ecology. It has also given me the opportunity to practice identification of aquatic invertebrates, including mosquitoes. As a Field Coordinator for “*Project Name X, Country C*”, I had the pleasure of introducing many student volunteers to the world of insects and progressed my science communication abilities. These experiences have allowed me to explore my interests, develop many practical skills, and gain experience working with other cultures and in remote conditions.

Through my exploration of entomology via coursework, readings, and work experiences, I have found myself drawn to lines of study that ask questions pertinent to real world problems, have the ability to make a difference, and take an interdisciplinary approach. I believe that a Master’s of Science is the first step in accumulating the knowledge and skills needed to conduct meaningful research on insect ecology in order to aid countries in developing effective management plans.

I recently read your papers: “*Paper A*” and “*Paper B*”, and am very intrigued by XYZ. I was also fascinated by the implications for increasing the efficiency of milkweed planting initiatives as well as the greater contributions that this tool could make to the conservation of monarchs and other species.

I would be very interested in starting a dialogue regarding the strontium isotope geolocation tool and how I would be a valuable addition to your project. I have attached my CV (with three references) and my unofficial transcripts, as requested. Thank you very much for your consideration; I hope to hear from you soon!

Sincerely,

Student X

10.2 Advice from Dr. Sarah Evans on writing emails to professors

The following is taken from Dr. Sarah Evans’ (from Michigan State University) webpage.

Some tips on writing an email of interest to potential graduate school advisors

Finding an advisor is important for attending graduate school. Graduate programs have an official application to the program you submit through the university, but many graduate programs will only accept students if a professor has agreed to accept or interview them. (Note: an exception is a program that accepts students then matches them to advisors in their first or second year, through rotations or other means). Therefore it is essential to make connections with advisors before you submit your application. Finding and contacting an advisor is up to the applicant.

How to start? Start by learning more about what research you are interested in and what others are doing, with the goal of finding a pool of people doing work in your area of greatest interest. “Doing your homework” in this way is essential to focusing your topic areas and reflecting on what you want to do. Look at the lab website of principal investigators and reflect on your own constraints (e.g. geographical). Scientific papers or conferences are also a great place to learn about someone’s research. If you are interested in a lab, see if there is a page on their website for prospective students. If so, follow the directions for reaching out, and use the information there to craft your email.

When to start? Ideally you would contact potential advisors several months before you submit an application (this document doesn't cover other things you should think about before applying, like taking the GRE or developing relationships with supervisors who will write letters). If applications are due in December, generally you should contact advisors by the end of September. However, reach out to potential advisors as soon as you can articulate your interests. If it's a long time before applications, you might be able to meet up with the advisor at a conference or their university. If it's after you've submitted an app, it's not too late.

What to say in an email? It's important to spend time on this email because it can make a good first impression and catch an advisor's eye. You will need to state your research interests and why you are interested in this laboratory, so it is important to understand the lab's research by reading the website and papers. The ability to articulate why you are interested in a certain research topic (theme or paper) in your own words – what you find exciting, how you came to be interested in that through past work experience, why it's important – is critical. The length should be one paragraph or at most two short paragraphs.

Other things to be sure to include:

- Any research experience you have. If you don't have research experience, other work experience can be mentioned if you can connect it to why you're interested in the lab. Connecting your past experience with your future goals in your lab of interest is essential.
- Your timeline – for instance, "I am applying to graduate programs this winter for anticipated start in August 2022"
- If you have some professional connection to the professor, mention this. This is NOT required but as humans we look for personal connection and if you have one, it can help the person notice your email and give you peer-credibility.
- If you will be attending a conference in a relevant field sometime soon, mention this. It is a great place to meet potential advisors and (if applicable) for them to see your research presentation!
- The question: are you accepting students right now?
- Attach your resume or CV.

Avoid:

- Copying and pasting phrases from the professor's website (but do read it over), or using the same exact email and sending it to multiple professors (it won't be very strong).
- Weird formatting, like multiple fonts, or unprofessional language
- Typos or mistakes like including the wrong professor's name. Proofread.

Follow-ups: If you have not gotten a response, it is appropriate to email the advisor again in a few weeks, and I would encourage you to do so. After a second email, I'd assume they are not taking students, and drop it or make contact another way (e.g. attend a talk) if possible (this is my personal opinion, other profs might feel differently). As for what to say in a 'followup': I recommend re-sending your first email, adding to the top something like: "Hi Dr. __, I wanted to make sure you saw my email, please let me know if you are taking graduate students this year". or "I know you are busy, but wanted to reach out one more time..." It might just have trickled down in their inbox. The faculty I surveyed said if this 're-mail' came a couple weeks after the first, they would not consider this pushy at all.

How many to contact? There's no rule on this, but I'd suggest you develop a list of 10-15 labs you are interested in, and contact them by the end of September. Any more and you probably need to focus your

interests more. Do not get discouraged if some never reply. A goal might be to have 3 advisors that are willing to take you on as a student by the time you apply. But you only need one to get in.

International students and labs: These tips apply to many PIs in the US. Many similar concepts apply to contacting anyone, but you may want to ask around for country-specific conventions if for schools outside the US.

The bigger picture: This document is partially motivated by uncovering hidden or unwritten curricula in STEM. This type of informal knowledge is often only communicated to those with the right networks or privilege, and thus reduces opportunities for other groups. Read more about unwritten or hidden curricula [here](#).

Other things that you might not be explicitly told during the grad school process:

- You can ask to speak to other people in the lab when evaluating whether it is right for you! And you should! This is a good way to learn about the advisor's advising style and mentoring quality, and the lab climate. Listen for red flags that may indicate the advisor is not a good mentor.
- You can ask about funding sources! Most grad students in STEM receive a stipend for the entirety of their schooling. Funding for graduate students can come from teaching assistantships (TA), research assistantships (RA), or other fellowships either inside or outside the university (e.g. NSF GRFP). Ask what funding the advisor has available, or other opportunities for funding, and what your grad experience would look like (e.g. are TAs widely available or guaranteed? Are any RAs available?)

Other resources for this task - read these over to get other perspectives.

- <https://contemplativemammoth.com/2013/04/08/so-you-want-to-go-to-grad-school-nail-the-inquiry-email/>
- <https://sites.google.com/view/apply-academic-positions/graduate-student>
- <https://www.sciencemag.org/careers/2015/05/dear-dr-neufeld>
- Talk to your current mentor, colleagues, or others familiar with academia! As I've said, there may be lots of opinions and perspectives on how best to do this - this is just one way. PIs, talk to your undergrads about this, particularly first-gen college students or underrepresented groups.

ONE example from a former student is below

*Note that customizing a letter to your own voice and interests is essential. See info above.

Dear Dr. Evans,

I am a senior Biology Major at Villanova University. I am interested in attending graduate school at Michigan State University, particularly in relation to the startup of your new lab there, and would like to inquire if you are currently accepting graduate students. I was intrigued by your recent paper, "Climate change alters ecological strategies of soil bacteria". The conclusion that of the 127 species found in both the ambient and delayed rainfall regimes, only 18% did not show changes in strategy, was profound in regards to the impacts of historical conditions on microbial communities. The question you pose at the end regarding the unclear distinction between alterations in ecological properties, being due to shifts in species composition or strategy, aligns with the types of questions I would look to pursue under your advisement.

This year I am working on a senior thesis project under the advisement of Samantha Chapman. Using a warming and snow removal experiment, I am addressing the question: will variable soil temperatures affect enzyme activity involved in P, N, C, and cation cycling in a Pennsylvania deciduous forest. While performing

this research I found I was particularly interested in the mechanistic aspects of soil ecology and would be interested in exploring related questions in a starkly contrasted environment such as the Namib Desert.

I greatly appreciate your time during this busy time of year and hope to hear back from you soon.

Doc written by S. Evans 1/15/19. Thanks to Nick Haddad (Michigan State University's Kellogg Biological Station) and Kathryn Docherty (Western Michigan University) for feedback and an additional perspective on these subjective tips!

Send feedback to evanssa6@msu.edu

Please feel free to repost with credit!

10.3 Sample email to request a reference

Sample email #1:

Here is a generic email adapted from the web. Note: This email assumes your potential reference letter-writer knows what NSERC CGS-M and OGS are (which should be the case if you have found a research professor to write the letter). If they are not familiar with these scholarships, it might be a good idea to give them a brief (sentence or 2) description.

Hi Professor/Employer/Supervisor X,

I hope you have been doing well! I'm starting to work on graduate school and scholarship applications for MSc programs at the University of Ottawa as well as for the NSERC CGS-M and OGS. I really enjoyed working under you this past year, so I was wondering if you would be willing to write me a recommendation letter for my applications (both are due in the beginning of December). If you are, I would be happy to send you my CV and transcript as well as the application information.

Kind regards,
Student X

Sample email #2:

Here is an example of a possible **follow-up email** after the professor has agreed to be your reference:

Hi Professor/Employer/Name of supervisor X,

Thank you so much for agreeing to be my reference! I really appreciate your support. I have attached my CV, transcript and the application information (e.g. selection criteria, referee guidelines etc.) here. The deadline for the application is **(*date*)**. Also, in thinking about my experiences working with you, I thought of *(*something you did/achieved/contributed to that you want your referee to comment on*)*. Do you think it would be possible to comment on this in the letter?

Kind regards,
Student X

10.4 Sample CV

This is a made-up sample CV that can give you some ideas about what experiences to include in the CV you will need to submit to the uOttawa graduate department. Note that this is **not** the CCV you need for the NSERC CGS – M scholarship application! (see an example of that in the below section)

Skipton O. Lou

slou01@uottawa.ca
613-613-6130

EDUCATION

Honours BSc. University of Loutra (2017 – Present)

Specialist: Ecology & Wildlife Conservation (CGPA: 8.2)

Honours Thesis title:

“Evolution of rock juggling behaviour in northern river otters”
(Supervisor: Dr. Carn Mustelid)

Minor: Philosophy & Creative Writing

Diploma. Royal Conservatory of Music (2011 – 2019)

Associate of The Royal Conservatory, Bassoon Performance

NON-PEER-REVIEWED PUBLICATIONS

Lou, S. O., Mustelid, C. 2020. Effects of food resource abundance on the propensity of rock juggling behaviour in northern river otters. University of Loutra undergraduate Honours Thesis Report.

PRESENTATIONS

Lou S. O., Mustelid, C. 2020. Effects of food resource abundance on the propensity of rock juggling behaviour in northern river otters. Ecology & Wildlife Conservation Departmental Undergraduate Poster Fair, Louville, ON. Poster.

Lou S. O., Mustelid, C. 2020. A circus in the river? Effect of food abundance on river otter rock juggling behaviour. Ontario Ecology, Ethology and Evolution Colloquium, Guelph, ON. Talk.

AWARDS & RECOGNITIONS

2020 - NSERC Undergraduate Student Research Award **(\$4500)**

2019 - ‘Tiria Thruigg’ Memorial Achievement Award, University of Loutra, Dept. Biology **(\$500)**

2018 – University of Loutra Merit Scholarship **(\$3000)**

2017 – 19 - Dean’s List, University of Loutra

2017 - University of Loutra Scholar, University of Loutra Entrance Award **(\$5000)**

RESEARCH & WORK EXPERIENCE

Undergraduate Honour’s Thesis Project in Ecology and Wildlife Conservation (September 2020 – Present)

(Supervisor: Dr. Carn Mustelid)

- Analyzing video data collected from a field study conducted in the summer of 2020
- Translating video data into quantitative data, applying statistical analyses to data
- Synthesizing results in a final report, presentation at a lab meeting, and poster presentation

NSERC Undergraduate Research Assistant & Student Researcher (May – September 2020)

(Supervisor: Dr. Carn Mustelid)

- Assisted graduate students with data collection in field experiments:
 - Conducted plant and animal surveys in wetland habitats
- Executed independent field experiment on effects of food resources on otter behaviour
 - Quantified fish abundance, set up camera traps to observe otter behaviour, conducted physical observations of otters

Volunteer Lab Technician (September 2019 – May 2020)

(Supervisor: Dr. Orlando Tax)

- Assisted a PhD student with processing 1000 badger scat samples:
 - Labelled, oven-dried, weighed, and measured volume of each sample
 - Identified mammalian hairs in each sample by microscope examination of cuticular patterns and cross sections
 - Prepared samples to be analyzed for food remains
 - Completed over 100 hours of volunteer lab service

Animal Rehabilitation Technician: Louville Animal Rehab Centre (May – September 2019)

- Assisted with caring for injured birds and small rodents prior to their release (feeding, processing and delivering medication, cleaning cages etc.)
- Trained new interns on rehabilitation protocols
- Updated and inputted data for patient files

SERVICE & OUTREACH

Mental Health Awareness Society: University of Loutra (2018 – Present)

- Working on various initiatives and campaigns to spread awareness, offer support, fundraise, and create a stigma-free campus surrounding mental health issues in undergraduate students

Towards a zero-waste campus: University of Loutra (2017 - Present)

- Sort and analyze campus waste for audits
- Manage data in Excel and generate reports and recommendations to improve waste management on campus in student residences

Childcare Volunteer: Louville Community Centre Children’s Drop-in (2016 – present)

- Provide childcare once a week (3-hour sessions) for children aged 6 – 12
 - Help lead games, prepare snacks, assist with homework and reading

Habitat Restoration Volunteer: Granite Park Stewards & Ignatius Centre (2016 - 2019)

- Contributed to various restoration projects by removing invasive plants and planting native shrubs and trees once a week in the summer and fall

Seed Packaging Volunteer: North American Native Plant Society (2019)

- Packaged donated wildflower seeds for native plant seed sale at two seed-packing sessions

Homeless Shelter Volunteer: Downtown Louville “Out of the Cold” program (2011- 2018)

- Took on weekly 6AM shifts for two months at a time to prepare breakfast and clean sleeping/dining areas used by guests

Elementary School Nature Program Volunteer: Granite Park Nature Center (2016 - 2018)

- Helped lead guided hikes, organize crafts and run games for elementary school children once a month

TECHNICAL SKILLS

- Working knowledge of R statistical Software and proficient in Microsoft office (i.e. Word, Excel, PowerPoint)
- Proficient in Ontario tree, wildflower, bird and insect identification
- Proficient in using search engines (i.e. Google Scholar, Web of Science, Scopus) to conduct literature searches

10.5 Sample Letter of Intent

Note: This is a sample! Please do not copy it word-for-word. Rather use it to give you a sense of what a letter of intent *can* look like (they can really vary), and to give you some starting ideas. Committees need to be able to hear your voice and experiences through the letter so copying this would not be helpful.

Student X - Letter of Intent

As an undergraduate student, my studies in (**Biology, Environmental Science, Biomedical Sciences etc.**) have greatly enhanced my knowledge of biological concepts and have fostered in me a keen interest in (** your research interest **). My undergraduate courses have all broadened my understanding of various biological processes and have heightened my awareness of (**Something your courses have helped you gain in terms of knowledge **). However, beyond the practical knowledge and skills I have acquired, my studies have also played an instrumental role in my intellectual development, as I have gained valuable skills in critical thought and have

learned the importance of asking questions. I believe this intellectual development has played a pivotal role in motivating me to pursue research at the graduate level.

*** THE FOLLOWING SHOULD BE THE BULK OF THE ESSAY***

(i.e. summarize how your accomplishments and experiences, but most importantly, describe how they have helped you develop skills and shaped your interest in research)

My interest in biological research began during my experiences as a *(* volunteer, participant, work-study student, co-op, research assistant *)* working with *(* name of employer, supervisor, professor, graduate student *)*. Over the course of that *(* year, summer, school semester etc. *)*, I *(* describe your research experiences *)*. The independent project I developed through this opportunity showed that *(* how your project contributed to the advancement of scientific knowledge *)*. Moreover, my experience working in this capacity helped me develop numerous skills in *(* describe how your experiences helped you develop skills in things like data analysis, writing, oral presentation, experimental design, other things that will be useful as a grad student etc. You can also discuss non-academic work or volunteer experiences that have helped you develop important skills. E.g. Collapsing cardboard boxes for Walmart for an entire summer might suggest that you are physically and mentally capable of outdoor fieldwork! Or if you have worked with youth, or elderly people, this can show that you know how to communicate to a diverse range of people. You can also talk about instances where you failed at something or were disappointed in an outcome and how you overcame challenges *)*. Equipped with the skills I have been able to develop from both my academic and non-academic experiences, I now hope to expand and further build upon this interest as a graduate student at the University of Ottawa. Specifically, I wish to develop my research interests in *(* something specific about what you want to study: e.g. effects of chemical pollutants on brain development, effects of climate change on lizard populations, etc. *)* as I believe that *(* why you think your research is important *)*.

Thus far, conducting research as an undergraduate student has been an exciting and rewarding experience. **Summarize the above briefly**: Participating in research has allowed me to develop skills in *(* insert skills, e.g. experimental design, observation, data collection, analysis, problem-solving, project trouble-shooting manuscript writing and editing etc. *)*. Moreover, my involvement in the community through participating in and leading *(* volunteer/community outreach programs etc. *)* has helped me develop skills in *(* “soft-skills” you gained *)*. I believe the skills I have acquired both from research and non-research settings will be indispensable to me as a researcher in the field of *(*field of study*)*. At the same time, I also recognize that I still have much to learn, and that graduate school will provide me with opportunities to expand and refine my learning. I also recognize that conducting research as a graduate student will engage me in an intellectual environment allowing me to cultivate both my curiosity in the natural world and critical thinking skills.

Ultimately, I have always been curious about *(* your broad research theme *)*. I am aware that the University of Ottawa offers many unique opportunities for graduate students through *(*funding opportunities, strong sense of community between graduate students, bilingual etc. *)* and that Professor X's lab produces leading research in *(*research themes*)*. In pursuing research in the Department of Ottawa, I hope that I can contribute to our knowledge of *(* your research interest *)* and use it to *(* how your work will contribute to something positive to the society at large *)*.

Scholarship sample letter of intent

This letter of intent was written for an application to an internal graduate-level scholarship (Antoine Morin Memorial Scholarship) in the department of Biology so it is slightly different from what you would write when

applying to graduate school. That said, similar advice applies here too! (e.g. drawing on your experiences and what you have gained from them). This example was kindly shared by Cécile Antoine.

Dear committee,

I am a third-year PhD Candidate in Dr. Jessica Forrest's lab, and I have a real passion for wild bees, environmental issues, and biology. I have been sharing my knowledge about these topics in classes or public talks for a long time, sometimes through associations. I like to be involved in my school community and use different communication tools to bring people together: I have been an executive member of the Biology Graduate Student Association (BGSA) for two years (acting President from 2019-2020, Communications officer from 2018-2019). I also am the French Editor of the magazine BioMatters published in the department.

Since fall 2017, I have been a Teaching Assistant in the Biology Department for over a hundred hours every semester, teaching a variety of undergraduate courses in biology. This experience has helped me improve my communication skills while developing in me a greater fondness for scientific instruction. I have also helped my supervisor develop and teach a week-long biodiversity-focused mini-course (in both French and English) for high school students. I oversaw several activities including fruit and flower dissections, visits to the university greenhouse and a debate on the anthropogenic impacts on biodiversity. I was the mentor of a numerous students, training them for field work and lab work: I supervised four CO-OP students, two lab assistants, and numerous volunteers with the most recently recruited through the University's Community Service-Learning program. The first two students I mentored pursued an Honours thesis using data collected during their field seasons with me. Part of my duty has been to guide them in their research, provide feedback, and assist with bee identification.

I love community outreach as I am passionate about sharing science with non-scientists. Recently, I gave two public webinars on native bees with the Canadian Wildlife Federation (in French and English) and a public talk with the National Capital Commission, about wild bees and the project I am currently working on in collaboration with them. Last spring, I gave a presentation entitled "What's a Bee?" to a class of children with disabilities in Ottawa. Moreover, during the first two years of my PhD, I was awarded a research grant from the Ottawa Field-Naturalists' Club and I published an article in the local journal *Trail and Landscape* last year. As a biologist, I believe it is important to communicate new discoveries to as many people as possible. Through field work, I have partnered with 40 farmers around Ottawa and have provided them with written communications describing the bee communities that live on their farms. Before arriving in Canada, I worked for a beekeeping association where I informed beekeepers and the public about the threats facing honeybees through newsletters, journal articles and workshops. Finally, in 2013, I made an extended visit to a community near Lima, Peru, and gave public talks to raise awareness on various health and environmental issues.

Over the years, I have gained multilingual, multicultural experience through sharing science with people from all over the world. Receiving this scholarship would provide invaluable help in funding the remainder of my studies while allowing me to continue pursuing outreach activities. As an international student I am ineligible for many scholarships funded by the Canadian government, but I am thankful for the opportunity to be considered for this one.

10.6 NSERC CGS – M sample documents

10.6.1 Outline of proposed research

Sample proposal #1:

Background & Objectives: The **timing of reproduction** for organisms living in **seasonal environments** can have significant effects on the **success of their offspring**^{1,2}. These **effects of reproductive timing** can be manifested in various offspring attributes such as competitive ability³, vulnerability to predation⁴, access to resources⁵, and ability to withstand harsh climatic conditions⁶. Specifically in seasonal environments, **reproducing early** in the season may be unfavourable as climate conditions may be more unpredictable and **resources scarce**^{7,8}. However, **reproducing late** can also be unfavourable if offspring do not have enough time to **develop to a stage** in which they are able to **survive winter conditions**⁹⁻¹¹. This may present organisms with **conflicting selective pressures on reproductive timing**; reproducing later in the season ensures food availability for both parents and offspring, but reproducing early ensures offspring acquire enough time to undergo sufficient ontogenetic development before winter. Reproductive timing in seasonal environments may ultimately reflect how **organisms maximize reproductive success** given the **trade-offs** between resource abundance and offspring developmental period. I plan to investigate the effects of reproductive timing in the solitary bee *Hoplitis fulgida* on individual reproductive output and offspring success. I also plan to explore the factors that impose selection on the timing of nesting activity in *H. fulgida* individuals. I will be asking the following questions: (1) What are the effects of nesting timing on *H. fulgida* offspring production and survival?, and (2) How does reproductive timing in *H. fulgida* reflect a balance between the conflicting selective pressures of floral resource abundance and time required for offspring development?

Methods: Data will be collected from XXXXXX XXXXXXXX XXXXXXXX XXXXXXXX XXX XXXX XXXXXX XXXXX XXXXXX XXXXX XXX XXXXX XXXX. Sites contain wooden trap-nests attached to tree trunks located at the edge of a meadow, which have already been used in previous solitary bee studies^{12,13}. Trap-nests consist of wooden blocks containing deep holes that attract a variety of cavity-nesting insects including *H. fulgida*. *H. fulgida* females typically seek out nesting cavities in the spring and construct nests which consist of a linear series of brood cells partitioned by walls made of mud and pebbles¹⁴. Each cell contains a mass of pollen and nectar upon which a single egg is deposited¹⁴. Over the course of the growing season, I will be monitoring trap-nests and observing *H. fulgida* nesting activity. Specifically, I will be recording the date on which individuals are observed to be nesting, the number of brood cells they produce, and the number of offspring that complete cocoons by the end of the season (given the fact that larvae must complete cocooning to successfully survive the winter). I will also be conducting flower surveys to determine the patterns of *H. fulgida* resource abundance over the course of the season. I will be using regression-type analyses with nesting date and floral density as predictors for the number of brood cells produced by each female. Similar analyses will be performed with the proportion of cocooned larvae per nest as a response. This will allow for the effect of offspring developmental period in determining offspring success to be tested.

Significance: Understanding how factors such as **resource abundance** and **offspring developmental constraints affect life-history events such as reproductive timing** is becoming increasingly critical as **changes in climate** alter the timing of various biological events¹⁵⁻¹⁷. Specifically, there has been a recent surge of interest in the **effects of climate change on pollinators** with regards to **phenological mismatch** between pollinators and their floral hosts. Numerous studies have already attributed changes in flowering time to climate change^{18,19}; however, few studies have actually documented the **fitness consequences of plant-pollinator mismatch to date**²⁰. Whether the evolved timing of life-history events such as reproduction in pollinators remains optimal as environmental conditions change remains unclear. My study aims to further our understanding of the biological factors that impact pollinator life-history, and will address the degree to which changes in these factors impact pollinator reproductive success.

Sample proposal #2:

Background: The importance of dispersal between subpopulations has long been understood, with such dispersal stabilizing populations, and “spreading the risk [of extinction] in space”¹. Dispersal also allows species to colonize new habitat patches, and this has become increasingly important as climate change alters species ranges, and habitat is degraded or destroyed through human actions². Anthropogenically altered landscapes can impair species’ capacities for dispersal, which increases extinction risk, particularly for poor dispersers². In some cases these factors are already altering community composition and reducing diversity, as generalists with stronger dispersal abilities persist, while habitat specialists and more sedentary species are lost³. Understanding what landscape factors limit species dispersal, and what traits cause species to be more vulnerable in anthropogenic landscapes, is essential to preserving richer and more diverse communities.

Bumblebees (*Bombus*) are effective pollinators and provide valuable ecological services to both native and agricultural communities⁴. Bumblebees also face significant threats, such as shifting ranges due to climate change⁵. Declines in bumblebee populations have been well documented, and due to their integral role in community function, conserving *Bombus* species is incredibly important and urgent⁶. At a regional scale, land-use change has been found to limit bumblebee dispersal^{7,8}, but much of the work surrounding dispersal barriers and dispersal limitation remains incomplete. To effectively conserve the bumblebee community it is critical to further investigate dispersal barriers on the landscape, and how these barriers are affecting all *Bombus* species.

Research Aims: My research objective is to determine patterns of bumblebee dispersal limitation, and how these limitations are differentially affecting members of the bumblebee community. I aim to answer three main questions: 1) What are the landscape barriers to bumblebee dispersal in North America and Europe? 2) How are these barriers affecting community composition in terms of species, trait, and phylogenetic diversity? 3) How can we structure conservation efforts at a regional scale to overcome dispersal barriers?

Experimental Approach: Data: I will use a pre-existing database of approximately 432,000 georeferenced observations of 67 European and American bumblebee species from across the two continents⁵. These observations have been compiled from the Global Biodiversity Information Facility, the Status and Trends of European Pollinators Collaborative Project, and *Bumblebees of North America*⁵. I will combine this database with high-resolution land cover data from across North America and Europe, using the United States Geological Survey (USGS) global land cover database⁹. Analysis: To identify areas of suitable habitat for each individual bumblebee species I will use GIS software to analyze the USGS land cover database, incorporating known species range limits⁵. Using the bumblebee observation database I will compare areas of bumblebee observations by species to areas of suitable habitat and identify areas that are uninhabited. I will then determine land cover features that may act as barriers preventing nearby populations from dispersing to the suitable habitat. I will analyze whether these barriers are differentially affecting species that are closely related or that share specific traits. I will examine whether barriers are shifting community composition and/or reducing diversity by reducing the dispersal of specific species. Finally, I will propose conservation strategies to facilitate bumblebee dispersal across these landscape barriers.

Significance: Bumblebees are valuable native pollinators, and also commercially valuable as agricultural pollinators. Yet many bumblebee species are in decline, and factors that may limit their dispersal to suitable habitat, and the effects these barriers are having on bumblebee community composition, are largely unknown. This study will identify barriers to dispersal and propose how they may be overcome, giving conservation planners and policy makers important tools to conserve these species.

10.6.2 Canadian Common CV

The following is a sample Canadian CV prepared for an NSERC CGS-M application several years ago. Identifiers have been blacked out.

Language Skills

Language	Read	Write	Speak	Understand
English	Yes	Yes	Yes	Yes

User Profile

Research Disciplines: Biology and Related Sciences

Areas of Research: Animal, Biological Behavior, Biodiversity and Biocomplexity

Fields of Application: Environment

Research Specialization Keywords: Ecology, Evolution [redacted]

Degrees

- [redacted] Bachelor's Honours, Honours Bachelor of Science, Ecology & Evolution [redacted] (Specialist), [redacted]
Degree Status: Completed
Supervisors: [redacted]
- 2007/1 - 2015/8 Diploma, Associate of The Royal Conservatory [redacted] Performance, Royal Conservatory of Music
Degree Status: Completed
Supervisors: [redacted]

Recognitions

- 2018/8 - 2018/8 [redacted] Undergraduate Scholarship; awarded for academic excellence in the [redacted] Program - 2,000 (Canadian dollar)
Prize / Award
- 2018/5 - 2018/8 [redacted] Excellence Award (declined for [redacted] intern position) - 6,000 (Canadian dollar)
Prize / Award
- 2016/5 - 2016/8 NSERC Undergraduate Student Research Award - 4,500 (Canadian dollar)
Natural Sciences and Engineering Research Council of Canada (NSERC)
Prize / Award

DRAFT

- 2015/4 - 2018/4 Dean's Honour List
██████████
Distinction
- 2014/10 University of ██████████ Scholar; awarded on the basis of outstanding academic performance - 5,000 (Canadian dollar)
██████████
Prize / Award
- 2014/9 ██████████ Memorial Award; awarded to a graduating student for excellence in academics, leadership, community service, and athletics - 1,000 (Canadian dollar)
██████████ Collegiate Institute
Prize / Award

Employment

- 2018/1 - 2018/4 Statistics Course Note-taker; I provided detailed lecture notes for a second-year statistical science course ██████████ to students requiring accessibility assistance
Oneclass Notetakers
- 2016/5 - 2016/9 NSERC-URSA Field Researcher; At the ██████████, I assisted three graduate students with their respective field experiments (experimental set-up, maintenance, data collection, data entry) while conducting my own independent project
██████████
- 2016/2 - 2016/3 Laboratory Technician; I assisted with the organization and preparation of a lab experiment for a second-year biology course ██████████
██████████ and collecting seeds from experimental plants
██████████

Mentoring Activities

- 2015/8 - 2015/8 Student Panelist, University of ██████████
I was selected to answer questions and provide guidance to incoming first-year students taking introductory calculus courses (i.e. where to seek help, how to study for mid-terms and exams and stay on top of assignments).

Community and Volunteer Activities

- 2016/11 Habitat Restoration Volunteer, ██████████
██████████
I frequently participate in various habitat restoration initiatives run by different organizations ██████████ participate in invasive species removal, picking up litter, and planting native trees, shrubs and wildflowers.
- 2015/2 Birdwatcher, E-Bird (Cornell Lab of Ornithology)
Regularly submit observations to Cornell's "E-Bird" system contributing to global bird data collection

DRAFT

- 2013/2 Seed Donor, [REDACTED]
 Every year, I collect seeds for over 30 plant species (vegetables and native wildflowers) from [REDACTED]. I then process and package the seeds to donate to local seed banks in [REDACTED]. The seeds are either given away during seed exchange events [REDACTED] or they are sold in support of the organization [REDACTED].
- 2011/10 Children's Weekly Drop-in Program Leader, [REDACTED]
 I organize/lead weekly activities (games, gardening, story time, crafts, singing etc.) for children aged 3 to 11. Every fall, I contribute to the adaptation and choreography of a drama production, and organize and run rehearsals. Currently, I meet with children twice a week online to read and play games with them, help with homework, and teach them about wildlife visible from their balconies/yards. I also run an online weekly book club for older children. I organize a yearly family hike for up to 30 children from the program and their parents. Prior to the event, I compose newsletters inviting families to the event, collect permission forms and emergency contact information, and coordinate transportation logistics. During the hike I teach participants to identify common plants, insects, and birds found in the city, facilitate discussions on basic ecology (e.g. invasive species, migration, pollination, seed dispersal etc.) and organize on-trail nature activities (scavenger hunts).
- 2017/8 - 2018/10 Farmers' Market Volunteer, [REDACTED]
 Assisted with setting up of farm stall, selling and transporting produce
- 2011/2 - 2018/1 Homeless Shelter Volunteer [REDACTED] "Out of the Cold" Program
 I took on weekly 6:00 AM shifts to prepare breakfast, distribute lunch packs, and clean sleeping and dining areas used by guests. I engaged in thoughtful conversations with the guests [REDACTED].
- 2016/2 - 2016/3 Elementary School Nature Program Volunteer, [REDACTED]
 Lead guided hikes, organized crafts and games for elementary school children; introduced children to winter bird-watching and native Ontario trees
- 2016/1 - 2016/1 Native-Plant Seed Packager, [REDACTED]
 Packaged locally-sourced donated wildflower seeds in preparation for a native plant seed sale

Other Memberships

- 2014/9 - 2015/10 Student athlete, [REDACTED]
 During the school year, I trained with a team several times a week, and competed in regional, provincial, and national university-level tournaments across Ontario.

Presentations

1. [REDACTED]
 Entomologists' Association Student Symposium [REDACTED]
 Main Audience: General Public
 Invited?: No, Keynote?: No, Competitive?: No
2. (2018). Poster Presentation: [REDACTED]
 [REDACTED] Ecology and Evolution [REDACTED] Departmental Undergraduate Poster Fair, [REDACTED], Canada
 Main Audience: Researcher
 Invited?: No, Keynote?: No, Competitive?: Yes

DRAFT

3. (2017). Poster Presentation: [REDACTED] Ecology and Evolution [REDACTED] Departmental Undergraduate Poster Fair, Toronto, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No, Competitive?: Yes

Publications

Thesis/Dissertation

1. [REDACTED] University of [REDACTED] Bachelor's Honours.
Number of Pages: 34 Supervisor: [REDACTED]
Funding Sources: [REDACTED]
2. [REDACTED] Bachelor's Honours.
Number of Pages: 19 Supervisor: [REDACTED]
Funding Sources: Natural Sciences and Engineering Research Council of Canada (NSERC)