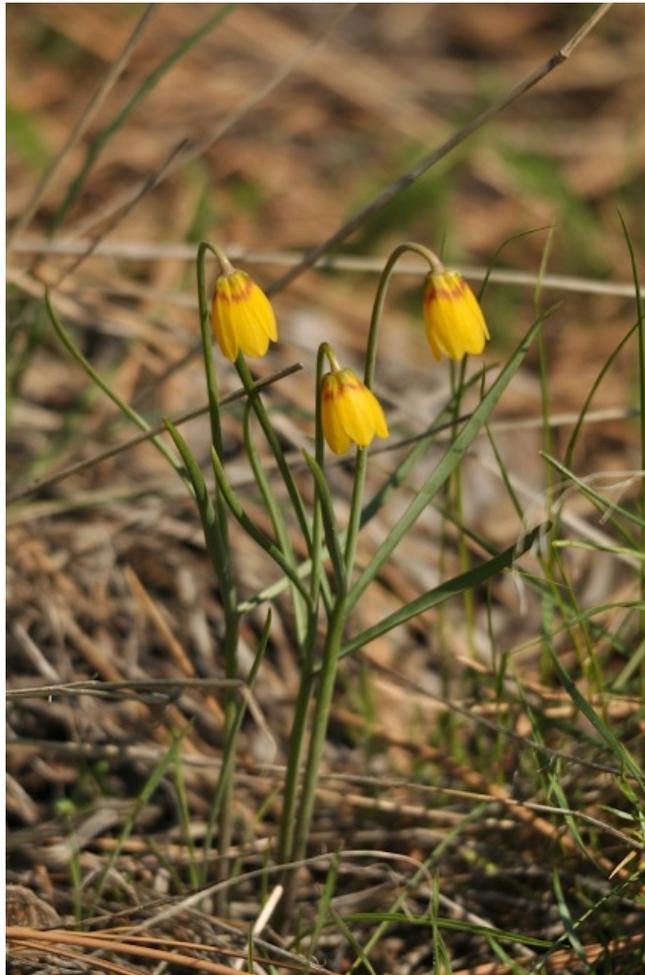


Biology Graduate Program Handbook



University of British Columbia, Okanagan campus

August 2017

This handbook is produced by the Biology Graduate Program Committee. It is designed to summarize basic information about the Biology Graduate Program to assist you throughout the course of your time here. Please let us know if there is additional information you would like to see in this guide or format changes that would make it easier to use.

The information in this handbook is subject to change. Please contact the Biology Graduate Program Coordinator for any updates.

Biology Unit Head:

Dr. Michael Deyholos
Email: Michael.Deyholos@ubc.ca
Phone: 250-807-9545
Office Number: SCI 316

Biology Graduate Program Coordinator:

Dr. Michael Russello
Email: Michael.Russello@ubc.ca
Phone: 250-807-8762
Office Number: FIP 346

Biology Unit Assistant:

Barb Lucente
Email: Barb.Lucente@ubc.ca
Phone: 250-807-8935
Office Number: SCI 155

2017-18 Members of the Biology Graduate Program Committee

Dr. Michael Russello (Chair)
Email: Michael.Russello@ubc.ca
Phone: 250-807-8762
Office Number: FIP 376

Dr. Miranda Hart (Awards Chair)
Email: Miranda.Hart@ubc.ca
Phone: 250-807-9398
Office Number: ASC 372

Dr. Louise Nelson
Email: Louise.Nelson@ubc.ca
Phone: 250-807-8756
Office Number: ASC 404

Dr. Lael Parrott
Email: Lael.Parrott@ubc.ca
Phone: 250-807-8122
Office Number: SCI 377

Dr. Andis Klegeris
Email: Andis.Klegeris@ubc.ca
Phone: 250-807-9557
Office Number: ASC 371

Dr. Jason Pither
Email: Jason.Pither@ubc.ca
Phone: 250-807-9629
Office Number: ASC 367

Dr. Robert Lalonde
Email: Robert.Lalonde@ubc.ca
Phone: 250-807-8764
Office Number: SCI 381

Table of Contents

Background	4
Biology Graduate Program Committees as a source of help	4
What are your responsibilities as a graduate student?	5
What are your supervisor's responsibilities?	8
Program Funding	9
Getting Started	9
Courses	10
Teaching Assistantships (TAs)	10
Thesis Guidelines	11
PhD Outreach Requirement	11
Safety, Permits, Specialized Training, Animal Care	11
Co-Supervision	11
Forming a Committee	12
Committee Meetings	13
Annual Progress Reports	14
Guidelines for the Research Proposal	15
The PhD Comprehensive Examination for Admission to Candidacy	17
The MSc Thesis Defense	18
The PhD Thesis, Oral Presentation, and Defense	19
Transferring from the MSc to the PhD Program	20
Space	20
Seminars and Discussion Groups	21
Scholarships and Fellowships	21
Develop your Professionalism	21
Looking for work or more training	23
Dealing with situations not described so far	23
Appendix: Timelines and Milestones	24

Background

Our goal is to make the Biology Graduate Program one in which students and faculty are enabled to do their best work, individually and collaboratively. This Handbook is designed to help you navigate through the formal requirements of the graduate program, as well as summarize other information that may help you to make the most of your time here.

Much of the material in this handbook is taken from program documents for the Biology Graduate Program as approved by the UBC Okanagan Senate. Other forms, processes, and information have been developed by the Biology Graduate Program Committee with subsequent approval by the Biology Graduate faculty or are linked to policies of the College of Graduate Studies (CoGS). All of these procedures or requirements have been designed to support our goal of making the Graduate Program strong, vibrant and intellectually rewarding.

Similarly, we want this Handbook to be helpful, clear, and readily accessible—please feel free to offer suggestions for ways to improve this Handbook.

The Biology Graduate Program Committee as a source of help

Clearly, your research supervisor and your supervisory committee are major sources of help available to you. The Biology Graduate Program Coordinator and Committee are also available to help you for other matters.

The Biology Graduate Program Committee creates or adapts policies and procedures, as well as tending to the recurring events in the program. If you have questions about the program that are not answered by your supervisor, feel free to contact the Biology Graduate Program Coordinator for further assistance.

What are your responsibilities as a graduate student?

For a supervisor to take a graduate student in this Program the supervisor needs to demonstrate financial support for the student's stipend; the supervisor is also responsible for providing expertise, equipment, and advice. The Program also invests in each student, providing financial support in the form of Teaching Assistantships and research support in the form of time investments by faculty in courses and on supervisory committees. In return, graduate students have responsibilities as well. Each graduate student should:

- Be aware of and adhere to required milestones and timelines.
- Prepare for all meetings with the supervisor or committee. Submit written material to committee members for committee meetings at least a week in advance.
- Inform the supervisor promptly if any situations arise that will affect satisfactory completion of the degree in a timely fashion (e.g. illness, inability to obtain required reagents, inability to find a way to learn a required skill, data collection going more slowly than anticipated).
- Discuss publications and authorship with supervisor.
- Discuss data ownership and best practices of keeping data records with your supervisor in keeping with the over-arching UBC policies.
- Discuss your academic progress and research with your supervisor regularly. The frequency and formality of meetings will vary with the stage of the work, nature of the research, and your independence; discuss with your supervisor how often meetings should be held. The goal here is for you to obtain help when you need it as well as to keep your supervisor informed of your progress. Monthly or weekly meetings are strongly encouraged.
- Obtain any specialized training or permits required for you to undertake your thesis research.
- Take advantage of seminars and discussion groups to broaden your knowledge and support other students in the program.
- Present your research internally and externally.
- Keep records of all of your activities (e.g. fellowship or grant applications submitted or awarded, papers submitted or published, talks given) and prepare the CoGS Annual Progress Report.
- Conduct your Teaching Assistantship with timeliness, confidentiality, and professionalism. This mandate includes doing any marking within the timelines specified by the instructor of the course, ensuring you are prepared for every class or lab session, maintaining respect for and confidentiality of the students, and asking for clarification of any elements of the TA obligations that are unclear to you. The students you will be teaching are paying tuition for a good education here and we want to help you to help provide that education for them; bring any queries about effective teaching to us.
- We strongly encourage students to seek opportunities for additional professional experiences, such as applying for fellowships or grants-in-aid-of-research, attending and presenting at conferences, and publishing the thesis research in peer-reviewed journals.

Expectations from the Graduate Student manual prepared by UBC Vancouver
(<https://www.grad.ubc.ca/handbook-graduate-supervision/graduate-student-responsibilities>):

When you register as a graduate student at UBC, you're making a commitment to devote the time and energy needed to engage in research and write a thesis or dissertation. Your supervisor has a right to expect substantial effort, initiative, respect and receptiveness to suggestions and criticisms.

As a graduate student, you must accept the rules, procedures and standards in place in the program and at the university and should check the University Calendar for regulations regarding academic and non-academic matters. You are expected to:

- Make a commitment and show dedicated efforts to gain the background knowledge and skills needed to pursue your research project successfully.
- In conjunction with your supervisor, develop a plan and timetable for completion of all stages of your thesis project, adhere to a schedule and meet appropriate deadlines.
- Meet with your supervisor when requested and report fully and regularly on progress and results.
- Maintain registration throughout the program and (for international students) ensure that study permits and (where applicable) employment authorization documents are kept up to date.
- Keep your supervisor, graduate program advisor and Enrolment Services informed about your contact information.
- Give serious consideration to the advice and criticisms received from your supervisor and other members of your supervisory committee.
- Keep your work space tidy, safe and healthy; show tolerance and respect for the rights of others.
- Be thoughtful and reasonably frugal in using resources provided by your supervisor and the University, and assist in obtaining additional resources for your research or for other group members where applicable.
- Conform to University, Faculty and graduate program requirements, including those related to deadlines, dissertation or thesis style, conflict of interest.
- When your degree program requirements have been met, terminate your work and clean up your work space.
- Return borrowed materials to your supervisor, graduate program, library or reading room, etc. when your project has been finished or when return is requested.

The following suggestions can make your life a lot easier:

- Review the literature regularly and keep your literature survey up-to-date.
- Maintain exemplary records of your experimental/theoretical work (so that others can replicate your results).
- While your supervisor is required to be reasonably available for consultation, it is your responsibility to keep in touch with your supervisor.
- Make yourself available to your supervisor for regular meetings at mutually acceptable times.
- Follow the university's policy regarding ownership of intellectual property.

This website also provides advice from students for new graduate students

- "It's all a matter of perspective. As a student you have little to no control over the administrative part of things, but on the flip side, if you take the time to get to know your administrators, things can be made a lot smoother, especially if someone in the office is willing to sign a form that is late."
- "Ultimately, you are responsible for yourself as a graduate student. It's time to learn how to self-advocate."
- "Take care of your committee. It sounds corny, but if the student doesn't care, the committee won't. For example, set up meetings (time and agenda), give them plenty of information on what you are doing (progress reports), and remind them of past, present, and future important stuff."
- "Don't expect your committee to care for your emotions. Their role is to put students to the test."
- "Other graduate students are your ticket to a healthy student life. They either have gone through it, are going through it, or will go through it. Sharing feelings and experiences will keep you sane."
- "Be nice to librarians: they are a key resource as your research progresses. You may need their assistance not only during the literature review, but for data analysis, web searches, and copyright issues."
- "Use your research to make contacts. Remember, you aren't just conducting graduate research—you are also entering a field of colleagues."

Some resources in our library about being a successful graduate student

- Gosling, P., & Noordam, B. (2006). *Mastering your PhD: Survival and success in the doctoral years and beyond*. New York: Springer. Call Number: LB2386 .G67 2006
- Grix, J. (2001). *Demystifying postgraduate research: From MA to PhD*. Edgbaston, Birmingham, UK: University of Birmingham Press. Call Number: LB2371.6.G7 G75 2001
- Mullen, C. A. (2006). *A graduate student guide: Making the most of mentoring*. Lanham, MD: Rowman & Littlefield Education. Call Number: LB2371.4 .M85 2006
- Potter, S. (Ed.). (2006). *Doing postgraduate research* (2nd ed.). Thousand Oaks, CA: Open University Press. Call number: LB2371 .D65 2006
- Rugg, G., & Petre, M. (2004). *The unwritten rules of PhD research*. Maidenhead, UK: Open University Press. Call Number: LB2386 R84 2004
- Tinkler, P., & Jackson, C. (2004). *The doctoral examination process: A handbook for students, examiners and supervisors*. Maidenhead, UK: Open University Press. Call Number: LB2371.6.G7 T56 2004
- Wallace, M., & Wray, A. (2006). *Critical reading and writing for postgraduates*. Thousand Oaks, CA: Sage publications. Call Number: LB2395.3 .W35 2006

What are your supervisor's responsibilities?

Supervisors are responsible for assisting their graduate students through every stage of the degree, from designing a thesis research project to conducting and analyzing the research, to writing up, presenting, and publishing the research. Graduate supervisors also must uphold University and disciplinary standards and should judge each student's work accordingly.

Graduate supervisors must:

- Assist the student with selecting and planning a suitable and do-able research topic.
- Discuss the student's academic progress and research regularly. The frequency and formality of meetings will vary with the stage of the work, nature of the research, and the independence of the student.
- Establish and chair a supervisory committee.
- Provide timely, thorough, and constructive comments on written work submitted by the student. The turn-around time should not normally exceed two weeks.
- Ensure continuity of supervision when the supervisor will be absent for extended periods, e.g. a month or longer.
- Assist the student in gaining access to facilities or research materials as needed.
- Ensure that the research environment is safe, healthy and free from harassment, discrimination and conflict. Students should be informed of potential hazards and how to mitigate these hazards. If specialized training is needed (e.g. radiation safety, first aid) for completion of the research, the supervisor should pay for this training.
- Endeavour to achieve consensus and resolve the differences when members of supervisory committees provide conflicting advice or differ in their expectations.
- Assist the student to know current graduate program requirements, deadlines, sources of funding, etc.
- Encourage the student to present research results within and external to the University, as appropriate.
- Encourage the student to finish when it would not be in the student's best interests to extend the program of studies.
- Acknowledge the contributions of the student in presentations and in published material, in many cases via joint authorship.
- Ensure that recommendations for external examiners of doctoral dissertations are made to the Biology Graduate Program Committee and forwarded to CoGS in a timely manner.
- Assist the student to comply with any changes to the thesis required after the thesis or dissertation defense.
- Ensure the minimum stipend requirements are met.
- Provide timely letters of recommendation as requested by the student for fellowships, jobs, etc. during and after the student's degree program.

(Please note that we used the Handbook of Graduate Supervision prepared by the UBC Faculty of Graduate Studies as partial inspiration for this section. This guide can be found at <https://www.grad.ubc.ca/handbook-graduate-supervision>).

Program Funding

Funding of a student's graduate program is a collaborative effort on the part of the student, the student's supervisor and the Biology Department. The Biology Graduate Program mandates minimum stipends loosely based on national standards set forth by the Canadian Tri-Council funding agencies (NSERC, CIHR, SSHRC) as follows:

MSc	\$17,500 per year (amount for Sept. 2015 incoming students and later)
PhD	\$21,000 per year (amount for Sept. 2015 incoming students and later)

These minimum values are reviewed annually and do not necessarily track changes in Tri-Council funding amounts. These mandated minimum values do not preclude a supervisor from funding a student at a higher rate.

Graduate student stipends are funded through a combination of internal and external funding awards, Teaching Assistantships (TA), and Research Assistantships (RA).

Students are expected whenever possible to apply for relevant scholarships and fellowships. These include principally, but are not limited to, Tri-Council Scholarships, University Graduate Fellowships, and Graduate Dean's Entrance Scholarships.

Teaching assistantships offer additional support and are awarded in accordance with the applicable Collective Agreement. These are not guaranteed, but are normally available subject to the balance between supply (the departmental TA budget) and demand (the number of students seeking TAs), and the student's qualifications (e.g., the skills and expertise required to instruct individual courses, and the student's prior performance as a TA). Alternatively, in some courses, markers may be employed.

Research assistantships are typically funded by the supervisor's external grants, contracts or other sources of funding.

All Biology graduate students are expected to devote full-time effort to their studies. In our experience, success as a graduate student is not compatible with substantive commitments to other employment.

Getting Started

The beginning stages of your degree program will vary: some students may start with some time in the field or lab to become acquainted with their study system or to learn techniques they will later use, whereas others will commence with coursework and developing a proposal, and will start the actual data collection later. The Appendix describes the required milestones and timelines throughout the program.

At a minimum, the following things should happen within the first semester you are in the program:

- Establish a supervisory committee
- Meet with your committee to discuss what coursework you will undertake and when you will fulfill the TA requirement
- Take some of your courses if appropriate
- Develop a preliminary draft of your proposal

Courses

The MSc degree requires completion of BIOL 501 (3 credits), an 18-credit research-based thesis (BIOL 599), and a minimum of 9 additional credits of coursework. All coursework must be completed with a cumulative average of 75% or higher. The elective course(s) must be approved by the student's supervisory committee. The supervisory committee may require additional coursework, if this is necessary for successful completion of the thesis research. Students are encouraged to use up to 6 elective credits towards a Directed Studies Course taught by their supervisor(s) (BIOL 5XX) to provide depth of knowledge in the student's primary area of research. At the discretion of their committee, students may also take courses in other programs (e.g. Chemistry, Math, Statistics).

The PhD degree requires completion of a substantial, original research-based thesis (BIOL 699) under the supervision of a faculty member in the Biology graduate program. PhD students are not required to complete any additional coursework unless: 1) required by the supervisory committee, or 2) as a condition of admission.

For the latest information on program requirements, please consult the graduate studies section in our academic calendar:

<http://www.calendar.ubc.ca/okanagan/index.cfm?tree=18,285,1005,0h>

For available courses, go to:

<https://courses.students.ubc.ca/cs/main?campuscd=UBCO>

Transfers of credits from other institutions

CoGS will examine post-graduate courses taken elsewhere to determine whether they may be used as credits in our program. Because the MSc and PhD programs require substantial original research, any request for transfers of thesis credits from other institutions will be reviewed on a case-by-case basis by the Biology Graduate Program Committee and CoGS.

Teaching Assistantships (TAs)

MSc and PhD students normally TA at some point during their program. These activities contribute financial support towards meeting minimum graduate stipend amounts, and are designed to assist students in learning how to communicate scientific information to audiences with less sophisticated scientific backgrounds. As part of the Teaching Assistantship, students will be mentored in teaching skills, both from the faculty member coordinating the TA and via the Centre for Teaching and Learning:
<http://ctl.ok.ubc.ca/welcome.html>.

The Biology Department will attempt to accommodate as many TA requests as possible.

Thesis Guidelines

CoGS provides descriptive guidelines for formatting of the thesis at the following link: <http://gradstudies.ok.ubc.ca/current-students/thesis-dissertation-info/thesis-preparation-formatting.html>.

PhD Outreach Requirement

PhD students are required to demonstrate outreach of their results. The method and timing for fulfilling this requirement will be determined by the student in consultation with the committee no later than one year after a successful candidacy exam. Possibilities include presentation of the results to a public (non-scientific) audience; contributing information to a species assessment for the Committee on the Status of Wildlife in Canada; presenting research at a government-led workshop; developing and disseminating educational materials on subjects related to the thesis research; and presenting to school groups.

Safety, Permits, Specialized Training, Animal Care

Supervisors are responsible for ensuring students have the necessary permits or training for the research they are undertaking. This category includes things like Animal Care certificates and protocols, permits from the Canadian Wildlife Service or the Ministry of Environment for handling wildlife, radiation safety training, first aid, safe driving with trailers, etc. Supervisors are expected to pay for the training and permits that are required for the students to undertake the work safely and in accordance with university policies. You should make yourself familiar with basic safety procedures and resources available on campus.

Co-Supervision

With the approval of the Biology Graduate Program Committee, students may seek formal co-supervisory arrangements with UBC Okanagan faculty who are not members of the Biology Graduate Program, with faculty at other universities, or with agency employees (e.g. Parks Canada, Environment Canada, Agriculture and Agri-Food Canada) if their research would strongly benefit from this arrangement. Primary supervision would be by the faculty member of the UBC Okanagan Biology Graduate Program. Primary supervision includes responsibility for the guaranteed personal stipend and ensuring all program requirements are met. If partners/spouses co-supervise a graduate student, the Supervisory Committee must be expanded to include another member.

Forming a Committee

Supervisory committees should be chosen within the first term you are on campus, ideally within the first month. As you develop your committee, you should consider the research expertise, time availability, and the interest of possible members in your research topic. Supervisory committees need to be approved by the Biology Graduate Program Committee and the Dean of CoGS.

For MSc students, committee membership must conform to the following:

- At least three members (one of which is the supervisor).
- The committee may include:
 - faculty members from other UBC graduate programs
 - non-faculty members or faculty external to UBC upon approval of the Biology Graduate Program Coordinator and Dean of the College of Graduate Studies
- The majority of the committee must be faculty members at UBC's Okanagan campus (including adjunct faculty).

For PhD students, committee membership must conform to the following:

- At least four members (one of which is the supervisor).
- The committee may include:
 - faculty members from other UBC graduate programs
 - non-faculty members or faculty external to UBC upon approval of the Biology Graduate Program Coordinator and Dean of the College of Graduate Studies
- The majority of the committee must be faculty members at UBC's Okanagan campus (including adjunct faculty).

The Supervisory Committee Membership form is found online on the Biology Graduate Program website: <http://biol.ok.ubc.ca/graduate/forms.html>. Completed forms to be submitted to the Biology Unit Assistant for processing.

If partners/spouses co-supervise or sit on the Supervisory Committee for a graduate student, the Supervisory Committee must be expanded to include another member.

Committee members are responsible for offering advice, reading and commenting on proposals and thesis drafts in a timely fashion (typically within 2 weeks), and attending committee meetings; committee members will sit on comprehensive exams (PhD students) and a subset will participate in the thesis defense. In some cases, committee members may also be your research collaborators and the work that you do might involve publication with committee members; in many cases, however, committee members are advisory rather than participatory in the research.

Committee Meetings

Committee meetings must be held at least annually to review your progress towards the degree. During the first year (MSc) or two years (PhD), meetings will be more frequent as you address the coursework and develop your proposal. **An initial committee meeting should be held during the first four months from program start date to discuss timelines and components for degree completion and to discuss any required coursework.** The supervisor will chair each meeting, and the committee is tasked with: (a) reviewing your progress towards completing the degree and offering recommendations and guidance about the next stages of the program; and (b) approving any coursework towards the degree (if applicable). We encourage students to arrange their own committee meetings, with the exception of the first one, which the supervisor should arrange.

At least at the end of the 2nd year (MSc) or 4th year (PhD), the committee will ask for a timeline for thesis completion and defense; most committees like to see suggested timelines annually. Beyond 3 years in a MSc program and 5 years in a PhD program, the committee must approve annual extensions. After 5 years in a MSc or 6 years in a PhD, a student will be asked to leave the program unless they obtain the permission of the Dean of CoGS to continue.

Prior to each committee meeting, students are responsible for providing their committee a short synopsis (usually 2-4 pages) of their progress and projected timelines. This report must be given to committee members at least one week in advance of the meeting.

The Supervisory Committee Meeting Report form is found online on the Biology Graduate Program website: <http://biol.ok.ubc.ca/graduate/forms.html>. Notes on the committee meeting will be prepared by your supervisor and attached to the form. You and your committee need to sign the form and submit to the Biology Unit Assistant for filing.

Ideas on preparing for committee meetings

Committee meetings are important: there are only a few times during the degree when you will meet with your entire committee. Sometimes issues will emerge that have not come up in your one-on-one discussions with your supervisor or committee members. It therefore pays to be well prepared going into each committee meeting.

How to prepare for committee meetings

- Discuss the purpose of the upcoming committee meeting with your supervisor. Is it primarily about coursework? An annual check-in? The proposal? Each meeting should have a clear agenda: you may wish to consult with your supervisor about whether you should prepare this agenda or if your supervisor will.
- Be sure that you prepare your progress synopsis carefully. It is a good idea to have your supervisor read it for you before sending it to your committee.
- Bring copies of relevant materials. You probably should bring at least one spare copy in case someone has not printed out or brought with them material you sent in advance of the meeting.

- Remember that the committee is there to help you; you should prepare notes for yourself (and sometimes formalize these as part of the agenda) of what you want out of the meeting so that you can be sure your questions and needs are addressed.
- Reserve or bring AV equipment if needed.
- It often helps if you are in regular contact with committee members outside of the formal meetings, so that concerns can be dealt with as they arise rather than accumulating and so that your committee members get an idea of how you approach problems and respond to feedback. These regular contacts often make the formal committee meetings less stressful and more useful.

During the committee meeting

- Follow the agenda. If other topics arise, give them separate time in the agenda, but be sure all agenda items are addressed.
- Be sure you are clear on what 'action items' or decisions have been reached. Also be sure you are clear who needs to know when you have accomplished particular things (e.g. are you submitting a form to a grad secretary, meeting later with your supervisor, or reporting back at another committee meeting?). Ask for clarification as often as needed; it is a bad thing when the committee thinks they've told you one thing, but you've heard another.
- If a topic arises that is really between you and one other person, ask the group if the two of you can have that conversation later or if it should be held here (e.g. if there is a question around a particular technique that one of your committee members is helping you learn).
- Work from your list of questions / needs to ensure you get the advice and help you need.
- Be aware that people differ in how they give feedback. Sometimes it comes across really harshly, even when it is intended by the speaker to be useful. Try to separate the advice from the way in which it is given.
- It may be useful to have a post-meeting debriefing with your supervisor, especially if you have any concerns about how the meeting went or what you are being asked to do.

Annual Progress Reports

Each year, each student must complete the **CoGS Annual Progress Report** found on the CoGS website at this link: <http://gradstudies.ok.ubc.ca/forms/annprog.html>. This form asks for information on coursework, fellowships and grants-in-aid applied for or received, conferences attended, talks given, progress towards the degree, etc. It enables the Biology Graduate Program to help showcase the activities of students, as well as allowing us to evaluate how students in the program are performing overall. CoGS also requires this information as part of their campus-wide oversight of graduate programming.

Guidelines for the Research Proposal

Research proposals should be approx. 25 double-spaced pages. Each proposal should:

- Provide a brief literature review to contextualize the proposed research,
- Give clear questions / objectives / hypotheses (as appropriate for the field of study),
- Outline the major methods and data collection (including the statistical analyses to be used, when appropriate),
- Indicate any progress to date (if appropriate)
- Give a brief projection of likely thesis chapters

Although not a part of the formal proposal, it is often useful for each student to also provide a brief projected timeline, e.g. when lab or fieldwork will occur, when drafts of chapters are expected, when the likely defense is. These timelines will likely be updated at each subsequent committee meeting and should be flexible, but they are useful for helping students and supervisors to ensure the thesis research is completed in a timely fashion.

Ideas on preparing a research proposal

- Read widely. It may help to ask your supervisor or committee for suggested readings, but of course you will also need to read well beyond what they recommend. Read some other proposals to see how other students have tackled their proposals. We are developing a collection that will be available as a reference.
- Look at some of the reference books listed earlier for guidelines. Books on preparing grant proposals are often useful too.
- Discuss your ideas with other grad students, your supervisor, and committee members.
- Start writing early; expect that you will revise and revise and revise this document.
- Someone reading your proposal should be able to tell what question(s) you will address, why the topic is interesting, how you will approach the problem, the types of data you will collect, and how your research will advance the field. Give drafts of your proposal to friendly readers and ask them to answer those questions to see how well you did at conveying your ideas.

MSc Thesis Proposal Approval Meeting

MSc students must have a preliminary committee meeting to discuss the topic of research and the direction that the student wishes to take. **As stated above, this should occur within the first term after initiating their program, and before undertaking significant amounts of the proposed research.** The committee will provide clear feedback to the student on the proposed research.

A final written proposal is expected no later than 8 months after initiating the degree program. Students must present their committee with copies of the research proposal at least one week prior to the committee meeting. **A neutral chair is not required for this meeting, but can be present at the request of either the student or the supervisor.** If a chair is requested, students/supervisors must contact the Biology Unit Assistant at least 3 weeks in advance of the anticipated meeting to allow sufficient time for

scheduling. Students will give a talk (approximately 20 minutes) on the proposed work, then field questions from the committee. The bulk of the time during this committee meeting should be spent on discussion between the student and the supervisory committee on the details of the proposal. At the end of the meeting, the committee shall discuss in camera whether the proposal is satisfactory or ask for modifications. If modifications are required, they should be specified in detail and a timeline should be developed for when the changes are expected. In cases where the proposal is deemed unsuitable, the committee may request another committee meeting to discuss the proposal.

PhD Thesis Proposal Defense

PhD students must present a preliminary research proposal to their committee no later than 12 months after initiating their program, and before undertaking significant amounts of the proposed research. The committee will provide clear guidance to the student as to any necessary modifications of the proposal. **A final proposal is expected no later than four months after presentation of the preliminary proposal and is to be formally defended.** Students must present their committee with copies of the finalized research proposal at least one week prior to the thesis proposal defense. PhD thesis proposal defense is closed to the public.

During the thesis proposal defense, students will give a talk (~20 minutes) on the proposed research followed by questions from the committee. Normally, questioning from the committee will occur over two rounds. In the first round, each committee member will have ~10-15 minutes each, followed by a second round of ~5-10 minutes each. After the questioning period, the candidate will be asked to leave the room and the committee shall discuss in camera the proposal and defense. The committee (including the supervisor) will vote, with no abstentions, to determine one of three evaluations: pass, pass with conditions, or unsuitable. If the outcome is pass with conditions, then a specific list of conditions and timeline for completion should be communicated to the candidate. All committee members except the supervisor will sign the PhD proposal defense form; once the conditions have been met, the supervisor will sign and submit to the Biology Program Assistant. If the outcome is unsuitable, a timeline and specific list of conditions should be communicated to the candidate and the committee may request another meeting to review the revised proposal. The final proposal must be approved before the student takes the candidacy exam (see below).

The meeting will be chaired by a neutral third party as appointed by the Biology Graduate Program Committee. Given the need to appoint a chair, students/supervisors must contact the Biology Unit Assistant at least 3 weeks in advance of the anticipated meeting.

The MSc Research Proposal Approval form or PhD Proposal Defense form will be provided to the supervisor or Chair, as appropriate. This form needs to be completed and signed at the Proposal Meeting. If a neutral chair has not been appointed, the form is to be completed by the supervisor. Form to be submitted to the Biology Unit Assistant for processing, along with an e-mailed copy of the approved proposal.

The PhD Comprehensive Examination for Admission to Candidacy

The comprehensive examination is oral and designed to assess the student's ability to carry out the proposed line of research. The exam will consist of questioning from the committee. The student does not give a presentation of thesis work at the beginning of the comprehensive exam. Questions will focus on topics contained within or pertinent to the research proposal, but will not be centered on the proposal itself as it must have been previously approved. The questions are expected to be broad-ranging, but should encompass topics considered relevant to the proposed research. Students should show:

- Familiarity with the literature in the proposed research area
- Familiarity with fields related to the proposed research
- Ability to integrate scientific information and draw appropriate conclusions
- Understanding of relevant experimental design, techniques, and analytic methods
- Sound reasoning skills

Because of the critical nature of this exam to progress in the program, the students should know the composition of their committee 6 months prior to taking the exam, so that they can obtain advice from the committee on how to prepare. The examining committee can be the same as the supervisory committee, or can consist of the supervisor, at least two other members of the supervisory committee, and up to two others not on the supervisory committee. This flexibility is in place in case a supervisory committee member is away on sabbatical or otherwise unable to participate, or if questioning in a particular area pertinent to the proposed research would benefit by bringing in someone external to the supervisory committee.

The comprehensive exam is normally taken within 4 to 6 weeks of having the research proposal approved and must be completed within 18 months of enrolling in the PhD program. Any extensions to the 18-month deadline must be requested in writing to the Biology Graduate Program Coordinator, justifying the need for the extension. The request for extension letter must be signed by both the student and the supervisor.

The comprehensive exam is closed to the public and typically does not exceed 3 hours in length. Normally, questioning from the committee will occur over two rounds. In the first round, each committee member will have ~10-15 minutes each, followed by a second round of ~10-15 minutes each. After the questioning, the committee will ask the candidate to leave so they can discuss the exam, and, at their discretion, may ask the research supervisor to leave. The committee (including the supervisor) will vote, with no abstentions, to determine one of four evaluations: pass, pass with conditions, fail with the opportunity to retake, and fail without the opportunity to retake. Should students fail but be allowed to retake the exam, they must retake the exam within 6 months; failing a second time will require withdrawing from the PhD program. Students who fail may continue in a MSc program. The 'pass with conditions' determination is used for strong students with a particular weakness; the conditions imposed are designed to remedy the weakness and could include such things as coursework in a particular area, writing essays on specified topics, etc. The student is advanced to PhD candidacy once the conditions are fulfilled, but there is no need to retake the comprehensive exam.

The meeting will be chaired by a neutral third party as appointed by the Biology Graduate Program Committee. The chair of the comprehensive exam is responsible for keeping track of time, intervening if questioning is inappropriate, guiding the discussion about the decision, informing the candidate of the decision, and preparing the written PhD Candidacy Exam Report. The chair will not ask questions of the student.

Given the need to appoint a chair, students/supervisors must contact the Biology Unit Assistant at least 3 weeks in advance of the anticipated meeting.

The following forms for the PhD Comprehensive are required and can be obtained from the Biology Unit Assistant:

PhD Comprehensive Examining Committee Membership Form
PhD Candidacy Exam Report Form
Recommendation for Advancement to Candidacy

All completed forms are to be submitted to the Biology Unit Assistant for processing and filing.

Preparing for the comprehensive exam

You and your supervisory committee should determine the members of your comprehensive examining committee no later than 6 months before the exam. It will help you in the exam if you:

- Discuss your proposed work with each member of the examining committee well in advance of the exam to obtain ideas about what sorts of material to study.
- Have a mock exam in which other grad students or your supervisor ask questions.
- Read copiously.
- Treat the exam as a chance to work on broadening and deepening your knowledge, rather than as an artificial thing imposed by the university: preparing for and taking the exam can help you learn a lot and you are in grad school for that education.

The MSc Thesis Defense

When all requirements have been met, and the student, Supervisor and the Supervisory Committee agree that the thesis is ready for defense, please refer to the document “Procedures for Scheduling the MSc Defense” that can be obtained from the Biology Unit Assistant.

CoGS governs the policies and procedures related to the actual defense. For more detailed information, refer to the “Handbook of Supervision and Examination” that can be found at the following link:

http://gradstudies.ok.ubc.ca/_shared/assets/Revised_Handbook_of_S_E_Feb49270.pdf

The PhD Thesis, Oral Presentation, and Defense

Students should obtain the formal requirements for PhD completion from the College of Graduate Studies six months before anticipated completion of the thesis.

When all requirements have been met, and the student, Supervisor and the Supervisory Committee agree that the thesis is ready for defense, please refer to the document “Procedures for Scheduling the PhD Defense” that can be obtained from the Biology Unit Assistant.

CoGS governs the policies and procedures related to the actual defense. For more detailed information, refer to the “Handbook of Supervision and Examination” that can be found at the following link:

http://gradstudies.ok.ubc.ca/_shared/assets/Revised_Handbook_of_S_E_Feb49270.pdf

Preparing for the thesis defense

Congratulations—you’re almost done with your degree. But don’t relax too early; the defense should feel good in the sense that you present your work clearly, then are asked challenging questions that you answer well. Your examining committee views the defense as a forum for you to be able to explain any pieces of the thesis that are unclear or complex, relate your work to other research, justify your interpretations, and discuss follow-up research.

To help make your defense a good one:

- Take all suggestions on the thesis seriously. If you ignore a committee member’s advice during your revisions, the odds are very high that the person will wonder why and will ask you about it.
- Prepare a good talk, practice it, and revise it with feedback from a test audience
- Bring a copy of your thesis (if it is long, you may want to mark some pages in it to make it easy to flip to them)
- Bring a pencil to make notes
- Listen carefully to each question (and do not interrupt the speaker). If you are not sure what you are being asked, you may ask for it to be rephrased or you can say something like “if you are asking x, then y...if you are asking z, then q.”
- It is ok to pause to marshal your thoughts, but do not pause too often or too long
- Be patient; if people ask you the same thing in different ways, answer again
- If you don’t know something, don’t bluff your way through it; instead, say that you don’t know or be very clear that you are making an educated guess.

Transferring from the MSc to the PhD Program

Exceptional MSc students may request a transfer into the PhD program with the support of their supervisor; the Supervisory Committee must then approve the decision to attempt a transfer.

In order to complete a transfer, the following requirements must be met:

1. The student must have completed one year of study in the master's program with a minimum 80% average in twelve credits, of which at least nine credits must be at the 500-level or above and at least nine credits must be at 80% or above.
2. The student must have a MSc thesis proposal formally approved by their supervisory committee.
3. The student must show clear evidence of research ability.
4. The student must initiate transfer into a doctoral program no later than 12 months from the start of their master's program; **transfers requested after this time will not be considered by the Biology Graduate Program.**
5. The supervisor must submit a new "Statement of Financial Commitment for Admissions Form" to the Biology Unit Assistant demonstrating sufficient funding for a total of 4 years of stipend support (elapsed time in the program counts towards this total).

Please Note:

1. Transfers may not be retroactive.
2. The transfer must be clearly justified by the student's supervisor and Biology Graduate Program Coordinator in a memorandum to Graduate Studies recommending the transfer.
3. The memo must be accompanied by the transfer form:
http://gradstudies.ok.ubc.ca/_shared/assets/Transfer_from_Master_s_to_Doctoral_Degree36802.pdf
4. If the transfer is approved, the commencement of the doctoral program will be from the date of first registration in the master's program.

The transferring student will be immediately subject to the requirements of a PhD student described above, but granted up to a 6-month extension of the typical timeline. For example, the preliminary PhD thesis proposal should be circulated to committee no later than 18 months from MSc program start date, a final proposal 4 months later to be formally defended shortly thereafter, and pass the PhD comprehensive exam within 24 months of the start of the MSc degree program.

Space

UBC Okanagan is a young and rapidly growing campus. Space is limited. Each student will be allocated a desk space and mail box. Access to printing and photocopying will be set up if approved by the Supervisor. Supervisors will also provide the necessary laboratory space or field access. Please be respectful of all shared and private spaces: do not use other people's desks, bench spaces, or equipment unless they have expressly given you permission to do so, keep shared space tidy, keep noise down, etc.

Seminars and Discussion Groups

Several Units have seminar series. Watch for the announcements and try to attend. There are several discussion groups comprising graduate students or graduate students and faculty. These groups are great, as they offer opportunities for learning and discussing new ideas, practicing talks, etc. It is well worth your time to attend regularly.

Scholarships and Fellowships

Graduate students are expected to apply for scholarships and fellowships. Normally, if the student is awarded a scholarship, the support supplied from the supervisor's grants will be decreased. You should discuss total stipend support with your supervisor when you apply for scholarships to clarify what funding will be available for your stipend or your project in the event you are successful.

Watch for announcements for external fellowships such as CIHR, NSERC and others. The American Association for the Advancement of Science often posts graduate fellowships. Your professional societies may also have fellowships or grants-in-aid-of-research for which you can apply. Also ask your supervisor for sources of which they are aware. The following websites might be useful:

www.grantsnet.com

www.cos.com [Community of Science]

www.scholarshipscanada.com

There are two primary internal funding opportunities including Graduate Dean's Entrance Scholarship (GDES) and the University Graduate Fellowship (UGF). The GDES is available for top incoming students who come in with a first-class average (80%) and meet other requirements as determined by CoGS. The UGF is available for continuing students. Starting in the 2017-2018 academic year, students will be considered for a UGF based upon the annual progress reports. Note that MSc students will not be considered for a UGF after year 2 in the program. Similarly, PhD students will not be considered for a UGF after year 4 in the program. The eligible window will be extended for one term for students who successfully transfer from the MSc to the PhD program. In addition to these two main sources, there are other internal funding opportunities as detailed on the CoGS website.

Develop your Professionalism

Becoming a professional biologist is only partly about your research and coursework. The following activities are strongly recommended as ways to develop the skills and experiences that typify a professional's life:

1. Publish your research. If your research is grant-funded, that also brings an obligation with it to disseminate your results. Publications are also a critical piece of evidence on your CV demonstrating your ability as a scientist. Discuss where to publish and authorship issues with your supervisor. It is best to discuss publications early and often; it is ideal if you can have several manuscripts submitted or even accepted

before you finish graduate school, rather than focusing on the thesis or dissertation and leaving all of the submission of manuscripts for after your degree program.

2. Attend seminars and discussion groups. These events foster learning and the exchange of ideas, as well as helping to build your professional network.
3. Attend professional conferences and present your work there. Presenting at conferences is another good way to get your ideas and data out to others in your field. Conferences are also great opportunities for networking.
4. Belong to one or more professional societies. Societies offer many advantages: they often provide expert advice to governments, support annual conferences, and publish flagship journals. Members often have access to reduced rates for conferences, journals, as well as other benefits. Societies often have job boards and granting opportunities or fellowships that are restricted to members.
5. Maintain a current and polished CV. Most fellowships, grants, and jobs require a CV, so practicing scientists typically update their CVs regularly. You should aim for updating yours at least once per semester. Feel free to ask your advisor or other faculty for comments on what to include and how to format your CV.
6. Maintain a presence on campus. Do not hide at home and avoid other students and the faculty. A vital part of your graduate school experience is learning from interactions with your fellow students, faculty, and visiting scholars. Becoming a professional scientist is about engaging in regular interactions with your peers, rather than being a solitary scholar. Often, the friendships you develop in graduate school will be the centre of your professional network for years or even decades to come. Furthermore, when it comes time to ask faculty for recommendation letters for jobs or further training, students who have avoided interactions will not receive strong letters.
7. Apply for funding for your stipend or your research project. Funding applications are a way of life for most practicing scientists, so use graduate school as a time to learn how to apply. If you are successful, not only will you receive the money, but also your CV will look much stronger. Even small grants or fellowships (e.g. \$500-\$2000) are useful additions to your CV.
8. Take advantage of opportunities to be a leader or to serve on committees. Service and outreach activities, within or external to the university, are often regarded quite positively by funding agencies and employers. These opportunities are often rewarding in their own right, especially if you select activities that are consonant with your values and interests. There are various committees on campus that welcome graduate student involvement. For example, Biology has invited a graduate student representative to attend faculty meetings and act as a liaison conveying information back and forth. This position will be filled on an annual basis by a vote of the Biology Graduate Students. Selection committees for hiring often invite student representatives, as do some university-wide committees. Ask your supervisor or the Biology Graduate Program Committee about opportunities.

Looking for work or more training

What happens next? Do you want more academic training, i.e. a PhD program or a postdoctoral position? A job in your field? It is a good idea to start thinking seriously about your future a year or more before the end of your degree program. It can take a while to locate good options and be accepted into a position you want. Good resources for you are your supervisor, professional societies (their webpages and annual meetings often provide advice, contacts, networking, etc.), workshops held by the graduate program or CoGS, and the UBC Career and Alumni Services office. We'll also be developing a bulletin board for posting opportunities and workshops as they arise.

Dealing with situations not described so far

So far, this Handbook has described the events that will occur for most students from start to finish of their degree programs. Inevitably, some situations will arise that are not described here. Situations such as parental or sick leave, other leaves, withdrawals, etc. will be handled through CoGS. Feel free to contact the Biology Graduate Program Coordinator for assistance on any other issue arising.

If you have issues you can't resolve with your Supervisor, please feel to discuss the issue with the Biology Graduate Program Coordinator, or book an appointment to speak with the Department Head through the Unit Assistant.

The Biology Graduate Program Committee welcomes feedback from anyone at any time on how we can help make the Program more welcoming and effective. Our goal is to make the environment one in which you can do your best work, so if you have good ideas about how to foster that environment, please let us know.

Appendix: Timelines and Milestones

This appendix outlines the major events and associated timelines for each graduate student in the Biology Graduate Program.

Major milestones and requirements for students

1. Students must maintain a standing of $\geq 75\%$ in all coursework.
2. The supervisory committee will gauge Student progress toward the thesis at least annually.
3. Within 8 months of initiating a MSc, and 12 months of initiating a PhD, students must successfully present a research proposal.
4. PhD candidates must take their candidacy exams within 18 months of degree initiation; if they fail, they may retake the exam within 6 months, but a second failure will lead to termination in the program.
5. Degree candidates must defend their thesis before a faculty committee struck for that purpose.
6. PhD students must successfully complete some outreach based on their research.

For MS. students

Within the first month

- Structure a supervisory committee. Review coursework and timing for TA requirement.
- Ensure that you know the major milestones in the program.
- Complete a **student – supervisor agreement form** if desired.

Within the first five months

- A first draft of the proposal should be well along in preparation for approval by the committee at 8 months.

Month 8

Approval of proposal at committee meeting

By 24 months

- If you have not already defended or scheduled your defense, hold a committee meeting to discuss timelines for completion.

At end of program

- Schedule a defense.
- Finalize thesis for final submission. .

At least annually

- Hold committee meeting on progress towards the degree.
- Submit the **CoGS Annual Progress Report** by Biology Program internal deadline each year (typically around June 15).

Sometime during the program

- Fulfill course requirements.

Throughout the program

- Apply for funding (fellowships, grants in aid of research, travel grants).
- Discuss publication of the research, if appropriate.
- Attend conferences.
- Attend seminars and discussion groups.
- Think about your future, whether it is pursuing a PhD or finding employment in your field.

For PhD students

Within the first month

- Structure a supervisory committee. Ensure you know the major milestones in the program.
- Complete a **student – supervisor agreement form** if desired.

By month 12

- First submission of research proposal for comments by committee.
- In consultation with your supervisory committee, establish the committee for the comprehensive exam.
- Meet with examiners for your comprehensive exam for advice and topic areas.

By month 18

- Defend thesis proposal
- Complete comprehensive exam.

By month 24

- Agreement with committee on outreach to be undertaken by the student.

At least annually

- Hold committee meeting on progress towards the degree.
- Submit the **CoGS Annual Progress Report** by Biology Program internal deadline each year (typically around June 15).

Sometime during the program

- Fulfill the outreach requirement.

Throughout the program

- Apply for funding (fellowships, grants in aid of research, travel grants).
- Discuss plans for publishing research.
- Attend conferences.
- Attend seminars and discussion groups.
- Think about your future, whether it is pursuing a postdoctoral fellowship or finding employment elsewhere in your field.

At end of program

- Finalize thesis for submission and defense; follow CoGS guidelines.
- Apply for jobs or postdoctoral positions.