Biology Graduate Program

Memorial University of Newfoundland

Guidelines for Students and Supervisors

2006

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A. Foreword

The Biology Graduate Program includes studies in a wide range of biological disciplines within the department and encompassing the collegial collaboration of its members in various branches of the university including the Ocean Sciences Centre and Marine Institute, as well as government agencies such as the Department of Fisheries and Oceans, Inland Fisheries and Wildlife Division, Environment Canada and Agri-foods Canada. It is administered by a Graduate Studies Committee at the department level which makes recommendations to the Head of Biology and Dean of the School of Graduate Studies.

This Guide presents a general outline of the administrative requirements of the Biology Graduate Program as well as other information that will be useful for students and supervisors. **It includes examples of forms that may be needed by supervisors and students to provide information required to administer the program.** Corrections and suggestions for changes and additions are welcome. If you have one or more questions that you feel are not answered in the guidelines please contact the Biology Secretary for Graduate Studies (phone 737 2346) or the Biology Graduate Officer.graduate.biology@mun.ca

Note: These are guidelines only to the regulations and procedures published in the Memorial University Calendar. Current *Memorial University School of Graduate Studies* [SGS] procedures and regulations are available at the SGS Web site.

B. Some useful Web sites, contact numbers and addresses

Web sites:

Memorial University	http://www.mun.ca
Memorial University School of Graduate Studies	http://www.mun.ca/sgs
School of Graduate Studies [SGS] Thesis Guide	http://www.mun.ca/sgs/thesisguide.htm
Biology Department, Memorial University	http://www.mun.ca/biology
Memorial University Directory [phone and e-mail]	http://www.mun.ca/cc/phone

E-mail addresses:

Memorial School of Graduate Studies:	sgs@mun.ca
Biology graduate studies:	graduate.biology@mun.ca

Phone number:	Biology Graduate Studies Secretary	737-2346
Fax number:	Biology Department	737-3018
Phone number for Campus Enforcement [Emergency Only]		737-4100

C. Introduction to the scope of the Biology program and application procedures

The degrees of Master of Science (MSc) and Doctor of Philosophy (PhD) are offered in Biology. The Biology graduate program includes faculty appointed to Biology, to the Ocean Sciences Centre and to the Marine Institute. In addition, certain cross-appointed faculty may supervise students in the Biology graduate program and adjunct faculty may be eligible to co-

supervise students. Details about the research interests of supervisors are available at the Web site http://www.mun.ca/biology. **Prospective students are strongly encouraged to make initial contact with a potential supervisor prior to submitting a full application to determine whether there is mutual interest**. Application to the program is made through the School of Graduate Studies, specifying the Department of Biology and the degree sought, along with the appropriate academic transcripts, three reference letters and TOEFL result, if the latter is applicable. Application can be made *via* the internet at http://www.mun.ca/sgs.

The major annual application deadline for fellowship consideration will be February 15, so applications should be completed by that time for full consideration. Later target deadlines of September 1 and May 1 may be applicable if resources permit.

D. Processing an application

When an application is received by the School of Graduate Studies, for Biology, it is dated and a copy is forwarded to the Department. Copies of references, transcripts and TOEFL scores (where required) are dated and forwarded to Biology as they become available. In Biology, the files are checked on a regular basis to determine when the file is complete. A file can proceed once two out of three letters of reference are received, provided that the recommendations are consistent. A representative from the Biology Graduate Studies Committee does a preliminary evaluation of the file to determine if the applicant meets the academic requirements. Then the file is made available to prospective supervisors, one of whom must express an interest in supervising the applicant. To facilitate the process, regular circulars are prepared and distributed. These circulars give the applicant's name and a brief outline of the area of interest. If no interest is shown by faculty members, the file may be closed usually within a year after it has been in circulation. When an application is closed, the applicant is notified. If a potential supervisor is identified, financial support for the applicant is considered, normally requiring at least the minimum level set for the Department (see Graduate Support Section below). Financial support can come from a variety of sources outlined below. The application will be given a final review by members of the Graduate Studies Committee in order to determine that the applicant has the qualifications for the proposed area of research. Once a Program of Graduate Studies Form is completed, members of the Biology Graduate Studies Committee may be asked to advise on the appropriateness of the supervisory committee. Once these requirements have been met to the satisfaction of the Department a recommendation will be made by the Head, or delegate, to the Dean of Graduate Studies requesting that the applicant be admitted to the program.

The Dean of Graduate Studies will review the recommendation and, if in agreement, will send the applicant a **letter of acceptance** outlining the program with regard to Department, supervisory committee and financial support. The commitment for financial support is guaranteed for the first year only, although the conditions for further support are set down, at this time, subject to available funding.

Foreign students require the letter of acceptance from the Dean when applying for visas to study in Canada.

The applicant will then accept or reject the offer made by the Dean of Graduate Studies.

Note: Graduate students are required to pay fees until the thesis and other program requirements are complete. That is, until the corrected thesis is submitted to, and accepted by the School of Graduate Studies, fees must be paid on a semester basis. The same applies if there are other outstanding requirements.

Visiting Graduate Students

Graduate students visiting to undertake collaborative research as part of their graduate programs elsewhere should register as "Visiting Graduate Students" with the School of Graduate Studies upon their arrival. Such visiting research students will be exempt from tuition fees. However, all international students studying on a study permit will be required, as a condition of registration, to purchase drug and health insurance (contact the International Student Advisor), and dental insurance (contact the Graduate Students' Union). Full-time Canadian students and Permanent Residents will be required, as a condition of registration, to purchase drug and health insurance, and dental insurance unless they have proof of alternative coverage and complete the required opt-out forms by published deadlines (contact the Graduate Students' Union).

E. Graduate support

Currently, the Department has set $15,500 (MSc) and $16,500(PhD) per annum as a guideline for minimum support of a student. This support is sought for two years for the MSc program and four years for the PhD program. However, funding is only guaranteed for one year at a time. Funding beyond this time-frame is at the discretion of those providing the funds. However, this support should not be withdrawn for trivial reasons. University fellowship monies terminate at the end of two years for MSc and four years for PhD students.

There are a variety of mechanisms by which students are supported. Students may hold external fellowships from NSERC, other scholarships or support through agencies such as CIDA or an agency of CIDA, university fellowships (including School of Graduate Studies baseline fellowships), teaching assistantships, supervisor's grants or contracts and by their own resources.

The Department may recommend baseline funding and teaching assistantships. The baseline funding budget comes from the School of Graduate Studies and is allocated in consultation with the Biology Graduate Studies Committee. Students and/or supervisors can and should request consideration for baseline funding if the student is not otherwise fully supported and has a minimum of a 75% cumulative average based on undergraduate and graduate transcripts. Baseline funding is currently recommended at $6,250 per annum for MSc students and $7,000 per annum for PhD students. Students may apply for teaching assistantships which are allocated in units of $860 at present. Each unit is the teaching of one laboratory slot, plus preparation and marking for one semester (approximately 56 hours). Allocations of up to 4 per year [for a total of $3,440] are normal from this source.

Full-time students cannot work more than 24 hours per week at a job. If a student works more than this s/he is considered to have a full-time job and the program must be changed from full time to part time using a **Change of Program** form.

Note: All transfers of funds to the School of Graduate Studies must be administered through the Biology Department because the Department must assemble the total payment for each student, per semester, on a form with grant and item numbers.

Foreign students must provide the Department with a valid work permit to hold a teaching assistantship [demonstrating] position, or otherwise receive a salary for work done. This permit requires student authorization from Canada Employment and Immigration. These authorizations are handled at the National Case Processing Centre (NCPC) in Vegreville, Alberta. Therefore, **students must ensure that the NCPC receives the application for renewal of a work permit before their current authorization expires or they will be out of status and subject to deportation.** It is recommended that the application be mailed at least three weeks before the expiration date of the current authorization. Application kits containing full information may be obtained from the School of Graduate Studies or from Student Affairs. The application and appropriate documents should then be mailed directly to the NCPC in Vegreville in the special envelope provided, to which Canada Post will give priority.

F. Requirements of the student upon arrival at Memorial University

MOST IMPORTANT THINGS TO TAKE CARE OF IMMEDIATELY UPON ARRIVAL

Make sure the following documents from the Government of Canada are in your possession upon arrival:

- Social Insurance Number from the Canadian Government (all students)
- Student Visa (foreign students)
- Work Permit (foreign students)

These documents are needed by both the Biology General Office, SN-3125, Science Building, and the School of Graduate Studies, INCO Building 2012. If these offices do not have these documents, there will be a delay in issuance of the bi-weekly pay-cheque to the student.

Procedure for registration and placement on the payroll:

(a) Foreign students must bring a visa and work permit, if applicable, to the School of Graduate Studies as soon as possible upon arrival.

(b) All foreign students must have health insurance. This insurance is administered by Ms. Lilian Beresford, in A-3039 of the Arts and Administration building. Ms. Beresford works with Student Affairs and Services, Phone ext. 3447 or e-mail at iberes@mun.ca.

(c) All students must register by either telephone or online registration ("Self Service" link found under the Essential links section on the MUN website). The information on this procedure is part of the package sent out by the School of Graduate Studies with the acceptance letter. In order for the registration to be complete, the caller must wait until the computer ends the call by saying "good-bye". If the caller hangs up before the computer says good-bye, the registration is not recognized. Graduate Studies will not

process the payroll paperwork for any student who is not registered. It is therefore advisable to register as soon as possible.

(d) If students want fees, such as tuition, health insurance, and income taxes to be automatically deducted from the bi-weekly pay-cheques, the student must go to the Cashier's Office, A-1023 in the Arts and Administration building and fill out the appropriate form to that affect. Deduction of income tax is optional, but suggested if students do not want to be faced with owing a large sum of money later in the year. The amount deducted from each pay cheque is up to the student. A suggested level is between $30 and $50 per pay period.

(e) The bi-weekly pay-cheque can be automatically deposited in the student's bank account by filling out a form that can be picked up at the Biology General Office, SN-3125, in the Science Building. The student will receive a cheque stub [a record of deposit] each pay day.

(f) If a foreign student has been admitted to the School of Graduate Studies based on a TOEFL, or other English language test, the student must do the English Language Placement Test. The information about this test will be included in the package sent from the School of Graduate Studies. If not received, check with the Department of Biology upon arrival.

G. Guidelines for general procedures to enter the graduate program

Members of supervisory committees should be familiar with the following guidelines from the School of Graduate Studies [SGS].

G.1. Responsibilities of the supervisory committee

a) Each candidate shall be assigned a supervisor by the Dean, on the recommendation of the head of the academic unit concerned.

a) A Supervisory committee shall be appointed for each candidate by the Dean of Graduate Studies. The Supervisory Committee shall consist of the Supervisor (or co-supervisors, if this is appropriate) who shall act as Chair, and sufficient other members to bring the total to three. In no circumstances may the Committee membership be fewer than two members. After consultation with the supervisor and the candidate, the membership of the Committee shall be nominated by the Head of the Department for approval by the Dean of Graduate Studies,

c) The Supervisory Committee shall forward its reports and recommendations to the Dean *via* the Head of the Department.

d) The functions of the Supervisory Committee shall be, ***inter alia***

d.1) to decide, in consultation with candidates, the program of study, the subject of research, and the title of the thesis, and to recommend these to the Head of the Department for approval by the Dean of Graduate Studies.

d.2) to monitor the candidate's progress in her or his courses and research program.

d.3) to report at least annually to the Dean of Graduate Studies on the candidate's progress and, at the same time, to advise on the student's continuation in the program. The supervisory committee shall make such other reports and recommendations about the candidates as it may deem necessary.

d.4) to recommend, after consultation with the candidate, necessary changes in the program of study, the subject of research, or the title of the thesis.

d.5) to recommend the timing of the comprehensive examination.

d.6) to report that the thesis is ready for examination by completing the Supervisory Approval Form, which is to accompany the thesis upon its submission to the School of Graduate Studies.

d.7) to recommend suitable people to act as members of the Thesis Examining Board.

G.2. Responsibilities of Supervisors and Graduate Students

As approved by the Academic Council of the School of Graduate Studies June 2000

The fundamental principle underlying this statement of responsibilities is that between students and faculty there must be mutual respect governed by high standards of professional integrity and ethics. Supervisors and students alike are expected to assume responsibilities and commitments, without which no written regulations will create a successful relationship. For additional information, refer to the Policy Statement on Integrity in Scholarly Research, available from the Office of Research.

A

Supervisors should make themselves familiar with regulations of the SGS and their own academic units, keep abreast of any changes that might affect their students, and ensure that students are informed of these regulations.

Students should become familiar with, and meet all appropriate deadline dates and regulations associated with registration and graduate requirements, as specified in the appropriate regulations of the SGS and the academic unit.

B

Supervisors should help students outline programs of study that are challenging and feasible and which enable students to contribute to their disciplines.

Students should understand that they are making a commitment to enhance the chosen field of study by developing expertise to a level of competence where new ideas and knowledge may be created. In consultations with the supervisor and members of the committee, the student should endeavour to choose an appropriate and reasonable topic of research as early as possible.

C

Supervisors should make reasonable efforts to ensure students have access to academic, financial and other resources necessary in order to complete their programs in a timely manner.

Students should make reasonable efforts to become aware of appropriate sources of funding.

D

If students have been supported by funds from the supervisor's research grants, and such funds become unavailable, supervisors should attempt to give at least one semester's notice to these students to find alternative funding.

Students should assist in the securing of additional or alternative funding by seeking sources, completing forms and providing information as required.

E

Supervisors should consult their academic units on the assignment of graduate assistantships, and ensure that duties assigned under such assistantships are appropriate and do not impede the progress of students' academic programs.
Students should be aware of guidelines governing teaching assistantships in their academic units and should carry out those duties in a professional manner.

F

Supervisors should inform students of safety regulations on campus and encourage students to become familiar with regulations off campus.

Students should maintain safe work environments and discuss concerns with supervisors as soon as problems are noted. Students should become aware of and follow safety policies on and off campus.

G

Supervisors should initiate regular meetings with their students, according to a mutually agreed schedule, and make themselves accessible to discuss problems or issues that may arise between scheduled meetings.

All students should have a supervisor or an advisor during the course of the program, and should contact the Graduate Officer if they do not have one. Students must maintain regular contact with the supervisor and the members of the supervisory committee, and should meet with the latter regularly to review progress. Students should follow the agreed upon program of study (including thesis research where appropriate) and endeavour to make acceptable progress towards program objectives.

H

During any extended period of absence from campus, supervisors must make arrangements for advising and supervising students while they are absent; such arrangements should be acceptable to their students and to heads of the relevant academic units.

It is the student's responsibility to keep the supervisor informed of where s/he may be contacted. Students should also inform the supervisor of any extended period of absence or the potential of such absence.

I

Supervisors must convene meetings of students' supervisory committees at least once a year and should complete and submit to the SGS annually a detailed Supervisory Report Form for each student under their supervision.

Students should assist the supervisor in preparing for the yearly report by providing relevant documents or information.

J

Supervisors should make constructive suggestions on any written work submitted as part of their students' program, alert students to any perceived difficulties this work is likely to encounter, and return the work to students promptly.

Supervisors should make reasonable efforts to ensure that theses are acceptable before they are submitted to the SGS for examination. Where it is required, the student must agree to produce a thesis of his/her own work that reflects a capacity for independent scholarship in the discipline, and that meets generally accepted standards of quality and style. In the thesis, the student must acknowledge assistance, materials and/or data provided by other scholars, including fellow students, companies, technicians, the supervisory committee and others.

K

Supervisors should discuss intellectual property issues with students, at the earliest possible stage of their programs, including any potential joint authorship that might arise from their research and any joint ownership of data or patents; supervisors should also make sure they adequately acknowledge any student contributions to material they publish.

Students must recognize that in cases where his/her research comprises a component of the supervisor's research program, questions of joint ownership of data and/or patents should be discussed. Questions regarding sole or joint ownership of data in such a research program must be resolved as early as possible in the life of the program, and the possibility of joint publication of research results discussed and clarified.

L

Supervisors should ensure that they do not exploit students for personal, financial or professional gain.

If students feel they are exploited in any way they have the responsibility to discuss concerns with the Vice-President (Academic) of the GSU**, Graduate Officer, Head of Department and finally the Dean of Graduate Studies. This list may not be exhaustive.

M

Supervisors should avoid any attempts to indoctrinate students into their own political, religious or other ideologies and prejudices.

If students feel they are being pressured, they have the responsibility to discuss concerns with the Vice-President (Academic) of the GSU**, Graduate Officer, Head of Department and finally the Dean of Graduate Studies. This list may not be exhaustive.

N

Supervisors should, in any case where disagreement arises between supervisor and student, approach (in consultation with the student if possible) the Head, Graduate Officer or other appropriate person to initiate a process for resolving the dispute.

In cases where there is disagreement between supervisor and student, it is incumbent upon the student, in consultation with the supervisor whenever possible to approach the appropriate officials within the academic unit and/or the SGS so that discussions aimed at solving the problems can be initiated. The Vice-President (Academic) of the GSU** is available for information and advocacy as well.

* All students should have a supervisor or an advisor upon admission and during the course of their program and should contact the Graduate Officer if they do not have one. In various academic units the practice is to assign advisors before appointment of a supervisor and/or supervisory committee. In these instances, the general principles of this policy statement still apply.

** Students may consult the Office of the Vice-President (Academic) of the Graduate Student Union to discuss their problem and receive information regarding a resolution. The Vice-President (Academic) of the GSU will offer graduate students advocacy, advice and proper directions in cases of academic disputes.

G.3. Questions that should be addressed by supervisors and students at the beginning of a program

Note: Some of what follows may include issues already addressed under the SGS Responsibilities of Supervisors and Graduate Students.

a) What is the nature of the research proposed, the funding for the research, and the timetable for doing the work? This is critical in large interactive research programs where timing of research may be critical (sea voyage, seasonal cycles, breeding periods, etc.) and funding may be time limited. Two aspects then need to be assessed: (a) what is the probability of obtaining data within a given time frame and (b) what are the funding prospects if the data collection period must be extended? The goal should be to limit the time taken in MSc programs to two years and PhD programs to four years, with longer periods being the exception rather than the rule for full-time students.

b) Questions concerning use and ownership of the data being collected by the student or provided to the student for analysis and its publication should be addressed. This may arise from contract research or if data are obtained from other agencies or companies. All rights and ownership should be known, and agreements on its use specified in writing so that no misconceptions arise. A student has the right to use all data that she or he has collected or compiled, unless a different arrangement is made using a contract signed by all parties concerned. Note**: Memorial is developing a Policy on Intellectual Property**...which should be available on the MUN website when adopted.

c) Publication of results: The protocols that will be used with respect to publication should be made clear from the start of a project. That is, will work be single authored (student) or multi authored with other researchers. It is the goal of the program that all thesis research ultimately result in publications in refereed journals. Unless otherwise agreed to, it is normal practise for the student to offer co-authorship to the supervisor for publications resulting primarily from the thesis research. Co-authorship is also usually offered to others who have played a significant role in the research. However this does not normally extend to other members of the supervisory committee nor to those consulted in limited capacities (e.g. for statistical, computing, experimental design or other technical advice). It may be appropriate to recognize a contribution made in a limited capacity by use of an acknowledgement. A supervisor may decline co-authorship of a paper, in which case the supervisor's contribution can be noted in the acknowledgments. A supervisor also has the right to use data for additional scientific publication beyond the initial use by the student or in cases where the student declines (in writing) to submit the material beyond the thesis. In such situations it is normal practise for the supervisor to offer co-authorship to the student and for the student to have the right to decline co-authorship, in which case the student's contribution should be noted as an acknowledgment. Any agreements limiting the student's right to use the data, or placing time restrictions on its use, should be agreed to in writing before the research begins.

The responsibility for preparing manuscripts for submission, in thesis or other published formats, lies initially and primarily with the student. The student is expected to consult with the supervisor regarding content and format, but the ultimate responsibility for the submitted manuscript is that of the student in the case of a thesis and that of the first author in the case of scientific publication.

d) If work is to be done away from a campus facility, the feasibility of access to the research site should be clearly determined and provisions, if any, for transport and field costs noted. The need for emergency medical transport insurance should be evaluated and secured as appropriate.

G.4. Program and Procedures common to both Master's and Doctoral programs

G.4.1 The Graduate Research Integrity Program (GRIP) is a required program designed to provide **all graduate students** at Memorial University with the knowledge to make informed decisions on integrity issues commonly encountered in the research process. GRIP is an initiative of the School of Graduate Studies and is Memorial's response to the Tri-Council Policy Statement on Integrity in Research and Scholarship (January 1994). This policy recommends that institutions that administer the Councils' funds establish programs to educate researchers on the principles and practices of integrity in research and scholarship. GRIP website: http://www.mun.ca/sgs/grip/

G.4.2 Procedures common to both Master's and Doctoral programs

a) A Supervisory Committee should be selected before or within a month of the student's arrival and consists of the Supervisor plus at least two others. The Committee is

appointed by the Dean based on recommendations of the Head (or delegate). The supervisor and the committee need to regularly interact in order to provide guidance and critical constructive aid during a student's program and research. Changes to this Committee are made on the School of Graduate Studies Change of Program form, available in the Biology Department.

b) The first meeting of the Supervisory Committee and the student to discuss the student's program should take place as soon as possible after arrival of the student, but not later than a month after first registration. Areas of weakness in biology, particularly as it relates to the proposed area of research as appropriate, should be determined. This meeting should be conducted immediately upon arrival in either the Fall and Winter semesters, so that students who require graduate courses and/or are deemed likely to require specific upgrading of undergraduate courses may then register for these courses. Changes to course requirements (additions or deletions) must be made on the same form noted in a) above and must be approved by the Head or Head's delegate as well as the Dean of Graduate Studies.

c) Program outline: An outline proposal of the program is to be completed and submitted to the Department and placed in the student file by no later than the end of the first semester. The purpose is to give the Department, student and supervisory committee a plan that will allow an evaluation of progress over the term of the program. This can be referred to in subsequent progress reports. Comments on parts completed, problems encountered and changes should be noted. The purpose is to provide structure and a goal to the program that all can see and evaluate over time. The attached form, 'Projected Graduate Student Program', outlines the structure. This does not prevent subsequent changes to the program but is geared to avoid undue delays resulting from misunderstood goals and direction of the program by one or all parties concerned. A form outlining such information is attached as Form A (Projected program for new students).

d) Research proposal seminar: By the end of the first semester, the student should have prepared an outline of her or his proposed research. This outline should be completed with direction from the supervisor and the supervisory committee. It should be presented, in the second semester, as a research proposal seminar. In recent years this presentation has been pat of a Biology graduate student colloquium held in December and April. The purpose of this seminar is twofold. First, it is to outline the hypothesis, objectives, methods and proposed analyses for the student's thesis work. This seminar is presented to students and faculty in order to receive critical positive feedback. Potential problems may thus be avoided or minimized. The second objective is to encourage interaction and exchange of information about a student's program among faculty and fellow students. As part of this process, the student must submit an abstract to the Department at least one week before the seminar.

a) Supervisory reports: It is required that a report be filed at least annually for each graduate student. This report should be produced at a meeting, with the student, in which the program is reviewed to determine progress, identify problems and project dates for completion of various tasks. (See attached: Graduate student Annual Progress and Supervisory Report form.) If the student is away from campus on a long term basis a

"meeting" can be interpreted to be an exchange of correspondence by electronic means provided that it meets the objectives of the annual review. The same would apply if a member of the supervisory committee was absent from campus for an extended period. Under these circumstances, the form should still be completed and approved by the Committee. A copy will be forwarded to the student, or any committee member that may not have been present at the meeting.

f) Courses: Master's and PhD students who take program graduate courses must obtain a grade of A or B. However, there are regulations by which a substitute course may be accepted or the course can be repeated. This substitution requires a recommendation from supervisor and supervisory committee and this must be supported by the Head of the Academic Unit. The recommendation must then be accepted by the Dean of Graduate Studies. Only one substitute or repeat is permitted. Failure to meet the above conditions will result in the student's program being terminated. Students do not need to obtain an A or B average in non-program courses and failure will not normally result in termination. However, students must pay per-course tuition fees, over and above graduate school tuition, for non-program courses, which should be taken into consideration. It should be noted that grades in all courses are used in averages. A course that is of interest, but in which the student has little experience, may reduce averages. Thus an audit level of participation in these courses may be a more appropriate option. An audit will require permission of the instructor. Instructors are not required to evaluate the progress of auditing students.

g) Use of animals: All graduate students handling or conducting research on vertebrate animals or cephalopods **must** complete an animal care course administered by the School of Graduate Studies and the Animal Care Unit at the first offering after commencement of their programs.

h) Diving: All students who undertake any activity at the university which requires diving must first show they have met the following requirements. These are proof of national or international diving certification, completion of 12 open water dives and possession of a diving medical fitness certificate from a recognized physician. Final approval may be given by the University Diving Officer after an evaluation of the student's qualifications. Currently, the University Diving Officer is Robert Guest [e-mail: rguest@mun.ca]. There are also specific requirements for operation of small boats, again overseen by Robert Guest.

i) Radioisotopes: Students who expect to use radioisotopes in their research are required to register as a radioisotope worker. This is done through the University Radiation Safety Officer, Department of University Works. Students are required to attend a one day training program in radioisotope laboratory safety that is conducted during the Spring and Fall semesters through the Safety Training Centre of the Department of University Works. Normally, students will be allowed to begin their research involving radioisotopes if this requirement precedes the training course, but this assumes that the work will be supervised by someone with the appropriate experience. Once you are registered as a radioisotope worker you will receive a notice when the course is to be offered. Students having questions about the safe use of radioisotopes should direct these

to their supervisors in the first instance but can also ask the University Radiation Safety Officer or the departmental representative on the University Radiation Control Committee. Currently, this is Dr. Steve Carr [scarr@mun.ca].

j) Microorganisms and research: Students who work with microorganisms will be expected to follow the Health and Welfare Canada and Medical Research Council of Canada Laboratory Biosafety Guidelines. Normally it is the responsibility of the student's supervisor to ensure that procedures in the laboratory meet the standards given in the guidelines. However, students can consult with the Biosafety Officer, Department of University Works in the Services Building, SV2023, phone 737-8250. Information about classes of biohazards is available at the Web site of Health Canada Online [http://www.hc-sc.gc.ca].

k) It is the responsibility of the supervisor to ensure that all permits, certificates and clearances for any research have been obtained covering all aspects and personnel involved. It is also the supervisor's responsibility to ensure safety procedures are followed in all aspects of the work. Students who fail to follow safe procedures may be deemed to be not performing satisfactorily, and a recommendation for termination of the program made to the Head of Department and to the Dean of Graduate Studies. It is the responsibility of the supervisor to ensure proper laboratory space and facilities are available for the graduate student to conduct the research needed to complete the program.

l) A *Field Research Safety Planning Form* is available [see Appendix Form G]. This form should be used to record information that should be useful to the Department in the event of an incident occurring during field studies. Responsibility for completing the forms lies with the field leader, but graduate students should be aware of the requirement for a completed form and are responsible for providing information as it pertains to them as individuals within the team. A Safety Policy for Off-Campus Activities is presently being developed by the Safety and Environmental Services Division of Facilities Management.

G.5. General guidelines for writing a thesis

A university guideline to thesis writing is available and should be followed. This guideline is available on the graduate studies Web site. Students are also advised to speak with the department on any specific format that may be in place within the Biology program.

G.6. Additional procedures specific to the MSc beyond general requirements

G.6.1. Nature of the program

The main purpose of a Master of Science in Biology is to provide the student, under supervision, with experience in coordinating a time-limited research project including a written document in a thesis format. This degree provides the opportunity to introduce the student to research in relation to current knowledge, and to develop defined hypotheses and explore appropriate methods. Student will then present results and a discussion of the results in the context of other work in the field. The conclusions and suggestions for further work demonstrate

the progress achieved. It is imperative that in planning this work that the project be of a type that will provide the student a reasonable opportunity to complete the degree in two years. The planned work must also account for other obligations such as course work and demonstrating. These requirements will probably limit the thesis to about four semesters work spread over the six semesters of a two-year program.

In addition to the research and thesis it is important for the student to gain additional skills in the techniques of evaluation of research, dissemination of results and the ability to debate scientific ideas with others. Part of this education is obtained through required courses which can include seminar-discussion courses. However, attendance at departmental seminars, graduate student proposal seminars, thesis seminars, discussion groups and participating in the demonstrating of courses to undergraduates are also deemed important and vital to the Biology graduate program.

G.6.2. The thesis seminar

Each Master's student will present a seminar on her or his thesis work. This seminar should be given after completion of the first thesis draft and before submission of the thesis to the Graduate School. In exceptional circumstances this requirement may be waived by the Department. The Seminar is open to all, including the public. This seminar is generally about 35 to 40 minutes in length followed by questions, generally for about 15 minutes. Fellow graduate students and faculty are encouraged to attend. A panel made up of the Supervisor (or delegate), Head (or delegate) and at least one other non-supervisory Department member will be in attendance. All comments arising will be considered to be of an advisory nature. This seminar is in addition to the research proposal seminar which takes place within the first year of the student's program [See section F.4. d].

G.6.3. Examination of the Master's thesis

See also School of Graduate Studies General Regulations section J. Theses and Reports

The thesis examination is a School of Graduate Studies examination. It consists of the following:

(a) A completed "Recommended Thesis Examiners" (Form C in Appendix) must be submitted to the Department by the Supervisor. The names and some additional information about one internal and two choices for external examiner are required. A brief reason why the person is qualified to be an examiner is to be included. The Graduate Studies Committee reviews these recommendations and approves them or suggests changes. Once an approved list is determined, the recommendations are sent to the Dean of Graduate Studies, who must approve the recommendations and appoint the examiners to whom the Department then forwards copies of the thesis. The process is greatly facilitated when current phone and fax numbers and the correct e-mail address are provided by the supervisory committee. **The above process should be initiated well before [one month] the anticipated thesis submission date so that the thesis can be sent out promptly once approval to do so comes from the School of Graduate Studies.**

(b) The student submits three completed copies of the thesis via the Department to the School of Graduate Studies for examination. A form signed by the supervisor and supervisory committee members, stating that the thesis is approved for submission, must accompany the thesis.

(c) The thesis is sent to two examiners. One examiner is internal to the University (not limited to just the Biology graduate program) and one is external to the University. Adjunct Professors are normally considered to be internal to the University.

Evaluation of Masters Theses and Reports (quoted from the Calendar)

A. i. Final examiners for the thesis/report will be appointed by the Dean on the recommendation of the academic unit. There will be two examiners for a Master's thesis. Examiners shall normally be those who have completed a graduate degree at the doctoral level, including a thesis/report, in the discipline or cognate area. Those serving as examiners shall not have been involved in the preparation of the thesis/report.

ii. Examination of the thesis/report will result in one of the following recommendations by each examiner. The thesis/report is:

a) acceptable without modifications; or

b) acceptable, although minor modifications are required. Minor modifications may include corrections of typographical errors and errors in nomenclature, improvement in phrasing, or rewriting of small sections of the thesis/report (see General Regulation J.5); or

c) unacceptable. The thesis/report requires major modification and re-examination. Major modifications signify the rectification of one or more of the following deficiencies: (1) misinterpretation and/or misuse of the matter covered, omission of relevant materials, unfounded conclusions, illogicality of argument and the like; (2) bad writing, (3) unacceptable physical presentation (see General Regulation J.5), or

d) totally unacceptable - the thesis/report is failed.

B. If both examiners recommend that the thesis/report is totally unacceptable, then the thesis will be failed, and shall not be re-examined.

C. If either examiner recommends that the thesis/report is unacceptable, and this recommendation is accepted by the Dean, then the student may apply to the Dean for permission to resubmit the thesis for re-examination in one of the following ways:

i. to submit a modified thesis/report to the original examiners.

ii. to submit a modified thesis/report to two new examiners.

iii. to submit the original thesis/report to the Examination Board to be appointed by the Dean.

D. If a thesis/report is re-examined, the candidate will not be awarded a pass unless all examiners find the thesis acceptable.

E. Under no circumstances may a thesis/report be re-examined more than once.

G.6.5. Final submission of examined thesis and requirements for graduation

a) Once the thesis has been passed by the examiners, all suggested minor changes must be made or justification for not doing so made in writing to the Department. Thus, when the thesis is returned to the Department for final approval, it must be accompanied by the examiners' reports noting which changes were accepted and made in the thesis. Suggested corrections that have not been done must be justified also. The supervisor must provide a letter stating that s/he is satisfied with the corrected thesis. Two final copies are required.

b) The student must pay the thesis binding fee of $20.00 for one copy at the cashier's office and bring the receipt of payment to the Biology Department. This receipt will accompany the thesis to the School of Graduate Studies. Additional binding fees are required for any personal thesis copies to be bound.

c) Students must ensure the following forms are completed. Note that some require the supervisor's signature. These forms are available from the School of Graduate Studies and from the department's graduate secretary.

Non-Exclusive Licence to Reproduce Theses
Doctoral Dissertations - Publish Abstract Only
Application for Graduate Degrees and Diplomas (with $30.00 fee)
Authorization to deposit two copies of the thesis in the University Library
Certification that supervisor concurs with submission of the thesis
Recommendation for the award of a graduate degree

G.6.6. Transferring from the MSc to a PhD program

Guidelines for Biology students requesting transfer from the MSc to a PhD program

Students requesting such as transfer should consider the essential difference between a MSc and a PhD. In the MUN Calendar, the PhD is characterized as requiring a public oral defence of the work once the Thesis Examining Board has determined that the thesis successfully demonstrates the candidate's competence to undertake independent research work, and that the work contributes significantly to knowledge in the field of study, that the contribution is of high scholarly merit.

A student registered for an MSc program may have good reason to transfer to the PhD program. Students with either prior post graduate experience or a record of research productivity

prior to the MSc program may be considered for such a change of program. Often these students enrolled in the MSc program with the expectation that they would be considered for transfer at an appropriate time. Also, a transfer may appear to be appropriate because a student may be showing a strong performance in the graduate program to date.

Normally a student will apply for a change of program after one year of MSc studies and before the two year period of studies is completed. Requests from students in the third or later years of studies will be considered only in very exceptional circumstances. Such students will normally be encouraged to complete their degrees and re-apply to the PhD program.

Requests for transfer should be initiated by the student in consultation with the supervisor and the supervisory committee. A strong rationale for the change should be included. In order to provide the Biology Graduate Studies Committee and the School of Graduate Studies with sufficient information to evaluate requests. The following information should be provided:

i) A formal letter of request signed by the student, supervisor and all members of the supervisory committee.

ii) A documentation of progress to date with details of why this should be considered a strong performance and/or why previous experience should be considered.

iii) An outline of the proposed PhD project and a statement of how this differs from, but builds on the MSc work to date. This outline should include sufficient detail to enable the committee, with additional specialist help if necessary, to determine the current status of the program and the potential for success of the proposed program.

iv) Copies of any publications or submitted publications, abstracts, etc. arising form the MSc work.

v) An up-to-date curriculum vitae.

vi) A current transcript.

vii) A letter of recommendation from the supervisor plus one other with whom the candidate has been associated at MUN. These letters should strongly support the transfer and should include specific reference to the research capabilities of the candidate.

viii) Normally a candidate already on fellowship who is found acceptable for transfer will be supported going into the new program, but this is dependent on availability of funds and the supervisor should complete the usual form attesting to available financial support, facilities, etc. for the duration of the program.

When complete, the application should be submitted to the departmental Graduate Officer who will bring it to the BGSC. If the committee approves the application, the Graduate Officer will write to the Dean of Graduate Studies recommending a change of program. If the BGSC declines to recommend the change of program, the Graduate Officer will communicate this together with

the reasons for the decision to the School of Graduate Studies, the candidate and his/her supervisor.

NOTE: Students successful in transferring from an MSc to PhD program will be charged PhD tuition fees that are retroactive to the initial semester of their MSc program.

G.7. Additional procedures specific to the PhD program beyond general requirements

G.7.1. Nature of the program

The purpose of a doctoral program is to provide the student with the opportunity to gain a high degree of competence in conducting original research at an advanced level. This should result in a significant advance in knowledge in the field of study. The program of research should be aimed at completion within a four year time span for a full-time student. A student successfully completing a PhD program should not only be a competent researcher in her or his field but also be a person able to communicate and evaluate technical information. These latter skills can be acquired and demonstrated by attending and participating in various seminars, discussion groups, graduate courses, scientific meetings and undergraduate laboratory teaching.

G.7.2. Comprehensive examination

a) **The University regulations now require a PhD comprehensive examination to be completed within 7 semesters of the first registration.** Part-time students must take it not later than the end of the third year of their program. The procedure shall be initiated by the Supervisor who shall notify the Head, in writing, of the candidate's readiness. Failure to comply with these regulations can result in candidate being required to withdraw from the program. **NOTE: A sub-discipline (see c below) must be determined no later than three months before the examination.**

b) Examination Committee: According to the regulations, the number of voting members shall be an odd number. They are the Department Head (or delegate), the supervisor, and three other members of which only one other member may be a member of the supervisory committee. A co-supervisor can serve as the other member of the supervisory committee. From the preceding, it is self-evident that the examination committee will consist of five voting members. The Department Head, or the delegate, usually chairs the comprehensive exam. Qualified persons outside the faculty of the Biology graduate program may serve. The supervisor recommends the five names to the Department of Biology and the Biology Graduate Studies Committee reviews the suggestions. These recommendations should be made on Form D in the Appendix. The committee may recommend changes. Once approved, the recommended examiners' names are submitted to the Dean of Graduate Studies for appointment to the Comprehensive Examination Committee. The Dean (or delegate) is a non-voting member of the examination committee.

c) Once the committee is appointed, it shall meet and select a seminar topic **within the student's previously determined sub-discipline**. The sub-discipline is normally what is listed as the 'Area of Concentration' on the 'Program of Study' form filled out when the

student was recommended for admission. The seminar topic will generally be broad in scope and related to, but distinct from, the thesis research. The examination committee will submit the topic and the sub-discipline to the Biology Graduate Officer, on Form E in the Appendix, for approval by the Biology Graduate Studies Committee. During the meeting that determines the question for the examination, the examination committee should also set a date for the examination. This date should be set with the following in mind: a) **The candidate must be notified in writing not more than six and not less than four weeks before the examination date.** b) Two weeks should be allowed for the transmission of the recommendation of the examination committee and the approval by the Biology Graduate Studies Committee. The Graduate Officer or Head will communicate the question and guidelines to the student six (6) weeks, if possible, but not less than four (4) weeks before the examination.

d) The student, upon receiving the topic, will prepare a 20 page maximum typed paper on the seminar topic, which will include references. This shall be double-spaced in 10 or 12 cpi size type. Figures or diagrams can be included/appended. The subsequent seminar will be based on this paper. The paper will be given to each examiner plus an additional copy to the department to be forwarded to the graduate studies representative at least one week before the examination. This paper is not graded; it is intended to inform the Examination Committee with regards to the approach the student has taken.

e) Format of the oral comprehensive examination: The seminar topic is always general and requires the student to provide a brief introduction followed by a more in-depth review of a narrower aspect of the subject. The student must demonstrate an understanding of the development of the subject, current knowledge, and be able to present a synthesis of the subject and opportunities for future research. After the seminar, students will be questioned by each examiner on the seminar topic, followed by a second round of questions on the sub-discipline. The aim here is to determine the student's basic knowledge of the field in which s/he is working. Thus PhD students, upon entering a program of study, should prepare for their comprehensive by being familiar with the general concepts and techniques of their field and be prepared to critically discuss them in the examination.

f) Procedure for comprehensive examination: All examiners, having had the written paper for a week, have an opportunity to develop potential questions for the candidate. At the time of examination, the student will present a 45-50 minute seminar on the assigned topic. This will be followed by a round of questions on the seminar topic lasting approximately 10 minutes per examiner. Then a second round of questions will follow. Primarily this round will focus on the broader sub-discipline area. Again, there will be approximately 10 minutes allowed per examiner. Any examiner may ask to have an answer elaborated on if it is felt clarification is needed. If time permits, questions from others attending the examination may be entertained. At the end of the question period the candidate and the audience will leave the examination room while the examiners discuss all facets of the examination and make their decision.

g) The outcome of the examination can be any one of the following:

(i) The candidate has either passed or failed the comprehensive examination. A pass requires a majority vote by the voting members of the examination committee.

(ii) If failed, and it is the first examination, the Committee can decide whether the student may be re-examined.

(iii) If passed, the committee can recommend that the student be 'Passed with Distinction'. This requires unanimous agreement and is awarded to candidates who demonstrate superior knowledge of their chosen field by showing excellence in the written paper and oral presentation, and answering/discussing examiners questions in a highly competent manner.

h) The results and subsequent action, if any, will be communicated to the Dean and supervisor, in writing, by the Chair of the examination committee.

i) If a re-examination, in total or in part, is required it must take place not less than one month nor more than six (6) months from the first examination. The student may be asked to redo the whole examination or only part of the examination. Re-examination can be in written or oral format. The student can be asked to review assigned literature and/or redo a seminar topic. The nature of the re-examination will be communicated to the candidate in writing.

j) The outcome of a re-examination is either pass or fail. This is decided by simple majority. If the result is fail, the student will withdraw from the program, as only one re-examination is permitted.

k) If outright failure is decided on the first examination, with no option for re-examination, this decision requires an unanimous vote.

G.7.3. Examination of a Doctoral thesis

The thesis examination is a School of Graduate Studies examination. The general nature of the process can be described as follows [greater detail is given in the Calendar under section J) 4. Evaluation of PhD Theses of the Graduate Studies General Regulations]. The Calendar regulations take precedence over the descriptions given below.

a) The thesis is examined by two examiners internal to the university and one examiner external to the university. A completed "Recommended Thesis Examiners" (Form C in Appendix) must be submitted to the Department by the Supervisor. The names and some additional information about two internal and two choices for external examiner are required. A brief reason why the person is qualified to be an examiner is to be included. The Graduate Studies Committee reviews these recommendations and approves them or suggests changes. Once an approved list is determined, the recommendations are sent to the Dean of Graduate Studies, who may approve the examiners to whom the Department then forwards copies of the thesis. The process is greatly facilitated when current phone and fax numbers and the correct e-mail address are provided by the supervisory

committee. **The above process should be initiated well before [one month] the anticipated thesis submission date so that the thesis can be sent out promptly once approval to do so comes from the School of Graduate Studies.**
Adjunct Professors are considered internal in this context. These examiners recommend, to the Dean, action which should be taken. If the thesis is acceptable, the Dean will set the time and place for the oral examination.

b) Each examiner may provide a written commentary on the thesis and makes one of the following recommendations with respect to the thesis (Please also consult the University Calendar.):

i) that the candidate be allowed to proceed to the oral examination of the thesis as submitted.

ii) that the candidate be allowed to proceed to the oral examination of the thesis provided that any minor corrections and/or modifications required by the examiners are made before final submission.

iii) that the thesis be rejected with the possibility of resubmission after major corrections and/or modifications.

iv) that the thesis be rejected without the possibility of resubmission.

v) If the majority of examiners recommend 'i' or 'ii' the Dean will normally proceed to set a date for the oral defence of the thesis.

c) The oral defence is chaired by the Dean of Graduate Studies (or delegate). Note that, at the beginning of the defence, the candidate will be expected to make an oral presentation, about her/his thesis, of approximately 20-30 minutes duration. Only the three examiners of the thesis are voting members of the examination board. The decision of this board will be made immediately following the thesis defence. Possible recommendations, of this board, to the Dean are:

i) 'Passed with distinction' (Awarded to candidates who demonstrate superior knowledge of their chosen field; this category requires unanimous support of the Examination Board.)
ii) 'Passed' (Awarded to candidates who demonstrate an acceptable knowledge of their chosen area; this category requires a simple majority vote.)
iii) 'Re-examination' (Selects those candidates with an understanding of their research area that lacks sufficient depth and scope as indicate by a simple majority vote.) If re-examination is recommended, only one additional oral defence is permitted. [See the Calendar for additional information].

iv) 'Fail' (Selects those candidates who, by unanimous vote of the Board, are deemed to be unable to demonstrate an adequate understanding of their research area. The candidate's program is terminated.

G.7.4. Final submission of the examined thesis and requirements for graduation

a) Once the thesis has been passed by the examiners, all suggested minor changes must be made or justification for not doing so made in writing to the Department. Thus when the thesis is returned to the Department for final submission, it must be accompanied by the examiners' reports noting which changes were accepted and made in the thesis. Those suggested corrections not carried out must be justified also. The supervisor must provide a letter stating that he/she is satisfied with the corrected thesis. Three final copies are required.

b) The student must pay the thesis binding fee of $20.00 for one copy at the cashier's office and bring the receipt of payment to the Biology Department. This receipt will accompany the thesis to the School of Graduate Studies. Additional binding fees are required for any personal thesis copies to be bound.

c) Students must ensure the following forms are completed. Note: some require the supervisor's signature. These forms are available from the School of Graduate Studies and from the Departmental Graduate Secretary.

Non-Exclusive Licence to Reproduce Theses
Doctoral Dissertations - Publish Abstract Only
Application for Graduate Degrees and Diplomas (with $30.00 fee)
Authorization to deposit two copies of the thesis in the University Library
Certification that supervisor concurs with submission of the thesis
Recommendation for the award of a graduate degree

G.8 Time limits for revisions

MSc and PhD theses requiring re-examination shall be resubmitted to the School of Graduate Studies within 12 months of the date that the thesis and examiner's reports were returned to the candidate.

The final version of MSc and PhD theses shall be submitted to the School of Graduate Studies within 6 months of the date on which the thesis and examiner's reports were returned to the student's academic unit..

Note: As stated earlier, graduate students are required to pay fees until the thesis and other program requirements are complete. That is, until the corrected thesis is submitted to, and accepted by the School of Graduate Studies, fees must be paid on a semester basis.

G.9 Graduate program extensions

Currently there is a limit of seven years to complete a graduate program at Memorial. Although extensions can be granted, the School of Graduate Studies looks closely at each request and asks for certain information. Generally, Graduate Studies requires sufficient information to determine that, if an extension is granted, there is a high likelihood that the program can be completed within the extension period. There are two means of extending the program. The first is to complete the 'Appeal for Waiver of General Regulation C.5 Period of Study' form which basically requests a program extension time in cases where the student is using university resources (facilities, faculty advice etc.). The second is to complete a "request for Leave of Absence General Regulation C.6' form where the student for good reason requests a leave of absence which essentially suspends the program for a period of time. These requests are considered by the Academic Council Executive of the School of Graduate Studies who make appropriate recommendations to the Dean.

Before Graduate Studies will approve an extension, a recommendation to this effect must come from the supervisory committee and from the academic body to which the student belongs. Therefore, the request from a Biology graduate student should, in the first instance, be submitted to the Biology Graduate Officer.

The Biology Graduate Studies Committee will want the following information:

1. Are all course requirements completed? Specify if not.
2. If an English test was required, is it completed?
3. If the animal care seminar was required, is it completed?
4. If the comprehensive exam was required, is it completed?

The above questions are often already answered if a recent supervisory committee report is on file. However, this is not always the case.

The next level of information required is with respect to research and the thesis. Usually we will want to know if the research is complete. If yes, then make a statement to this effect. If not, provide as many details as possible about how much research has yet to be done and the time frame for completion.

Often the research is complete but the thesis is not complete. Make a statement as to whether or not the written portion has been started. If yes, then Grad Studies will want to know the following:

1. An assumption will be made that a thesis proposal will be prepared for review and acceptance by the supervisory committee [i.e. does the applicant and her/his committee have an overview of the general form and content that the written thesis will take and have, respectively?]. Has this proposal been accepted by the supervisory committee or otherwise agreed upon?

2. If applicable, how many sections or chapters have already been completed? What proportion of the total does this represent?

3. Has a complete draft of the thesis been finished?

4. Has the draft been reviewed by the supervisory committee? If so, is it generally satisfactory?

When is the anticipated date of completion of the thesis? The Calendar contains deadlines for submission that are usually early in the semester so please take this into account when asking for an extension. Graduate Studies is often reluctant to consider second extensions. Therefore, the applicant and the supervisory committee are encouraged to set **realistic** deadlines. If a one-semester extension is sufficient then one semester should be requested. If longer is more appropriate then request extra semesters. Extensions beyond one year are not normal, but neither are all circumstances. Justification of the time requested is important.

Students are usually notified well in advance of the deadline for termination of their Program which may triggers the requests outlined above.

H. General useful information about university and department offices

H.1. University administration and advisory offices

a) The School of Graduate Studies. The Dean, Associate Dean and staff are all situated in the INCO Innovation Centre IIC-2012. The general office room number is and the general enquiries phone number is 737-2445.

b) The Registrar's office is situated in the Arts and Administration Building. General enquiries about registration etc. can be made at room A2003, phone 737-8260.

c) The Comptroller's Office. This office handles all grants, contracts, travel, customs and payments of fees. The general office for enquiries is A2022 with several phone numbers for different personnel (see phone book). Fees are paid at the cashier's counter, A1023.

d) Graduate Student Union. This is the graduate students' organization that represents graduate students at the University. It is located in the Field Hall , GH2007, phone 737-4395.To have your e-mail address added to GSU information bulletin (GSU LIST), please send a message to GSU@mun.ca . Information about important graduate student issues is posted on this list and grad students have an opportunity to communicate in an open forum.

e) Student Affairs and Services. This unit is headed by a Dean whose office is in the Arts and Administration Building A3039, phone 737-7594. This office handles student health care and health insurance for foreign students (contact Mrs. L. Beresford, Hatcher House room 9-316B, phone 737-3447). They also control student housing on campus through an office in Hatcher House, room 301, phone 737-7590.

f) The Student counselling centre is located in the Smallwood Centre, room UC5000, phone 737-8874.

g) Sexual Harassment Advisor. This office is a campus wide service for all cases of sexual harassment. The person in charge is Ms. L. Yetman located in Smallwood Centre, room UC3000, phone 737-2015.

h) University Security. This office deals with all security matters on campus. They also handle parking permits and unlocking of doors, etc. They are located in Services Building, Rm. SV1018, phone 737-8561, and in cases of emergency only 737-4333.

H.2. Facilities within the Department of Biology

Note: The usage of many facilities and supplies in the department are subject to charges against an account of the supervisor. Thus graduate students must have signing authority to access supplies and/or use of these facilities. A form giving this authority is available in the Biology office.

a) Office of the Biology Department, Head, Dr. P. Marino, 737-7497; Secretary for Graduate Studies, Ms. S. Kenny, 737-2346, e-mail shirleyk@mun.ca; Graduate Officer, Dr. P. Snelgrove, 737-3440, psnelgro@mun.ca; (can also be reached through Ms. Kenny). Fax for all Biology is 737-3018.

b) Ms. Minerva Cramm is the Biology Department Administrative Officer. She is located in room SN-3126C, 737-4578. Her e-mail is minerva@mun.ca.

c) Mr. Garry Collins, room SN-3126B, 737-4004 is the head laboratory supervisor.

d) Biology Stores and vehicles are in SN-1103A, 737-7523]. Mr. Craig Barnes and Mr. Joe Watson are in charge of stores.

e) Photography facility SN-3106. Mr. Roy Ficken, at ext.7504, is the photographer.

f) Electron microscope facility SN-1006A. This facility has three electron microscopes, two transmission and one scanning, with the latter having elemental analysis capabilities. Ms. Lisa Lee, at ext. 7515, is the EM technologist.

g) Computer room SN-4117. Mr. Peter Earle, at ext. 4500, co-ordinates the use of computers. Newly arrived students, and those requiring new software applications, should notify Mr. Earle of their intention to use the facilities. No software may be added to the system without Mr. Earle's approval.

H.3. Facilities and laboratories with faculty or adjunct professors connected to the Biology Graduate Program

a) The Ocean Sciences Centre at Logy Bay, about 10 km from campus, houses multiple faculty members of this program and provides extensive research facilities and holding

areas for maintaining a variety of freshwater and marine organisms. The Logy Bay complex includes machine, woodworking and electronics shops. The OSC maintains a Field Services Centre with access to SCUBA divers, boats etc. A decompression chamber is located at Health Sciences. There are several vehicles including a tank truck for transporting live fish. The OSC Director is Dr. Ian Fleming, 737-3709, Fax. 737-3220.

b) 4 Clarke Place, on the edge of campus, houses several faculty and graduate students.

c) Marine Institute, Ridge Road. Faculty in the aquaculture program and the Fisheries Conservation Group are located at this facility.

d) The Biology Annex building is on Mt. Scio Road about 2.5 km from campus. It houses some faculty laboratories.

e) The Biology Field Station is in Bonne Bay at Rocky Harbour on the West Coast. This facility is in the community within Gros Morne National Park.

f) The Memorial University Oxen Pond Botanical Garden is located on Mt. Scio Road beside the Biology Annex. Dr. Wilf Nicholls, wnicoll@mun.ca, is the Director.

g) The Memorial University Research Forest is located at Paddy's Pond about 10 km from campus and is operated by the forestry faculty in Engineering and Applied Sciences.

h) Government Laboratories. There are several Adjunct Professors who are involved in our graduate program. Their locations include the Department of Fisheries and Oceans, Inland Fisheries and Wildlife Division, Environment Canada and Agri-foods Canada.

i) Currently, the University Diving and Boating Officer is Mr. Robert Guest at Facilities Management, rguest@mun.ca]. **All diving and boating activities carried out under university auspices (teaching, research etc.) must be pre-approved by the Diving and Boating Officer.**

H.4. General University campus facilities

a) Libraries: There are two main libraries. Queen Elizabeth II is the main library plus the Health Sciences library in the Health Sciences Building. Note: Government libraries have additional material not held in the university system but are listed in the MUN library database.

b) Computing Services is in the Henrietta Harvey Building [HH2013] and operates a client support centre for computer users. Phone 737-4595. Their Web site is at www.mun.ca/cc.

c) The Works is a division of Memorial University Recreation Complex Inc. It manages the Field House, Aquarena, and recreation facilities on the St. John's campus. These world class facilities offer a variety of fitness, aquatic, recreation, and sport programs for all ages and for all members of the University and the community at large. There are

approximately 250 employees at The Works and the majority of these employees are students from Memorial University of Newfoundland. For further information please contact The Works by telephone at: Field House 737-3000, Aquarena 737-3799, or on line at www.theworksonline.ca

d) The University Bookstore has textbooks, reference books, general reading books, stationary supplies and gift items. It is located in the Smallwood Centre, room UC-2006, phone 737-7440.

I. Awards available to Biology graduate students

Note: It is the responsibility of the supervisor and the graduate student to notify the Department that they wish to be considered for any of these awards and to ensure that all the required documents etc. are provided to the department well in advance of the deadline. The following are only a few of the awards that may be applicable to Biology graduate students, but they are awards for which Biology graduate students have had a record of success. Further information may be obtained from the Department Office and/or the School of Graduate Studies. Also, check the School of Graduate Studies Web site for listings of available awards and the appropriate deadlines.

Dr. F.A. Aldrich Alumni Graduate Scholarship - Three of these $2000 scholarships are awarded annually based on academic merit and need. Nominations will be made to the Dean of Science in May of each year. It is therefore advisable that if a graduate student wishes to be considered for this award, all pertinent information be submitted to the Biology Graduate Secretary before mid-April.

The A.G. Hatcher Memorial Scholarship - Three or more scholarships are awarded annually based on academic merit. Nominations are made to the Dean's Advisory Committee on Scholarships and Awards by early August and all required information should be received by the Biology Graduate Secretary no later than mid-July. The value of the Scholarship is $15,000 and it can be held for one year only.

School of Graduate Studies F. A. Aldrich Fellowships - This is a university-wide competition open to all **incoming full-time** students. The SGS deadline for application is about the 3rd week of February and applications should be submitted to the Biology Department by the end of the 1st week of February. These are valued at $20,000 and $15,000, per year, for PhD and MSc applicants respectively. Subject to certain restrictions, these are renewable for up to one year for PhD students. Approximately six to eight fellowships are awarded each year. These are awarded for exceptional academic achievement.

The Maritime Awards Society of Canada (MASC) Maritime Studies Scholarship - This can be awarded to a Canadian citizen studying in a “maritime based” program at either the MSc or PhD level. It has a value of $5,000.00 per year and may be renewed once.

The National Scholarship in Ocean Studies at Memorial University of Newfoundland - This can be awarded to PhD candidates in an aspect of ocean studies. The value is $18,000 per year for up to three years. The award is based on academic excellence. Guidelines and applications are available from the School of Graduate Studies.

The Leslie Tuck-Avian Ecology Award - This award is for $1,000 annually and is awarded based on a 500-word essay on the student's research and its relevance to avian ecology and ecosystem preservation in Newfoundland and Labrador.

The George Weston Graduate Scholarships - Two awards at a minimum of $2,000 may be made annually to full time graduate students. One of these is given in the field of Marine Biology. Applicants must have been born in one of the Atlantic Provinces.

Royal Bank Fellowship in Marine Studies - This award is valued at $5,000 and re-applications will be considered. The award is based on academic merit and is open to full-time graduate students in marine studies.

Fellow of the School of Graduate Studies - This title will be awarded to a graduate student based primarily on academic merit and will be indicated on the transcript. This title does not have a stipend attached to it. The nominations are sent to the School of Graduate Studies by early April for the Spring convocation, and any graduate student wishing to be considered must have all information to the Biology Graduate Secretary no later than the end of the second week in March. The nominations for the Fall convocation are sent to the School of Graduate Studies by early October, and any graduate student wishing to be considered must have all information to the Biology Graduate Secretary no later than the third week in September.

Natural Sciences and Engineering Research Council of Canada Postgraduate Scholarships and Fellowships - The annual competition for these awards commences in the Fall semester of each year.

Appendix - Forms

Forms required by the School of Graduate Studies: Common to all students.

1) Program of Study (for new admits/deferrals/transfers)
2) Graduate student Annual Progress and Supervisory Report.

Forms related to actions that are processed through the Department:-

Form A - Projected Program for New Graduate Students
Form B - Supervisory Report Form
Form C - Recommendation for thesis examiners
Form D - Recommendation for Composition of the PhD Comprehensive Examination Committee
Form E - Recommendation from PhD Comprehensive Examination Committee
Form F - Information required from student and supervisor in order to request letters from Graduate Studies.
Form G - Field Research Safety Planning Form

The following forms may be used by the Department to transmit information to the School of Graduate Studies but are not included in this guide. They are available from the Biology Department office. Many of these require both the student's and the supervisor's signatures.

1) Recommendation for Changes in a Graduate Program (supervisor and student signature)
2) Course Change form (student's signature)
3) Forms required for thesis submission see F.5.4. (c).
4) Form applying for an extension of program
5) Form applying for a leave of absence

Other forms available in the Biology Department office are:

1) Internal signing authority form.
2) Request for keys.
3) Application for a Teaching Assistantship (to be considered as a lab demonstrator).
4) Application for financial support for conference travel by students.

BIOLOGY GRADUATE Program

Form A: Projected program for new Graduate Students.

Purpose: To provide a projected flow chart of the student's program which can act as a guide to progress of the student over their program. Must be filed with the Graduate Officer not later than the end of the first semester.

Student Name: _____ Student No.: _____

Degree: _____ Supervisor: _____

Supervisory Committee:

Research topic:

Sub-discipline:
Areas to be strengthened by courses and proposed courses to be taken:

Projected timing of courses (year and semester):

Projected timing of Research Seminar (normally in the second semester before main research period, but not later than one year into program) (year and semester):

In the following table, indicate the projected time-frame of the program, include courses, research seminar, comprehensive examination, research, thesis write-up and final completion.

Year	Winter	Summer	Fall
20___			
20___			
20___			
20___			

. . . /2

For PhD students, projected timing of comprehensive, year and semester (Note: it must be done within two years of starting program):

Projected source(s) of funds for student's personal support and over what period:

Projected source of funds for student's research costs and over what period:

Signature of Supervisor Date

Signature of Student Date

Signature of Supervisory Committee Member Date

Signature of Supervisory Committee Member Date

Signature of Graduate Officer Date

BIOLOGY GRADUATE Program

Form B: SUPERVISORY REPORT FORM

(Note: This form also serves as the report to the School of Graduate Studies.)

Student Name: _____Student No.: _____

Department: _____

Academic Year_____

Degree Sought: _____ Year in Program: _____ Full-time _____ Part-time _____

Sub-discipline:

_____

Financial support for next year. (Please indicate if continuing financial support is available.)

Program

Note: a short one to two paragraph summary of the student's work to date must be attached.

Check and fill in the following list of items which pertain to the student's progress.

		Yes	No	
a)	course work required			If yes, # of courses _____
b)	course requirements completed			If no, completion date _____
c)	require English course			If yes, is it completed _____
d)	Animal care seminar required			If yes, is it completed _____
e)	actively engaged in research			
f)	writing thesis			
g)	maintaining program			
h)	comprehensive exam required			If yes, is it completed _____

Comments re student's progress in relation to initial projected program.

_____

_____

_____

_____

. . . /2

Recommendation:

Continuation _____

Conditions (if any) _____
_____
_____

Termination _____

If this recommendation is made, a letter to the Department documenting the reasons for this action must be attached and will be filed with this report to the Dean of Graduate Studies.

Signatures:
Student: *I have seen this report and agree/disagree that it represents an accurate assessment of my program. NOTE: If you do not agree with the report, a letter setting out the reason(s) for disagreement must either accompany the report or be forwarded separately to the Dean of Graduate Studies.

_____ _____
Student Date

_____ _____
Supervisor Date

_____ _____
Supervisory Committee Member Date

_____ _____
Supervisory Committee Member Date

_____ _____
Supervisory Committee Member Date

_____ _____
Head of Academic Unit or Graduate Officer Date

For School of Graduate Studies Use:

Recommendation: _____ Date: _____

_____
Signature, Dean of Graduate Studies

*Students who are currently living outside the St. John's metropolitan area, are not required to sign the form. A submission from the supervisory committee will suffice. In all instances where the report is unsigned by the student, a copy shall be sent to the student by the academic unit.

BIOLOGY GRADUATE Program

Form C: Recommendations for Thesis Examiners

Please submit this form to the Department of Biology prior to submission of thesis. MSc degrees require two examiners, one internal and one external. PhD degrees require two internal and one external. In all cases, please list two externals, in order of preference (see also guidelines).

Student Name: _____ Supervisor: _____

Title of Thesis: _____

INTERNAL:

Name (1):_____

Address:_____

Phone: (__) _____ FAX: (__) _____ e-mail:_____

Please state the reasons for this recommendation: _____
_____

Name (2)_____

Address:_____

Phone: (__) _____ FAX: (__) _____ e-mail:_____

Please state the reasons for this recommendation: _____
_____

EXTERNAL:

Name (1):_____

Address:_____

Phone: (__) _____ FAX: (__) _____ e-mail:_____

Please state the reasons for this recommendation: _____
_____

Name (2):_____

Address:_____

Phone: (__) _____ FAX: (__) _____ e-mail:_____

Please state the reasons for this recommendation: _____
_____

BIOLOGY GRADUATE Program

Form D: Recommendations for the Composition of the PhD Comprehensive Examination Committee for _____

The Committee is made up of Supervisor, Head of Department or Delegate, and three others. Only one member of the supervisory committee besides the supervisor may be on this examination committee. It is preferable that at least three of the examiners have full appointments in administrative units in the Biology graduate program. The non-voting Graduate Studies representative will be appointed by the School of Graduate Studies. Please submit this completed form to the Department of Biology for approval of the Graduate Studies Committee. Upon approval by the Graduate Studies Committee and supervisor the names will be forwarded to the Dean of Graduate Studies by the Department. The Dean will appoint the committee.

Thesis Topic: _____

_____

(1) **Supervisor** _____ Phone:_____

Address:_____ _____e-mail:_____

(2) **Head or Delegate** _____Phone:_____

(3) **Examiner** _____ _____ Phone:_____

Address:_____e-mail:_____

Reason for selection: _____

(4) **Examiner** _____ Phone:_____

Address:_____ e-mail:_____

Reason for selection:_____

(5) **Examiner** _____ Phone:_____

Address:_____e-mail:_____

Reason for selection: _____

BIOLOGY GRADUATE Program

Form E: Recommendation from PhD Comprehensive Examination Committee

TO: Graduate Officer, Department of Biology

FROM:

DATE:

SUBJECT: Comprehensive Examination

Candidate

MUN #

The Examination Committee met on _____ to determine the seminar topic and the defined research area in Biology for general questioning. The following is recommended:

The current thesis topic is:

The candidate's sub-discipline is:

Proposed seminar title:

Comments:

Date and time of Comprehensive:

BIOLOGY GRADUATE Program

Form F: Information required from student and supervisor in order to request letters from Graduate Studies.

TO: Graduate Officer, Department of Biology

FROM:

DATE:

SUBJECT: Type of Letter Requested:

Student Name: _____

Financial support currently held by student:_____

Future financial support which student will be awarded and for what period of

time:_____.

Supervisor's signature: _____

Date: _____

Please attach the partially filled out Student Letter Request Form and submit both forms to the Graduate Secretary.

Biology Department, Memorial University

FIELD RESEARCH SAFETY PLANNING RECORD

Page 1 of 4

This form or a similar one, is to be completed by the Principal Investigator and submitted to the Department Head (or equivalent) before departure on field research. Multiple trips to the same site or group of sites can be covered by one form. The form is good for a single academic year and a new form must be completed annually.

ACADEMIC UNIT [Biology / OSC / MI / other*: *If other then specify:	**PRINCIPAL INVESTIGATOR:**

LOCATION OF FIELD RESEARCH:

Country:

Geographical Site:

Nearest City/Town/Centre:
(name, distance to)

NATURE OF RESEARCH:

DATE OF DEPARTURE:	**DATE OF RETURN:**

FIELD RESEARCH TEAM **Chain of Responsible Leadership** NAME	CATEGORY (check all that apply)			
	Team Leader	Team Member	Other (specify)	Trained First Aider

PHYSICAL DEMANDS:

9 Diving and other Underwater Activities
9 Climbing
9 High Altitude
9 Remote Area

Other (specify):

9
9
9
9

RISK ASSESSMENT: (Complete to the extent that it is appropriate for your circumstances). List identified risks associated with activities or environment (e.g. extreme heat or cold, wild animals, endemic disease, firearms, explosives, violence), and measures for eliminating or reducing risks to acceptable levels. Use section 10 if you need to expand on one or more items. Attach additional pages if the space is insufficient.

RISK	**PRECAUTION**
1	
2	
3	
4	
5	
6	
7	
8	
9	

10

Biology Department, Memorial University
FIELD RESEARCH SAFETY PLANNING RECORD
Page 3 of 4

EMERGENCY PROCEDURES
Detailed Emergency Plan for Research location (Attach additional page if necessary):
(Include information on communication and evacuation plans)

University Contact & Phone No. for the group.	**Local Contact and Phone No. (If available at or near the site of research) for the group.**

Note: Each member of the group should fill out, and have on file, the form for recording personal contact numbers and other information such as the medical care registration number (page 4).

I, the undersigned, acknowledge that :

(a) I have been fully informed of the risks of this field research and that I accept them;
(b) I will comply with the established safety procedures;
(c) I am in a satisfactory state of health to undertake the research; and
(d) I have received all of the prescribed immunizations.

ACKNOWLEDGMENT OF TEAM MEMBERS:

NAME (Please Print)	**SIGNATURE**	**DATE**
1		
2		
3		
4		
5		
6		
7		

Signature of Department Head (or equivalent)

I acknowledge receipt of this document:

Name (please print)	Signature	Date

Biology Department, Memorial University

Individual Personal Contact Number(s) and Medical Care Information

(Field Research Safety Planning Record, Page 4 of 4)

Give your name and MUN employee number, or student number, as appropriate:

Each member of the research team should provide as much of the following information as appropriate for the occasion:

1 Name and number on your Newfoundland Medical Care Commission Registration Card (Your M..C.P. No.).

2 Name and number for your medical care card if other than M.C.P. Also, state the name of the plan.

3 Complete the following travel immunization/prophylaxis record for your current status. Indicate if you do not currently meet requirements for the area in which you wish to travel and whether or not your intend to meet the requirements by the time of travel. Note that having up to date immunizations, such as for tetanus, may be relevant for individuals working and traveling in Newfoundland and Labrador. That is, the list should not be seen as relevant only to people who expect to travel outside of the country.

TRAVEL IMMUNIZATION/PROPHYLAXIS REQUIREMENTS:

9 Diphtheria	9 Polio	9
9 Hepatitis A	9 Rabies	9
9 Hepatitis B	9 Rubella	9
9 Japanese encephalitis	9 Tetanus	9
9 Malaria	9 Typhoid	9
9 Measles	9 Yellow Fever	9

4 List the names and contact numbers (phone, e-mail, etc.) for people close to you whom you may wish to have contacted in case of an emergency.