



**MCDB&G**  
**Molecular, Cellular, Developmental Biology and Genetics**

*Graduate Program Handbook – 2008-09*

THE UNIVERSITY OF MINNESOTA

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*The information in this handbook and other University catalogs, publications, or announcements is subject to change without notice. University offices can provide current information about possible changes. The information in this handbook is available in other formats upon request.*

## STUDENT ACADEMIC CONDUCT

Every student is expected to act responsibly and honestly in all aspects of his/her graduate education. These responsibilities extend to both course work and laboratory research. Misconduct such as failing to work independently in examinations or falsifying research data is not acceptable in any academic community.

**Egregious misconduct is considered sufficient grounds for the assignment of a failing grade in a course or dismissal from the graduate program. Several examples of academic misconduct are given below:**

- Copying answers from another student's examination paper during a closed book examination.
- Consulting lecture notes, the textbook, or a summary of important notes to oneself (a crib sheet) while writing a closed-book examination.
- Copying answers from another student's examination paper for a take-home examination.
- Collaborating with other students in the course of developing answers to take-home examinations through discussion of the exam questions and their answers.
- Permitting someone else to read and/or copy your answers to a take-home examination in order that they might better understand the question.
- Submitting a paper written wholly or in part by someone else to meet course requirements for a term paper or other technical writing.
- Failing to adequately reference sources of information or ideas used in the preparation of a term paper or other technical writing.
- Submitting fabricated data in place of experimentally determined results in a laboratory experiment.
- Selectively modifying data points so that experimental results more closely approximate the expected result.
- Selectively reporting only one set of data from a collection of equally valid sets of data in order to support a favored hypothesis.

## I. STUDENT REQUIREMENTS BY YEAR

**Students are expected to maintain a GPA of at least 2.8.**

### ANNUALLY

- **Attend annual fall retreat and present a poster.**
- **All students must present a student research seminar. Advisor and committee members must be in attendance.**
- **Annual review meeting with advisor and committee members. Usually done after the seminar.**
- **Annual evaluation forms must be completed by student and advisor.**
- **Participate in MCSB recruiting**

### YEAR II      Register for Fall and Spring Semesters ONLY

**YOU MUST REGISTER BETWEEN 6-14 CREDITS  
EACH SEMESTER**

#### **Fall/Spring**

- Student completes 1<sup>st</sup> TA assignment of 2 required
- International students take SPEAK test
- One elective course per semester completes required course work
- Optional Preparing Future Faculty (<http://www1.umn.edu/ohr/teachlearn/pff/>)

#### **Spring Semester**

- Present Student Research Seminar
- Meet with committee members
- Submit annual evaluation form to Sue
- Student must have committee chosen by **December 17, 2008**
- One-page outlines of written proposal and thesis research due **January 12, 2009**
- Preliminary written exam due **February 25, 2009**
- Complete the Graduate School [Degree Program Form](#).
- Complete the Graduate School [Preliminary Oral Exam Scheduling Form](#)

**Must complete Prelim Oral Exam before first week of Year III Fall Semester**

### YEAR III

#### **Fall**

- **Register for 10-14 thesis credits (MCDG 8888)**
- **Register for one 3-4 credit course along with your thesis credits if you need more credits**
- Present Student Research Seminar
- Meet with committee members
- Student completes 2<sup>nd</sup> and final TA assignment during Fall or Spring
- Optional Preparing Future Faculty (<http://www1.umn.edu/ohr/teachlearn/pff/>)

**Spring**

- Register for your remaining 10-14 thesis credits (MCDG 8888)
- File the Graduate School [Thesis Proposal Form](#).

**YEAR IV and beyond****STUDENTS MUST REGISTER FOR 1 CREDIT OF MCDG 8444 FOR FALL AND SPRING SEMESTER UNTIL COMPLETION OF DEGREE.**

Some students may have to register for summer session. You will be notified by Sue

**Fall or Spring**

- Present Student Research Seminar
- Meet with committee members

**February**

- Doctoral Dissertation Nominations due to DGS. Students within 12-18 months of completion are eligible to apply.

**GRADUATION YEAR**

- Student prepares for final oral exam. Request [Graduation packet](#) from the Graduate School. Complete the [Reviewers Report](#) from the Graduation packet.
- Submit thesis to readers at least 2 weeks before final exam.
- Complete the Graduate School [Final Oral Exam Scheduling Form](#) at least one week before Final Oral exam.
- Notify DGS, Student Personnel Coordinator (Sue) and Student Payroll staff member (Tami) of termination of student status
- Submit copy of thesis to Student Personnel Coordinator (Sue)

All the forms can be found online at: [http://www.grad.umn.edu/current\\_students/forms/doctoral.html](http://www.grad.umn.edu/current_students/forms/doctoral.html)

## **II. Introduction**

While graduate programs are officially distinct from departments, in practice programs rely on departments for financial assistance, office staffing and space. Our program works closely with the Department of Genetics, Cell Biology and Development. This department is located in 6-160 Jackson Hall, 321 Church St. SE, Minneapolis Campus.

### **A. Graduate Faculty Responsibilities**

- Direct an active research program
- Advise and support graduate students
- Annually evaluate students
- Provide for lab rotations
- Serve on student and graduate program committees
- Participate in Admissions and Recruitment activities
- Graduate Program Committees
- Teach one Current Topics course every five years that is open to MCDB&G students.
- Attend annual MCDB&G Fall retreat

### **B. Graduate Student Responsibilities**

- Actively pursue thesis research with adequate and timely progress
- Course work: complete core courses and electives, maintain minimum GPA of 2.8, maintain active registration
- Give student research seminar once a year
- Meet annually with committee
- Complete annual student progress report
- Attend student research seminar series and one regular departmental seminar series
- Attend one regular journal club series
- Teaching (TA), see appropriate degree requirements
- Examinations, required by the Graduate School and designed by the Program, see appropriate degree requirements
- File required Graduate School forms in a timely manner
- Attend annual MCDB&G Fall retreat
- Participate in MCSB recruiting activities
- Participate in MCSB welcome luncheon

### **C. Advising**

Advising can be obtained from your advisor, or the Director of Graduate Studies (DGS), Tom Neufeld, 5-245E Moos, telephone; 612-625-5158; email: [neufe003@umn.edu](mailto:neufe003@umn.edu).

General advising, including registration, graduate school policy and procedure, is available from Sue Knoblauch at [smk@umn.edu](mailto:smk@umn.edu) or 612-624-7470. She is located in 5-116 MCB.

### **JD/PhD and JD/MS Joint Program**

Students will be advised by the DGS in MCDB&G and Carol Rachac in the Joint Degree office, [crachac@umn.edu](mailto:crachac@umn.edu), 612-625-3356.



### III. REGISTRATION REQUIREMENTS

#### Maintaining Active Status with the Graduate School

**ALL Graduate School students are required to register in the Graduate School every fall and spring term in order to maintain active status.**

Maintaining active status is critical and is required in order to participate in the University community as a Graduate School student. This includes registering for coursework, taking examinations, submitting milestone forms, or filing for graduation. Students not registered every fall and spring term are considered to have withdrawn and their Graduate School records are deactivated. Those who wish to resume graduate work must request readmission to the Graduate School (and if readmitted, must register) to reactivate their status.

**Grad 999** - a zero-credit, zero-fee, non-graded registration option - is an option for those Graduate School students who must register solely to meet the Graduate School's registration requirement and to keep an active status. Students should check with the DGS for eligibility.

**International students** must register for 6 - 14 credits to maintain a full-time status. Once the 24 thesis credits are completed, international students must register for GCD 8444, a special one-credit course that is considered a full course load. International students may not drop below full-time status without first consulting with the DGS and filing an exception form with the International Student and Scholar Services.

#### A. PhD Curriculum

The PhD curriculum is designed by the student, advisor and DGS to meet individual interests and goals. Advanced courses in genetics, molecular biology, cell biology, developmental biology, and biochemistry are required, in addition to special courses, topical seminar courses, laboratory research rotations, thesis research, student research seminars, departmental seminars, and journal clubs.

PhD students must complete at least 12 credits in a minor field or supporting area. At least two-thirds of the credits must be taken for A/F credit.

## **YOU MUST REGISTER BETWEEN 6-14 CREDITS FALL AND SPRING SEMESTER**

Students are responsible for the tuition for more than 14 credits.

### **YEAR TWO**

Registration includes required courses and typically two 3 – 4 credit elective courses to be chosen in consultation with the advisor and/or DGS.

#### **Fall Semester - Required courses**

MCDG 8900 – Student Research Seminar (1 credit)

MCDG 8950 – Teaching Practicum (1 credit) (Register for this only if you have been assigned a TA position)

MCDG 8666 – Pre-thesis credits (use only if you need more credits to make the 6 credit minimum)

#### **Electives Options (*one 3 or 4 credit course*) – note that this is a partial list**

Optional Preparing Future Faculty (<http://www1.umn.edu/ohr/teachlearn/pff/>)

Grad 8101—Teaching in Higher Education (3 credits)

GCD 8171 - Literature Analysis (**note: 2 credits**)

GCD 8213/BioC 8213 – Selected Topics in Molecular Biology (4 credits)

GCD 8181 - Selected Topics in Cell & Developmental Biology – Stem Cell Biology (3 credits)

BIOC 5361 – Microbial Genomics and Bioinformatics (3 credits)

BIOC 5527 – Introduction to Modern Structural Biology (4 credits)

BIOL 5485 – Introductory Bioinformatics (3 credits)

EEB 5042 - Quantative Genetics (3 credits)

EEB 5963 – Modeling Nature and the Nature of Modeling (3 credits)

NSC 5461 Cellular and Molecular Neuroscience (3 credits)

NSC 5561 - Systems Neuroscience (3 credits)

PubH 6450 - Biostatistics I (4 credits)

Stat 5021 - Statistical Analysis (4 credits)

#### **Spring Semester - Required courses**

MCDG 8900 –Student Research Seminar (1 credit)

MCDG 8950 – Teaching Practicum (1 credit) (Register for this only if you have been assigned a TA position)

MCDG 8666 – Pre-thesis credits (use only if you need more credits to make the 6 credit minimum.)

#### **Electives Options (*one 3 or 4 credit course*) – note that this is a partial list**

Optional Preparing Future Faculty (<http://www1.umn.edu/ohr/teachlearn/pff/>)

Grad 8101—Teaching in Higher Education (3 credits)

Grad 8102—Practicum for Future Faculty.(3 credits)

GCD 8008 – Mammalian Gene Transfer and Expression (2 credits)

GCD 8073 – Adv. Human Genetics (3 credits)

BIOC 5309 – Biocatalysis and Biodegradation (3 credits)

BIOC 5353 –Microbial Biochemistry and Biotechnology: Small Molecules (3 credits, alternate years)

BioC 5352 - Microbial Biochemistry and Biotechnology: Proteins (3 credits, alternate years)

BIOC 5530 – Selected Topics in Molecular Biophysics (1-3 credits)

BIOC 5444 –Muscle (3 credits)

BIOC 8216 – Signal Transduction and Gene Expression (4 credits)

EEB 5221 – Molecular and Genomic Evolution (3 credits)

MICa 8003 – Immunity and Immunopathology (4 credits)

MICa 8004 – Cellular and Cancer Biology (4 credits)

MATH 8540 – Topics in Mathematical Biology (3 credits)

NSC 8211 - Developmental Neurobiology (3 credits)

PHCL 5111 Pharmacogenomics (3 credits)  
PubH 6450 - Biostatistics I (4 credits)  
Stat 5021 - Statistical Analysis (4 credits)

### **YEAR THREE**

The Graduate School requires students to register for 24 thesis credits, MCDG 8888 after passing the preliminary oral exam. MCDB&G students must register for MCDG 8888 the semester immediately after passing the preliminary oral for 10-14 thesis credits and then 10-14 for the following semester (for a total of 24). Students are required to complete the required thesis credits quickly, within 2 semesters.

Most students will need to register for one 3-4 credit course either Fall or Spring semester, along with your thesis credits, in order to have enough credits. Besides, this is your last chance to do so without paying extra for it.

### **YEAR FOUR and BEYOND**

Once the required 24 thesis credits are completed, you will register for one credit of a special full time equivalent (FTE) of MCDG 8444 to maintain full-time status.

#### **B. Student Research Seminar - MCDG 8900**

Second year students and beyond are expected to present a Student Research Seminar. All graduate students and graduate faculty are expected to attend each week. Registration is via MCDG 8900 until thesis credits are taken.

The aim of this seminar is to give each student an opportunity to present a formal seminar on their own research and also to give the student and faculty an opportunity to assess the student's progress towards completion of the thesis research. The advisory committee should attend the seminar and hold a committee meeting immediately or soon after the seminar to provide specific advice for completing the thesis research. The annual student evaluation form should be filled out after the committee meeting (see the annual student evaluation section).

#### **C. Pre-Thesis Credits – MCDG 8666**

In a response to the need for doctoral students who must be registered to satisfy requirements external to the Graduate School, but who have not yet passed their preliminary oral examinations, an additional registration category has been created. Doctoral students who have **not yet passed their preliminary oral examinations** may register for doctoral pre-thesis credits (MCDG 8666). MCDG 8666 will NOT be graded. These credits will not be used to meet doctoral thesis requirements or other Graduate School requirements.

#### **D. Preparing Future Faculty (PFF) – GRAD 8101 and GRAD 8102**

Preparing Future Faculty (PFF) welcomes graduate and postdoctoral participants from all disciplines. PFF helps participants acquire information about the teaching and learning process and the faculty role at a variety of institutions of higher education; gain a realistic perspective on the skills required for success as a faculty member; examine their fit with a teaching career in

higher education; work with a faculty mentor in a teaching opportunity at a local college or university; demonstrate, document, and reflect on their teaching skills; and market themselves for faculty or other professional positions.

To receive a letter of recognition and certificate of program participation from the Graduate School, participants must complete Grad 8101—Teaching in Higher Education and Grad 8102—Practicum for Future Faculty. Other credit courses on teaching and learning or the faculty role may be recognized by PFF as substitutes for Grad 8101 or Grad 8102.

PFF is a program of the Graduate School, administered through the Center for Teaching and Learning Services (CTLs) in the Office of Human Resources. For information on program enrollment, contact PFF at 612-625-3811 or [pff@umn.edu](mailto:pff@umn.edu), drop by CTLs in 120 Fraser Hall, or visit <http://www1.umn.edu/ohr/teachlearn/graduate/pff/index.html>

**If you plan to take PFF you should take the first course in spring of your second year and the second course fall or spring of your third year.**

#### **IV. Ph.D. DEGREE REQUIREMENTS**

##### **A. Required Program GPA**

The graduate program requires a GPA of at least 2.8, excluding journal clubs, seminars, thesis and research credits. No more than 1/3 course credits included on the degree program can be graded S/N.

##### **B. Time Limit for Earning the Degree**

MCDB&G students are expected to take their preliminary written exam in March of year two. The oral exam is taken prior to the start of Fall quarter of their third year. Graduate School rules state that students have 5 years to complete their degree after passing the oral examination; however, the MCDB&G program expects that students will complete their degree within 4 years of passing the oral, unless there are extenuating circumstances.

**Failure to meet the GPA or timing requirements noted above may result in written warnings, loss of funding, and/or dismissal from the MCDB&G Graduate Program.**

##### **C. Departmental Seminars**

Genetics, Cell Biology and Development weekly seminars are scheduled on Thursdays at 12:00 p.m. Seminar notices will be distributed each semester to all students. **It is expected that each student will attend at least one seminar series on a regular basis, if not GCD, then a series in another department.**

##### **D. Annual Student Evaluation**

Students are evaluated on an ongoing basis to insure to the maximum degree possible that uniform academic standards are applied to all graduate students, to assist in monitoring progress

of students, to identify students whose academic progress is unsatisfactory, and to make recommendations concerning continuation or provision of financial support and/or change of degree objective.

Each graduate student is required to have one evaluation meeting each year with his/her faculty advisor and the faculty on his/her advisory committee to discuss academic and research progress and plans. It is strongly recommended that this meeting be done after the student research presentation (Mondays 12-1 pm). The program has reserved the seminar room from 1:00 to 1:30 pm on Mondays to facilitate the scheduling of this meeting. Forms for this evaluation will be emailed to the student and advisor prior to the student research presentation. The evaluation will be submitted to the DGS for review and inclusion in the student's file. If problems are detected in academic or research progress, the student or any committee member may call for additional advisory committee meetings.

### **E. Teaching Requirements**

**All Ph.D. students will teach two semesters**, not to include the first and last years. The teaching requirement is intended to ensure that all students in the program have, as part of their graduate training, experience as instructors at the university level. Students are able to express their preferences for different teaching assignments. These experiences should provide for professional growth. Credit for teaching experience is obtained through registration for 1 credit under the designator MCDG 8950, Teaching Practicum. MS, MS/JD, and MD/PhD students will teach one semester. MS in genetic counseling and PhD/JD are not required to teach.

#### **Meeting with the course instructor**

The TA and course instructor should meet before the beginning of the course (ideally one month ahead of time) to discuss the specific TA duties and expectations.

#### **Assist faculty in the teaching of students in specific courses**

Students who TA lecture courses will typically be expected to present at least one lecture. The course instructor will assist the TA by discussing and previewing with them with an overview of the material to be presented, the overall structure of the lecture as well as design and use of visual aids.

TAs for laboratory courses may assist the course director in the design and presentation of one or more laboratory sessions. The course instructor will assist the TA by discussing and previewing them with an overview of the material to be presented, the overall structure of the laboratory exercises as well as design and use of visual aids for the laboratory session introductory lecture.

TAs should seek a critique of their lecture from the course director as soon as possible after the lecture.

#### **Supervision or instruction of lab classes, recitation sections, or review sessions.**

TAs for lecture courses will hold weekly office hours where they will be available to answer questions about material presented in lecture. The TA will also lead a review of course material and answer questions during review sessions held regularly and/or prior to examinations.

TAs for laboratory courses will help to supervise students and answer questions during the course of laboratory exercises. They should be available to answer student questions after class, although they typically do not hold office hours.

### **Preparation of examinations or class assignments**

TAs for lecture courses may be asked to assist the course instructor in either preparing, critiquing or reviewing in-class or take home examinations. Laboratory course TAs will typically assist the instructor in reviewing laboratory notebooks and in the design of one or more written assignments.

### **Grading of examinations and reports**

TAs may be asked to aid in the grading of written examinations or laboratory reports. The course instructor should provide a detailed examination or answer key for the TA to use as a guide. The instructor should also be available to provide guidance when the TA has questions about grading an answer and should review the grading to ensure that student work is being evaluated appropriately.

### **Assist in the administration of the course**

TAs may be asked to assist the course instructor in preparing some materials for the course, such as copying handouts, on a limited basis (such as when a handout is unexpectedly needed at the last minute). However, it should be noted that **TAs are not responsible for course copying**. The departmental offices have all of the necessary resources for course copying.

TAs may be asked to assist in recording grades and in preparing graphs and statistical analyses of student grades. TAs may be asked to assist with preparing and updating class websites.

## **F. SPEAK test**

All nonnative English speaking students must demonstrate proficiency in spoken English appropriate to the demands of their teaching assistantship. This proficiency will be assessed by 1) the SPEAK test (Spoken Proficiency in English Assessment Kit); or 2) the TSE (Test of Spoken English); or 3) an English Language Proficiency rating earned through coursework with the Center for Teaching and Learning Services. For further detailed information: <http://www1.umn.edu/ohr/teachlearn/nonnative/>.

The SPEAK test **MUST** be taken in the Spring semester of your first year. In order to qualify for teaching with no further English courses required you must receive a score of 55 or higher.

**Please see the required course descriptions and registration for scores of 50 or less that require English classes at <http://www1.umn.edu/ohr/teachlearn/nonnative/>.**

## **G. Thesis Credits and Advanced Doctoral Status**

The Graduate School requires students to register for 24 thesis credits, MCDG 8888 after passing the preliminary oral exam. **MCDB&G students must register for MCDG 8888 the**

semester immediately after passing the preliminary oral for 10-14 thesis credits and then 10-14 for the following semester (for a total of 24). Students are required to complete the required thesis credits quickly, within 2 semesters.

PhD students must complete at least 12 credits in a minor field or supporting area. You may have to register for one 3-4 credit course along with your thesis credits if you need more credits.

After completing 24 thesis credits, students are placed in a status that dramatically reduces their fringe benefit rate – effectively saving the advisor thousands of dollars per year, if the students are supported with research funds.

All students who have completed their 24 thesis credits will register for MCDG 8444 for one credit. We would like students to discontinue using MCDG 8888 to register for one credit.

When you register for 8444 you are required to complete the "Application for Full-time Status with One-credit Registration" form each Fall semester. Please check all three semesters on the form. Turn the form into Sue. You may download the form at [http://www.grad.umn.edu/current\\_students/forms/doctoral.html](http://www.grad.umn.edu/current_students/forms/doctoral.html) and click on Application for Full-time Status with One-credit Registration at the bottom of the list.

You may register for courses beyond the 1 credit (including audits), but you will be responsible for any additional tuition and fees assessed. It is not possible to use federal grant funds to cover the costs of the additional credits, but it may be possible that your advisor can fund some additional credits with other funds, especially if this is related to your thesis work. In all cases, pursue this possibility with your advisor in advance of registering for the extra credit(s).

## H. Examinations and Forms

Three examinations must be passed for a Ph.D. degree in MCDB&G:

- the written preliminary examination,
- the oral preliminary examination and
- the final oral examination with thesis defense.

These examinations will be administered and graded by the student's Advisory & Examination Committee.

### 1. Examining Committee

The student, in consultation with his/her advisor and with approval of the DGS and Graduate School, will select five faculty members to serve on this committee. The advisor will not be a member of the examining committee for the oral preliminary exam. Although the graduate school permits a 4-member committee, MCDB&G examining committees will be five members. All five members must hold a graduate faculty appointment in the graduate school. Three of the faculty members must be current members of the MCDB&G graduate faculty. The other two faculty members are to hold an appointment in another graduate program related to the student's area of interest, although these two might also be members of the MCDB&G faculty. ***Two of the five-committee members must have their primary academic appointment in a department other than that in which the student's advisor is based.*** The recommendation of committee members

should be presented by the student and advisor to the DGS with a brief justification for each proposed member relative to the student's research interests. The DGS can approve the recommendations or request changes.

For a list of the faculty and their appointment level and departments please refer to the web page at [http://www.grad.umn.edu/faculty\\_rosters](http://www.grad.umn.edu/faculty_rosters).

## 2. Written Preliminary Examination

This exam is taken in the Spring semester of the second year. This exam is currently based on a research proposal and should include several components: background and significance, specific aims being addressed and proposed experiments. This last section should describe how the results will be evaluated and interpreted. The proposal may not be based on the student's thesis research, although a topic related to the student's research is acceptable.

### a. Decide on the proposal topic.

Students will submit a one-page outline of their thesis project (essentially, the abstract and specific aims of their project) along with a one-page outline (abstract and specific aims) of their Written Preliminary Exam Proposal to the DGS. The Student Review Committee must approve (or disapprove) of the topic for their written. The major criteria for approval will be that the written topic falls within the areas represented by the MCDB&G faculty and that it not be a thinly disguised version of the student's thesis topic.

### b. Proposal Guidelines

The written preliminary examination will consist of an original research proposal. This proposal should:

- Set forth an original hypothesis about an unsolved problem that you propose to investigate. The student may **not** write on their thesis topic or on any other topic that they have written on in the recent past (e.g. their research proposal for GCD 8213, Select Topics in Molecular Biology). They may write on any other topic of their choosing within their field of research or another field of interest. Students are encouraged to consider a wide range of techniques to evaluate the validity of the hypothesis.
- Provide a critical review of relevant literature leading to a stated hypothesis.
- Include a statement regarding the significance of the problem.
- Describe a meaningful set of experimental designs to test the hypothesis.
- Include a discussion of anticipated results and alternate possibilities.

The total length of the proposal is limited to **15 pages double-spaced, 12-point type and 1-inch margins (excluding references). The limit includes figures.** The following format should be used and recommended page lengths are indicated:

- Background and Significance (5 pages)
- Specific aims, including statement of hypothesis (1 page)
- Experiment Design (5 pages)



- Anticipated Results and Alternatives (2 pages)
- Summary and Future Directions (2 pages)
- References

Note: the page lengths in parentheses are meant as rough guidelines.

**Rules to be followed when writing the proposal**

Since this is an examination, the proposal must be of the student's own creation. The student may not use any research grant application written by his/her advisor or any ongoing project in the lab as the basis for the proposal. It is up to the student to choose the topic of the proposal. The scope should be sufficiently narrow so that it represents a 3-4 year project that can be completed by an individual, not a broad NIH grant to support 5-10 people. The student may not let anyone read her/his proposal prior to submission.

**c. Grading of the Written Preliminary Examination.**

The written preliminary examination will be graded by three faculty who are members of the student's Advisory and Examination Committee, excluding their advisor. The three graders will read and evaluate the examination. Each grader will indicate on the grade sheet one of the following outcomes:

- Pass – students passes the written examination.
- Pass with Revisions– the proposal must be corrected according to the committee recommendations before the student can pass the written examination.
- Fail – the proposal contains fundamental flaws or the proposal is poorly written. The student does not pass the written examination and will be given a second chance to write a new proposal.

The recommendations of each committee member will be forwarded to the DGS. The outcomes will be as follows:

- All 3 pass = pass
- 2 pass + 1 pass with revisions = pass
- 1 pass + 2 pass with revisions = pass with revision
- All 3 pass with revisions = pass with revision
- 1 pass + 1 pass with revisions +1 fail = pass with revision
- 2 pass with revisions + 1 fail = pass with revision
- 2 or 3 fail = fail

*If the outcome is pass* the student must schedule her/his Preliminary Oral examination for a date within a period of 3 months and inform the DGS of this date.

*If the outcome is Pass with Revisions* the student will schedule individual meetings with all the examiners to discuss the concerns and suggestions of reviewers. The student will then revise the proposal and resubmit it within the time outlined by the examining committee.

*If the outcome is Fail* then the student will have 2 months to submit a new proposal, which will be graded by the same committee as described above.

If revised or resubmitted proposals are also unacceptable, the student will have failed the exam. In this case, the final action will be determined by the Program Steering Committee. The Steering Committee will review past class performance and comments from the faculty. The Steering Committee may:

- offer the student the opportunity to work towards an MS Degree
- Terminate the student from the program
- In rare cases, arrange for the student to take a third Written Preliminary Examination.

### **3. File the Degree Program Form**

The **Degree Program Form** needs to be filed with the Graduate School during your second year. It is available on the web at [http://www.grad.umn.edu/current\\_students/forms/doctoral.html](http://www.grad.umn.edu/current_students/forms/doctoral.html). This form lists all the course work you have taken or will be taking as well as your 24 thesis credits. **There should be no less than 30 credits total. There must be at least 18 credits as major courses and at least 12 credits as the other program courses (minor). At least two-thirds of your credits must be A/F, only 1/3 can be S/N.** It also designates for the Graduate School who will be on your oral preliminary exam committee.

The form must be completed by the student, signed by the advisor and submitted to the Sue Knoblauch for review. The DGS will sign it and then forward it to the Graduate School.

**Transfer of Credits for the Doctoral Degree**—Students may request from the Graduate School the transfer of graduate level course credits by including the courses on the proposed degree program form. In all cases, official transcripts of the graded work must be attached to the degree program form, unless they have already been included in the student's Graduate School file. Transfer of graduate credit is not allowed for courses taken before the awarding of a baccalaureate degree. For additional regulations regarding course credits that can be transferred see: <http://www.catalogs.umn.edu/grad/gen/phd.html>.

Generally, MCDB&G will only allow transfer of 4 credits towards the degree.

### **4. Preliminary Oral Examination**

The Preliminary Oral Examination must be taken within three months of passing the Preliminary Written Examination. Students are responsible for consulting with committee members about their availability and scheduling a room. All five committee members plus the advisor should be present. The advisor is to be a silent observer, not an active participant.

You must schedule your preliminary oral exam with **the Graduate School at least one week in advance using the Doctoral Preliminary Oral Examination Scheduling form found at [http://www.grad.umn.edu/current\\_students/forms/doctoral.html](http://www.grad.umn.edu/current_students/forms/doctoral.html)**. The Degree Program Form and the Written Prelim Exam Form must be on file with the Graduate School in order to take the Preliminary Oral Examination.

You must distribute your final written proposal to all your committee members and your advisor. The Preliminary Oral Examination Report form will be sent to the Chair of the Examining committee after the exam has been scheduled with the Graduate School. The committee will

complete the form and the student will submit it to the Graduate School within one working day of completion of the Preliminary Oral examination.

### **Format of the Preliminary Oral Examination**

Before the exam starts, the examining committee chair may excuse the student, briefly, and the committee members may discuss the format of the exam.

The oral preliminary examination will start with a defense of the written preliminary proposal. The student may prepare a presentation of the written preliminary proposal to begin the exam. However, the examination is intended to be open-ended and to examine the student's knowledge and problem solving skills, particularly in areas related to the proposal, the student's own research area and to course work that has been completed. In particular, members of the examining committee representing the minor or supporting program should evaluate the student for her/his breadth of knowledge.

Upon completion of the exam, the student is excused and members vote by secret ballot. A preliminary vote may be taken followed by a discussion and then a final vote. The results are tallied by the chair.

Results may be pass, pass with reservations, or fail. Procedures for lifting reservations must be specified by the committee members. If the result is fail, **the preliminary oral exam may be taken a second time only with unanimous approval (vote) of the committee, and the exam must be conducted by the same exam committee members.**

### **5. File the Thesis Proposal Form**

The **Ph.D. Thesis Proposal Form** should be filed with the Graduate School no later than one semester after passing the preliminary oral examination. You may obtain the Thesis Proposal form on the web at [http://www.grad.umn.edu/current\\_students/forms/doctoral.html](http://www.grad.umn.edu/current_students/forms/doctoral.html)

The thesis committee will consist of five members, including the advisor. This committee will usually be similar to the preliminary oral examination committee, except that the student's advisor is a member of this committee replacing one of the faculty members from the MCDB&G program. The committee must be approved by the DGS. The **advisor or co-advisor cannot be the chair of the committee.** This form also specifies **three members who will serve as reviewers of the thesis. Two reviewers, including the advisor, are selected from the major field. One reviewer must also be selected to represent the minor or supporting program. This person must have a graduate faculty appointment outside of the MCDB&G program (although he/she may also be on the MCDB&G graduate faculty.)** These members read the thesis draft and must sign the Thesis Reviewer's Report Form indicating that it is acceptable for defense at least one week prior to the scheduled date of the final oral examination.

### **6. Graduation Packet and Thesis Reviewer's Report Form**

These forms may be obtained after the thesis proposal form has approved but at least one week prior to the Final Oral Exam. Available via the web at [http://www.grad.umn.edu/current\\_students/forms/doctoral.html](http://www.grad.umn.edu/current_students/forms/doctoral.html). Included in the packet are: Graduation instructions, Application for Degree form, Commencement Attendance Approval

form, Microfilm Agreement, and Survey of Earned Doctorates **and the Thesis Reviewer's Report form.**

### **7. Final Oral Exam and Scheduling**

At least 10 weeks must elapse between the prelim oral exam and final oral examination. It is up to the student in consultation with their committee to find an appropriate date and room for their final oral exam. Likewise, the student is expected to provide the reviewers a reasonable length of time to read his/her thesis. Graduate rules specify that all members of the committee must have at least two weeks to read the thesis. **The student is responsible for returning the certified Thesis Reviewer's Report form to the Graduate School at least one week before final oral.** The final exam must be scheduled with the Graduate School at least one week in advance via the scheduling form at [http://www.grad.umn.edu/current\\_students/forms/doctoral.html](http://www.grad.umn.edu/current_students/forms/doctoral.html). Please note the final exam clearance requirements on the final exam scheduling form.

This examination is primarily the thesis defense, although the questions and discussion may cover related areas as well. The first portion of all final oral examinations is a one-hour seminar given by the student covering the thesis research. This seminar must be publicly announced and all interested faculty and students are invited. Following a brief period of questions from the audience, the second portion of the examination will consist of additional questions to the candidate from the members of the examination committee. The second section of the examination is not open to the public.

Questions often arise about the role of the reviewers and the interpretation of the reviewers' actions prior to the oral examination. The reviewers determine whether the thesis is acceptable for defense. **If the thesis is judged to be not acceptable for defense, specific reasons will be communicated to the student in writing.** If acceptable, the reader has judged that the thesis is ready for oral defense - and only that. The reviewer may have reservations and after the oral examination may vote not to pass the candidate for the Ph.D. degree. However, this is rare and the annual student evaluations are designed to guard against such a possibility. Refer to the Graduate School Bulletin for more detailed information regarding the final oral exam. The Final Exam Report form will be forwarded to the chair of the exam committee, who returns the report form to the Graduate School; there can be no more than one dissenting vote for the student to pass the examination.

Submit **one** copy of the thesis abstract and **one** copy of the thesis (all signed by the advisor), the signed and passed Final Oral Examination Form, Microfilm Agreement Form and the Survey of Earned Doctorates by the last working day of the intended month of graduation. The application for degree must be submitted by the first working day of the month of intended graduation. Instructions for the preparation of the thesis, including format specifications and adviser's signature requirements, should be obtained from the Graduate School, 316 Johnston Hall or on the web at [http://www.grad.umn.edu/current\\_students/forms/doctoral.html](http://www.grad.umn.edu/current_students/forms/doctoral.html). **One additional bound copy of the thesis is required by the program. Submit to 5-116 MCB.**

## **V. MD/PHD PROGRAM**

The PhD requirements for the MD/PhD are the same as those for students pursuing only the PhD, with the following exceptions. 12 credits from the M.D. program may be transferred as supporting program credits, in lieu of elective courses. MD/PhD students may be excused from BioC 8001 at the discretion of the DGS and student's advisor. MD/PhD students are only required to fulfill one teaching assistant assignment. The written and oral prelim exams are generally taken late in spring semester of the first year in the Ph.D. portion of the program. MD/PhD students should discuss these modifications in program requirements with the Director of Graduate Studies.

## VI. MS DEGREE REQUIREMENTS

The Graduate School has specific course credit requirements for the master's degree and the student must make the choice between a Plan A (with thesis) or Plan B (non-thesis) program. Master's candidates are required to take a final oral examination as outlined in the Graduate Bulletin.

*The required program and Graduate School GPA is a 2.8 (excluding journal clubs, seminars, thesis and research credits). No more than 1/3 course credits included on the degree program can be graded S/N*

**Failure to meet the requirements noted above may result in written warnings, loss of funding, and/or dismissal from the Molecular, Cellular, Developmental Biology and Genetics Graduate Program.**

The average time for receipt of degree is 2 years, the maximum time for award of the Master's Degree is 7 years (beginning with the earliest work included on the official degree program, including any transfer work)

Master's candidates not intending to seek a Ph.D. may wish to pursue a program with less emphasis on analytical and quantitative biology and greater emphasis on biological breadth. This may be true particularly where the student's goal is to pursue a teaching career requiring a broad background in biology.

### **Plan A (with thesis) Minimum course work: (see page 24)**

- 14 semester credits in major field
- 6 semester credits in related field
- 10 Thesis Credits, at a minimum (MCDG 8777)
- 30 credits total**

**Students are required to take an oral final exam as well as submitting a thesis document.**

### **Plan B (non-thesis) Minimum course work: (see page 27)**

- 14 semester credits in major field
- 6 semester credits in related field
- 10 semester course credits at the discretion of the student and advisor (Research credits can be used)
- 30 credits total**

**Students are required to take an oral final exam as well as submitting a written report.**

### **Teaching experiences**

**All MS students will teach one semester**, not to include the first and last years. The teaching requirement is intended to ensure that all students in the program have, as part of their graduate training, experience as instructors at the university level. Students are able to express their preferences for different teaching assignments. These experiences should provide for

professional growth. Credit for teaching experience is obtained through registration for 1 credit under the designator MCDG 8950, Teaching Practicum.

**Registration Requirement for the Master's Degree**—Master's degree students are required by the Graduate School to complete at least 60 percent of the coursework for their official degree programs (excluding thesis credits) as registered University of Minnesota Graduate School students; The MCDB&G program generally allows transfer of only 4 credits (see Transfer of Credits for the Master's Degree below).

**Double Counting**—Students may have a maximum of 8 credits in common between two master's-level degrees.

**Transfer of Credits for the Master's Degree**—Unless otherwise specified under a student's major in Degree Programs and Faculty, the following rules apply to transfer of credits.

With approval of the adviser, director of graduate studies in the major (and director of graduate studies in the minor, if the courses are for a designated minor), and Graduate School, the transfer of up to 4 credits from any combination of the following is permitted.

1. Other recognized graduate schools;
2. University of Minnesota coursework meeting specific registration criteria (see "Registration for Graduate Credit" in the current class schedule for registration instructions);
3. Registrations through other University of Minnesota units (e.g., College of Education and Human Development, Law School) in pursuit of graduate-level degrees that were not awarded;
4. Adult special, summer session, and College of Continuing Education registrations at the University of Minnesota before spring semester 2001.

In all cases, official transcripts of the work must be attached to the degree program form, unless they have already been included in the student's Graduate School file.

Work to be transferred must be graduate level (postbaccalaureate) and have been taught by faculty authorized to teach graduate courses. It is the student's responsibility to provide appropriate course documentation (e.g., course syllabi, faculty status information) supporting proposed transfer credits to the program.

In the case of a transfer from a non-U.S. institution, the credits must have been earned in a program judged by the Graduate School to be comparable to a graduate degree program in a graduate school of a regionally accredited institution in the United States.

Regarding the transfer of coursework from either a U.S. or non-U.S. institution, if conditions are placed on a student's admission to exclude certain coursework from transfer to a Graduate School degree program, that coursework may not be transferred regardless of the level of the coursework or the status of the school or college in which it was earned.

Credits are transferred by including the courses in the proposed degree program. Credits not accepted as part of a student's degree program cannot be transferred to the Graduate School transcript.

Courses taken before the awarding of a baccalaureate degree cannot be transferred.

**Time Limit for Earning the Master's Degree**—All requirements for the master's degree must be completed and the degree awarded within seven years. The seven-year period begins with the earliest coursework included on the official degree program form, including any transfer work. The graduate faculty in a specific program may set more stringent time requirements.

Students who are unable to complete the degree within the seven-year limit may petition the Graduate School for an extension of up to one additional year. Extensions beyond one year are considered only in the most extraordinary circumstances. To ensure timely consideration, petitions should be filed early in the term in which the time limit expires.

If a petition is approved, the student is notified of the expectations for progress and completion of the degree. If the petition is denied, the student is terminated from the graduate program.

Students who have been terminated under such circumstances may apply for readmission to the Graduate School; however, readmission under these circumstances is not assured. The faculty in the major field and the Graduate School set any readmission conditions on the student's resumption of work toward the degree, such as registering for additional coursework, retaking written examinations, completing the degree within a specified time period, or other appropriate terms.

For more information about the master's degree time limit and petitioning procedure, visit [http://www.grad.umn.edu/current\\_students/forms/masters.html](http://www.grad.umn.edu/current_students/forms/masters.html).



## **A. PLAN A: Master's Degree with Thesis**

### **Plan A (with thesis) Minimum course work:**

- 14 semester credits in major field
- 6 semester credits in related field
- 10 Thesis Credits, at a minimum (MCDG 8777)
- 30 credits total**

**Students are required to take an oral final exam as well as submitting a M.S. thesis.**

### **TYPICAL COURSEWORK PLAN A**

### **YOU MUST REGISTER BETWEEN 6-14 CREDITS FALL AND SPRING SEMESTER**

Students are responsible for the tuition for more than 14 credits.

#### **First Year**

##### **Fall Semester**

- BioC 8001 - Biochemistry: Structure, Catalysis and Metabolism (3 credits)
- BioC 8002 – Molecular Biology and Regulation of Biological Processes (3 credits)
- GCD 8151 – Cell Structure and Function (3 credits)
- MCDG 8900 – Student Research Seminar (1 credit)
- MCDG 8994 – Research (1 – 4 credits, as appropriate)

##### **Spring Semester**

- GCD 8131 – Advanced Genetics (3 credits)
- GCD 8161 – Advanced Developmental Biology (3 credits)
- BioC 8401 – Ethics, Public Policy and Careers in Molecular and Cellular Biology (1 cr)
- MCDG 8900 – Student Research Seminar (1 credits)
- MCDG 8910 – Journal Presentations (1 credit) – optional
- MCDG 8994 – Research (if appropriate)

#### **Second Year**

##### **Fall Semester Required Courses**

- MCDG 8900 – Student Research Seminar (1 credits)
- MCDG 8777 – Thesis Credits Master's (5-10 credits – note 10 credits total is required)
- MCDG 8950 – Teaching practicum (1 credit) Register for this the semester of your TA.
- One elective course in Fall or Spring

##### **Electives Options (*one 3 or 4 credit course*) – note that this is a partial list**

- GCD 8171 – Literature Analysis (**note: 2 credits**)
- GCD 8213/BioC 8213 – Selected Topics in Molecular Biology (4 credits)
- GCD 8181 – Selected Topics in Cell & Developmental Biology – Stem Cell Biology (3 cr)
- BIOC 5361 – Microbial Genomics and Bioinformatics (3 credits)
- BIOC 5527 – Introduction to Modern Structural Biology (4 credits)
- BIOL 5485 – Introductory Bioinformatics (3 credits)
- EEB 5042 – Quantative Genetics (3 credits)
- EEB 5963 – Modeling Nature and the Nature of Modeling (3 credits)

NSC 5461 Cellular and Molecular Neuroscience (3 credits)  
NSC 5561 – Systems Neuroscience (3 credits)  
PubH 6450 – Biostatistics I (4 credits)  
Stat 5021 – Statistical Analysis (4 credits)

Optional Preparing Future Faculty (<http://www1.umn.edu/ohr/teachlearn/graduate/pff/index.html>)  
Grad 8101—Teaching in Higher Education

### **Spring Semester Required courses**

MCDG 8900 –Student Research Seminar (1 credits)  
MCDG 8777 – Thesis Credits Master’s (5-10 credits – note 10 credits total is required)  
(MCDG 8950 – Teaching practicum (1 credit) Register for this the semester of your TA.)  
One elective course in Spring or Fall

Optional Preparing Future Faculty (<http://www1.umn.edu/ohr/teachlearn/graduate/pff/index.html>)  
Grad 8102—Practicum for Future Faculty.

### **Spring Semester Elective Options (*one 3 or 4 credit course*) – this is a partial list**

GCD 8008 – Mammalian Gene Transfer and Expression (2 credits)  
GCD 8073 – Adv. Human Genetics (3 credits)  
BIOC 5309 – Biocatalysis and Biodegradation (3 credits)  
BIOC 5353 –Microbial Biochemistry and Biotech: Small Molecules (3 cr, alternate years)  
BioC 5352 – Microbial Biochemistry and Biotechnology: Proteins (3 credits, alternate years)  
BIOC 5530 – Selected Topics in Molecular Biophysics (1-3 credits)  
BIOC 5444 –Muscle (3 credits)  
BIOC 8216 – Signal Transduction and Gene Expression (4 credits)  
EEB 5221 – Molecular and Genomic Evolution (3 credits)  
MICa 8003 – Immunity and Immunopathology (4 credits)  
MICa 8004 – Cellular and Cancer Biology (4 credits)  
MATH 8540 – Topics in Mathematical Biology (3 credits)  
NSC 8211 – Developmental Neurobiology (3 credits)  
PHCL 5111 Pharmacogenomics (3 credits)  
PubH 6450 – Biostatistics I (4 credits)  
Stat 5021 – Statistical Analysis (4 credits)

### **Rotations**

Plan A students typically rotate in at least two laboratories and then select their advisor/lab.

### **Filing of Degree Program Form**

File the Degree Program Form by the end of the second semester. You may obtain the **Degree Program form** via the web at [http://www.grad.umn.edu/current\\_students/forms/masters.html](http://www.grad.umn.edu/current_students/forms/masters.html). After consultation with and approval of advisor and DGS, submit the program form to MCDB&G Program office with a current nonofficial transcript. Plan A students include the proposed thesis title on the degree program form.

### **The Examining Committee**

The student in consultation with his/her advisor and with approval of the DGS and Graduate School will select three faculty members to serve on this committee. All three members must

hold a graduate faculty appointment in the graduate school. Two of the faculty members must be current members of the MCDB&G graduate faculty, one of whom is the student's advisor. The other faculty member is to hold an appointment in another graduate program related to the student's area of interest, although they might also be members of the MCDB&G faculty. One of the three committee members must have their primary academic appointment in a department other than that in which the student's advisor is based. The recommendation of committee members should be presented by the student and advisor to the DGS with a brief justification for each proposed member relative to the student's research interests. The DGS can approve the recommendations or request changes.

### **Thesis Reviewers**

Notify reviewers at least two weeks prior to delivery of thesis; allow readers at least 2 weeks to read the thesis. The student is responsible for returning certified Thesis Reviewer's Report form to Graduate School in exchange for the Final Examination Report form.

### **Final Examination**

The examination is coordinated by the chairperson of the committee. The student obtains the report form from the Graduate School. A majority vote of the three-member committee, all members present and voting, is required to pass the exam. In case of failure, unanimous committee consent is required to retake the final exam, and only one retake is allowed.

For a list of the faculty and their appointment level and departments please refer to the web page at [http://www.grad.umn.edu/faculty\\_rosters/](http://www.grad.umn.edu/faculty_rosters/).

### **Graduation Packet, Thesis Reviewer's Report Form, and Final Examination Form**

Pick up anytime after the degree program form is approved. This form is available at the Graduate School, 316 Johnston Hall and can be found at [http://www.grad.umn.edu/current\\_students/forms/masters.html](http://www.grad.umn.edu/current_students/forms/masters.html). It includes: Graduation instructions, Application for Degree form (submit by first working day of the intended month of graduation), Commencement Attendance Approval form, and Thesis Reviewer's Report Form. Remember to allow your committee at least 2 weeks to read the thesis. Submit the signed Thesis Reviewer's Report form to 316 Johnston Hall. The Final Examination Report Form will be given to you at that time. You must have the Final Exam Form before you report for the exam. Return the Final Examination Report form by the last working day of the intended month of graduation.

### **Preparation and Submission of the Thesis**

Two copies of the thesis must be submitted to the Graduate School by the last working day of the intended month of graduation. **Provide program with one copy of bound or unbound thesis.** The student's adviser(s) must sign both copies of the thesis to confirm that they are complete and satisfactory in all respects and that all revisions required by the final examining committee have been made. Instructions for the preparation of the thesis, including format specifications and adviser's signature requirements, should be obtained from the Graduate School, 316 Johnston Hall, or online at [http://www.grad.umn.edu/current\\_students/forms/masters.html](http://www.grad.umn.edu/current_students/forms/masters.html).

## **B. PLAN B: Master's Degree Without Thesis**

### **Minimum course work:**

14 semester credits in major field  
6 semester credits in related field  
10 semester course credits at discretion of student and adviser. (Research credits may be used.)  
**30 credits total**

### **Final Oral Examination**

**Students are required to take an oral final exam as well as submitting a project document.**

### **Teaching experiences**

**All MS students will teach one semester**, not to include the first and last years. The teaching requirement is intended to ensure that all students in the program have, as part of their graduate training, experience as instructors at the university level. Students are able to express their preferences for different teaching assignments. These experiences should provide for professional growth. Credit for teaching experience is obtained through registration for 1 credit under the designator MCDG 8950, Teaching Practicum.

## **TYPICAL COURSEWORK PLAN B**

### **YOU MUST REGISTER BETWEEN 6-14 CREDITS FALL AND SPRING SEMESTER**

Students are responsible for the tuition for more than 14 credits.

#### **First Year**

##### **Fall Semester**

BioC 8001 - Biochemistry: Structure, Catalysis and Metabolism (3 credits)  
BioC8002 – Molecular Biology and Regulation of Biological Processes (3 credits)  
GCD 8151 – Advanced Cell Biology (3 credits)  
MCDG 8900 – Student Research Seminar (1 credit)  
MCDG 8994 – Research (1 credit)

##### **Spring Semester**

GCD 8131 – Advanced Genetics (3 credits)  
GCD 8161 – Advanced Developmental Biology (3 credits)  
BioC 8401 - Ethics, Public Policy and Careers in Molecular and Cellular Biology (1 cr)  
MCDG 8900 – Student Research Seminar (1 credit)  
MCDG 8910 – Journal Presentations (1 credit) - optional  
MCDG 8994 – Research (1 credit)

#### **Second Year**

##### **Fall Semester Required Courses**

MCDG 8900 – Student Research Seminar (1 credit)  
(MCDG 8950 – Teaching practicum (1 credit) Register for this the semester of your TA.)  
One elective in Fall one elective in Spring

##### **Electives Options (*one 3 or 4 credit course*) – note that this is a partial list**

GCD 8171 - Literature Analysis (**note: 2 credits**)  
GCD 8213/BioC 8213 – Selected Topics in Molecular Biology (4 credits)

GCD 8181 - Selected Topics in Cell & Developmental Biology – Stem Cell Biology (3 cr)  
BIOC 5361 – Microbial Genomics and Bioinformatics (3 credits)  
BIOC 5527 – Introduction to Modern Structural Biology (4 credits)  
BIOL 5485 – Introductory Bioinformatics (3 credits)  
EEB 5042 - Quantative Genetics (3 credits)  
EEB 5963 – Modeling Nature and the Nature of Modeling (3 credits)  
NSC 5461 Cellular and Molecular Neuroscience (3 credits)  
NSC 5561 - Systems Neuroscience (3 credits)  
PubH 6450 - Biostatistics I (4 credits)  
Stat 5021 - Statistical Analysis (4 credits)

### **Spring Semester**

MCDG 8900 –Student Research Seminar (1 credit)  
MCDG 8950 – Teaching practicum (1 credit) Register for this the semester of your TA  
One elective course

### **Elective Options** (*one 3 or 4 credit course*)

GCD 8008 – Mammalian Gene Transfer and Expression (2 credits)  
GCD 8073 – Adv. Human Genetics (3 credits)  
BIOC 5309 – Biocatalysis and Biodegradation (3 credits)  
BIOC 5353 –Microbial Biochemistry and Biotechnology: Small Molecules (3 credits, alternate years)  
BioC 5352 - Microbial Biochemistry and Biotechnology: Proteins (3 cr, alternate years)  
BIOC 5530 – Selected Topics in Molecular Biophysics (1-3 credits)  
BIOC 5444 –Muscle (3 credits)  
BIOC 8216 – Signal Transduction and Gene Expression (4 credits)  
EEB 5221 – Molecular and Genomic Evolution (3 credits)  
MICa 8003 – Immunity and Immunopathology (4 credits)  
MICa 8004 – Cellular and Cancer Biology (4 credits)  
MATH 8540 – Topics in Mathematical Biology (3 credits)  
NSC 8211 - Developmental Neurobiology (3 credits)  
PHCL 5111 Pharmacogenomics (3 credits)  
PubH 6450 - Biostatistics I (4 credits)  
Stat 5021 - Statistical Analysis (4 credits)

### **Rotations**

Plan B students are required to do two or three rotations and then select their advisor/lab.

The course requirements for a Plan B (non-thesis) MS are identical to those for the PhD. MS students are required to complete at least 30 credits total. Plan B MS students do not have to conduct long-term research, but they are required to do laboratory rotations and research for at least 2 semesters, and to submit a 15-page paper outlining the research they conducted on their rotations, which constitutes their Plan B paper. A final examination is also required.

### **Project Completion**

The Plan B project requirement can be satisfied in three ways:

1. By undertaking projects, of appropriate scope (independent of any courses) involving a minimum of 120 hours of effort. This is the recommended option for MCDB&G and involves two 10-week lab rotations and a final report of 15 pages.
2. By completing Plan B papers in three graduate courses in the master's program, each requiring approximately 40 hours of effort. The student will have the instructor certify that he/she has agreed to the paper and that it meets the standards of a Plan B paper.
3. By undertaking independent study courses, creditable to the master's program, devoted totally to the completion of Plan B project(s). A total of 120 hours of effort is the minimum requirement.

### **Filing of Degree Program Form**

File the Degree Program Form by the end of the second semester. You may obtain the **Degree Program form** via the web at [http://www.grad.umn.edu/current\\_students/forms/masters.html](http://www.grad.umn.edu/current_students/forms/masters.html). After consultation with and approval of advisor and DGS, submit the program form to MCDB&G Program office with a current nonofficial transcript. Plan A students include the proposed thesis title on the degree program form.

### **The Examining Committee**

The student in consultation with his/her advisor and with approval of the DGS and Graduate School will select three faculty members to serve on this committee. All three members must hold a graduate faculty appointment in the graduate school. Two of the faculty members must be current members of the MCDB&G graduate faculty, one of whom is the student's advisor. The other faculty member is to hold an appointment in another graduate program related to the student's area of interest, although they might also be members of the MCDB&G faculty. One of the three committee members must have their primary academic appointment in a department other than that in which the student's advisor is based. The recommendation of committee members should be presented by the student and advisor to the DGS with a brief justification for each proposed member relative to the student's research interests. The DGS can approve the recommendations or request changes.

### **Final Examination**

The Examination is coordinated by the chairperson of committee. The student obtains the report form from the Graduate School after the Degree Program form has been approved. A majority vote of the three-member committee, all members present and voting, is required to pass the exam. In case of failure, unanimous committee consent required to retake final exam, and only one retake is allowed.

For a list of the faculty and their appointment level and departments please refer to the web page at [http://www.grad.umn.edu/faculty\\_rosters/](http://www.grad.umn.edu/faculty_rosters/).

### **Graduation Packet and Final Exam Form**

Pick up anytime after the Degree Program form is approved. This form is available at the Graduate School, 316 Johnston Hall and can be found at [http://www.grad.umn.edu/current\\_students/forms/masters.html](http://www.grad.umn.edu/current_students/forms/masters.html). It includes: Graduation instructions, Application for Degree form (submit by the first working day of intended month of graduation), Commencement Attendance Approval form, and Final Examination Report. Return

the Final Examination Form to 316 Johnston by the last working day of the intended month of graduation.

## **VII. JD/MS OR JD/PHD PROGRAM**

Please refer to the web site at <http://www.jointdegree.umn.edu/> for the most current information. Current cross-counting courses can be viewed from links on this site.

Students in the Joint Degree Program combine their Law and Science curricula by cross counting up to 12 Law School credits in their Graduate School program and up to 12 Graduate School credits in their Law School program.

**JD/MS and JD/PhD students must complete one teaching assistantship.**

### **A. JD/MS in Molecular, Cellular, Developmental Biology & Genetics (MCDB&G)**

#### Sample Plan

[Note: \*\* indicates credits that are expected to cross-count in the other unit, e.g., Law School credits expected to cross-count for Graduate School credit in MCDB&G.]

#### **YEAR ONE:**

MCDB&G coursework --

- Research Seminar (MCDG 8900; 1 MCDB&G credit each semester)
- 2 or 3 Laboratory rotations (approximately 7 – 10 weeks each) (MCDG 8994; 1 - 4 MCDB&G credit)
- optional Journal Club (MCDG 8910; 1 MCDB&G credit)
- Molecular Biology (BioC 8002; 3 MCDB&G credits)
- Advanced Genetics (GCD 8131; 3 MCDB&G credits)
- Cell Structure and Function (GCD 8151; 3 MCDB&G credits)
- Advanced Developmental Biology (GCD 8161; 3 MCDB&G credits)
- Ethics, Public Policy and Careers in Molecular and Cellular Biology (BioC 8401; 1 MCDB&G credit)
- Biochemistry (usually BioC 8001; 3 MCDB&G credits) highly recommended  
and
- Joint Degree Proseminar (LAW 6875; 1 credit)

#### **YEAR TWO:**

Law School first-year curriculum (30 Law credits total)

- Civil Procedure (LAW 6006; 6 Law credits)
- Constitutional Law (LAW 6007; 6 Law credits)
- Contracts (LAW 6001; 4 Law credits)

- Criminal Law (LAW 6009; 3 Law credits)
- Legal Research and Writing (LAW 6003; 3 Law credits)
- Property (LAW 6004; 4 Law credits)
- Torts (LAW 6005; 4 Law credits)
- and
- Joint Degree Proseminar (LAW 6875; 1 credit)

### **YEARS THREE & FOUR:**

Law courses and other requirements (need 58 Law credits (minus those cross-counted above))--

- Professional Responsibility (LAW 6600; 3 Law credits)
- Second-year writing requirement (moot court (2 Law credits) or law review (3-6 Law credits))

MCDB&G courses and other requirements--

- 2-3 electives, which may be Law courses\*\* , or graduate courses that fit with research interests, such as (**see additional electives listed under Ph.D. degree**):
  - Literature Analysis (GCD 8171; 2 MCDB&G credits)\*\*
  - Advanced Human Genetics (GCD 8073; 3 MCDB&G credits)\*\*
  - Selected Topics in Molecular Biology (GCD 8213; 4 MCDB&G credits)
  - Stem Cell Biology (GCD 8181; 3 MCDB&G credits)
  - Mammalian Gene Transfer (GCD8008; 2 MCDB&G credits)
- Research Seminar (MCDG 8900; 1 MCDB&G credit each semester)
- Plan B paper (satisfying the third-year writing requirement in the Law School)\*\*
- take final M.S. examination
- and
- Joint Degree Proseminar (LAW 6875; 1 credit)



## **B. JD/PhD in Molecular, Cellular, Developmental Biology & Genetics (MCDB&G)**

### Sample Plan

[Note: \*\* indicates credits that are expected to cross-count in the other unit, e.g., Law School credits expected to cross-count for Graduate School credit in MCDB&G.]

#### **YEAR ONE:**

Law School first-year curriculum (30 Law credits total)

- LAW 6006 Civil Procedure (6 credits)
- LAW 5007 Constitutional Law (6 credits)
- LAW 6001 Contracts (4 credits)
- LAW 6009 Criminal Law (3 credits)
- LAW 6003 Legal Research and Writing (3 credits)
- LAW 6004 Property (4 credits)
- LAW 6005 Torts (4 credits)
- LAW 6875 Joint Degree Proseminar (1 credit)

#### **YEARS TWO & THREE:**

MCDB&G requirements--

- Research Seminar (MCDG 8900; 1 MCDB&G credit each semester)
- 3 Laboratory rotations (approximately 7 weeks each) (MCDG 8994; 1 - 4 MCDB&G credits)
- optional Journal Club (MCDG 8910; 1 MCDB&G credit)
- Molecular Biology (BioC 8002; 3 MCDB&G credits)
- Advanced Genetics (GCD 8131; 3 MCDB&G credits)
- Cell Structure and Function (GCD 8151; 3 MCDB&G credits)
- Advanced Developmental Biology (GCD 8161; 3 MCDB&G credits)
- Ethics, Public Policy and Careers in Molecular and Cellular Biology (BioC 8401; 1 MCDB&G credit)
- Biochemistry (usually BioC 8001; 3 MCDB&G credits) highly recommended
- 3-4 electives, often:
  - Literature Analysis (GCD 8171; 2 credits)\*\*
  - Advanced Human Genetics (GCD 8073; 3 MCDB&G credits)\*\*
  - Selected Topics in Molecular Biology (GCD 8213; 4 MCDB&G credits)
  - Stem Cell Biology (GCD 8181; 3 MCDB&G credits)
  - Mammalian Gene Transfer (GCD 8008; 2 MCDB&G credits)
  - but may be Law courses\*\*
- preliminary written and oral examinations
- dissertation research
- Joint Degree Proseminar (LAW 6875; 1 credit each year)

#### **SUMMERS AFTER YEARS TWO & THREE:**

Research

**YEAR FOUR:**

Law courses and other requirements remaining (need 58 Law credits (minus those cross-counted above))--

- Professional Responsibility (6600; 3 Law credits)
- Second-year writing requirement (moot court (2 Law credits) or law review (3-6 Law credits))

MCDB&G requirements--

- preliminary oral examination completed before start of 3<sup>rd</sup> MCDB&G year
- file dissertation title, register for 24 thesis credits, conduct dissertation research
- Research Seminar (MCDG 8900; 1 MCDB&G credit each semester – registration not required)
- Joint Degree Program Proseminar (LAW 6875; 1 credit)

**SUMMER AFTER YEAR FOUR:**

Research (MCDG 8444)

**YEARS FIVE & SIX, INCLUDING SUMMERS AFTER EACH:**

Research (MCDB&G- MCDG 8444)

Research Seminar (attend without registration)

Joint Degree Program Proseminar (LAW 6875; 1 credit each year)

**YEAR SEVEN:**

Law and MCDB&G courses and other requirements--

- complete Law School courses
- complete dissertation (satisfying the third-year writing requirement in the Law School)\*\*
- take final oral examination defending dissertation
- Research Seminar (MCDG 8900; 1 MCDB&G credit each semester – registration is not required)

and

Joint Degree Program Proseminar (LAW 6875; 1 credit each year)

## VIII. DEGREE CLEARANCE, GRADUATION AND COMMENCEMENT CEREMONIES

Graduate students may graduate monthly. By obtaining the Graduation packet and submitting the application for degree by the first working day of the month, the Graduate School will monitor completion of academic degree requirements, i.e., course work, final examination report forms, microfilming fees, theses, etc. If all requirements are completed by the last working day of the month, the degree will be awarded as of that day and recorded on both the transcript and diploma. If all requirements are not completed, graduation will be delayed at least until the next month. Please refer to these web pages for an explanation of the Graduate School forms, requirements and process at

[http://www.grad.umn.edu/Current\\_Students/degree\\_completion/index.html](http://www.grad.umn.edu/Current_Students/degree_completion/index.html)

There are two Commencement Ceremonies each year. January through June graduates may attend the May ceremony; July through December graduates may attend the December ceremony. If a student wishes to have his or her name appear in the Commencement Program distributed at the ceremony and/or attend the ceremony, they must complete the Commencement attendance form and have it signed by their advisor and the DGS by the deadlines. Diplomas will be prepared and sent to students as soon as possible after completion of the degree requirements (3-4 months). Information is available on the Graduate School web site at [http://www.grad.umn.edu/current\\_students/degree\\_completion/commencement/index.html](http://www.grad.umn.edu/current_students/degree_completion/commencement/index.html).

## IX. EMPLOYMENT TERMS AND CONDITIONS FOR GRADUATE ASSISTANTS

### Graduate Assistants Employment Office

Office of Human Resources, 200 Donhowe Building

Phone: 612-624-7070 Fax: 612-625-9801

email: [gaoinfo@umn.edu](mailto:gaoinfo@umn.edu)

<http://www1.umn.edu/ohr/gae>

Policy and guideline information pertaining to graduate assistantship employment is available online (<http://www1.umn.edu/ohr/gae>) or from your hiring department. **Please be aware you are responsible for knowing the policies and guidelines applicable to your appointment as a graduate assistant.**

In addition to the terms and conditions set forth in your graduate assistant appointment letter, graduate assistantships are contingent upon admission to the Graduate School, current registration as a graduate student and satisfactory progress toward a Graduate School degree. In order to hold a graduate assistantship during Fall or Spring semester you are required to be registered for credit (audit registration only is not acceptable). For regular assistantships, 6 credits of registration are required; for Advanced Masters and Ph.D. candidate positions, one FTE credit is required. If personal circumstances require registration for fewer than six credits, you may apply for an exception. For details, see the above web site.

Registration must be maintained for the entire semester or your graduate assistantship will be terminated. Withdrawal from all credits will result in termination of your assistantship. If your assistantship is terminated, the hiring department has the option of converting your appointment

to a non-student classification for the remainder of that semester only; however, benefits such as your graduate assistant health insurance plan and tuition benefits may be adversely affected.

If you have F-1 or J-1 visa status, federal law prohibits the University from employing you more than 20 hours per week (50% time) during scheduled class periods and finals weeks. Exceptions exist if you have been authorized for 'practical or academic training'. Consult with the Office of International Student and Scholar Services over these matters.

#### **A. GRADUATE ASSISTANT TUITION BENEFITS**

Most MCSB students are appointed as 50% (an average of 20 hours per week) graduate assistants/fellows. Students with this appointment level will receive 100% tuition benefits. Tuition benefits waive tuition only (for 6-14 credits per semester) and do not cover the student service fee or course fees. For detailed information about tuition benefits visit <http://www1.umn.edu/ohr/gae>.

MCSB students who have their own external fellowships (not from the grad program or through the University of Minnesota) may have a different appointment. Tuition benefits for these students may still be available if eligibility requirements are met. Students will be notified if there is anything unusual about their tuition benefits.

#### **Appointments Beginning After or Ending before the Official Semester Appointment Dates**

Appointments that begin after or end before the official semester appointment dates will be prorated according to total hours worked for the semester payroll period. The student will have the unearned portion of tuition benefits billed to them, at non-resident rates if applicable. If the shortened appointment falls below the 195-hour eligibility threshold (equivalent to a 25% time appointment for the full semester period), 100% of the tuition will be billed to the student, at non-resident rates if applicable.

#### **Appointments Ending Due to Graduation**

If an appointment ends early because of graduation, the student will receive the full tuition benefit awarded for that final term of employment as a graduate assistant. The benefit will not be prorated and charged back to the student.

#### **Resident Tuition Rates for Non-residents (Non-resident waiver)**

##### Current Students:

If a non-resident student holds a 25% time (or more) graduate assistantship, traineeship or fellowship he/she is eligible for resident tuition rates (through a non-resident waiver). This privilege applies to the student and to members of his/her immediate family.

Immediate family members (spouse or registered same sex domestic partner, children, parents, or legal guardian or ward living in the household) wishing to claim resident tuition rates must bring ID documentation to the Graduate Assistants Office each semester for certification prior to going to the registration center.

Former Students:

Former graduate assistants, their immediate family members, and/or domestic partners are eligible to receive extended resident tuition rates if the graduate assistant has held at least 2 semesters of qualifying appointments (at least 25% time). This benefit is extended to graduate assistants who are no longer employed as graduate assistants for a maximum of 4 semesters, one term of extended benefit earned for each term of eligible appointment. Extended benefits must be used within 3 years of the last term of eligible assistantship appointment.

**Additional Aid Opportunities**

Graduate fellowships and awards based exclusively on academic merit are available to new and currently enrolled grad students through the Graduate School. Information may be obtained from the Graduate Fellowship Office, 314 Johnston Hall, 612-625-7579 or via the web at <http://www.grad.umn.edu/fellowships/>.

The Office of Scholarships and Financial Aid, located in 210 Fraser Hall, Minneapolis, 612-624-1111 can provide students with general information on available loans and scholarships. Their web site is at <http://admissions.tc.umn.edu/CostsAid/finaid.html>

## B. GRADUATE ASSISTANT HEALTH AND DENTAL INSURANCE

N-323 Boynton Health Service  
612-624-0627  
email: [gradins@bhs.umn.edu](mailto:gradins@bhs.umn.edu)  
<http://www.bhs.umn.edu/insurance/graduate/>

Students taking at least six credits are required to carry hospitalization insurance. Graduate assistants with 25% appointments or more can obtain health and dental care benefits by enrolling in the Graduate Assistant Health Care Plan. Enrollment information can be obtained from Tami, Sue or Darlene. Once you are enrolled, your coverage will continue as long as your appointment remains at 25% or more. **If you have coverage Spring semester, you will be covered through the summer even if you are not working as a graduate assistant.** If you leave your graduate assistant appointment before the end of the term, your graduate assistant health-care coverage will end. However, you have the option of purchasing continuing coverage at your own expense.

**A student with a 50% appointment will receive a 95% subsidy of premium for their own coverage.** A student with a 25% appointment will receive a 47.5% subsidy. **Students will be billed their portion of the premium costs once each term (directly to the students account).** The Graduate Assistant Insurance plan also includes office visit co-pay for enrollees. The University contributes part of the cost of dependent coverage.

**Outside insurance** - If you already have insurance through your parents or spouse and you don't want to participate in the Graduate Assistant Health Care Plan, bring the name of your insurance company or HMO and your policy number to the Graduate Assistant Health Benefits office (N323 Boynton). **You must call their office (612-624-0627) every semester you register to tell them you have outside insurance.**

If you don't qualify for the Graduate Assistant Health Care Plan and don't have your own insurance, you may purchase the University-Sponsored Student Health Benefit Plan. If you register for at least six credits and don't have hospitalization insurance, you will automatically be enrolled in the Student Health Benefit Plan when you register.

## X. FELLOWSHIPS AND AWARDS

A number of graduate fellowships and awards based on academic and research merit are available to new and currently enrolled grad students through the Graduate School. Information may be obtained from the Graduate Fellowship Office, 314 Johnston Hall, 612-625-7579 or via the web at <http://www.grad.umn.edu/fellowships/>.

The Graduate School publishes a list of available fellowships each year at <http://www.grad.umn.edu/fellowships/>.

### *Privately-funded Fellowships*

Several privately-funded fellowships are administered by the Graduate School. Please see the Graduate School fellowship website (listed above) for a current listing of available privately-funded fellowships. Application deadline is December 1.

### *Doctoral Dissertation Fellowships*

Candidates must be nominated by the MCDB&G graduate program to an all-University Graduate School competition. Fellowships are awarded to students who expect to complete their thesis research within 18 months. The internal MCDB&G program deadline will be announced by email and is in February of each year.

### *Thesis Research Grant*

Grants of up to \$2,500 are available to support dissertation research, such as domestic travel and expenses for fieldwork, postage, and photocopying. Deadlines: October 1 and March 1 (if deadline falls on a weekend, then the following Monday.)

### *Torske Klubben Fellowship for Minnesota Residents*

This fellowship award has been established to support outstanding graduate students (master's or Ph.D.) currently enrolled in any field in the University of Minnesota Graduate School. Applicants must have outstanding academic achievement, excellent leadership potential, and an interest in or connection with Norway. Must be official state of Minnesota residents. The stipend is \$13,000 for the academic year, plus full tuition. Sponsored by the Torske Klubben of Minneapolis. Deadline: March 1 (if deadline falls on a weekend, then the following Monday.)

The Minnesota Medical Foundation administers several research awards each year. For a current list, see the **student honors and awards section** of their website, which can be accessed from <http://www.mmf.umn.edu/services/>, and scroll down to the research section. Applications are typically due in January.

Students may also submit applications for fellowships through agencies that are external to the University of Minnesota. There is a listing of several external fellowships at the Graduate School website. Students should consult with their advisors about submitting applications for highly competitive fellowships from the NIH, NSF, American Heart Association, etc. Submission of fellowship proposals to external agencies requires consultation with your advisor and with your advisor's departmental grants submission staff to co-ordinate the preparation and submission of proposals.

## APPENDIX A - GOVERNING BODY

The **Director of Graduate Studies (DGS)** is responsible for all aspects of the Program; appoints the members of the Program's various committees; represents the Program to the University administration; is nominated and elected by the faculty members of the Program; serves for a four year term.

### Committee Structure

The **Steering Committee** is chaired by the DGS and composed of the representatives of each of the other committees and a student representative. The committee meets at least once a semester to review the business of each committee and to deal with any special issues that arise. Meetings are open to all faculty.

The **Admissions Committee**: recommends standards for admission to the Program; reviews applications and recommends applicants for admission; establishes a regular dialogue with desirable students. **Chair of committee serves on MCSB Coordinating Committee.**

The **Recruitment Committee**: writes and designs the brochure for the Program; evaluates and initiates changes to the program website; organizes and runs recruiting visits for prospective students; organizes an outreach program to local colleges to promote the Program through seminars and reciprocal visits. Program faculty and a student representative serve on the committee. **Chair of committee serves on MCSB Coordinating Committee.**

The **Curriculum Committee**: recommends the curriculum and course requirements for students in the Program; recruits faculty members to teach courses as appropriate; encourages needed changes in the content of existing courses.

The **Faculty Review Committee**: recommends criteria for initial appointment and reappointment to the faculty of the Program; reviews new applications for appointment to the Program faculty; reviews annually applications for reappointment to the Program faculty.

The **Student Review Committee**: recommends the format for major examinations in the Program; prepares, administers and grades the written preliminary examination; reviews the progress annually of each student in the Program.



## **APPENDIX B - UNIVERSITY AND PROGRAM INVOLVEMENT**

The graduate students have created an organization to provide a forum for graduate students to discuss and make recommendations on matters related to graduate students. Student representation on program and Graduate School committees and at staff meetings is solicited through the Graduate Student Association (GSA).

The Council of Graduate Students (COGS) officially represents within the Graduate School all graduate students. In each program the graduate students may elect one representative to serve on the council. Through COGS these representatives are able to accomplish the following: (a) unite graduate student forces; (b) assimilate, coordinate and disseminate pertinent information; (c) provide student members for Graduate School and University committees; (d) deal with those problems and issues which affect graduate students. The COGS Newsletter, distributed to all graduate students, attempts to keep graduate students informed of Graduate School affairs. <http://www.cogs.umn.edu>.

Graduate students are encouraged to participate in a variety of scientific and research activities. A Women in Science group meets regularly. The group brings together faculty and students to discuss scientific problems and concerns relating to their status as women. For detailed information contact Kathryn Hanna (612-625-2788) in the CBS office.

### **MCDB&G Graduate Student Association (MCDB&G GSA)**

#### Goals of GSA

1. Build a strong student support network of new and older students.
2. Keep students informed about our graduate program changes.
3. Keep in touch with each other, and eat free food!

#### Student Leadership Structure

1. President and Vice President-2 Year Term
  - a. Each year 1 person is voted in to serve a two year term, the first year they will act as Vice President, the second year they will become the President while a new VP will be voted in.
  - b. Responsibilities:
    - i. Organize MCDB&G GSA 1-2 meetings per semester
      1. Attend all GSA meetings
      2. Communicate with DGS' Questions, problems, etc.
    - ii. Serve as Head of Student Recruitment Committee
    - iii. Serve on MCDB&G Executive Committee and report info back to GSA
    - iv. Serve on MCB Coordinating Committee
2. Student Representatives from each class -- 1-2 volunteers per class
  - a. Responsibilities
    - i. Bring class mates questions/concerns to MCDG&G GSA
    - ii. Attend all MCDB&G GSA meetings
    - iii. Serve on committees (if desired) report back to MCDB&G GSA
3. Committees Students Serve On
  - a. Student Invited Speaker:

- b. TA Liaison Committee
- c. Retreat Committee
- d. COGs (Council of Graduate students)
- e. Picnic committee

## **APPENDIX C - PROCEDURES**

### **1. Safety Training**

Federal, state and local regulations require all University employees, including graduate students, to undergo safety training. For graduate students, training includes laboratory safety standards (research laboratory safety plan), hazardous waste management, and, if applicable, radioisotope use, biosafety and use of controlled substances in research. Training times are offered when graduate study begins. Refresher courses are offered annually and when new protocols and/or hazardous chemicals are introduced to the laboratory or substantially changed. The safety training session given at orientation fulfills the requirement for initial safety training for laboratory safety standards and hazardous waste management.

People who work in laboratories that utilize radioisotopes must receive special training concerning safety in the use of radioactive materials. This training consists of viewing video tapes and taking a test in the learning centers of the Bio-Medical Library (Minneapolis campus) or the Magrath Library (St. Paul campus). The use of some radioisotopes requires personnel to wear film badges and/or rings to monitor exposure to radiation. Film badge and/or ring request forms are available from the Radiation Protection Office, W140 Boynton Health Service or from David Okita at [okita001@umn.edu](mailto:okita001@umn.edu).

### **2. Accident Reporting**

Either the State of Minnesota Workers' Compensation Plan or liability insurance covers work-related accidents or injuries. All injuries (examples include chemical burns, open wounds and eye injuries) should be treated without delay (see guidelines below) and must be reported to the department and the victim's immediate supervisor as soon as possible (within 24 hours).

For a serious injury, call the emergency number 911. For a victim requiring critical care: render first aid and seek medical care at Boynton Health Service. For injuries occurring when Boynton Health Service is closed, use Fairview-University Medical Center Emergency Room, 420 Delaware Street SE (612-273-2700). For non-emergency medical attention you may use your own clinic or one of the University's approved clinics posted by all lab telephones.

All work-related accidents must be reported to the departmental safety administrative officer, David Okita, as soon as possible (within 24 hours), so that the appropriate forms can be completed and submitted.

### **3. Paychecks**

University employees (including student employees) are paid on a delayed bi-weekly payroll system. Pay periods are 2-weeks long, beginning on a Monday and ending on Sunday, 14 days later. Paychecks are available, by way of campus mail, in the departmental labs 10 days later on Wednesday afternoon. Forms to authorize automatic deposit can be obtained from the departmental payroll office personnel. Pay statements/Direct Deposit Authorizations are

available online at “My One Stop” and the HRSS website (<http://hrss.umn.edu>) two days before payday.

**APPENDIX D - HOLIDAYS AND VACATION**

2008	
September 1	Labor Day
November 27	Thanksgiving holiday
November 28	Floating holiday
December 25	Christmas Day
December 26	Floating holiday
2009	
January 1,	New Years Day
January 19	Martin Luther King holiday
March 20	Floating holiday
May 25	Memorial Day
July 3	Independence Day
September 7	Labor Day
November 26	Thanksgiving holiday
November 27	Floating holiday
December 24	Floating holiday
December 25	Christmas Day
January 1, 2010	New Years Day
January 18	Martin Luther King holiday
March 19	Floating holiday
May 31	Memorial Day

**VACATION**

Students have official University holidays off. Additional vacation time must be cleared with the student’s advisor in advance and is expected to be no more than two weeks per year.

## **APPENDIX E - RESOLUTION TO ISSUES**

Resolution of grievances may be sought through the student's adviser, the Director of Graduate Studies, the Department heads, the Graduate School, and the University Senate Judicial Committee.

Grievance procedures relating to academic freedom and responsibility are governed by the University Senate statement on Academic Freedom and Responsibility of December 17, 1970, and the Revised Report of the University Appeals Committee on Academic Freedom and Responsibility of April 18, 1974. As a consequence of these policies each department or program has available a set of operating procedures to deal with both the formal and informal aspects of possible grievance matters. Each department or program has also established a standing committee on grievances to conduct hearings and make recommendations in those cases which reach the formal grievance stage.

In the event that the nature of the potential grievance precludes resolution, graduate students may wish to seek advice from the Graduate School dean's office. There is a Graduate School Grievance Committee, but its function is essentially limited to hearing appeals from department or program grievance committees.

Recent publications speaking to the issue of sexual harassment have attempted to avoid misunderstandings by faculty, students and staff on the definition of sexual harassment and set procedures for filing and/or resolving complaints. The rights and concerns of the complainant and the respondent must be fully assured. To get further information or advice about sexual harassment, contact the Office of Equal Opportunity and Affirmative Action on the Twin Cities campus (419 Morrill Hall, 612-624-9547).

An Office for Students with Disabilities is located in the McNamara Alumni Center at 200 Oak St. (612-626-1333). The Office protects the rights of disabled people and provides information, referral, advocacy, and accommodations such as sign language interpreters, readers, and academic assistance (<http://ds.umn.edu/index.html>).

The University Counseling and Consulting Services provide assistance to those students who wish to learn more about themselves as they develop in an educational setting. Counseling services include the areas of academic or educational decisions, vocational or career planning, personal or family problems, marital relationships, and other concerns. Assistance is offered to develop reading and study skills. They are located in 199 Coffey Hall (612-624-3323) and 109 Eddy Hall (612-624-3323) - <http://www.uccs.umn.edu> in Mpls and for St. Paul.

Counseling and advisory services are provided for students and scholars from other countries by the Office of International Student and Scholar Services in 190 HHH Center on the Minneapolis West Bank campus (612-626-7100). This office provides assistance to those seeking information about visa regulations; federal, state and local regulations governing foreign nationals; financial aid requirements; English language requirements; and other educational, social and personal problems (<http://www.iass.umn.edu/>

## APPENDIX F - HELPFUL WEB ADDRESSES

- Computer labs: <http://www1.umn.edu/adcs/index.html>
- Council of Graduate Students (COGS), 405 Johnston Hall, <http://www.cogs.umn.edu>
- Graduate Assistant Medical Plan, N-323 Boynton Health Service, 612-624-0627 or email: gradins@bhs.umn.edu, <http://www.bhs.umn.edu/insurance/graduate/index.htm>
- Graduate Assistant Employment Office (GAE), 170 Donhowe Building, 612-624-7070 Fax: 612-625-9801, web at <http://www1.umn.edu/ohr/gae/>
- Graduate School Catalog: <http://www.catalogs.umn.edu/grad/index.html>
- Graduate School Handbook: [http://www.grad.umn.edu/current\\_students/handbook/index.html](http://www.grad.umn.edu/current_students/handbook/index.html)
- Graduate School website: [www.grad.umn.edu](http://www.grad.umn.edu)
- Graduate School Forms: [http://www.grad.umn.edu/current\\_students/forms/index.html](http://www.grad.umn.edu/current_students/forms/index.html)
- Graduate School Student Services: 316 Johnston Hall, 612-625-3490, [http://www.grad.umn.edu/offices-contacts/student\\_services.html](http://www.grad.umn.edu/offices-contacts/student_services.html)
- Health Service Boynton on St. Paul Campus, 109 Coffey Hall, 612-624-7700; on Minneapolis, 109 Eddy Hall, 612-624-0627, <http://www.bhs.umn.edu/>
- Housing: <http://www.umn.edu/housing/>
- International Student and Scholar Services, 190 Hubert H. Humphrey Center (HHH), 612-626-7100, [www.iss.umn.edu](http://www.iss.umn.edu)
- Libraries: <http://www.lib.umn.edu/>
- MCDB&G Graduate Program: <http://mcdbg.umn.edu>
- Office for Students with Disabilities, McNamara Alumni Center, 612-626-1333, <http://ds.umn.edu/index.html>
- Parking and Transportation Services Office, 511 Washington Avenue SE, at 612-626-7275 or on the web at <http://www1.umn.edu/pts/>  
Student contract lottery each semester at <http://www1.umn.edu/pts/studentcontracts.htm>
- Registration: <http://onestop.umn.edu/onestop/registration.html>
- Scholarships and Financial Aid, 210 Fraser Hall, 612-624-1665,

[http://www.onestop.umn.edu/onestop/Financial\\_Aid/Scholarships.html](http://www.onestop.umn.edu/onestop/Financial_Aid/Scholarships.html)

- Student Dispute Resolution Center. 211 Eddy Hall, U of MN, East Bank, 612-624-7272, email us [sos@umn.edu](mailto:sos@umn.edu), <http://www1.umn.edu/sos/>
- University Counseling and Consulting Services, <http://www.uccs.umn.edu/> Located in 109 Eddy Hall on the Minneapolis Campus and 199 Coffey Hall. 612-624-3323.
- University Grievance Office, 662 Heller Hall (West Bank), <http://www1.umn.edu/ocr/> 612- 624-1030
- Center for Writing, 15 Nicholson Hall or 9 Appleby Hall, <http://writing.umn.edu/sws/>  
E-mail: [writing@umn.edu](mailto:writing@umn.edu), Nicholson appointments and information: (612) 625-1893, Appleby walk-in center: (612) 626-1328.

## **APPENDIX G - UNIVERSITY OF MINNESOTA POLICY STATEMENTS**

Mutual Responsibilities in Graduate Education at the University of Minnesota

Approved by the Graduate School Executive Committee 5/28/97; Amended 11/28/00

[http://www.grad.umn.edu/faculty-staff/governance/Policies/mutual\\_responsibilities.html](http://www.grad.umn.edu/faculty-staff/governance/Policies/mutual_responsibilities.html)

### **Preamble**

A major purpose of graduate education at the University of Minnesota is to instill in each student an understanding of and capacity for scholarship, independent judgment, academic rigor, and intellectual honesty. Graduate education is an opportunity for the student to develop into a professional scholar. Graduate research and teaching assistantships offer an "apprenticeship" experience in the academic profession as well as financial support. It is the joint responsibility of faculty and graduate students to work together to foster these ends through relationships that encourage freedom of inquiry, demonstrate personal and professional integrity, and foster mutual respect. This shared responsibility with faculty extends to all of the endeavors of graduate students, as students, employees, and members of the larger academic community.

High quality graduate education depends on the professional and ethical conduct of the participants. Faculty and graduate students have complementary responsibilities in the maintenance of academic standards and the creation of high quality graduate programs. Excellence in graduate education is achieved when both faculty and students are highly motivated, possess the academic and professional backgrounds necessary to perform at the highest level, and are sincere in their desire to see each other succeed.

The following principles illustrate what students should expect from their programs and what programs should expect from their students, to help achieve this excellence.

### **Principle 1: Information about Policies and Procedures**

The Graduate School and graduate programs are responsible for providing students and prospective students with access to information about their graduate program, areas of specialization, degree requirements, and average time to completion of degrees. Graduate programs are responsible for providing access to information about graduate student financial support in the program, such as the prospects for fellowships, assistantships or other financial support and the proportion of students receiving financial support. In addition, graduate programs should provide students and applicants with information about career experiences of graduates of the program. All such information should be presented in a format that does not violate the privacy of individual students. Programs are encouraged to provide relevant information in their handbooks, websites or other readily accessible formats.

Students are responsible for keeping themselves informed about current policies of their program and the Graduate School that affect graduate students. Students and alumni also have a responsibility to respond to program inquiries about their career development.

### **Principle 2: Communication about Academic Status**

The Graduate School and graduate programs are responsible for providing students with information about their individual academic status: who in the Graduate School and in their graduate program is responsible for communicating to them about admission issues and progress through the degree program, how the communication will take place, and the possibility for appeal to a third party for assistance in resolving disputed issues.

Students are responsible for communicating with the Graduate School and their graduate program about changes in their circumstances that affect their status and progress toward the degree.

### **Principle 3: Research Contributions**

Individual faculty, as research directors, are responsible for providing students with appropriate recognition for their contributions at conferences, in professional publications, or in applications for patents. It is the faculty member's responsibility to clarify the principles for determining authorship and recognition at the beginning of any project.

Students are responsible for discussing their expectations regarding acknowledgment of research contributions or intellectual property rights with the appropriate person(s) in the research team, preferably early in the project.

### **Principle 4: University Governance**

Departments and graduate programs are responsible for defining specific opportunities for student participation on committees as they deem appropriate. The University recognizes that graduate students make important contributions to governance and decision making at the program, department, college, Graduate School and University level; specific roles for participation are defined at each level by the relevant governing bodies.

Students are responsible for participating in University governance and decision making that enriches the campus community.

### **Principle 5: Respectful Employment Conditions**

University faculty and staff are responsible for assuring that graduate students are able to conduct their work, as students or students/employees, in a manner consistent with professional conduct and integrity, free of intimidation or coercion. Students who are employees also have the protection of all University employment policies and laws. Graduate programs are responsible for providing clear communication to students about the possibility for appeal to a third party for assistance in resolving disputed issues.

Students are responsible for reporting unprofessional conduct to the appropriate body or person, as defined in the academic or employment grievance policy; they should be able to do so without fear of reprisal. Students are responsible for acting in a respectful and fair manner toward other students, faculty, or staff in the conduct of their academic work or work they may do in connection with an assistantship.

### **Principle 6: Conditions of Employment**

The University (through its departments, research projects or other employing units) is responsible for providing to prospective graduate assistants a written offer of financial support before a response to the offer is required. Such communication must indicate their salary and the terms and conditions of their appointment, including the general nature of the work they will be performing, duration of employment, and whether and how this employment is tied to their academic progress. The details of specific teaching or research assignments may need to await later written clarification.

Students are responsible for accepting the conditions of employment only if they believe they are qualified and able to complete the tasks assigned. Students have a responsibility for communicating in writing any changes in their circumstances that affect their ability to fulfill the terms and conditions of their employment.

### **Principle 7: Safe Work Environment**

Supervisors are responsible for providing a safe working environment for graduate students, and for developing and publicizing safety policies and training programs to achieve that goal. Graduate students are responsible for helping

to maintain a safe working environment, for adhering to safety policies, for participating in training programs and for reporting safety violations to the proper authority.

**Principle 8: Responsible Conduct of Research**

Students are responsible for carrying out their research in a responsible manner.

The faculty and Graduate School are responsible for ensuring that students receive training and guidance in the responsible conduct of research as appropriate for each field.

**Other University Documents**

The following web pages may provide information and guidance relevant to the graduate education experience.

- **Academic Code of Conduct**, <http://www1.umn.edu/regents/policies/academic/Conduct.pdf>
- Board of Regents, **Academic Freedom and Responsibility**  
[http://www1.umn.edu/regents/policies/academic/Academic\\_Freedom.pdf](http://www1.umn.edu/regents/policies/academic/Academic_Freedom.pdf)
- **Graduate Assistant Office Policies**, <http://www1.umn.edu/ohr/gae/policies.html>
- **Student Conduct Code**, <http://www.sja.umn.edu/conduct.html>

## EQUAL OPPORTUNITY STATEMENT

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

In adhering to this policy, the University abides by the Minnesota Human Rights Act, Minnesota Statute Ch. 363, by the Federal Civil Rights Act, 42 U.S.C. 2000e; by the requirements of Title IX of the Education Amendments of 1972; by Sections 503 and 504 of the Rehabilitation Act of 1973; by the Americans with Disabilities Act of 1990; by Executive Order 11246, as amended; 38 U.S.C. 2012, the Vietnam Era Veterans Readjustment Assistance Act of 1972, as amended; and by other applicable statutes and regulations relating to equality of opportunity.

Inquiries regarding compliance may be directed to the Office of Equal Opportunity and Affirmative Action, 419 Morrill Hall, 100 Church Street S.E., University of Minnesota, Minneapolis, MN 55455, (612) 624-9547.