

# BIOCHEMISTRY, MOLECULAR BIOLOGY AND BIOPHYSICS

*Committed to biomedical research,  
biotechnology & structural biology  
through research and education*



## ***Graduate Program Handbook***

**2009-2010**

(Updated September 2009)

**UNIVERSITY OF MINNESOTA**

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## I. Student Requirements by Year

(Questions, please contact the Student Personnel Coordinator or the DGSs)

### Year 1

Follow MCSB grad program handbook

- Itasca Orientation (MCDG 8920)
- Fall Semester
  
- Student Orientation
  
- Register for classes (12-14 credits, see pg 5 for details)
- Take Speak Class (if international)
- Keep GPA at 2.8
- Do Lab Rotations
- Meet regularly with your DGS

Spring Semester

- Register for classes (12-14 credits)
- GPA 2.8
- Finish Lab Rotations
- Choose Thesis Advisor before the end of spring semester

**(Welcome to BMBB Program!!)**

### Year 2

Fall Semester

- Register for classes (12-14 credits)
- Take Speak Test (if international)
- Keep 2.8 GPA
- September-Nominate Exam Committee Members  
(inform Student Personnel Coordinator)
- **Research Seminar Presentation BioC 8084** (make sure examination committee is present)
- October-Program Exam Consent Form/Topic of Prelim Form  
One page summaries of thesis and prelim topics (inform Student Personnel Coordinator)

Spring Semester

- Jan 2<sup>nd</sup> Degree Program Form Due to Graduate School (GS89a&b)
- Feb 1<sup>st</sup> Preliminary Exam Due to Student Personnel Coordinator (7 copies)
- March 1<sup>st</sup>- Decision of Prelim Committee
- April 1<sup>st</sup>-Rewrite of Prelim due to Student Personnel Coordinator (7 copies) if applicable
- May 1<sup>st</sup>-Decision of Prelim Committee on rewrite if applicable  
(Rewrites and Oral Exam should be completed before the beginning of Fall semester!)
- Schedule Oral Exam (six weeks within passing Prelim)
- Schedule room with coordination of your exam committee
- One week before Oral Prelim, turn in form GS12A to Grad School

Summer

Teaching Assignments (2 semesters required-anytime Year 2-4)

**(You must complete with Prelim Oral Exam before 1<sup>st</sup> week of Fall semester!)**

### Year 3

- Register for BioC 8888 (12 credits Fall and Spring)
- Teaching Requirement
- Fall/Spring Research Seminar Presentation BioC 8084
- (3 members of your Exam Committee must be present, it is your responsibility to tell your committee that you are presenting)
- Form 63abc due to Grad School-Final Oral Exam and Thesis Project/Proposal

### Year 4 and beyond

- Teaching Requirement
- Register BioC 8444, **if you have 24 credits of BioC 8888** (1 credit) for **Advanced Doctoral Status!**
- Research Seminar Presentation BioC 8084  
(3 members of Exam Committee must be present, it is your responsibility to tell your committee that you are presenting)

*\*If you will be here beyond the end of Year 5, you must be meeting with your committee and request an extension or you'll be removed from the payroll*

### Last year (hopefully Year 5!)

**Turn in Thesis Proposal Form to the Grad School (at least one term before Final Oral Exam**

- After Thesis Proposal Form is approved request Graduation Packet from Grad School
- Register for BioC 8444 (1 credit)
- Present Research in BioC 8084 or Journal Club (must have DGS approval first!)
- Submit the signed Thesis Reviewer's Report form to the Grad School and schedule the Final Oral Defense schedule online at least one week prior to exam
- Final Oral Exam and Thesis Defense  
(Coordination of examination committee, schedule room, inform Student Personnel Coordinator for announcement)
- Return Final Oral Exam report no later than 1 working day following completion of final oral defense
- **Notify DGS/Student Personnel Coordinator and Student Payroll of termination of student status**
- First working day of the month of graduation submit application for degree to 200 Frasier Hall (130 Coffey Hall, if on St. Paul campus)
- Copy of dissertation, abstract (all signed by advisor), UMN Conservancy Agreement (<http://conservancy.umn.edu/pol-services.jsp>), and Survey of Earned Doctorates due by last working day of intended month of graduation to Graduate School
- Give bound copy of thesis to Student Personnel Coordinator

**GRADUATION!**

## II. Introduction

**Welcome!** This handbook for the graduate program in Biochemistry, Molecular Biology and Biophysics (BMBB) at the University of Minnesota serves as a guide for enrolled students and as information for others who are considering graduate work in this program.

Most of the information that a University of Minnesota graduate student needs can be found on **The Graduate School's** website ([www.grad.umn.edu](http://www.grad.umn.edu)). Some pages with important information include:

- Graduate Student Handbook ([http://www.grad.umn.edu/current\\_students/handbook/index.html](http://www.grad.umn.edu/current_students/handbook/index.html))
- Graduate Catalog (<http://www.catalogs.umn.edu/grad/index.html>)
- First Year Graduate Students (<http://www.ofyp.umn.edu/gradstudents/index.html>)
- Doctoral Degree Requirements ([http://www.grad.umn.edu/current\\_students/doctoral/phdedd-Checklist.pdf](http://www.grad.umn.edu/current_students/doctoral/phdedd-Checklist.pdf))

This **Graduate Program Handbook for Biochemistry, Molecular Biology and Biophysics** provides information specific to the BMBB program relating to a student's appointment and to the operational and administrative aspects of the program.

Specifics on the **Molecular Cellular and Structural Biology Joint First-year Admissions (MCSB) Program** can be found in the *MCSB First Year Handbook* (if you need a copy, see Darlene)

If you would like to discuss any policy or procedure found in this handbook or offer suggestions for improving its content feel free to (1) contact your advisor; (2) contact a Director of Graduate Studies; and/or (3) contact the Student Personnel Coordinator, Darlene Toedter.

### Program Goals and Priorities

1. The Doctoral degree in BMBB is a research degree, and the goal of the graduate program is to provide the student with the optimal conditions under which she or he can develop into an independent, productive, research scientist.
2. The result of this development should be an individual who, based on solid, advanced knowledge and practical experience, has the ability to
  - a. Recognize and define significant problems and design the proper experiments through which problems can be solved
  - b. Assess the time and effort required to solve problems
  - c. Communicate the resulting scientific advances in seminars and journal papers
  - d. Operate as a member of a research community in which the productivity of the entire group depends on proper handling of common research facilities (i.e. equipment and or library) and has the breadth of interest, creativity, and confidence required to be an active and productive scientist
3. The activities in the program include courses, seminars, research conferences, journal clubs, and examinations. All of which are designed to help the student develop as a productive scientist.

### III. Degree Requirements and Procedures

The following requirements and procedures are specified for typical students. Certain exceptions may be made with the consent of the advisor and Director of Graduate Studies.

#### A. Course Requirements for PhD Degree

Students **major in Biochemistry, Molecular Biology and Biophysics** with an 'emphasis' in any of the **four BMBB Supporting Program Tracks**:

1. **Structural Biology and Biophysics**
2. **Molecular Biology**
3. **Regulatory Biochemistry**
4. **Microbial Biochemistry and Biotechnology**

To obtain a Ph.D. in Biochemistry, Molecular Biology and Biophysics, all students must complete **9 credits** of required coursework for the major in BMBB. In addition, all students must complete **12 credits** of coursework in one of the four BMBB Supporting Program Tracks. **Courses need to be at graduate level** with a course number of **5XXX** or higher to count towards a Ph.D. degree. Only grades C and better can be applied to a Graduate School degree. All students must maintain a **minimum of GPA of 2.8** during their residence in the BMBB program (see also section H. Termination of Graduate Status). **Students awarded a 3M Fellowship must have a minimum GPA of 3.3 at the end of their second year, otherwise the fellowship will not be renewed.**

Courses from disciplines other than Biochemistry, Molecular Biology and Biophysics may also be used to build a supporting program (see required and recommended courses of supporting program tracks). The selection of courses should be carried out in consultation with the Director of Graduate Studies and the advisor.

A student may elect to complete a **minor** (a rarely used option) instead of a supporting program track. In this case, all 12 credits must be from a single graduate program, and the courses selected must be approved by the Director of Graduate Studies of that graduate program.

In addition to the required course work for the major in BMBB and elected Supporting Program Track, students are required to participate in **2 biochemistry seminars** per week, the Departmental invited speaker seminar (BioC 8184) and the student seminar (BioC 8084) (seminar schedules can be found at: <http://www.cbs.umn.edu/BMBB/graduate/seminars.shtml> ). First-year students must register for both seminar courses each semester. After the first year, students must register for 1 credit of BioC 8084, per year in the semester in which their seminar is presented, and for 1 credit per semester of BioC 8184 until they have earned 24 thesis credits (see below) and have begun registering for 1 thesis credit of BioC 8444 (i.e., have reached the "Advanced Doctoral" status). BioC 8184 has to be attended at least 50% of the time. Students have to sign in, and if attendance is below 50% they will not receive credit and will be not be considered for BMBB travel and dissertation awards.

The Graduate School requires that at least 12 semester credits must be completed outside the major area. However, there is no minimum number of credits required by the Graduate School for the major. By the beginning of the spring semester of the second year in conjunction with the submission of the preliminary written exam, students have to file a **Degree Program Form** (GS89 a & b) see ([http://www.grad.umn.edu/current\\_students/doctoral/phdeddchecklist.html](http://www.grad.umn.edu/current_students/doctoral/phdeddchecklist.html)) for approval by

the Graduate School. This form is the official record of who a student's faculty advisor is, what coursework will be used to meet degree requirements, and whether a student formally declares a minor.

**To be considered a full-time student**, a minimum of **6** credits and a maximum of **14** credits must be taken per semester prior to completing the Preliminary Examination.

**Requirements for the major in BMBB (9 credits):**

(Note: The following requirements apply to students admitted in the Fall of 2005 or later. Students admitted prior to this date should review the previous version of the handbook. The Director of Graduate Studies may waive MCDG 8920 in exchange for another course for students that are directly admitted into the BMBB program and enter the program outside the regular admission in the fall.)

<b>Course</b>	<b>Course Title</b>	<b>Credits</b>	<b>Grade Base</b>	<b>Semester</b>	<b>Day/Time</b>
BioC 8001	Biochemistry: Structure, Catalysis & Metabolism	3	A/F	Fall	10:10-11:00 MWF
BioC 8002	Molecular Biology & Regulation of Biological Processes	3	A/F	Fall	9:05-9:55 MWF
BioC 8401	Ethics, Public Policy and Careers in Mol. & Cell. Biology	1	S/N	Spring	3:35-5:15 M
MCDG 8920	Special Topics (Itasca Lab Workshop)	2	S/N	Summer	Last 2 weeks in August

**Requirements for Supporting Program Tracks in BMBB (12 credits):****Microbial Biochemistry and Biotechnology**

<b>Course</b>	<b>Course Title</b>	<b>Credits</b>	<b>Grade Base</b>	<b>Semester</b>	<b>Day/Time</b>
<b>Required courses:</b> 6 credits must be taken from the following courses.					
BioC 5352	Biotechnology and Bioengineering for Biochemists	3	A/F	Spring	1:15-2:30 MW
BioC 5361	Microbial Genomics and Bioinformatics	3	A/F	Fall	10:15-11:30 TTh
<b>Recommended courses:</b> Students may take 6 credits of graduate level classes (5XXX or higher) from other disciplines such as Chemistry, Microbiology, Chemical Engineering, Computer Science, or Mathematics if appropriate to a student's research interest.					
MiCA 8002	Structure & Function of Bacteria and Viruses	3	A/F	Spring	1:25-3:20 MW
GCD 8151	Cell Structure & Function	3	A/F	Fall	9:45-11:00 TTh

## Regulatory Biochemistry

Course	Course Title	Credits	Grade Base	Semester	Day/Time
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### Required course:

BioC 8216	Signal Transduction & Gene Expression	3	A/F	Spring	9:05-10:20 TTh
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**Recommended courses:** It is recommended that students take at least two of the following courses. Students may take additional graduate level courses which may be appropriate to their developing research interest.

BioC 5527	Introduction to Modern Structural Biology	4	A/F	Fall	10:10-12:05 TTh
BioC 5528	Spectroscopy and Kinetics	4	A/F	Spring	10:10-12:05 TTh
GCD 8151	Cell Structure & Function	3	A/F	Fall	9:45-11:00 TTh
BioC 8213	Selected Topics in Molecular Biology	4	A/F	Fall	8:00-9:55 TTh

## Molecular Biology

Course	Course Title	Credits	Grade Base	Semester	Day/Time
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**Required course:** Students must take BioC 8213 and either GCD 8151 or BioC 8216, the remaining credits can be chosen from other graduate level classes (5XXX or higher) within our program or from other disciplines such as Chemistry, Microbiology, Chemical Engineering, Computer Science, or Mathematics if appropriate to a student's research interest.

GCD 8151	Cell Structure & Function	3	A/F	Fall	9:45-11:00 TTh
BioC 8213	Selected Topics in Molecular Biology	4	A/F	Fall	8:00-9:55 TTh
BioC 8216	Signal Transduction & Gene Expression	3	A/F	Spring	9:05-10:20 TTh

## Structural Biology and Biophysics

Course	Course Title	Credits	Grade Base	Semester	Day/Time
<b>Required course:</b>					
BioC 5527	Introduction to Modern Structural Biology	4	A/F	Fall	10:10-12:05 TTH
BioC 5528	Spectroscopy and Kinetics	4	A/F	Spring	10:10-12:05 TTH
<b>Recommended courses:</b>					
Bioc 5444	Muscle	3	A/F	Spring	4:00-5:15 TTh
BioC 5531	Macromolecular Crystallography Techniques Applications I: &	1	S/N	Fall	4:40-5:30 T
BioC 5532	Macromolecular Crystallography Techniques Applications II: &	1	S/N	Spring	4:40-5:30 T
Chem 8011	Mechanisms of Chemical Reactions	4	A/F	Fall	10:10-11:00 MWF
Chem 8021	Computational Chemistry	4	A/F	Spring	9:05-9:55 MWF
Chem 8411	Introduction to Chemical Biology	4	A/F	Fall	12:45-2:00 TTh
Chem 8412	Chemical Biology of Enzymes	4	A/F	Spring	11:15-12:30 TTH
Chem 8735	Bioinorganic Chemistry	4	A/F	Spring Not offered every year	2:30-4:25 TTh

## B. Examinations

There are **3 examinations for the PhD degree**:

- a. Written Preliminary Examination (Beginning of 4<sup>th</sup> semester (Spring))
- b. Preliminary Oral Examination (End of 4<sup>th</sup> semester (Spring or early Summer))
- c. Final Oral Examination with Thesis Defense (typically end of 5<sup>th</sup> year)

Exams will be conducted by the Preliminary Written and Oral Examination Committee and the final Graduate Committee:

### **Preliminary Written and Oral Examination Committee:**

- a. Students may nominate graduate faculty to serve on the Committee (typically student choices are filed by mid- **September** of the second academic year).
- b. After assignment of committee members by the Directors of Graduate Studies, their consent to serve must be documented by obtaining each potential committee member's signature on the Program Examination Consent form (Form GF105, obtained from the Student Personnel Coordinator and signed form should be returned to the Student Personnel Coordinator typically by the second week in **October** of the second academic year).
- c. Final appointment of the Committee by the DGSs occurs in conjunction with the filing of the Degree Program Forms (GS-89a & b) for the Preliminary Written Exam by the student (typically the first workday in **January** of the second academic year).
- d. Each Preliminary Examination committee is composed of a minimum of 5 members: 3 members from the major field and 2 members who represent the minor or supporting program fields. At least 1 member of the Graduate Committee must have a primary appointment in a department other than the Department of Biochemistry, Molecular Biology and Biophysics. Advisor and co-advisor cannot be on the Preliminary Examination Committee (see instructions on Degree Program Form).

### **Final Graduate Examination Committee:**

- a. Following the Preliminary Examination, the student may make changes to the assigned committee to determine the **Final Graduate Examination Committee**, which must include the advisor (see Final Oral Exam & Thesis Project/Proposal Form 63abc, which needs to be filed the term after passing the Preliminary Oral Exam).
- b. The Graduate Committee will participate in the student's annual research reviews to monitor progress and provide advice about the thesis project.

### **1. Written Preliminary Examination:**

- a. Content: The Written Preliminary Examination consists of an original research proposal. The proposal should set forth an original hypothesis about an unsolved problem, provide a critical review of relevant literature leading to the hypothesis, state the significance of the problem, outline the specific goals, and provide an effective experimental design to test the hypothesis, including a discussion of

expected outcomes and alternative possibilities. Students are encouraged to utilize a wide range of techniques from biochemistry to evaluate the validity of the hypothesis.

- b. Page limitation: The total length of the proposal is limited to 15 pages of double spaced 12 pt. type (including figures but excluding references).
- c. Originality: Because this is an examination, the proposition must be of the student's own creation. The student may not use any research grant application written by his/her advisor in preparing this proposal. **The topic of the proposal cannot be the thesis research of the student, but may be related to the student's thesis research in a broader sense.** The student may consult with members of the Examination Committee in developing ideas for the proposal. It is permissible for the student to consult broadly and generally with other students, members of the laboratory and the advisor when developing background materials and the general concepts for the Written Preliminary Examination. However, it must be stressed that the written Preliminary Examination itself is the unique formulation of ideas written by the student alone. All materials should be the sole intellectual property of the student.
- d. Approval of topic: To ensure that the written Preliminary Examination is of the student's own creation, students must submit one-page summaries (typically the third week in **October** of second academic year) of thesis research and preliminary written proposition to the Student Personnel Coordinator for approval by the Examination Committee Chair.
- e. Submission: 7 copies of the Written Preliminary Examination have to be submitted to the Student Personnel Coordinator (typically the first workday in **February** of the second academic year).
- f. Decision: Three faculty members from the Program who constitute the major field examiners of the Graduate Committee will evaluate the proposal within a month of submission (typically the first workday in **March** of the second academic year). The proposal will also be distributed to minor or supporting program examiners who may contribute their comments as well.

The Committee members will decide on one of the following outcomes:

- i. Acceptable: Student passes.

On the 1<sup>st</sup> submission, all 3 major field members of the committee must vote *acceptable* for the student to pass. If members of the major field vote *acceptable* while minor or supporting program members provide a written evaluation and vote *needs revision* or *unacceptable*, it is the responsibility of the Committee Chair to evaluate the comments in sum and reach a decision. It is allowable for a student to pass the examination if the major field votes unanimously *acceptable* while the minor or supporting program examiners vote *unacceptable*. However, the Committee Chair may, upon the advice of the minor or supporting program faculty, require a revised proposal be submitted even if the major field examiners voted unanimously *pass*.

- ii. Acceptable, in principle, but needs revision: the general problem and approach are reasonable, but some significant flaws exist in the presentation that needs to be corrected before the proposal is acceptable.

Revised proposals have to be submitted to the Student Personnel Coordinator by the first weekday in April or a month after receiving the notification, whichever

occurs first. Revised proposals will be evaluated by the Committee within one month of submission.

If the revised proposal is still not acceptable to the 3 major field examiners, the student will be allowed 1 additional re-write that must be returned within 1 month of the second notification.

Revised proposals must include a point-by-point response to the committee's concerns, describing changes and modifications made in the revised proposition.

- iii. Unacceptable: proposal contains fundamental flaws that cannot be remedied by rewrite. Student does not pass examination but may be given the chance to rewrite a new proposal if the committee deems this appropriate. However, only 1 additional written proposition may be submitted.

Rewritten new proposals have to be submitted to the Student Personnel Coordinator by the first weekday in May or two months after receiving the notification, whichever comes first. Rewritten proposals will be evaluated by the Committee within one month of submission.

If the second proposal is unacceptable or needs revision, the student will have failed the examination. In the case of a split vote among the Committee members, the Directors of Graduate Studies will be responsible for deciding the acceptability of the proposal in consultation with the Committee Chair.

After notification from the Director of Graduate Studies that the Written Preliminary Examination has been passed, the student will schedule the Oral Preliminary Examination.

Passing of the Written Preliminary Examination is documented by the Preliminary Written Examination Report

(GS17, see: [http://www.grad.umn.edu/current\\_students/doctoral/phdeddchecklist.html](http://www.grad.umn.edu/current_students/doctoral/phdeddchecklist.html), which needs to be signed by the advisor and DGS and submitted to the Graduate School before the Preliminary Oral Examination can be taken.)

## 2. Preliminary PhD Oral Examination.

- a. Scheduling: **The Oral Preliminary Examination must be scheduled within 6 weeks of passing the Written Preliminary Exam.**

Normally, the Oral Preliminary Examination should be completed by the beginning of the third year. Delay of the Oral Preliminary Examination will cause financial implications in the future (see *Section III* Graduate Appointment).

**It is up to the student, in consultation with the Committee members, to find a suitable date for the examination and to reserve a room (<http://www.classroom.umn.edu/index.html>).** Students should be aware that finding a suitable date during the summer months may be difficult, and should schedule the room immediately after passing the Written Examination.

At least **one week before the Preliminary Oral exam**, students must register the examination with the Graduate School by filing the Preliminary Oral Examination Scheduling Form (GS12a, see [http://www.grad.umn.edu/current\\_students/doctoral/phdeddchecklist.html](http://www.grad.umn.edu/current_students/doctoral/phdeddchecklist.html)). If the student fails to register or fails to meet the requirements listed on the scheduling form, the Graduate

School will not send the Preliminary Oral Examination Report Form to the Chair of the Preliminary Oral Examination Committee and the Preliminary Oral exam will not take place.

- b. Oral Preliminary Examination: The oral exam focuses on a defense of the written examination and on general knowledge.

The exam will start with a defense of the written proposal submitted by the student and approved by the committee. However, the examination is open-ended and may range into other areas relevant to the student's program. In particular, members of the Examination Committee representing the minor or supporting program should evaluate the student for her/his breadth of knowledge. The student is expected to demonstrate knowledge on topics presented in courses taken as part of the BMBB major requirements and courses taken as part of the students supporting program requirements.

The student's advisor may attend the Oral Preliminary Examination but may not participate in examination or discussion of the outcome unless questioned by other Committee members. The advisor's role is to observe, so that she/he may help in correcting any problems/deficiencies that are encountered during the student's examination.

Rules for the outcome (Passed, Passed with Reservations, or Failed) of the Oral Preliminary Examination are provided by the Graduate School and are listed on the Preliminary Oral Examination Report.

The Preliminary Oral Examination Report, signed by the members of the Examination Committee, needs to be submitted to the Graduate School **within 24 hrs after completion of the Preliminary Oral Exam**.

### 3. Final PhD Oral Examination.

Final Graduate Examination Committee: The PhD Thesis Proposal Form (GS-63abc) specifies the Graduate Faculty who will serve as examiners for the final Graduate Oral Examination. This form must be filed with the Graduate School no later than 1 semester after passing the Preliminary Oral Examination. It specifies 3 members who will serve as reviewers (readers) 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 BMBB Program.

Graduation Packet: Any time after the Thesis Proposal has been approved by the Graduate School; a student can request a graduation package which includes Graduation Instructions, Thesis Reviewer's Report, Application for Degree, Commencement Attendance Approval Form, UMN Conservancy Agreement, Survey of Earned Doctorates. (request at: [http://www.grad.umn.edu/current\\_students/forms/grad\\_packet/doctoral/confirm.html](http://www.grad.umn.edu/current_students/forms/grad_packet/doctoral/confirm.html) )

Application for Degree: Needs to be submitted to 200 Fraser or 130 Coffey by the first working day of the intended month of graduation.

Thesis Reviewer's Report: Committee members read the thesis draft and must sign this form indicating that it is acceptable for defense at least 1 week prior to the scheduled date of the Final Oral Examination. Students must make sure that sufficient time is allowed for the readers to examine the thesis. Graduate school rules specify that all members of the Committee must have at least 2 weeks to read the thesis. This means

that the thesis should be given to Committee members 3 weeks before the examination date.

Scheduling Final Oral Exam: The Final Oral Exam needs to be scheduled at least 1 week before the exam by scheduling the exam online at: [http://www.grad.umn.edu/current\\_students/forms/doctoral.html](http://www.grad.umn.edu/current_students/forms/doctoral.html). Only if the student has met the requirements listed on the scheduling form will the Graduate School send the important Final Oral Examination Report Form to the Chair of the Examining Committee.

Final Oral Exam: This examination is primarily the thesis defense, although the questions and discussion may cover related areas as well. The 1<sup>st</sup> portion of all Final Oral Examinations is a 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 2<sup>nd</sup> portion of the examination will consist of additional questions to the candidate from the members of the Examination Committee. The 2<sup>nd</sup> 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 unacceptable, specific reasons will be communicated to the student. If acceptable, the reader has judged that the thesis is ready for oral defense, and only that. The reviewer may have reservations after the oral examination and vote to not pass the candidate for the PhD degree. These reasons should be communicated to the student.

Rules for the outcome (Passed or Failed) of the Final Oral Examination are provided by the Graduate School and are listed on the Final Oral Examination Report.

The Final Oral Examination Report signed by the members of the Examination Committee needs to be submitted to the Graduate School **within 24 hrs after completion of Final Oral Exam**.

Graduation: Submit the following on or before the last working day of the month you intend to graduate: Your dissertation, publishing fee, final oral exam report form, one signature page signed by your adviser, one copy of the title page of your dissertation, deposit agreement to allow use of your dissertation in the University MN Conservancy, and survey of earned doctorates. .

[http://www.grad.umn.edu/current\\_students/degree\\_completion/doctoral/g21c.pdf](http://www.grad.umn.edu/current_students/degree_completion/doctoral/g21c.pdf)

If interested in submitting a paper copy of your dissertation follow instructions found at:

[http://www.grad.umn.edu/current\\_students/degree\\_completion/doctoral/PaperDissertationSubmission.html](http://www.grad.umn.edu/current_students/degree_completion/doctoral/PaperDissertationSubmission.html)

### **C. Teaching Requirements for PhD Degree**

In order to help prepare students for an academic or educational career, teaching and its associated activities is required of all BMBB graduate students. (Please see further details in Appendix C: Guidelines for teaching assistants). PhD students are required to do 2 semester equivalents of teaching. To enhance the breadth of experience, attempts are made to divide this between one laboratory-based course and one-lecture based course. However, this may not always be possible depending on the availability of Teaching Assistant positions. It is highly recommended that all students attend the Teaching Assistant Workshop offered each fall by the Center for Teaching and Learning.

1. Teaching requirements are usually fulfilled during students' 2<sup>nd</sup> through 4<sup>th</sup> years in residence
2. The teaching assignments are generally made and announced during the summer of the academic year preceding the one in which the assignment is to be carried out.
3. Students are required to inform a DGS of any obligations or commitments that may conflict with teaching in any given semester. Once assignments have been made, students must inform the DGS immediately of any obligations or commitments that may conflict with their assigned teaching activities. The DGS will determine if these conflicts are of sufficient gravity that a change in the teaching assignment is needed.
4. **SPEAK Test for International Students.** Current University of Minnesota policy requires that all non-native English-speaking teaching assistants or prospective teaching assistants, who are or will be assigned to teaching, tutoring or advising duties, take the SPEAK Test. (for further details, please see Appendix C).

It is important to take this test long before the start of the student's teaching assignment in the event that remedial effort will be required to improve proficiency in spoken English. Classes are available to help improve ability in spoken English. Improving spoken English will be of great benefit to the student for such experiences as discussing research projects with the advisor and lab coworkers, discussing new developments in biochemistry seminars and journal clubs, presenting seminars, and routine communication. **It is the student's responsibility to have the necessary English language skills.**

#### **D. Research Seminar Presentation required for PhD Degree**

In order to assist students and provide feedback on research achievement, a periodic progress review must be conducted.

- a. Students must present a research seminar during their 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> years in the program. Seminars should be attended by Graduate Committee members. A minimum of 3 members of the Graduate Committee must be present for the progress review. The advisor should also be present and participate fully in the discussions involved in the research review process. **It is the student's responsibility to ensure that the minimum number of committee members is in attendance.** If this minimum attendance is not achieved at the regularly scheduled seminar, the students must schedule an additional committee meeting to fulfill this requirement.
- b. Research seminars will be presented as a part of a regularly scheduled program in the Department (BioC 8084). Fifth-year students have the option of presenting their research in Journal Clubs, but must obtain written approval from one of the DGSs. Fifth year students must notify the Student Personnel Coordinator about the location of their seminar. The research seminar should be advertised and open to all members of the program. The seminar should be preceded by an abstract that is circulated to the graduate program members. Following the seminar, the Committee will meet with the student. *A written evaluation of student progress will be submitted to the DGS by the Committee Chair within one week of the presentation. The advisor may submit his/her own evaluation if different from the Chair's.*

## E. Evaluation of Student Progress

Normal progress toward the PhD degree by full-time graduate students is based on satisfying the following general minimum requirements:

1. Selection of the thesis advisor by the May Term of the 1<sup>st</sup> year.
2. Completion of all laboratory rotation reports by the end of May Term of the 1<sup>st</sup> year.
3. Maintaining the minimum GPA of 2.8.
4. Passing the Written Preliminary Examination.
5. Passing the Oral Preliminary Examination.
6. Performing all teaching assignments and other departmental functions satisfactorily, including presenting seminars.
7. Making satisfactory progress in research. In order to assist students and provide feedback on research achievement, a periodic progress review must be conducted:
  - Students must present a research seminar during their 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> years in the program. Second year students should present their thesis topic during their student seminar in BioC 8084. Fifth-year students have the option of presenting their research in Journal Clubs, but must obtain written approval from the DGS.
  - The research seminar should be advertised and open to all members of the program. The seminar should be preceded by an abstract that is circulated to the graduate program members.
  - The students Committee members should attend the seminar. A minimum of 3 members of the Graduate Committee must be present for the progress review. The advisor should also be present and participate fully in the discussions involved in the research review process. **It is the student's responsibility to ensure that this requirement is fulfilled and must schedule a committee meeting as soon as possible after the seminar if it is not.**
  - Following the seminar, the Committee will meet with the student to discuss the student's thesis project. *A written evaluation of student progress will be submitted to the DGS by the Committee Chair within one week of the presentation. The adviser may submit his/her own evaluation, but this submission is optional.*

## F. Thesis Credits and Advanced Doctoral Credits

1. **Thesis Credits:** To obtain a PhD degree, students must register for a minimum of 24 thesis credits ([BioC 8888](#), Doctoral Thesis Credits). **The Graduate School will not permit students to register for Doctoral thesis credits until the semester after the Preliminary Oral Examination has been completed.** Typically, PhD students will register for 12 thesis credits during the 2 semesters following completion of the Preliminary Oral Examination. For Graduate School registration requirements see: [http://www.grad.umn.edu/current\\_students/registration/active\\_status.html](http://www.grad.umn.edu/current_students/registration/active_status.html).
2. **Advanced Doctoral Credits:** Upon completion of the 24 thesis-credit requirement, the student is required to register at least once during each academic year for 1

credit of BioC 8444 (FTE: Doctoral) to maintain full-time, active student status. For loan-deferment purposes, the student will need to register every semester (see [http://www.grad.umn.edu/current\\_students/registration/FTE\\_procedures.html](http://www.grad.umn.edu/current_students/registration/FTE_procedures.html))

## G. Responsibility for Payment of Tuition Costs

- The program will pay for program-approved classes leading to the degree before the Preliminary Oral Exam (up to 14 credits per semester, inclusive). Students have ample time to take classes during this time.
- Following the Preliminary Oral Exam, a student may take a degree-related class. The advisor (rather than the Department) will pay for the tuition, and, as such, will issue the permission to register for the course.
- Tuition for all non-degree-related classes will be paid by the student, and the advisor must give permission to take the class, if it meets during normal working hours.
- The “Preparing Future Faculty” course sequence is the only exception to the policy regarding non-degree-related classes. The advisor may elect to cover the tuition for this course at the request of the student. Regardless of who pays the tuition for this series, written permission must be obtained from the advisor. A policy statement regarding this course is typically issued in June.

## H. Termination of Graduate Status and/or Support

1. Graduation or withdrawal from the program. Upon graduation, students should notify the Student Personnel Coordinator and Director of Graduate Studies of the effective date for termination of student status. **A bound copy of the thesis must be given to the Student Personnel Coordinator.** Students who decide to withdraw from the program should give written notice to the Director of Graduate Studies as soon as the decision has been reached. The notice should indicate the effective date of withdrawal. In instances where students have effectively withdrawn from the program without notice, the Department will terminate support retroactive to the apparent date the student ceased to participate in the program.
2. Graduation Deadlines: The BMBB program strongly encourages completion of the research for the Ph.D. degree within five years of the start of the semester in which the student enters the program. This will usually be the Fall semester for students following the normal progression and will not count any summer study prior to that Fall semester.

Students who have not completed their degrees after this five year period may continue to pursue research towards a degree up to the graduate school limit of 5 years after completion of the oral exam, so long as the advisor provides space and funding for supplies. **The BMBB program will not continue stipend support after the summer semester of the 5<sup>th</sup> year in the program unless an extension is granted according to the procedure described below.** Official, unpaid leaves of absence will not be included when the student’s time in the program is calculated.

If all of the laboratory research for the Ph.D. is completed within the 5 year limit, a Director of Graduate Studies may grant a single 3 month writing extension for thesis preparation. This extension does not require a meeting of the student’s thesis committee.

Extensions for additional laboratory research totaling a maximum of one year may be granted to a student who has made satisfactory progress toward his/her Ph.D. degree as

determined by the student's Graduate Committee. An extension shall not be granted if, in the judgment of the student's committee, the student is not likely to complete a body of work sufficient for a Ph.D. thesis by the end of his/her sixth year.

To obtain an extension for additional research, the student must meet in person with his/her Graduate Committee, present the progress that has been made to date in the research problem, outline a plan of the work to be finished, and indicate the anticipated time needed for its completion. The Graduate Committee should make recommendations for modifying this plan, if appropriate, and reach an agreement with the student and the thesis advisor on the work to be completed. Based on this meeting, the Chair of the Graduate Committee will forward a letter to the DGS (with a copy to the student and advisor) outlining the Committee's recommendation.

The student must schedule the meeting with his/her committee at least 2 weeks before the end of the 5th year or the expiration of the first extension. If granted, the first extension will be for six months. A second six month extension may be granted to all students who received a first extension based on the same rules and criteria. If the second extension is not approved, the student will receive a stipend until the end of the current semester, but no further writing extension will be permitted. If the second six month extension is granted, no additional stipend extensions for research shall be granted, but a 3 month writing extension may be granted by the DGS.

3. Termination of graduate status. The Graduate School and BMBB policy requires that 1 warning be issued to the student regarding unsatisfactory performance before that student is terminated. The warning must include the specific deficiencies and must outline a mechanism and time limit for correcting them. **Students must maintain a cumulative graduate GPA of 2.8 or higher during their entire residence in the BMBB program. Students with a GPA below 2.8 after the 1<sup>st</sup> academic year will have one semester to improve their GPA to 2.8. Students with a GPA below 2.8 after three semesters in residence will be terminated from the BMBB program. A satisfactory performance on the Written and Oral Preliminary Examinations is also required for continuation in the program.**
4. Academic and scientific misconduct. Academic misconduct (such as cheating on closed book examinations) or violation of course guidelines (which describe the extent of collaboration that is acceptable in responding to take-home examinations, homework assignments, or problem sets) is sufficient cause for dismissal from the program. **Unethical scientific conduct, including plagiarism, fabrication of data, and the falsification of data, is considered grounds for dismissal.**

## **I. MD/PhD Program**

Introduction: The MD/PhD Program combines approximately 7 years of coursework, fundamental biomedical research culminating in a dissertation and PhD degree and clinical training resulting in a MD degree. The goal of the MD/PhD Program is to be a link between biomedical science and clinical practice to provide a basis for optimal research and patient care. MD/PhD students who have a strong, fundamental interest in the analysis of disease at the molecular level and who anticipate a career as a clinical or basic biomedical research are encouraged to pursue their PhD training with faculty in the Graduate Program in Biochemistry, Molecular Biology and Biophysics (BMBB). The training is completed in the following sequence:

Phase 1: Pre-clinical coursework (years 1-2). Students take extensive pre-clinical coursework, select an area of basic biomedical research, and choose an advisor to supervise the PhD dissertation. To help identify a BMBB mentor for their thesis research, MD/PhD students attend weekly seminars at which faculty members present an overview of their research projects. MD/PhD students interested in the BMBB Graduate Program are invited to participate in Orientation Week, including the Program Retreat. MD/PhD students who enter a BMBB laboratory for their dissertation research must do so no later than the fall semester of their 3<sup>rd</sup> year.

Phase 2: PhD coursework and research (years 3-6): Fulfillment of the PhD component of the MD/PhD Program with a degree in BMBB requires completion of specialty coursework, dissertation research culminating in the writing of a thesis, and satisfactory completion of both the Preliminary and Final Exams. The period of work leading to the PhD degree in BMBB begins with 1 year of coursework in a particular area of emphasis (a minimum of 4 credits), along with research under the direction of a BMBB program member. At the end of the 1st year of *Phase 2*, students will complete the requirements for the Preliminary Exam including both written and oral components as described in Section II.B. Following satisfactory completion of the Preliminary Exam, students will continue with full-time research until finished with *Phase 2* (typically 3-4 years). At the end of *Phase 2*, students will complete their Final Oral Exam with Thesis Defense as required by the Graduate School and be granted their PhD. MD/PhD students will serve as a teaching assistant (TA) in a BMBB course for 1 semester during *Phase 2*. The TA assignment is determined by the Director of Graduate Studies and may be either a laboratory- or lecture-based experience and is typically one semester.

For the PhD degree, the University of Minnesota Graduate School requires 12 credits from a minor or supporting program. Students in the MD/PhD Program, who conduct research under the direction of a BMBB faculty member, will major in Biochemistry, Molecular Biology and Biophysics and list a supporting program on their degree form. To major in BMBB, the Graduate Program requires that MD/PhD students complete a minimum of 4 credits of coursework in a single area of emphasis (Regulatory Biochemistry, Molecular Biology, Microbial Biochemistry and Biotechnology, or Structural Biochemistry and Biophysics). MD/PhD students should plan their specialty coursework in consultation with their advisor and the Director of Graduate Studies upon entering the program.

During *Phase 2*, students will become completely immersed into the BMBB Graduate Program, functioning in every respect identically to those BMBB students admitted in the PhD Program. This includes attending BMBB retreats, journal clubs, laboratory meetings, research reviews, seminars, national and international meetings, and authoring original scientific papers. MD/PhD students are also eligible to hold elected office within the BMBB student governance system and represent the BMBB Program on University or College committees. Like all graduate students,

MD/PhD students are encouraged to apply for private research fellowships (e.g., American Heart Association) and Graduate School Doctoral Dissertation Fellowships. During *Phase 2* MD/PhD students are financially supported through a combination of fellowships, training grants and individual research grants. MD/PhD students are paid the stipend and have benefits identical to those BMBB students in the PhD Program. **During Phase 2 the MD/PhD program requires the student to commit 4h/week over a 36-week period to clinic time with a physician scientist.**

*Phase 3:* Clinical rotations and MD (year 7): Approximately 64 weeks of clinical rotations conclude the Combined Degree Program, at the end of which the MD degree is awarded. In *Phase 3*, or earlier, students link with a clinical-discipline advisor who is responsible for keeping them in touch with clinical medicine and research. **MD/PhD Internet Site** <http://www.med.umn.edu/mdphd/>

### **J. Master of Science Degree (MS)**

The Master of Science Degree (MS) is given only under Thesis Masters *Plan A*. This degree requires that the student satisfactorily completes a course program. Coursework requirements for an MS degree in any area of Biochemistry, Molecular Biology and Biophysics are the same as those given for the PhD degree, except that only 6 credits are required in the minor or related field. For the MS degree, 14 credits must appear on the graduate transcript in the major. MS students must register for 10 thesis credits (BioC 8777). MS students do not need to register for courses beyond the first year.

If related fields (MS) option is selected, the courses may be from different disciplines but should constitute a coherent program of courses that support the overall research interests of the student. A final oral examination will be given covering the student's research and other topics in biochemistry.

If an MS degree candidate wishes to enter the PhD Program, she/he should plan to complete the MS degree program and pass the Final Examination before applying for admission to the PhD Program. Students who complete the MS and who wish to enter the PhD Program must apply through the Admissions Committee. The final MS Oral Examination is primarily a thesis defense, but may also be used as a basis for recommending that the successful candidate proceed with the PhD Program. Students who complete a Thesis Masters *Plan A* master's and who are accepted into the BMBB PhD Program will have their MS thesis accepted in lieu of the written component of the PhD Preliminary Exam. Once admitted into the PhD Program, they should complete the oral component of the Preliminary Exam as soon as possible. Students must have a cumulative graduate GPA of 2.8 or higher after 2 semesters or more of residence in order to remain in the Program. Thereafter, the cumulative GPA must be 2.8 or higher at the end of the spring semester of each year prior to graduation.

MS students must complete one semester of teaching. A seminar must be presented each year. Students in the MS program will not receive departmental support. The graduate assistantship will be automatically terminated after three years, unless an extension is granted (see above).

## IV. Graduate Appointments

### A. Types of Appointments

Most graduate students will be appointed each semester to 1 of 3 positions, Research Assistant, Summer Research Assistant or PhD Research Assistant. Each of these appointments comes with special conditions/requirements:

1. Research Assistant (RA). Students will be appointed to this title fall and spring semesters. **They must register for a minimum of 6 credits per semester.** <http://onestop.umn.edu/onestop/registration.html> Students who have completed their oral prelims will register for the maximum number of doctoral thesis Credits (BioC 8888) allowed by the tuition cap in order to reach 24 credits as soon as possible. FICA will not be withheld as long as the student is registered for a minimum of 6 credits.
2. Summer Research Assistant (Summer RA). Students who have not completed 24 doctoral thesis credits will be appointed to this position for summer semester. **Students will not register summer semester;** thus, FICA and Medicare will be withheld.
3. PhD Research Assistant (PhD RA). Students are appointed to this position when they have **completed their 24 doctoral thesis credits**. They must register for 1 credit each semester (including summer) until they have completed their PhD.

Students with RA or PhD RA appointments must register before the end of the second week of class. **Failure to register by the second week of class will result in the termination of the Graduate Assistantship.** The BMBB Tuition Benefits Program does not pay non-refundable fees.

The financial support for graduate students comes from a variety of sources, with a general commitment to provide similar annual stipends for students at similar stages of their PhD career. Frequently, a student's stipend comes from 2 or more sources in a given year, and the sources may change from year to year. The Research Assistant should see the appropriate payroll administrator, Tami Jauert; [jauer002@umn.edu](mailto:jauer002@umn.edu), for details on pay and the approximate dates and amounts of paychecks.

The graduate appointment is typically 50 percent. Graduate students are expected to devote their full effort to graduate work (research, study, and teaching). The Director of Graduate Studies and the advisor must be consulted before other employment either inside or outside the University is accepted. Traditionally in the BMBB program, all students have a major responsibility to do research regardless of their source of support. However, a set amount of teaching experience is required for the degree program. Students may be required to accept additional Teaching Assistantships (TA) if their adviser is unable to provide financial support for a period of more than 9 months.

### B. Registration Requirements

Individuals with student loans should inquire of the lending agency about the registration requirements and documentation needed to prevent the loans from coming due. International students need to register for 6 credits in order to maintain their student visa status. Graduate School tuition is paid as part of the graduate appointment, but should a student withdraw from Graduate School in the middle of a semester, he or she will become personally responsible for reimbursement of the tuition for that semester.

The University, *per se*, does not recognize a leave of absence from the Graduate School. The graduate stipend must be terminated when the student departs, but the status as a student in a

graduate program continues until canceled by the program or, after some time, by the Graduate School. A leave of absence must be discussed with the Director of Graduate Studies. Return to the program is contingent on the availability of financial resources. A leave of absence will extend the 5- or 3-year limit for support in the PhD and MS programs, respectively. However, it will generally not extend the time allowed by the Graduate School for completion of a degree after taking the Preliminary Oral Examination.

### **C. Vacation/Sick Leave Guidelines**

Graduate assistants receive paid leave for University holidays; however they do not qualify for paid vacation leave. Graduate Assistants are entitled to paid sick leave, not to exceed two weeks (10 days) of consecutive pay for absences caused by illness or injury to themselves, a dependent child, or the dependent child of a same sex domestic partner. Students needing a leave of absence other than sick leave (e.g., due to military service, prolonged illness or complications after child birth), must contact the Director of Graduate Studies and the HR administrator, Tami Jauert ([jauer002@umn.edu](mailto:jauer002@umn.edu)), to discuss options under University guidelines. Please see website: [http://policy.umn.edu/categories/hr/policy/GradStudentEmployment\\_pol.cfm](http://policy.umn.edu/categories/hr/policy/GradStudentEmployment_pol.cfm)

## V. Fellowships and Awards

A limited number of competitive pre-doctoral fellowships are awarded each year. A fellowship award is a valuable addition to a student's résumé. A few important awards and approximate application dates are listed. More information is provided by the Graduate School Fellowship Office (<http://www.grad.umn.edu/fellowships/>) and the Minnesota Medical Foundation <http://www.mmf.umn.edu/services/awards/index.cfm>. Contact the Director of Graduate Studies for further information regarding these fellowships and awards.

### **Charles Carr / William Peterson Award (April)**

The Carr-Peterson Award is presented annually to a graduate student whose research emphasizes metabolism and regulation. This \$500 award administered, by the Minnesota Medical Foundation, is in recognition of the careers of BMBB emeritus faculty member, Charles Carr and his student William Peterson.

### **Thomas Reid Award (April)**

The Thomas Reid Award is given annually to recognize novelty and innovation in graduate research. Dr. Reid is the founder of Life Science research and development at 3M Company and is an alumnus of the University of Minnesota. He was presented with the Alumni Society Outstanding Achievement Award in 1998. The \$1000 Reid award, administered by the University Foundation, is open to any BMBB graduate student submitting a copy of a published or "in-press" manuscript considered particularly significant or groundbreaking. The award may also be applied to an original research contribution that focuses on techniques or methodologies or those that are particularly new or likely to lead to significant changes in how research in a particular field is conducted.

### **Thomas Reid Graduate Fellowship (April)**

The Thomas Reid Graduate Fellowship is given annually to recognize novelty and innovation in graduate research. Dr. Reid is the founder of Life Science research and development at 3M Company and an alumnus of the University of Minnesota. He was presented with the Alumni Society Outstanding Achievement Award in 1998. Dr. Reid's gift was matched with the 21st Century Graduate Fellowship Endowment from the Graduate School. The Fellowship is open to any BMBB graduate student who has a strong chemistry and/or physical chemistry background or who is using chemical principles as a major component of his/her thesis research. The Fellowship comes with an annual stipend supplement of \$2500 and a flexible research fund of \$2500. The Fellowship will be continued for each year that the student is in graduate school provided that she/he remains in good standing with the Graduate School and BMBB Graduate Program.

### **Frederick J. Bollum Award (April)**

The Frederick J. Bollum Award is given annually to a graduate student whose thesis research focuses on molecular biology. This \$1000 award administered by the Minnesota Medical Foundation, is open to any BMBB graduate student, but is designed to recognize particularly noteworthy findings concerning the biology of nucleic acid structure, function or regulation or any aspect of gene expression.

### **Arnold Harvey Johnson Doctoral Fellowship (April)**

The fellowship was created in 1991 by his family and friends to provide an opportunity to a worthy candidate in the field of biochemistry to pursue studies in the field of nutritional biochemistry. Dr. Johnson received his MS and PhD from the University of Minnesota while working with CH Bailey in the area of fermentation. The graduate student holds the \$12,000 fellowship during the entire graduate career.

### **Ross A. Gortner Award (April)**

The Ross A. Gortner Award is given annually to an advanced graduate student in recognition of high quality scholarly contributions. The \$1000 award, sponsored by the University of Minnesota Foundation, emphasizes enzymology and/or protein chemistry, and is given to a student in recognition of consistent, high quality research as measured by his/her publication record.

### **Cyrus Barnum Teaching Awards (April)**

Up to four \$500 awards may be given out annually to BMBB graduate students in the name of Cyrus Barnum in recognition of excellence in teaching. The awards may be for any aspect of the teaching experience including tutorials, lab classes or traditional classroom activities but may not be awarded to individuals for mentoring undergraduates in research within a faculty member's laboratory.

### **Victor Bloomfield Graduate Fellowship in Molecular Biophysics (April)**

The Victor Bloomfield Graduate Fellowship in Molecular Biophysics has been established through the generous contribution of BMBB Professor Victor Bloomfield. This endowed fund is used to attract and retain highly talented students conducting research in Structural Biology or Biophysics. The Fellowship may be used as an incentive package to a highly desirable student, and the sponsorship will be annually renewable, provided students maintain good standing in their performance.

### **BMBB travel awards**

BMBB graduate students are eligible to apply for up to \$750 per scientific conference to help defray the costs of attending and presenting their data at scientific conferences.

### **Preparing Future Faculty (PPF) Tuition Fellowships (June)**

Two one-semester PPF tuition fellowships will be provided annually by the BMBB department to enable two students to receive additional training in teaching. Preference will be given to students pursuing an academic career.

### **Other Fellowships**

1. October: NSF Pre-doctoral Fellowship
2. December: AAUW Fellowship (women only)
3. March: Most Graduate School Endowed Fellowships
4. April: Graduate School Dissertation Fellowships. Students approaching their last year of pre-doctoral work are eligible
5. The two months before each semester: Graduate School Tuition Fellowships
6. When available: Training Grant Fellowships.

## VI. Governing Body

The following rules for governance of the graduate program in Biochemistry, Molecular Biology and Biophysics at the University of Minnesota constitute guidelines rather than a formal constitution. The powers and composition of the Coordinating Committee are derived from majority vote of the graduate faculty in BMBB. Actions of the Committee related to the topics below will be binding for the graduate faculty. However, the powers and composition of this committee may be altered by majority vote of the graduate faculty. Proposed changes in this document will be accepted at any time but need to be brought up for vote only once per year, typically at the Spring semester meeting.

### A. Coordinating Committee

The Coordinating Committee consists of the Directors of Graduate Studies representing St. Paul, Minneapolis, and Duluth; Head of the Department; Chairpersons of the Admissions and Recruiting Committees; Faculty representatives from each of the 4 BMBB divisions (divisions vote for representatives); and 2 student representatives, (1 from each campus). The Coordinating Committee members are appointed by a subcommittee consisting of the DGSs and the departmental head.

Committee Responsibilities The responsibilities of the Coordinating Committee are to ensure the smooth operation of the graduate program in Biochemistry, Molecular Biology and Biophysics at the University of Minnesota. The following is a list of specific responsibilities of the Committee. This list is not exhaustive and the Committee is held responsible for other aspects of the program not considered here.

1. Recommend stipend levels for graduate students (based on monitoring other institution stipend levels, recruiting success, and other factors).
2. Institute and maintain procedures for monitoring graduate student progress above those required by the Graduate School.
3. Act as a Curriculum Committee to which new course proposals and other proposed changes in the program are presented. Usually, subcommittees will deal with courses in the major fields. It is generally understood that faculty in each of the divisions of BMBB are responsible for determining the courses to be taught in that division. For example, the faculty in molecular biology will be expected to propose and maintain appropriate courses for that area. These courses will be the primary responsibility of the faculty committee in the molecular biology area, usually chaired by the representative of the Coordinating Committee.

Recommendations for modifications will be forwarded to the Coordinating Committee for further discussion and approval. The Coordinating Committee maintains authority over course requirements. However, the Committee will attempt to accommodate proposals that are considered to be in the best interest of the program and do not disrupt other aspects of the program.

4. Receive and act on any other proposals regarding the graduate program that are forwarded by the faculty through members of the Coordinating Committee.
5. Serve as the Grievance Committee for any matter associated with the graduate program.
6. Review requests for appointment to the graduate faculty.

7. The Committee must meet at least once per semester.

### **B. The Directors of Graduate Studies (DGSs)**

In order for the BMBB graduate program to operate most effectively, two DGSs serve at a time. DGSs are elected by a simple majority of votes of the Twin Cities BMBB graduate faculty. The term of office is 4 years. Both DGSs are designated as DGS (as opposed to associate DGS), and each is empowered with all privileges and responsibilities of a DGS as outlined by the Graduate School at the University of Minnesota. The responsibility of Chairing the Coordinating Committee will alternate between DGSs each semester.

Most duties performed by the DGS are designated in the Graduate School Handbook for Directors of Graduate Studies. Decisions relating to special aspects of the Program require approval by both DGSs, which is usually obtained informally. In the event that the two DGSs cannot reach agreement on various matters, the disputed topic must be brought before the Coordinating Committee. The following duties relate to special aspects of the BMBB program:

1. Contact with new students entering the program, including organization of Orientation Week;
2. Advise and approve coursework for 1st year students;
3. Assign laboratory rotation advisors;
4. Assign permanent thesis advisors;
5. Assign Graduate Committee Members and oversee the Written and Oral Preliminary Examinations;
6. Review course performance of students and send necessary letters indicating inadequate performance;
7. Recommend students for special graduate fellowships and travel awards;
8. Assign graduate teaching appointments;
9. Communicate any decision regarded as important to joint cooperation between campuses;
10. Evaluate requests for extensions;
11. Work with Student Personnel Coordinator to update Graduate Program Handbook.

### **C. Admissions Committee**

The Admissions and Recruiting committees are fully responsible for interactions with students up to the time when they have accepted an offer from our program. Responsibility for the students shifts to the DGSs for assignment of rotation advisors, etc. The Admissions Committee is composed of 4 faculty members, and assignments are made by DGSs and the Department Head. The Committee Chair will be determined in the same way. The term of service is 4 years. The following is a partial list of what is expected of the Admissions Committee.

1. Respond to inquiries from prospective students. Personal letter and departmental brochure is to be signed by Committee Chairperson and mailed as soon as possible after receipt of an inquiry. Special attention should be addressed to specific requests for information.
2. Send follow up letters to encourage application;

3. Screen the applications and send letter of acceptance, which is signed by the Committee Chair;
4. Determine nominations for graduate school fellowships, which are due approximately February 1;
5. Determine the recipients of any special scholarships that the program offers to prospective students;
6. Determine admission of students who have received a MS degree in Biochemistry from the University of Minnesota and then apply for admission to the PhD program;
7. Make admission recommendations to the DGS on students that wish to be directly admitted to the BMBB PhD program. Direct admission into the program is an exception and typically reserved for students that have previously worked in a BMBB faculty member's laboratory, who will become their PhD. advisor upon admission. Tuition and stipend will be paid upon matriculation by their advisor, who will agree in writing that he/she is prepared to do so if the student is admitted to the program.

#### **D. Recruiting Committee**

The Recruiting Committee is composed of a faculty member from each division, appointed by the Directors of Graduate Studies and the Departmental Head for a term of 4 years. The Committee Chair will be determined in the same way. The following is a partial list of what is expected of this Committee. This list is incomplete and the Committee is encouraged to expand the methods of effective recruiting with approval from the Coordinating Committee.

1. Use the BMBB website (<http://www.cbs.umn.edu/bmbb>) as effectively as possible as a recruiting tool.
2. Compose and distribute recruiting posters, and revise and distribute the program brochure. Recruiting advertisements and posters should be mailed by August of each year. The brochure should be reprinted every other year and should be completed by August 1.
3. Respond to inquiries from prospective students. Special attention should be addressed to specific requests for information.
4. Send follow-up letters to encourage application.
5. Recruit acceptable candidates or assign individual faculty members to recruit individual students. Monitor recruitment to ensure smooth operation.
6. Encourage and coordinate visits of prospective students and determine expense payments for the visits.
7. Coordinate new activities designed to improve recruiting to the program. Examples might include faculty visits to area schools or a biochemistry symposium for prospective students.
8. Work with other graduate programs to enhance the recruiting efforts of The University of Minnesota.

## **E. Student Representation**

To ensure student representation in the BMBB graduate program and department, graduate students have opted to elect students to several positions: BMBB Student Presidents, Council of Graduate Students (COGS) Representative, and 2 College of Biological Sciences Committee Representatives. The nomination and election of students to these positions is the sole privilege and responsibility of BMBB graduate students. With the exception of the College of Biological Sciences positions, elections are annual, and each elected representative serves a 1-year term.

### **1. Student President Responsibilities**

- a. Hold a yearly BMBB graduate student meeting in September to introduce the new graduate students, to discuss any issues or policy decisions, and to organize any committees (e.g., holiday party committee, recreational events committee, grievance committee, student-invited seminar speaker committee) as needed.
- b. Serve on BMBB Graduate Program Coordinating Committee (each semester)
  - Represent student views on policy issues and on membership in the Graduate Faculty
  - Voting rights on all issues except membership in the Graduate Faculty
- c. Attend the BMBB Graduate Faculty meeting (once per year)
  - Represent student views on policy issues
  - Advisory voting rights on all issues
- d. Attend BMBB Departmental Faculty Meetings
  - Represent student views on policy issues
  - Advisory voting rights on all issues (at discretion of the Department Head)
- e. Oversee the student-invited seminar speaker committee (Typically, at least 1 speaker will be invited per semester.)
- f. Organize the nomination and election of student representatives
- g. Facilitate the student seminar program
- h. Facilitate graduate student and faculty recruiting efforts
- i. Serve as an advocate for graduate students as needed
- j. Foster cohesiveness in the graduate program by facilitating social events, career development opportunities, etc.

### **2. Responsibilities of COGS Representatives**

- a. Attend meetings as required
- b. Represent BMBB graduate student views on policy issues

### **3. Election of Student Representatives**

- a. Electronic nominations to be solicited by current Student Presidents in June. All students in the BMBB Graduate Program in their 2<sup>nd</sup> to 4<sup>th</sup> years, inclusive, are eligible.
  - b. A paper ballot listing nominees for each campus will be sent to all BMBB Graduate Students by July 1, to be returned by July 15.
  - c. New appointments to begin August 15.
4. Appointment of College of Biological Sciences Committees. Bylaw 2 for the CBS Constitution states that “The selection of graduate student representatives is based upon a rotational system of representation on the four standing committees, with the method of selection of each group’s representative at the group’s discretion. Eligible graduate students shall be those whose adviser is a faculty member in the College.” Students representing these committees meet an average of 4 times a year.

## **F. Graduate Faculty Policy**

1. Obligations of Graduate Faculty in the BMBB Program. Faculty members are expected to participate broadly in the activities of the program. These activities include:
  - a. Serving as academic adviser for BMBB students;
  - b. Serving on graduate committees of students in program (including evaluation of Written and Oral Preliminary Examinations; student research reviews; and Final Oral Examinations);
  - c. Teaching graduate courses;
  - d. Serving in recruitment activities (including role of recruiter for new students; interviewing prospective students; attending Program Retreat);
  - e. Serving on committees (e.g., Admissions, Coordinating, Recruiting);
  - f. Attending program seminars (including departmental and student).

While not every faculty member will necessarily participate in every one of these activities, each member is expected to be involved in several areas.

3. Graduate Faculty Appointments. Nomination of current University of Minnesota faculty shall be by any member of the Graduate Faculty. Nominations will be reviewed by the Coordinating Committee to evaluate what expertise and/or functions the nominee might contribute to the program. Examples of contributions are: expertise in an important research area of BMBB, outstanding research reputation, ability and willingness to teach in an area of importance to the program. The BMBB graduate faculty has vested authority for admission of faculty candidates to the BMBB program in the BMBB coordinating committee. Admission shall require a two thirds “super majority” of all members of that committee.

The graduate faculty must retain ample opportunity for input into these decisions. The BMBB Coordinating Committee shall have an initial vote to send a nomination forward to the full faculty for their consideration. This vote would require a simple majority. The candidate shall be required to present a seminar in the Twin Cities and be available to meet with interested faculty. The BMBB graduate faculty shall be informed in advance that this individual is a candidate. The graduate faculty shall then be invited to give feedback to the members of the coordinating committee prior to that committee’s final consideration of that candidate’s application.

If a unit of the University outside of the Departments of Biochemistry Molecular Biology and Biophysics wishes to initiate a search for a faculty member whom they believe would be appropriate for a graduate faculty appointment in BMBB, it should notify the Coordinating Committee of their intentions before initiating the search. This will enable a discussion of whether the planned position (regardless of who is hired) satisfies the basic principles of appointment in the BMBB Program.

If the Coordinating Committee approves the proposal, it will nominate 1 or more members of the graduate faculty to serve on the search committee. All recruiting seminars will be advertised to the graduate faculty in BMBB and interviews of the candidates will include time for visits with faculty members. At the end of the interview process, before an offer is made, the graduate faculty will vote on the candidates to indicate acceptability. Any candidates voted as unacceptable will not be appointed to the BMBB graduate faculty.

A candidate can be appointed to the BMBB graduate faculty under different membership categories as outlined by the Biological Sciences and Review Council. Appointment to the BMBB graduate faculty typically occurs at the Senior Member level with full advising and teaching responsibilities in the program. Members of the Coordinating Committee will vote on the suitability of candidates. New BMBB tenure-track hires will be automatically appointed as Senior Members to the BMBB program without the requirement of a nomination process. Affiliate Membership may be granted by the Coordinating Committee to individuals who will benefit the BMBB graduate program. Responsibilities and rights of an Affiliate Member Nominee will be decided upon case by case by the Coordinating Committee and send in writing to the nominee.

3. Periodic Review of Full Membership on graduate faculty. All full members on the BMBB graduate faculty will be subject to a 5-year review. This review will be conducted by the Coordinating Committee at its spring meeting each year. Each faculty member will be evaluated based on the criteria listed in *Section 1*. The DGSs will collect information regarding involvement in program activities from faculty prior to this meeting. After discussion, the Coordinating Committee will vote on whether to renew the appointment. Renewal will require a simple majority of Committee members present. Faculty members who are judged to be insufficiently active in the program will be contacted by the DGS to determine whether there is interest in remaining in the program. If so, the faculty member will be given 1 additional year to increase involvement. The Coordinating Committee will then review the faculty member at the following year's spring meeting. If again, it is judged that involvement in programmatic activities is inadequate, the faculty member's appointment will not be renewed or their status will be transferred to Associate Membership.
4. Publications. All publications involving a BMBB graduate student whose thesis adviser is departmentally affiliated in another unit (e.g., Plant Biology, GCD, Neuroscience, and Microbiology) should include in the author affiliations *Graduate Program in Biochemistry, Molecular Biology and Biophysics* for the indicated student.

## Appendix A

### BMBB Graduate Faculty Membership by Division

#### **Regulatory Biochemistry**

KENNETH W. ADOLPH (SECONDARY).....ADOLP001@UMN.EDU  
EDGAR ARRIAGA.....ARRIAGA@UMN.EDU  
IAN M. ARMITAGE (SECONDARY).....ARMIT001@UMN.EDU  
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DAVID A. BERNLOHR .....BERNL001@UMN.EDU  
ROBERT J. BROOKER .....BROOK005@UMN.EDU  
SCOTT DEHM.....DEHM@UMN.EDU  
DEBORAH A. FERRINGTON .....FERRI013@UMN.EDU  
MERI FIRPO.....FIRPO001@UMN.EDU  
TIMOTHY GRIFFIN.....TGRIFFIN@UMN.EDU  
DO-HYUNG KIM.....DHKIM@UMN.EDU  
**ALEX J. LANGE , DIR.....LANGE024@UMN.EDU**  
DAVID C. LAPORTE (SECONDARY) .....DLAPORTE@UMN.EDU  
LAURA J. MAURO .....MAURO002@UMN.EDU  
KEVIN H. MAYO (SECONDARY) .....MAYOX001@UMN.EDU  
SHARON E. MURPHY .....MURPH062@UMN.EDU  
GARY L. NELSESTUEN.....NELSE002@UMN.EDU  
LINCOLN R. POTTER .....POTTER@UMN.EDU  
ROBERT J. ROON .....ROONX001@UMN.EDU  
MICHEL M. SANDERS (SECONDARY) .....SANDE001@UMN.EDU  
DAVID D. THOMAS (SECONDARY).....DDT@UMN.EDU  
HOWARD C. TOWLE (SECONDARY) .....TOWLE001@UMN.EDU

#### **Molecular Biology**

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VIVIAN J. BARDWELL .....BARDW001@UMN.EDU  
DAVID A. BERNLOHR (SECONDARY) .....BERNL001@UMN.EDU  
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**ANATH DAS, DIR. ....DASXX002@UMN.EDU**  
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REUBEN HARRIS.....RSH@UMN.EDU  
THOMAS S. HAYS .....HAYSX001@UMN.EDU  
ERIC A. HENDRICKSON .....HENDR064@UMN.EDU  
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HARRY T. ORR .....ORRXX002@UMN.EDU  
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JEFFREY A. SIMON .....SIMON004@UMN.EDU  
ALEXANDRA SOBECK.....ASOBECK@UMN.EDU  
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BRIAN G. VAN NESS .....VANNE001@UMN.EDU  
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#### **Microbial Biochemistry and Biotechnology**

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BURKHARD SEELING.....SEELIG@UMN.EDU  
**Lawrence P. Wackett, DIR. ....wacke003@umn.edu**

#### **Structural Biology and Biophysics**

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VICTOR BLOOMFIELD.....VICTOR@UMN.EDU  
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JOHN D. LIPSCOMB .....LIPSC001@UMN.EDU  
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KYLIE J. WALTERS.....WALTE048@UMN.EDU  
CARRIE M. WILMOT .....WILMO004@UMN.EDU

**BMBB DULUTH FACULTY-DIVISIONS**

**REGULATORY BIOCHEMISTRY**

GRANT W. ANDERSON.....ANDER163@D.UMN.EDU  
MATTHEW T. ANDREWS (SECONDARY). MANDREWS@D.UMN.EDU  
LESTER R. DREWES .....LDREWES@D.UMN.EDU  
JOSEPH R. PROHASKA.....JPOHASK@D.UMN.EDU

**MOLECULAR BIOCHEMISTRY**

ROBERT T. CORMIER.....RCORMIER@D.UMN.EDU  
MATTHEW T. ANDREWS ..... MANDREWS@D.UMN.EDU

**STRUCTURAL BIOLOGY & BIOPHYSICS**

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KENDALL B. WALLACE .....KWALLACE@D.UMN.EDU

## **Appendix B**

### **Procedures Common to Both Campuses**

#### **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 Universities' 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. Payroll**

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 C**

### **BMBB GRADUATE TEACHING ASSISTANT GUIDELINES**

Each year graduate students serve as Teaching Assistants (TAs) for a variety of undergraduate, graduate and professional courses. In order to help prepare students for an academic or educational career, teaching and its associated activities is required of all BMBB graduate students. Typically, PhD students are required to do 2 semester equivalents of teaching. To enhance the breadth of experience, every attempt is made to divide this between one laboratory-based course and one-lecture based course (see also BMBB Graduate Handbook pp. 13-14).

#### **Typical teaching duties of graduate teaching assistants:**

- Assisting students in a laboratory situation
- Preparing reagents and readying equipment for student use
- Contribute to grading notebooks and examinations
- Conducting tutorial and review sessions
- Entering course-related materials into a computer

**Note: Writing exams is the responsibility of the instructor and cannot be transferred to a graduate TA! TAs are, however, strongly encouraged to contribute one or two exam questions to a midterm or final exam to enhance their teaching skills.**

To enhance the teaching experience of TAs, instructors are encouraged to give TAs the opportunity to prepare and deliver one lecture during the semester. The instructor shall provide advise on material and presentation of the lecture and provide feedback after the class. For undergraduate courses, we require TAs to practice the lecture with the instructor before delivering it to the students in the course. This will ensure that the presented material is organized clearly and is appropriate for the course.

#### **Workload of graduate TAs** (see:

<http://policy.umn.edu/Policies/hr/Hiring/GRADSTUDENTEMPLOYMENT.html>):

BMBB graduate students hold a 25 percent graduate teaching assistant appointment during the semester they serve as TAs. This corresponds to a **workload of 10 hrs on average per week over the course of the two-semester TA experience.**

#### **Formal evaluation of graduate teaching assistants:**

TAs are formally evaluated by both the instructor in charge and by the students in the class. Such evaluations play a large part in faculty nominations for the Barnum teaching award.

Instructors shall ensure that TAs are evaluated by the students in the class. Appropriate forms can be obtained from the Department (see: <http://eval.umn.edu/set.html>).

#### **SPEAK Test for International Students.**

Current University of Minnesota policy requires that all non-native English-speaking teaching assistants or prospective teaching assistants who are or will be assigned to teaching, tutoring or

advising duties take the SPEAK Test. This is an institutional version of the Test of Spoken English, developed by the Educational Testing Service and administered here on campus by the Minnesota English Center. Since all graduate students in the BMBB Graduate Program will eventually be expected to serve as a teaching assistant, 1<sup>st</sup>-year students are required to take the SPEAK Test at their earliest opportunity. SPEAK Tests are scheduled periodically throughout the year. To schedule the SPEAK Test call the TA English Program/Faculty and TA Enrichment Program (625-3041) (see: <http://www1.umn.edu/ohr/teachlearn/nonnative/speak/>).

**Additional guidelines for graduate teaching assistants:**

1. Talk with the instructor to make sure you know what she/he expects from you as a TA.
2. Ask questions to clarify any issues concerning your TA responsibilities.
3. Always be on time for class and never miss a class without having prior approval of the instructor.
4. If you need to attend a scientific meeting that interferes with your ability to serve as a TA during the semester, make sure the instructor knows about the absence well in advance. Find out from the instructor if she/he wants you to find a replacement and/or how to handle the time away from class.
5. Ask the instructor for feedback during the semester, find out if you are meeting the instructor's expectations.
6. Obey Student Code of Conduct at all times. Behave ethically and honestly with all students and staff. Report any suspicions of academic fraud or dishonesty to the instructor.
7. Do not initiate or develop romantic relationships with students in your class during the semester you TA. Such relationships are permitted if the TA is no longer in a supervisory or oversight capacity.
8. Provide honest feedback to the instructor during and after the course. Remember you are serving the dual role of advocate for both the faculty and the students.
9. Do not take personal vacations or time-off during the semester you TA. If you are unavoidably called away from class, make sure you contact the faculty member in charge of the course.
10. During the semester you TA, your responsibilities to the class outweigh your responsibilities to your laboratory and must take first priority. Having said that, do not slow down or stop your thesis research (work hard).

Students must inform a DGS of any other obligations or commitments that may conflict with teaching in any given semester.

**Students are strongly encouraged to inform a DGS about problematic issues**, e.g. workload significantly higher than outlined above, assignment of teaching duties that are the responsibility of the instructor (e.g. writing of exams, recording grades), that arise during their teaching assistantship.

**TAs should not be responsible for grading the entire exam of a class (especially if the class size is greater than 50 students).**

**Instructors are responsible for recording all grades, exam grades and the final class grade into the University of Minnesota grade submission web site. TAs should return graded exams to the instructor so that the instructor may review the exams before the grades are recorded. TAs may prepare a preliminary tally of exam grades to present to, or discuss with, the instructor.**

**TAs of laboratory classes are strongly advised to leave all recording of grades to the instructors. This will ensure uniform grading in these classes, which have multiple TAs participating in the grading of exams. The major objective for these measures is to keep**

**the time commitment for TAs as close to an average of 10 hrs/week as possible and to fairness to the students.**

**The DGSs will reserve the right to not assign graduate TAs to courses directed by instructors that repeatedly overstep the responsibilities and workload of assigned graduate teaching assistants.**

If you have any questions or concerns, please don't hesitate to contact your DGSs.

## ***Appendix D***

### **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

#### **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, 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, 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 on 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 on 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**

The faculty, as research directors, is 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. For example, University Senate policy requires student membership on faculty search committees.

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. Students who are employees also have the protection of all University employment policies and laws. Graduate programs are responsible for clearly communicating to students 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 Working 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.

### ***Other University Documents***

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

1. **Academic Code of Conduct**

[http://www1.umn.edu/regents/policies/academic/Code\\_of\\_Conduct.html](http://www1.umn.edu/regents/policies/academic/Code_of_Conduct.html)

2. Board of Regents, ***Academic Freedom and Responsibility***, adopted 9/8/95.

[http://www1.umn.edu/regents/policies/academic/Academic\\_Freedom.html](http://www1.umn.edu/regents/policies/academic/Academic_Freedom.html)

3. **Graduate Assistant Office**

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

### ***Student Conduct Code***

[http://www1.umn.edu/regents/policies/academic/Student\\_Conduct\\_Code.html](http://www1.umn.edu/regents/policies/academic/Student_Conduct_Code.html)

### ***Human Rights 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. Inquiries regarding compliance may be directed to, Office of Equal Opportunity and Affirmative Action, 419 Morrill Hall, University of Minnesota, 100 Church Street S.E., Minneapolis, MN 55455, (612) 624-9547. <http://www.eoaffact.umn.edu/index.html>

### ***Sexual Harassment Statement***

Sexual harassment subverts the mission of the University, and threatens the careers of students, faculty, and staff. The All-University Policy Statement on Sexual Harassment, approved by the University Senate in 1984, defines sexual harassment as follows: Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitutes sexual harassment when (1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment or academic advancement, (2) submission to or rejection of such conduct by an individual is used as the basis for employment decisions or academic decisions affecting such individual, or (3) such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment. Information and guidance regarding sexual harassment are available from the Office of Equal Opportunity and Affirmative Action, which is also the office for complaints of sexual harassment. All inquiries are held in strict confidence.

***Standards of Student Conduct***

The University is concerned with matters that may impinge upon academic achievement and integrity and with maintaining an educational climate. Other matters of concern include preserving and protecting the rights, health, property and safety of members of the University community. Thus, specific disciplinary offenses actionable by the University include scholastic dishonesty, falsification, disorderly conduct on the campus, theft and property damage, disruptive noise and demonstrations and so forth. The official regulations and procedures concerning inappropriate and illegal behavior are contained in *A Statement of Standards of Student Conduct Enforceable by University Agencies*, a copy of which may be obtained from <http://www1.umn.edu/oscai/>

## Appendix E Other Helpful Information/Links

**Bookstore** (<http://www.bookstore.umn.edu>) 5-6000

**Campus Escort Service:** A company you anywhere within the campus vicinity-4-WALK

**Child Care** (<http://www1.umn.edu/ohr/worklife/childcare/index.html>)

**Computer and Internet Support:** (<http://www.oit.umn.edu/>)

**Counsel of Graduate Students (COGS);** (<http://www.cogs.umn.edu/>) represents graduate students at the University and is recognized by the Graduate School. COGS is an open and democratic organization comprised of graduate students from across the University. COGS provides opportunities for graduate students to participate actively in University administrative and policy-making decisions, as well as social and cultural programming and job training. The backbone of the organization are Department Representatives, composed of students selected by all degree-granting programs at the University. COGS also elects representatives to serve on [University-wide committees](#), on [Policy and Review Councils](#), and in the [University Senate](#). Together, we represent over 10,000 students.

**Graduate School Catalog** (<http://www.grad.umn.edu/catalog/index.html>)  
Graduate school policies and information

**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 Student Services:**  
([http://www.grad.umn.edu/current\\_students/doctoral/index.html](http://www.grad.umn.edu/current_students/doctoral/index.html)) 4-3490

**Housing** (<http://www.housing.umn.edu>) Information on campus and off campus housing

**Disability Services** (<http://www.ds.umn.edu/>) provides assistance with academic accommodations for students with diagnosed, severe, and persistent mental health conditions.

**International Student and Scholar Services (ISSS)** (<http://www.iss.umn.edu>) International Student and Scholar Services (ISSS) is the office dedicated to serving the University of Minnesota's international community. Its primary mission is to assist international students and scholars in successfully accomplishing the goals that brought them to the University, by using all available resources.

**Legal Services:** The University Student Legal Service (<http://www1.umn.edu/usls/>) provides legal counsel and services to fee-paying students for little or no cost. Advice is offered on consumer matters, tenants' rights, immigration, family law, misdemeanor and DWI defense, and employment problems. For more complex legal problems, students are referred to other attorneys.

**Mental Health Resources:** The University provides various mental health services for students.

The Mental Health Clinic at Boynton Health Services (<http://www.bhs.umn.edu/services/mentalhealth.htm>) provides phone and walk-in assessment on an urgent basis, as well as scheduled medical evaluations and management, chemical health assessment and counseling, and individual, couples, and group therapy. Additional resources for the management of personal stress are available through the Health Promotion Department at Boynton Health Services.

#### **University Counseling and Consulting Services**

(<http://www.uccs.umn.edu/index.html>) provides confidential counseling programs with professional counselors who can help students address academic stresses, personal and relationship concerns, or feelings of anxiety or depression. Walk in counseling is available.

**Motorist Assistance Program:** Unlocking vehicles, providing jump starts, and changing flat tires. To request assistance, call 6-PARK.

**Parking/Transportation** (<http://www1.umn.edu/pts/>) Information on the parking and transportation options available to students

**Staying on Course:** Mutual Responsibilities in the Graduate School Experience (<http://www.cogs.umn.edu/pdfs/Staying%20on%20Course%202008.pdf>)

**Student Academic Grievances:** (<http://www1.umn.edu/ocr/>) 4-1030

**Student Dispute Resolution Center:** (<http://www.sos.umn.edu/>) 4-7272

**University Women, Office of:** (<http://www1.umn.edu/women/>)

## Appendix F Journal Club Attended By BMBB Members

<b>Group</b>	<b>Size</b>	<b>Coordinator</b>	<b>Location</b>	<b>Time</b>	<b>Alt. Contact</b>
Membrane	12-15	David Thomas <a href="mailto:ddt@umn.edu">ddt@umn.edu</a>	1-136 NHH	2 <sup>nd</sup> Tue of month	Razvan Cornea <a href="mailto:rc@ddt.biochem.umn.edu">rc@ddt.biochem.umn.edu</a>
Molecular Biology	50	Howard Towle <a href="mailto:Towle001@umn.edu">Towle001@umn.edu</a>	6-135 JacH	Friday Noon-1pm	
Muscle	15-20	David Thomas <a href="mailto:ddt@umn.edu">ddt@umn.edu</a>	1-136 NHH	Monday 10:15am	Ewa Prochniewicz <a href="mailto:ewa@ddt.biochem.umn.edu">ewa@ddt.biochem.umn.edu</a>
Structural Biology	20	Douglas Ohlendorf <a href="mailto:ohlen@umn.edu">ohlen@umn.edu</a>	4-101 NHH	Monday 12:20-1:20pm	Ke Shi 625-2109

\*Clubs that meet regularly and have at least 6 regularly participating faculty attending will be acceptable for Student Seminar presentation credit, but 4 or 5 Thesis committee members must be present to evaluate and comment. Contact the club coordinator or alternate contact for more information and to join the group.