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Introduction

The University of Iowa Department of Biochemistry comprises approximately 150 individuals including faculty, postdoctoral fellows, graduate and undergraduate students, and supporting office and technical staff. Faculty laboratories and offices are located on the fourth floor of the Bowen Science Building, on the third floor of the adjacent Medical Education and Research Facility, the Eckstein Medical Research Building, and in the Pappajohn Biomedical Discovery Building. These buildings are located in the University’s health sciences campus on the west side of the Iowa River. The department offers graduate training leading to the master of science (MS) and doctor of philosophy (PhD) degrees in Biochemistry. These degrees require a thesis (MS) or a dissertation (PhD) on a research topic. Students usually work towards the PhD degree without first completing the MS degree.

Scientific Background of Students

The curriculum leading to both the MS and PhD degrees has been designed with the assumption that students have had at least a one-semester course in general biochemistry before starting graduate school. Those who do not have sufficient knowledge should remedy this deficiency before enrolling in the graduate program or master this material on their own.

Orientation

All first-year students should arrive on campus at least once week before classes start (international students should arrive at least two weeks before and in time for international student orientation) in order to move into housing, take care of formal administrative details at the Biochemistry Department main office (4-403 Bowen Science Building), and get acquainted with the faculty and other graduate students. New students should talk with the Graduate Program Director who acts as the general advisor for first-year students and can be consulted concerning any aspect of graduate study. Later, an Advisory Committee of four faculty members will be formed to provide additional advice.

Students should see the Biochemistry Departmental Administrator to complete the forms necessary to receive the stipend, for which proper identification is required. The stipend will begin after arrival and the first paycheck, covering a portion of August, will be on September 1 with a full month stipend on October 1.
Finding Housing

Health Insurance
Foreign students are required to carry health insurance and will be informed about options by the Office of International Students and Scholars. All graduate students may use the University’s Student Health Service, for which the department pays the “Mandatory Health Fee.” Graduate students are also eligible for the Student Health Insurance Policy (SHIP) or the UI GRADCare plan. Students should choose the plan when the appointment in Biochemistry begins. The student contributes a nominal amount per year to either plan, and the department pays the remainder.

The PhD Program

The First Year
Students entering the PhD program in Biochemistry, a subprogram of the Biomedical Sciences Graduate Program at the University of Iowa Roy J. & Lucille A. Carver College of Medicine, have the opportunity to tailor their curriculum to take courses that enhance their educational goals. They are expected to take a combination of graduate level courses that includes a first year laboratory research rotation course, seminar courses and topic based courses that have been divided into one hour modules. Currently, 34 hours of coursework plus 38 hours of research credit are required prior to completion of the PhD degree.
Twenty hours of coursework for all students includes:

- 3 hours of Biophysical Chemistry (typically Biochemistry students take 6)
- 8 hours of Research Techniques
- 4 hours of Molecular or Cellular Biology (typically Biochemistry students take 6-8 hours)
- 5 hours of Biochemistry seminar
- Principles of Scholarly Integrity/Responsible conduct of Research

An additional 14 hours of coursework (for a total of 34 hours) is chosen from current course offerings in the Department of Biochemistry and other departments across campus. An example of typical first year curriculum is shown below.

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Course</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC:5261</td>
<td>Research Techniques</td>
<td>4</td>
</tr>
<tr>
<td>BIOC:5241</td>
<td>Biophysical Chemistry I*</td>
<td>3</td>
</tr>
<tr>
<td>BIOC:5282:A01</td>
<td>Biochemistry Seminar</td>
<td>2</td>
</tr>
<tr>
<td>BMED:5207</td>
<td>Principles of Molecular &amp; Cellular Biology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

*This course can be taken as individual one hour modules (BIOC:5243, 5245, 5247)

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Course</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC:5261</td>
<td>Research Techniques</td>
<td>4</td>
</tr>
<tr>
<td>BIOC:5242</td>
<td>Biophysical Chemistry II*</td>
<td>3</td>
</tr>
<tr>
<td>BIOC:5282:A01</td>
<td>Biochemistry Seminar</td>
<td>2</td>
</tr>
<tr>
<td>MMED:6215</td>
<td>Transcription RNA</td>
<td>1</td>
</tr>
<tr>
<td>MMED:6227</td>
<td>Cell Fate Decisions</td>
<td>1</td>
</tr>
<tr>
<td>MMED:6226</td>
<td>Cell Cycle Decisions</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

*This course can be taken as individual one hour modules (BIOC:5244, 5246, 5248)
The following courses qualify to meet the Molecular and Cell Biology requirement.

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMED:6215</td>
<td>Transcription RNA</td>
</tr>
<tr>
<td>MMED:6225</td>
<td>Growth Factor Receptor Signaling</td>
</tr>
<tr>
<td>MMED:6226</td>
<td>Cell Cycle Control</td>
</tr>
<tr>
<td>MMED:6227</td>
<td>Cell Fate Decisions</td>
</tr>
<tr>
<td>MMED:6220</td>
<td>Mechanisms of Cellular Organization</td>
</tr>
<tr>
<td>PCOL:6208</td>
<td>G Proteins &amp; G Protein-Coupled Receptors</td>
</tr>
<tr>
<td>PCOL:5204</td>
<td>Basic Biostatistics &amp; Experimental Design</td>
</tr>
</tbody>
</table>

**Other Training**

It is expected that students will continue to develop their speaking skills by participating in laboratory group meetings and in journal clubs. These programs are an important aspect of a student’s training and can be very useful for developing proposals for the Comprehensive Examination.

Graduate Students should budget their time between regular course work and laboratory work. Performance in both aspects is important in judging the progress of first-year students.

**Laboratory Rotations and Assignment to a Laboratory**

Graduate students rotate through three different laboratories during their first academic year, unless they have satisfied this requirement in part by previous equivalent research experience. The course number and title for the laboratory rotations is **BiOC:5261 (Research Techniques)**. The laboratory rotations are approximately ten weeks each. They are intended to help the student learn how to do research, to learn a wide range of experimental methods and techniques, and to explore different areas of biochemical research.

Students will be assigned to their first laboratory rotation based on their choice of laboratory and the availability of faculty. Students will be polled for their choices for the first rotation before arrival at the University. Assignment to the first rotation will be made by the Graduate Program Director, the Department Head, and participating faculty. During the first few weeks of the fall semester, there will be opportunities for students to attend faculty presentations in which to learn more about the research being pursued in a faculty member’s laboratory. During the first six weeks of the semester, each student should meet with several members of the faculty to discuss possible research projects for the second and third rotations. By the end
of the sixth week, students will be asked to submit to the Graduate Program Director a list of at least five faculty members in whose labs they would like to complete their schedule of rotations. The Director, the Department Head, and participating faculty will then determine the laboratory assignments. These assignments will be based on educational objectives including diversity of training in different areas of biochemistry, student preference, availability of space, and faculty teaching loads. The assignments will be made in time for all three faculty members to attend the advisory committee meeting at the end of the first rotation. If the student wishes to change preferences after assignments are made, the request will be accommodated if possible.

The Laboratory Rotations Advisory Committee

The Advisory Committee is composed of the faculty members in each student’s first-year laboratory rotation schedule. The Graduate Program Director may substitute for one of the laboratory advisors at committee meetings if an advisor is unavailable. Each of these faculty members will serve, in turn, as research advisor and chairperson of the Advisory Committee during the tenure of the student in his/her laboratory. This committee evaluates a student’s performance during the tenure of the student in his/her laboratory. This committee evaluates a student’s performance during the laboratory rotations and makes recommendations for promotion to the second year. At the end of each laboratory experience, the student will meet with the Advisory Committee to present the research and training completed during that rotation. The Advisory Committee will write a short evaluation of the student’s performance, and assign a grade for the laboratory work. This evaluation will become part of the student’s departmental record and will be used to assign a grade for the course BIOC:5261 (Research Techniques).

Laboratory Rotation Presentations

The student should first discuss the presentation in depth with the research advisor before the meeting. The rotation meetings begin with the student giving a brief (~30 mins) oral summary of the research project.
The faculty will question students about the experimental and theoretical significance of the laboratory experiences, including the interpretation of their data and the limitations of the techniques used.

The student should write a short report, usually in the form of a manuscript (title, abstract, introduction, methods, results, discussion, references, tables, and figures). Typically, the rotation research report will be (5-10 pages of written, double-spaced text, not including figures, figure legends and references). The figures used in the oral presentation to the committee may be used as figures in the written report.

The report should be provided to the rotation committee at least 24 hours before the committee meeting, keeping in mind that much of the written report can be prepared while the laboratory experiments are still ongoing. The written report will be submitted via ICON and analyzed by plagiarism software. ICON can be found on MYUI. You are also required to submit a paper version to each of your committee members by the due date. A copy of the report will be placed in the student’s file. No grade will be assigned for the semester until the reports are deposited.

Committee meetings may be requested by the student or any member of the committee at any time.

**Promotion to the Second Year**

At the end of the first academic year, the student’s Advisory Committee will recommend to the department whether or not the student continue as a potential PhD candidate. Promotion to the second year is the decision of the biochemistry faculty based on the recommendation of the Advisory Committee, and on course performance, scholarly potential, and a reasonable expectation that the student will perform well on the Comprehensive Examination. Dismissal
from the PhD program by the Biochemistry faculty may be due to poor performance in one or more of the above areas.

**Selection of Thesis Advisor**

Near the end of the third rotation, students should submit to the Graduate Program Director a list of three preferences for thesis advisor. This choice is an important step in one’s career and should be given very serious consideration. Thus, students should discuss possible projects with any faculty members in which they are interested and familiarize themselves with the faculty laboratories. They should consider as many dimensions as possible including the definition of the thesis project, future prospects for the research, and the scientific approach. The laboratory chosen may be one of those involved in the rotations or another laboratory in the Department.

Assignment of the thesis advisor is subject to the constraints of laboratory space, financial support, acceptance by the professor, and approval by the Department Head. The Department Head and the Graduate Director will consult with the faculty members involved prior to final placement of the student. Occasionally, a fourth rotation period is recommended to help identify the best possible training opportunity for the student.

**English Proficiency Certification Examinations**

The Graduate Program in Biochemistry requires doctoral students to complete one semester of teaching assistant (TA) experience. The University of Iowa requires all students for whom English is not a first language and who have first-time appointments as TAs to take the ESPA test to assess their effectiveness in speaking English before they are assigned assistantship responsibilities. The test, administered by the University’s Teaching Assistant Preparation in English Program (TAPE), assesses students’ language and comprehension skills for teaching in a typical American university classroom situation. Students must be rated “C” or higher on the ESPA test before starting a TA assignment. Assignment of TA duties will be consistent with the level of certification. Students who receive less than a “C” should enroll in TAPE courses to achieve certification at a level of “C” or higher.

**The Second Year**

In the second year students take BIOC:5282:A02 (Seminar) for 1 hour and enough electives to fulfill their course requirements. The course BIOC:5282:A02 has, as a goal, the mentored completion of the doctoral thesis proposal that is due at the end of the semester in time for the student to have their first thesis committee meeting. The faculty research mentor is
responsible for the course. Although there are many ways to structure the course it is generally useful for the student and mentor to arrange a weekly meeting to review the field, design the proposal and edit the proposal. It is often helpful to establish dates where progress can be assessed. The elective can be chosen from the 1 hour module list, special topic courses, or graduate courses offered by other departments that will enhance a student’s capacity to complete their degree. The electives chosen should be in consultation with the student’s research advisor and discussed with the Director of Graduate Studies.

A typical second year curriculum might include:

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course</td>
<td></td>
</tr>
<tr>
<td>BIOC:5282:A01 Biochemistry Seminar/Doctoral Proposal</td>
<td>1</td>
</tr>
<tr>
<td>Electives</td>
<td>As many as needed*</td>
</tr>
<tr>
<td>BIOC:7292 Research Biochemistry</td>
<td>5-8</td>
</tr>
<tr>
<td>BMED:7270 Scholarly Integ/Resp Conduct of Rsrch I</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

*all 34 hours of graded coursework should be completed before comps are taken

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Semester Hours</th>
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<tbody>
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<td>Course</td>
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<td>Electives</td>
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<td>0</td>
</tr>
<tr>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

*all 34 hours of graded coursework should be completed before comps are taken

All of these courses are graded except BIOC:7292 and the third seminar of BIOC:5282, section A02, which are graded “satisfactory/unsatisfactory” (abbreviated S/U).

### Selection of the PhD Thesis Committee

Before the start of fall semester of the second year, the PhD student and her/his PhD thesis advisor, along with the advice of the Graduate Program Director and approval of the Department Head, identifies possible faculty members for the five-person PhD thesis committee. A typical committee is made up of four Biochemistry faculty members with the fifth member from a department other than Biochemistry. The committee chair must be a member of the Biochemistry faculty. (In special cases the student may request a thesis committee composed of three Biochemistry faculty members and two non-Biochemistry Department faculty members.) The student’s thesis advisor is not a member of the thesis
committee; however, the advisor may attend, as an observer, the student’s meetings with her/his thesis committee.

The thesis committee should be composed of faculty members who are able to judge the thesis research and include members with expertise in diverse areas. Since the student and the student’s advisor should know who could best help the student with the thesis, they should have a primary and initial role in nominating members for the committee. **Thesis committee members should be chosen in compliance with University standards regarding conflict of interest.**¹ The responsibility for serving on these committees should be distributed equitably among the faculty. “Equitable distribution” will be determined by the Head of the Department when making the assignments.

The selection procedure is as follows. Before the start of the fall semester of the second year, the students should submit to the Graduate Program Director a list of at least eight faculty members, in order of preference, to serve on the student’s thesis committee. The student need not ask members of the Biochemistry faculty if they would be willing to serve; however, the student should make the request of potential members outside the department. The Graduate Program Director, with the approval of the Department Head, will compose the committees. To achieve equitable distribution and to maintain the diversity that can accommodate and facilitate evolving research objectives, the committee may include members who are not among the first eight faculty members suggested. When a committee cannot be composed with faculty on the student’s list, the Graduate Program Director will discuss alternatives with the student and the student’s committee and will ask one person to be chairperson of the committee. A faculty member should decline the invitation if there is a conflict of interest. The committee membership should be finalized by October 1st in preparation for the first thesis committee meeting near the end of the fall semester of the second year.

**The PhD Thesis Research Proposal, Individual Development Plan (IDP), and First Thesis Committee Meeting**

During the fall semester of the second year, the student, in collaboration with the thesis advisor, will prepare a detailed thesis proposal that describes the proposed research to be

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¹ University of Iowa Graduate College policy on faculty and student conflict of interest (COI) ([http://facstaff.grad.uiowa.edu/dgs/handbook/policies-and-procedures/professional-ethics](http://facstaff.grad.uiowa.edu/dgs/handbook/policies-and-procedures/professional-ethics)) states: No member of the instructional staff, non-academic staff member, or student may participate in a decision in which he or she has an obvious COI. University policy directs that anyone with a COI must be removed from the decision making process and must refrain from influencing those who are responsible for the decision. An individual who may have a COI is responsible reporting it to the DEO, who is then responsible for making certain appropriate procedures are followed.

It is a COI for a faculty or staff member or a student to participate in decisions affecting anyone related to him or her by blood, adoption, or marriage or anyone with whom he or she has a current or former relationship that would compromise or appear to compromise objectivity (e.g. an amorous relationship or a business relationship).
The proposal and IDP will be submitted online via ICON & a paper version will be distributed to committee members by the student one week in advance of the meeting. The proposal and IDP will be submitted online via ICON & a paper version will be distributed to committee members by the student one week in advance of the meeting. The proposal and IDP will be submitted online via ICON & a paper version will be distributed to committee members by the student one week in advance of the meeting.

conducted for the PhD dissertation as part of BIOC:5282:A02. The form of this proposal should follow the guidelines given in the next section. This PhD thesis proposal should be submitted to the student’s PhD Thesis Committee one week prior to the student’s meeting with his/her Committee. The meeting is scheduled near the end of the fall semester of the second year.

The Individual Development Plan (IDP) should also be submitted at this time. The IDP is envisioned as a bottom-up tool, the trainee is responsible for filling out. The trainee’s mentor is engaged through the discussion of the goals with the student or fellow. It is not a contract; rather, it should serve as a way to develop goals, identify areas of strength and weakness, and find practical strategies to prepare for the future. To encourage regular reviews of the plan, both the student and advisor should sign-off and date the document. Biochemistry Graduate students will submit an updated IDP at their yearly committee meetings. Please contact office staff to receive an IDP template.

The PhD thesis advisor should sign the first page of the student’s PhD thesis proposal to signify that she/he has read the final version of the document. The first thesis committee meeting is not meant to be an examination over the proposal; rather, it is an opportunity for the committee to make suggestions and offer advice, and for the student to explain any unclear details.

The PhD thesis advisor may choose to attend thesis committee meetings as an observer. The thesis advisor should NOT participate in the committee meetings except to provide points of clarification when asked and to discuss the student’s progress after the student has left the meeting. The committee will write a short description of the meeting for the student’s file.

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1 In 2013, the NIH made the following announcement, “the NIH encourages grantees to develop an institutional policy requiring an Individual Development Plan (IDP) for every graduate student and postdoc supported by any NIH grant, regardless of the type of NIH grant that is used for support.”
Format for Biochemistry Doctoral Research and Comprehensive Exam Proposals

Font

- Use 11 points or larger Arial, Helvetica, Palatino Linotype or Georgia font.

Paper Size and Page Margins

- Use standard size (8 ½” x 11”) paper.
- Use at least ¾ inch margins (top, bottom, left, and right) for all pages. No information should appear in the margin except for page numbers.

Page Formatting

- Use only a standard, single-column format for the text.
- The proposal must be single-sided and double-spaced (three lines/inch).
- Consecutively number pages throughout the application. Do not use suffixes (e.g. 5a).

Figures, Graphs, Diagrams, Charts, Tables, Figure Legends, and Footnotes

- 10 or 11 point font is acceptable.
- All images should be legible without digital enlargement.

Copies & Submission

- Each committee member should receive a printed copy and an electronic version will be submitted via ICON.

Grantsmanship

- Use English and avoid jargon.
- If terms are not universally known, spell out the term the first time it is used and note the appropriate abbreviation in parentheses. The abbreviation maybe used thereafter.
Page Limitations and Content Requirements

<table>
<thead>
<tr>
<th>Section</th>
<th>Page Limit</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover page</td>
<td></td>
<td>Title, Name, Advisor, Committee Members, Date and Room # for Meeting</td>
</tr>
<tr>
<td>Research Proposal-</td>
<td>1</td>
<td>Succinct and accurate description of proposed work</td>
</tr>
<tr>
<td>Abstract/Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introductory Statement and</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Specific Aims</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Background, Experimental</td>
<td>20</td>
<td>Text including all figures and tables</td>
</tr>
<tr>
<td>Approach, Possible Outcomes,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems, and Future Directions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>References</td>
<td>As needed</td>
<td></td>
</tr>
<tr>
<td>Addendum</td>
<td>Up to 2 papers</td>
<td>Key papers related to proposal</td>
</tr>
</tbody>
</table>

The Comprehensive Examination

The Comprehensive Examination has two parts: a written examination proposal that is prepared during spring semester of the second year and an oral part that is administered near the end of the spring semester. Before attempting the Comprehensive Examination students must submit a Plan of Study to the Graduate College via the Graduate Program Director who will make sure that all course requirements are listed. Students and their advisors may make additions to this plan, and it may be modified to correct deficiencies following the outcome of the Comprehensive Examination. The Graduate College requires a minimum of 72 semester hours of graduate work, including acceptable transfer credit and research hours.

The Comprehensive Examination will be administered by the student’s thesis committee. The thesis committee chair will also chair the comprehensive examination. The oral portion of the examination is about two hours in length, and is based in part on the written examination proposal submitted by the student. The Graduate Program Director will meet with all eligible students in the fall semester of their second year to explain how the examination will be administered and to summarize the expectations of the examining committee.

3 Adapted from the instructions found for Ruth L. Kirschstein National Research Service Award Individual Fellowship Application (PHS 416-1)
The examination is not limited to the subject of the proposal; it tests a student’s knowledge of important background material or subject matter needed for a full interpretation of the experiments proposed. In this sense, the examination is comprehensive in the spirit of the description found in the University of Iowa’s *Manual of Rules and Regulations of the Graduate College*.\(^4\) For Biochemistry, this means that a student should, at a minimum, possess knowledge of graduate-level biochemistry and demonstrate the ability to use this information to devise and defend original experiments aimed at solving an important biological problem.

On **February 1** of the second year, each eligible student will provide their thesis committee with an updated thesis proposal that has been prepared by the student in collaboration with the thesis advisor. This will be submitted via ICON\(^5\) and a paper version will be distributed by the student with a cover sheet signed by their research mentor. The student also has the **option** of suggesting to the examination committee one to three general topics for the examination proposal; however, this is not required. Each suggested topic should be no more than two sentences. The committee may or may not select these topics for the examination.

On **March 1**, the thesis committee will present the student with two potential topics for the examination proposal. One topic will be related but not identical, to the student’s thesis proposal and one will be unrelated. The student will have 6 weeks (until April 15) to prepare a written proposal on one of the two assigned topics and the committee will approve or disapprove of the proposal within one week of its receipt (by April 22). The proposal will be unsatisfactory if a majority of the committee feels that it has significant factual errors or such a limited scope that it will be difficult for the student to defend in the oral exam. If the proposal is unsatisfactory, the chair of the committee will communicate the deficiencies to the student in writing and the student will have two weeks (until May 7) to revise the proposal. The revised proposal will then be distributed to the committee and the exam scheduled. The oral exam will be scheduled approximately 2-3 weeks after the proposal is accepted (typically between May 15 and June 7). A summary of the deadlines and time of the examination is as follows:

\(^4\) "This examination, administered only on campus, is intended to be an inclusive evaluation of the candidate’s mastery of the major and related fields of study, including the tools of research in which competence has been certified."

\(^5\) All ICON submissions are analyzed by plagiarism software.
Time Table for the Comprehensive Examination

February 1 of second year: Each eligible student gives the examination committee a copy (printed copy and electronic copy submitted via ICON) of her/his written PhD thesis proposal signed by the thesis advisor. The student may also choose to suggest one to three general examination topics to the committee.

March 1: Each eligible student is assigned two possible examination topics by the committee.

April 15: The student gives the committee a written examination proposal (see following section for details) on one of the two topics. This will be submitted via ICON as well as the student distributing a paper copy to the committee.

April 22: The committee informs each student on the suitability of the proposal. If the proposal is unsatisfactory, the student has two weeks to revise the proposal.

A date between May 15-June 7: Oral examination is taken on a date assigned by the Department of Biochemistry.

All deadlines are at 5 pm on the indicated day. If the deadline occurs on a weekend, the deadline is extended to 9 am on the following Monday. Failure to meet any of these deadlines constitutes FAILURE of the Comprehensive Examination.

In special cases (for example, MSTP students), a similar schedule of deadlines can be established at an alternative time during the year or in the fall semester.
Preparation for the Comprehensive Examination

The purpose of the Comprehensive Examination is to allow students to demonstrate their ability to:

- Develop a well-defined original problem in experimental biochemistry, and propose how it might be solved
- Present the background, methods and goals for the proposed research in written form
- Answer questions concerning the feasibility and importance of the proposed research as well as questions dealing with basic concepts in biochemistry
- Explain and apply the basic concepts of biochemistry to the solution of a research problem
- Interpret possible results in terms of the hypotheses to be tested

Originality of Examination Proposal for the Comprehensive Examination

The thesis committee assigns each student two possible proposal topics and the student selects one topic for the examination proposal. No part of the examination proposal may be based on information contained in the proposals of other students or based on proposals of faculty or staff. That is, the proposal must be an original idea developed solely by the student. Ideas for the research proposal can come from a number of sources; for example, reading the literature, course work, journal clubs, departmental seminars, background reading during a rotation, etc. However, it is NOT appropriate to use as the basis of the proposal a term paper that has been submitted as a course requirement and critiqued by the instructor(s) of the course.

The Written Examination Proposal for the Comprehensive Examination

The form and length of the examination proposal should follow the same guidelines as those for the written PhD Thesis Proposal (SEE ABOVE FOR DETAILS). Briefly, the proposal should have a cover page followed by no more than 20 pages. The cover page should show the title
for the proposal, the name of the student, name of advisor, committee members, date and room number for the exam and the words “Proposal for the PhD Comprehensive Examination in Biochemistry”. The Specific Aims, Background & Significance, Research Design & Methods, Literature Cited, and Addendum should follow the same guidelines described above for the PhD Thesis Proposal.

The written report will be submitted via ICON. You are also required to submit a printed version to your committee by the due date.

**Passing the Oral Portion of the Comprehensive Examination**

To pass the oral Comprehensive Examination, a student must perform satisfactorily both in defense of the examination proposal and in answering questions of general biochemistry that are germane to the proposal, or that are important for a full understanding of the proposed experiments and their interpretation. If the performance during the oral examination is unsatisfactory, the student fails the exam. An exceptional performance on one part of the examination cannot rectify an unsatisfactory performance on the other part. A report of “reservation” will be given. If deficiencies displayed by the student where modest, and can be easily rectified. If the reservations re satisfied the report will be changed to indicate a pass.

If the student fails the examination, the thesis committee will recommend to the faculty of the Department of Biochemistry whether the student should be allowed to take the examination a second time.

**Subsequent Years**

**The Fifth-Semester Seminar**

In the fall semester of the third year (the fifth semester) the student will update and revise the written PhD thesis proposal prepared during the fall semester of the second year (prior to the Comprehensive Exam), and will present a seminar on her/his thesis research to the department at one of the weekly Biochemistry Workshops. All of this should be completed in the same semester. The seminar and the updated thesis proposal should describe the background and specific aims of the thesis research, the relevant research already completed, and the
experiments required to achieve the stated goals. An updated Individual Development Plan should also be submitted at this time. This updated thesis proposal and IDP must be submitted to the thesis committee and Abby Johnson (abby-t-johnson@uiowa.edu) at least one week before the seminar.

After the workshop presentation, the student will meet with his or her thesis committee to discuss the proposed thesis research. Similar to the first committee meeting at the end of fall semester of the second year, this meeting is not meant to be an examination over the proposal; rather, it is an opportunity for the committee to make suggestions and to offer advice, and for the candidate to explain any remaining unclear details. The thesis advisor may attend and observe this committee meeting or subsequent meetings. The committee will write a short description of the meeting for the student’s file.

Abby Johnson will schedule 5th semester seminar committee meetings. This is the only committee meeting that will be scheduled by Abby. All other meetings are the responsibility of the student.

Teaching Experience
The Biochemistry graduate program believes that teaching is an important component of the training of graduate students. Thus, graduate students will participate in the formal teaching programs of the department for at least one semester. First-year students as well as students who are within a year of receiving the PhD degree usually are not asked to teach. Teaching may take a variety of forms, including tutoring, leading discussions and laboratory groups, correcting examinations, preparing teaching materials and lecturing. The commitment should not exceed 20 hours/week averaged over the course of a semester. Teaching assistants will be evaluated by the faculty, and their performance must be judged at least "satisfactory". An "unsatisfactory" assessment will require an additional TA assignment. After a satisfactory TA assignment graduate students may request additional TA assignments. Graduate advisors are expected to support such requests. The Biochemistry Department will support a portion of the stipend of graduate students who elect to serve as TAs beyond one semester. To prepare for the TA position, graduate students will be required to attend the New TA Orientation, presented by the UI Center for Teaching, the summer before their assignment begins.

Registration after the Plan of Study is Completed
After completing the courses on the Plan of Study and passing the Comprehensive Examination, a student should register for GRAD:6002 Doctoral Continuous Registration, while continuing research. The department will continue to pay the tuition and mandatory fees
As long as normal progress toward degree is made. Past five years the thesis committee will recommend whether financial support will continue.

**Annual Meetings with the PhD Thesis Committee**

Students **must meet annually** with their PhD Thesis Committees. Meetings should be scheduled near the completion of the third, and subsequent, academic years. The final thesis defense may serve as one of these meetings. These conferences are intended to inform the committee of the student’s research progress. **It is the responsibility of each student to schedule these meetings.**

Thesis committee meetings with the student should be held at least once a year until the student is prepared to defend her/his PhD thesis. One week before each meeting the student should provide the committee and Abby Johnson with a written report detailing progress made since the previous meeting and an updated IDP. The committee chair should prepare a short written description of each meeting with the student and communicate the results of the meeting to that student and the advisor. A copy of this written description will be kept in the student’s file in the Biochemistry Main Office (4-403 BSB). Arranging a committee meeting takes planning and perseverance. The guidelines below should make the process as efficient as possible and enhance the success of the meeting:

- **Committee meetings should be held at least once a year, or more frequently if requested by your committee.** Meeting with your committee will help to assure that “satisfactory progress”, required for continued stipend support, can be documented and will help focus your research efforts.

- **You should talk to both your thesis advisor and your committee chair at least one month** before you would like to have the meeting. These discussions should include what progress and problems need to be brought to the attention of the committee.

- **Establish the dates and time that your committee chairperson will be able to attend the meeting.** Working on availability over a two-week time span is recommended. Please take into consideration that there may be large blocks of time-such as a week or more-when your chair or members of your committee may be off campus and unavailable.

- **Set up a doodle poll** (doodle.com) using the following criteria:
  - Omit Seminar (Thurs 10:30-11:30 AM)
  - Omit Workshop (Tues 12:30-1:30 PM)
- Poll for two hour time segments
- Send the poll to Abby for review before it is sent to the committee
- Once approved by Abby send the poll out to committee
- When you have a time that works for everyone, let Abby know and she will reserve you a room and send a confirmation to your committee

- Prepare a written report for your committee describing your project goals, some brief background information, progress, and what will be discussed in the meeting. You might include an updated CV, a Thesis Outline, and copies of any manuscripts in progress or submitted. These written materials should be prepared in consultation with your thesis advisor. They should be distributed to your committee members at least one week prior to the meeting.

- Prepare an Individual Development Plan (IDP) for your committee. Contact Abby Johnson if you would like a template.

- Be prepared to give your committee some estimate of how much time you expect your thesis project will take. This might take the form of a “Timeline” in your progress report or annotations of your thesis outline indicating expected dates of completion for individual projects or chapters.

The documents above should be sent to the committee and Abby Johnson at least one week before the scheduled meeting.

**Suggested format for contacting Committee**

Dear Thesis Committee,
I would like to schedule a meeting to discuss the progress made on my doctoral work since (the date of the last meeting you had). I have spoken with (my thesis advisor) and my chairperson (name chairperson) and would like to know your availability for the following dates and times in the doodle poll (link below).

(doodle poll link)
Sincerely,
Your name
It is the responsibility of the chairperson to summarize the consensus of the committee in a written report to the student, with copies of the report for the student’s file and the student’s research advisor. If a student fails to schedule an annual meeting, the Graduate Program Director will schedule a meeting.

Final Examination for the PhD
The five-member PhD Thesis Committee serves as an advisory body for preparation of the thesis. This committee meets with the student to review the material that is expected to be incorporated into the thesis. Although meetings of the PhD candidate with the committee should be yearly, the candidate, thesis advisor, or the committee can request a meeting at any time. The committee as a whole and the advisor will advise the student as to the suitability of the research accomplished for a dissertation. This is conveniently done by scheduling a committee meeting approximately four to six months before the final examination. This is an important step and can avoid problems that can occur after the thesis has been written. The student, however, makes the final decision as to when the thesis should be written and presented to the committee. The final draft must be given to all members of the committee two weeks before the final examination. Failure to meet this deadline will require re-scheduling the final examination so that all committee members have at least two weeks to read the thesis.

The final PhD examination takes the form of a seminar presented to the department. This presentation is announced according to the Graduate College policy. Questions, comments, and discussion will follow. After the seminar, the candidate will meet with the committee for the final thesis defense. The PhD degree is not awarded until the thesis is signed. In some cases quite extensive revisions may be required.

Preparation of the Dissertation
In addition to Graduate College requirements, the Department of Biochemistry requires the following:

- A list of all abbreviations used with definitions
- A unified bibliography for the complete thesis (in contrast to a list of references at the end of each chapter). Although format for references can assume several common styles used by peer reviewed journals, at minimum, the references should include: all authors (exception-if the # of authors exceeds 10 on a publication list the first 10
authors followed by et al.); year of publication; title of publication, journal, volume, and page numbers.

• Proper attribution of work in tables and figures is required. Tables or figures not the direct work of the student need to be attributed appropriately and cited in the figure legend. This comes up when the student is one of the authors on a multi-author publication.

• Compatible with the format used for the comprehensive exam, the following fonts would be acceptable: Arial, Helvetica, Palatino Linotype, Georgia, Times New Roman, and Cambria.

• Headings format will be: Major (primary) headings (all Caps-Left Justified), Secondary headings (Bold, Left Justified), Tertiary Headings (Italicized-Left Justified)


Departmental funds cannot be used for preparation of the thesis or figures in the thesis; however, figures already prepared for publication may be used and paid for from grants.

In March 2008, the Graduate College addressed the issue of thesis and dissertations released into the public domain upon a student’s final deposit to the Graduate College. The following text, provided by the graduate College, instructs and describes how a research thesis or dissertation will be handled after a student makes his or her final deposit.
Entrance to the PhD Program with Advanced Standing

Students with Master Degrees
Students who enter the Graduate Program with a Master of Science in Biochemistry or similar experience usually will have met some of the requirements for the PhD program and may be able to enter with advanced standing.

After consideration of the student’s background, achievements, interests, and performance on placement examinations (if indicated), the Director of Graduate Studies will suggest a tentative plan of study. This program may include rotations through one or more research laboratories. As soon as is advisable, the student will select a thesis advisor, start thesis research, and take the Comprehensive Examination. The student and the thesis advisor in consultation with the Director of Graduate Studies will formulate the final plan of study and schedule the Comprehensive Examination.

For students filing research theses or dissertations

By submitting this thesis or dissertation to the Graduate College with the First Deposit Checklist, I am not making any decisions about later dissemination of my work. At the time of Final Deposit, I understand that I will be making the thesis or dissertation available to University Libraries for shelving, circulation to approved borrowers, and permanent archiving, or for posting on the Iowa Digital Library if my thesis is submitted in electronic form. I understand also that it will be made available to ProQuest/UMI for electronic distribution according to more detailed instructions that I provide at the time of submission.

If any of the foregoing is unacceptable because you are preparing books, research articles, or patents, you may wish to consider asking the Graduate College for an embargo of your thesis or dissertation.
U2G Fast Track PhD Students

The U2G Fast Track PhD program in the Department of Biochemistry allows high achieving students to take PhD coursework early and have the potential to accelerate the progress of extremely able students toward the completion of the PhD. Fast Track admits are considered full members of the Biochemistry PhD program. During the students senior (undergraduate) year they will complete research rotations in three distinct Biochemistry laboratories (refer to pg 4) as well as consult with the Directors of Undergraduate and Graduate Studies to determine coursework that completes their undergrad requirements and gives the student a head start on PhD requirements. The Graduate College allows 6-12 (no more than 12) coursework credits to be cross-credited. U2G students will be placed in a lab prior to their first full year of graduate school and will then be on the same schedule as 2nd year graduate students.

MD/PhD Students (MSTP)

Students in the combined MD/PhD program will normally begin full-time graduate study after the first two years of medical school. Students will have the opportunity to tailor their curriculum to take courses that enhance their educational goals. They are expected to take a combination of graduate level courses, seminar courses, and topic based courses that have been divided into one hour modules. Thirteen hours of the coursework for all MD/PhD students includes:

Three hours of Biophysical Chemistry

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC:5241</td>
<td>Biophysical Chemistry I*</td>
</tr>
<tr>
<td>BIOC:5242</td>
<td>Biophysical Chemistry II*</td>
</tr>
</tbody>
</table>

*This course can be taken as individual one hour modules (BIOC:5244, 5246,5248)

Three semesters of graduate seminar

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC:5282:A01</td>
<td>Biochemistry Seminar</td>
</tr>
<tr>
<td>BIOC:5282:A02</td>
<td>Biochemistry Seminar</td>
</tr>
</tbody>
</table>

Four hours of Molecular or Cellular Biology

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMED:6215</td>
<td>Transcription RNA</td>
</tr>
<tr>
<td>MMED:6225</td>
<td>Growth Factor Receptor Signaling</td>
</tr>
</tbody>
</table>
Thirteen hours of non-research based coursework, including the courses needed to meet the requirements listed above, are chosen from current course offerings in the Department of Biochemistry and other departments across campus.

Also, students must register for the seminar course, MSTP:8512 MSTP Clinical Connections for four semesters. Since the research component of the combined program should be completed in three years, the Comprehensive Examination should be taken at the end of the second semester, but no later than the start of fall semester of the second year of graduate study. Although not required, it is recommended that students participate in laboratory rotations even if they are abbreviated. These can be worked out through consultation with the Director of Graduate Studies and the Director of the MD/PhD program. These students should participate in the research programs offered the summer before starting medical school and in the summer between their first and second year of medical school.

The following list of pre-clinical courses from the MD curriculum will be included on the PhD Plans of Study of MSTP students. The courses constitute a total of 30 semester hours.

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MED:8123</td>
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</tr>
<tr>
<td>MED:8124</td>
<td>8</td>
</tr>
<tr>
<td>MED:8133</td>
<td>7</td>
</tr>
<tr>
<td>MED:8224</td>
<td>7</td>
</tr>
<tr>
<td>ACB:8101</td>
<td>5</td>
</tr>
</tbody>
</table>

32 hr
Master’s Degree Programs

Candidates for the Master of Science Degree may enter the program in two ways. A student may choose to take the MS degree without a declared intention to pursue the PhD degree (formal MS degree), or a student may withdraw from the PhD degree program to complete the MS (interim MS degree).

Formal Master of Science Degree
The Biochemistry Department offers a two-year research-oriented program for the Master of Science degree. To enter the MS program, the student must find a faculty sponsor who will agree to provide laboratory space and stipend support. No teaching assistant duties will be required of the MS student and any tuition or stipend support must be paid either by the student or from the research grant of the faculty sponsor. In contrast to the PhD program, no formal comprehensive examination or laboratory rotations are required for the MS degree. The following courses, or their equivalent, are required. A minimum of 32 semester hours is required for the MS degree.

The First Year
- Three hours of Biophysical Chemistry (although typically Biochemistry students take 6 hrs)
- Eight hours of Biochemistry Research
- Four hours of Molecular or Cellular Biology (although typically Biochemistry students take 6-8 hrs)
- Three hours of Graduate Seminar
- Principles of Scholarly Integrity/Responsible Conduct of Research

Additional hours of coursework are chosen from current course offerings in the Department of Biochemistry and other departments across campus. An example of a typical first year curriculum is shown below:
### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC:5261</td>
<td>Research Techniques</td>
</tr>
<tr>
<td>BIOC:5241</td>
<td>Biophysical Chemistry I*</td>
</tr>
<tr>
<td>BIOC:5282:A01</td>
<td>Biochemistry Seminar</td>
</tr>
<tr>
<td>BMED:5207</td>
<td>Principles of Molecular &amp; Cellular Biology</td>
</tr>
</tbody>
</table>

*This course can be taken as individual one hour modules (BIOC:5243, 5245, 5247)*

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC:5261</td>
<td>Research Techniques</td>
</tr>
<tr>
<td>BIOC:5242</td>
<td>Biophysical Chemistry II*</td>
</tr>
<tr>
<td>BIOC:5282:A01</td>
<td>Biochemistry Seminar</td>
</tr>
<tr>
<td>MMED:6215</td>
<td>Transcription RNA</td>
</tr>
<tr>
<td>MMED:6227</td>
<td>Cell Fate Decisions</td>
</tr>
<tr>
<td>MMED:6226</td>
<td>Cell Cycle Decisions</td>
</tr>
</tbody>
</table>

*This course can be taken as individual one hour modules (BIOC:5244, 5246, 5248)*

The following courses qualify to meet the Molecular and Cell Biology requirement.

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMED:6215</td>
<td>Transcription RNA</td>
</tr>
<tr>
<td>MMED:6216</td>
<td>Chromatin Structure and Disease</td>
</tr>
<tr>
<td>MMED:6217</td>
<td>Epigenetics, Cancer and Mouse Models</td>
</tr>
<tr>
<td>MMED:6225</td>
<td>Growth Factor Receptor Signaling</td>
</tr>
<tr>
<td>MMED:6226</td>
<td>Cell Cycle Control</td>
</tr>
<tr>
<td>MMED:6227</td>
<td>Cell Fate Decisions</td>
</tr>
<tr>
<td>MMED:6220</td>
<td>Mechanisms of Cellular Organization</td>
</tr>
<tr>
<td>PCOL:6208</td>
<td>G Proteins &amp; G Protein-Coupled Receptors</td>
</tr>
<tr>
<td>PCOL:5204</td>
<td>Basic Biostatistics &amp; Experimental Design</td>
</tr>
<tr>
<td>BMED:5205</td>
<td>Practical Bioinformatics</td>
</tr>
</tbody>
</table>
The Second Year

A typical second year curriculum might include:

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Course</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC:5282:A01</td>
<td>Biochemistry Seminar/Doctoral Proposal</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td>BIOC:7292</td>
<td>Research Biochemistry</td>
<td>8</td>
</tr>
<tr>
<td>BMED:7270</td>
<td>Scholarly Integ/Resp Conduct of Rsrch I</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Course</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td>BIOC:7292</td>
<td>Research Biochemistry</td>
<td>9</td>
</tr>
<tr>
<td>BMED:7270</td>
<td>Scholarly Integ/Resp Conduct of Rsrch I</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Progress in the program will be monitored at least annually by a Thesis Committee of three members of the Biochemistry faculty, not including the student’s research advisor. The student should submit a list of at least four names of faculty members to the Graduate Student Advisor by midterm of the spring semester so that a committee can be constituted and an advisory meeting held before the end of the second year. The research for the MS thesis ideally should be completed during the second year. The final MS examination takes the form of a seminar presented to the department, followed by a meeting with the thesis committee.

Interim Master of Science Degree

This program is for the graduate student who elects or is advised by an Advisory or Comprehensive Committee to prepare a MS thesis. The decision to enter this program should be made no later than the end of the fourth semester of graduate work. The interim Master of Science candidate will defend the MS thesis before a committee of five members, selected in the same manner as the PhD committees. If the student begins the MS program at the end of the first year, the committee should be appointed before the start of the next fall semester.
The expectation is that the student will complete the requirements for the interim MS degree within approximately 12 months. At the conclusion of the MS thesis defense, the committee will determine if the requirements for a MS degree have been met and recommend to the biochemistry faculty whether the student should continue in the PhD program. If the student enters the PhD program after obtaining an interim MS degree, the student should take the Comprehensive Examination as soon as possible. During the second year of study and while working toward an interim MS degree, the student should satisfy the course requirements for the MS and is advised to take other courses so that the course requirements for the PhD are met by the end of the fourth semester.

Other Information

Primary Financial Support

Normally all PhD students are supported by a yearly stipend that is paid monthly. Tuition is also paid. Any student not so supported will be clearly informed during the correspondence before admission. Students will be supported for the time required to finish the PhD degree; however support beyond five years is contingent upon evidence of satisfactory progress on the dissertation research. Continuation of funding beyond the fifth year requires a written recommendation to the Head of the Department (with a copy to the Departmental Administrator) by the Thesis Committee, and the approval of the majority of faculty members. Compliance will be monitored by the Departmental Administrator. In cases of unsatisfactory progress, the department may reduce the level of support or even terminate the candidacy.

Although students are appointed as half-time Research Assistants, it is expected that students will devote full-time to course work and research. Students should not be employed in other jobs. If a student faces severe financial hardship, the Graduate Student Advisor or Department Head should be informed so that special arrangements can be made. In accordance with the University’s policy on Conflict of Interest for faculty and staff, a student may consult, or engage in activities related to the profession, for up to nine days per year. These activities should be reported to the Departmental Administrator.

Paid Leave

PhD students are entitled to University-designated holidays and up to (15) working days per fiscal year of absences without pay deduction. All paid leave must be scheduled with approval of the mentor.
PhD students may be absent for the University-designated holidays unless the mentor specifically requires the PhD student to work. At such time, the mentor and the PhD student shall schedule alternate paid time off. Mentors will make an effort to minimize holiday work for PhD students and if they require work on a holiday, shall provide PhD student(s) with no less than thirty (30) days written notice, whenever feasible.

**University-Designated Holidays:**

- New Year’s Day
- Dr. Martin Luther King, Jr.‘s Birthday
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Friday after Thanksgiving Day
- Christmas Day
- A day before or after Christmas Day

Monday will be recognized as a holiday for all holidays occurring on a Sunday and Friday for all holidays occurring on a Saturday. Any further vacation time should have the additional approval of the DEO/Director, which will be granted without financial support.

**Sick Leave**

PhD students may be absent due to illness without loss of pay not to exceed (18) days during a twelve month appointment.

If a PhD student has exhausted paid sick leave due to illness, they may request an unpaid leave of absence which will be granted at the sole discretion of the Program and mentor, and subject to any relevant policies of the Graduate College.

**Family Illness Leave**-PhD students may use available sick leave for care of and necessary attention to ill or injured members of the immediate family or for parental leave including birth and adoption.

**Bereavement Leave**-PhD students may use available sick leave for three work days when a death occurs in the employee’s immediate family.

**PhD programs may grant additional paid leave**-Such leaves may be granted provided the Program and mentor determine that the PhD student is able to meet the time and effort
obligations reflected in the percentage of appointment over the full term of the student’s appointment.

**Unpaid Leave of Absence**
A PhD student may be granted an unpaid leave of absence during the term of their appointment, upon request to and at the sole discretion of the Program and mentor. The Program and mentor shall authorize leave requests in accordance with the provisions of the Family Medical Leave Act of 1993 for qualifying individuals.\(^6\)

**Departmental Equipment**
Several pieces of equipment owned by the department are available for use by students, staff and faculty. Faculty, staff, or students familiar with these items of equipment provide training for their uses. Report any Breakdowns to the faculty member in charge, or the Departmental Administrator so that repairs may be made. Much of the equipment and materials in the department have been procured through grants funded for specific purposes. Students must consult with the responsible faculty member when they wish to use instruments and/or facilities not clearly identified as departmental property.

**Departmental Reading Room**
This room is available on a 24-hour basis and is accessed by ID card. There is no librarian, so please return books to their correct place immediately after use. No books or journals may be removed from the library at any time except for photocopying. Food is not allowed in the reading room.

**Ethics**

**Policy on authorship of publications** (taken from Virginia Commonwealth University, Dean S. G. Bradley). To merit authorship, an individual should: contribute significant ideas and experimental design to the project, take part in the actual experimentation and data analysis, and be able to present and defend the work at a scientific meeting (exceptions may be made when one author has carried out a unique, sophisticated study or analysis). In general, the principal author is the first author, and a laboratory director is listed last. Other authors are listed in descending order of their contributions to the research being reported. The submitting

author is usually the first or last author listed. Students should also read, “Ethical Obligations of Authors” in *Accounts of Chemical Research* 18(12), pp. 356-357 (1985).

**Academic misconduct.** Any form of cheating or plagiarism in respect to curricula requirements is grounds for dismissal. Plagiarism is taking another’s ideas, words, or creative works and presenting them as your own, or presenting them without proper attribution (giving credit to the original source).

**Sexual Harassment**
The University of Iowa has clearly stated guidelines and regulations pertaining to sexual harassment. Refer to the University of Iowa Operations Manual-Chapter 4-Sexual Harassment. This is required reading for all incoming students.

**Departmental Committees**
Graduate Students select representatives to attend Graduate Students Senate meetings as well as spearhead student committees (Graduate student recruitment weekend, and student-invited seminar committees).

**Student Recourse**
In the event that a student is failing to meet departmental standards, the department will notify the student of this fact in writing and specify the deficiencies. If the student does not remedy the deficiencies within a reasonable specified time, the student may be dismissed. If the student judges that this or any other departmental action is improper, the student has a right to request a review. If the student wishes to appeal the decision, the Head of the Department should be contacted to arrange the appeal process following the rules of the Graduate College. A document on Academic Grievance Procedure is available in the departmental office and in the Graduate College, 205 Gilmore Hall.

**Safety and Accidents**
As soon as students are assigned to a laboratory, they should become familiar with the location and use of fire extinguishers, safety showers, fire blankets, and fire hoses. Students should seek advice concerning hazardous reactions or procedures. Safety goggles, safety shields, lab coats, disposable gloves, film badges and other personal protection devices should be used when appropriate.
Laboratory accidents resulting in injuries requiring treatment must be reported at once to the Departmental Administrator. If the injury is not reported promptly, it may be difficult to receive compensation for the costs of treatment. See the Biochemistry Departmental Administrator for details about the University policies on safety and accidents.

**Security**
All members of the department share the responsibility for keeping laboratories secure against accidents (to people who may wander into a research area) and against pilferage. The core laboratory doors are locked 24/7. If you need access, please ask Biochemistry Main Office (4-403) for assistance.

**University Policies**
A booklet outlining what is expected of a student at The University of Iowa can be obtained from the Office of the Registrar. It is titled *Policies and Regulations Affecting Students*. The Graduate College posts on their website the *Manual of Rules and Regulations of the Graduate College* which contains information about registration and examinations.

**Changing Graduate Subprograms**
A student wishing to change subprograms should follow the steps outlined below, in the sequence in which they are presented, as relevant. Note that the final step, completing a Request for Change of Graduate College Status form for the Graduate Admissions, must be completed with approval and oversight from the Office of Graduate and Postdoctoral Studies (OGPS).

- The student should have a discussion with the DGS/Director of the subprogram the student is proposing to leave. The student should have a clear, compelling rationale for the proposal to change subprograms. “Compelling rationale” could include a strong realization and conviction that the student prefers a different field of biomedical science or has convincing career opportunities in a different field of biomedical science. Such rationale will not include unhappiness with particular subprogram requirements, difficulties with the comprehensive exam, or debate about the relative merits of different subprogram requirements. The student should obtain permission from the DGS/Director (of the subprogram the student is leaving) to change subprograms.

If such permission is not granted, and the student wishes to continue pursuing the request to change subprograms, the student’s request will be evaluated by the
subprogram’s Executive Committee. The Executive Committee will render a decision. If the issue remains unresolved, the student’s request will be evaluated by the CCOM Associate Dean of Graduate and Postdoctoral Studies, and a final decision will be rendered.

- The student should have a discussion with the DGS/Director of the subprogram the student is joining, and should obtain permission from that DGS/Director to join that subprogram.

If such permission is not granted, and the student wishes to continue pursuing the request to join that subprogram, the student’s request will be taken up by the destination subprogram’s Executive Committee. If the Executive Committee upholds the decision to not grant permission to the student to join the subprogram, the student will not be permitted to join that subprogram.

- For students who are still in the first-year rotation phase of their training, the student should have a discussion with the relevant DGSs/Directors (the one for the subprogram the student is leaving and the one for the subprogram the student is joining) about what will be counted for lab rotations, what remains to be completed for lab rotations, and the optimal time for the subprogram change.

In the case of first-year rotation students, there may be funding implications of changing subprograms – e.g., the slot allocation for the student/subprogram may be affected, the student may be on a training grant, etc. Such financial implications should be discussed amongst the relevant DGSs/Directors and CCOM Associate Dean of Graduate and Postdoctoral Studies, and a consensus should be reached.

Note: The policies articulated herein for changed subprogram’s in the BSP are not meant to address or otherwise cover situations where students are having difficulty affiliating with a lab home. The responsibility for placing students in a lab home lies with the subprogram into which the student initially matriculated. Changing subprograms should not be used as a mechanism to solve lab placement problems. Subprograms have the prerogative to place students in labs of PIs outside the subprogram, with appropriate agreements, co-mentoring arrangements, and full understanding by all relevant parties (so-called “subcontracting”). Such placements need not require the student to change subprograms.
• When relevant (for students who are already affiliated with a PI/lab), the student should obtain permission from the student’s mentor. The student may be staying in the same lab with the same mentor, or may be changing mentors/labs. In either case, the student should inform all relevant parties and obtain permission from all relevant parties.

Per Office of Graduate and Postdoctoral Studies (OGPS) and Biomedical Science Program (BSP) policies, the DEO of the supervising faculty member is required to approve lab affiliations. If a change of subprograms implies a change of the responsible DEO, the new DEO should be informed of the change, give permission for the change (if the DEO infact approves), and accept responsibility for financial backstopping of the student (per standard OGPS/BSP policy). As previously stated, situations where relevant permissions are not granted should be taken to the Executive Committee of the relevant subprogram(s), and then to the CCOM associate Dean of Graduate and Postdoctoral Studies if the matter remains unresolved.

• The student should obtain permission and approval from the CCOM Associate Dean of Graduate and Postdoctoral Studies.

• The Student should obtain a “Request for Change of Graduate College Status” form from the Graduate Admissions Office (115 Calvin Hall). The form should be completed by the student and then submitted to the OGPS office for approval. OGPS approval is required prior to submitting the form to the subprogram the student is transferring into, and then submitted to Graduate Admissions per instructions on the form.