



Integrated Program in Biochemistry
UNIVERSITY OF WISCONSIN-MADISON

Graduate Program Handbook

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1. Program Authority

1.1 Graduate School

The Graduate School is the ultimate authority for granting MS and PhD degrees at the University of Wisconsin – Madison (“University”). The doctorate of philosophy is the highest degree conferred by the University, and it is never conferred solely as a result of any prescribed period of study, no matter how faithfully pursued. Rather, a PhD is a research degree and is granted on evidence of distinctive attainment in a specific field and on ability for independent investigation as demonstrated by a dissertation presenting original research or creative scholarship with a high degree of literary skill. The Departments of Biochemistry and Biomolecular Chemistry administer a graduate degree program, the Integrated Program in Biochemistry (IPiB or “Program”) under the authority of the Graduate School. If completed successfully, IPiB’s minimum requirements meet all Graduate School requirements for conferring a PhD (or MS) degree. The Program is designed to prepare students for outstanding professional careers in research, teaching, and science communication.

1.2 IPiB Faculty and Committees

Program authority to set degree requirements beyond the minimum required by the Graduate School lies with the IPiB faculty. The policies described in this handbook have been approved by the IPiB faculty as a whole, and are subject to periodic review and update. Day-to-day Program administration is delegated by IPiB faculty to the Steering Committee, whose membership is appointed by the Chairs of the Departments of Biochemistry and Biomolecular Chemistry. The Steering Committee provides guidance to students and faculty with regard to Graduate School and Program requirements, and arbitrates any requests for exceptions to Program requirements. They are aided by Program staff and related committees – Admissions and Recruiting Committee, New Student Orientation Committee (NSOC), Student-Faculty Liaison Committee (SFLC), and Examination and Certification Committee (ECC). The ECC has several specific functions in arbitrating course requirements and student committees as stipulated below.

See appendices for listings of IPiB faculty, staff, committee composition, and courses.

2. Admission to the Program

Admission into IPiB is contingent on meeting requirements set forth by the Graduate School and by the Program.

2.1 Graduate School Admission Requirements

The Graduate School web site (<http://grad.wisc.edu>) details minimum University admission standards, including expected degree achievement from an accredited institution, GPA, standardized test results, and English language proficiency.

2.2 Program Admission Requirements

- 2.2.1 Undergraduate Degree and GPA: For admission to graduate study in IPiB, a student must have completed a BS or BA degree from a recognized, accredited college or university. Candidates should have an undergraduate degree in a physical or biological science major. A minimum GPA of 3.0 (on a 4.0 scale) is required.
- 2.2.2 Background Coursework: In addition to meeting the general requirements of the Graduate School, IPiB stipulates that at least 3 semester credits (or the equivalent) of coursework in each of the following subjects is required: organic chemistry, biochemistry, physics, and physical chemistry. If any of these course deficiencies exist and the student is admitted into the Program, such deficiencies must be rectified within the first two years of graduate study. In addition, prior coursework in mathematics, biology, and genetics is strongly recommended. Upon receipt of a student's final transcript, the ECC will determine if any deficiencies exist and the Graduate Student Services Coordinator will follow up with the student with a recommended course of action.
- 2.2.3 Research Experience: Undergraduate research experience is strongly recommended.

2.3 Admission Timeline

The Program application deadline is December 1. Students are selected between January and March for admission the following September. The deadline for acceptance or declination of an offer of admission is April 15.

3. PhD Requirements for a Major in IPiB

The primary requirement for achieving a PhD in IPiB is the completion of a noteworthy intellectual contribution to biochemical research. PhD candidates are expected to do significant, original research during their degree tenure and to write a thesis based on this research. The thesis must represent a substantial effort from both the experimental and literary points of view. The purposes of all other Program requirements listed below are to ensure students have strong, broad-based background knowledge of general biochemistry so they may perform effectively and proficiently in all applications of the science, and to assess the level of student achievements with regard to Program and professional standards.

3.1 Program Course Requirements

In order to graduate with a PhD in Biochemistry from IPiB, students must fulfill the following requirements.

- 3.1.1 Rectifying Admission Deficiencies: Any deficiencies identified by the ECC in the background coursework will be detailed in writing to the student (2.2.2, above), and must be made up during the first two years of graduate study.
- 3.1.2 Required Courses: All students must complete the following course series (see 4.2 for typical timeline):
- Biochem 660: Methods in Biochemistry (2 credits)
 - Biochem / BMC 701: Professional Responsibility (1 credit)
 - Biochem / BMC 710: Exploring Biochemical Function of Macromolecules (2 credits)
 - Biochem / BMC 990: Advanced Research Seminar (see 3.3 below)
- 3.1.3 Physical and Biological Sciences Breadth Requirements: Students must complete a minimum of two additional graduate-level (600 or above) didactic or laboratory courses in order to fulfill their physical and biological sciences breadth requirements. Each course must carry 2 or more credits, and total a minimum of 6 credits.
- Appendix 10.D lists approved courses that satisfy these breadth requirements. If a student wants to meet the physical or biological sciences breadth requirement by substituting a University course not listed in Appendix 10.D, the student must petition the ECC for approval by submitting a course syllabus and a written description that *specifically* justifies how the requested substitute meets the intent of the particular Program course requirement.
- For example, the intent of the physical science breadth requirement is to familiarize students with the physical side of biochemistry. Just because a course is offered by the Chemistry Department does not guarantee it will meet this intent. A student's advisor must indicate approval of the substitution request in writing. The request will then be considered by the ECC. Approval by the ECC must be requested prior to enrollment in the substitute course.
- 3.1.4 Additional Coursework: At the discretion of a student's thesis advisor, thesis committee, or the ECC, additional remedial or advanced coursework may be recommended to enhance the student's professional training.
- 3.1.5 First-Author Publication: Students must have at least one first author or co-first author research paper describing their work that has been submitted to or published in a peer-reviewed journal. The student's thesis committee can waive this requirement under special circumstances and this will require approval by the ECC. Such circumstances might include co-authorship on a multi-disciplinary, very high profile publication.

3.2 Graduate School Minor Requirements

The Graduate School specifies that a PhD Program must be rationally unified, with courses that contribute to an organized plan of study and research. Most courses are selected from a single group embracing a principal subject of concentration, called the "major" (in this case, Biochemistry). Additional courses are selected from one or more related fields, called the "minor," to provide educational breadth. The Program course requirements for a major in Biochemistry are outlined above (see 3.1). The Graduate School minor course requirements may be satisfied by Minor Option A or Minor Option B. An average GPA of 3.00 on all minor coursework is required.

- 3.2.1 Minor Option A (Focused): requires a minimum of 10 credits in a *single* department or field of study. With the advice of a "minor advisor," the student chooses courses from the offerings of a particular University department that covers a discipline related to biochemistry (*e.g.*, chemistry, bacteriology, genetics, neuroscience, *etc.*). The specific requirements, coursework, and grades to be met are prescribed by the chosen minor department.
- 3.2.2 Minor Option B (Distributed): requires a minimum of 10 credits in one or more departments that cover a discipline(s) related to biochemistry and can include coursework in the major department.

As a matter of course, many IPiB students select Minor Option B to fulfill the Graduate School minor requirements because IPiB allows (nearly) all coursework credits taken for the major (see 3.1) to count toward the Option B minor *in addition* to counting toward the major requirements. In other words, Biochem 660 (2 credits), Biochem / BMC 701 (1 credit), Biochem / BMC 710 (2 credits), the physical sciences breadth requirement (2+ credits), and the biological sciences breadth requirement (2+ credits) may be combined to provide all 10 credits for an Option B minor.

- 3.2.3 University Coursework not Applicable to the Minor: The Graduate School stipulates that the 10-credit minimum for Option A or B minor requirements can only be fulfilled by advanced (300 level or above) didactic or laboratory courses. Seminar courses (*e.g.* Biochem 901 through 945) and advanced research study (Biochem / BMC 990) credits are not applicable toward minor requirements.
- 3.2.4 Non-University Coursework: With the approval of the ECC and the Graduate School, students may receive graduate-level transfer credits, applicable toward a Biochemistry major or Option B minor, for courses taken at another institution.

If a student believes that a course he or she has taken at another institution is equivalent to one of the IPiB basic courses or an Option A or B minor course, the student should contact the professor in charge of the IPiB course to request credit for the equivalent course. With the written approval of the IPiB course

professor, the student may submit a request for a credit transfer / substitution to the Graduate Student Services Coordinator. The ECC will make the final determination on the course substitution.

The maximal credit toward the major or Option A or B minor that will be given for courses taken elsewhere is 6 semester credits.

- 3.2.5 Certification of the Minor: To ensure chosen minor coursework meets the requirements of the Graduate School, a student must file a proposal for their minor program with the Graduate Student Services Coordinator before his or her preliminary examination can be scheduled. The First Thesis Committee Meeting Form is used for this purpose.

Usually, the proposed coursework is discussed and the form is completed during a student's first thesis committee meeting (Section 3.8.1). To certify a Minor Option A, the form must include the signatures of the thesis advisor and a representative of the minor department (minor advisor). For Minor Option B, the form must receive approval from the thesis advisor and one of the ECC Co-Chairs.

3.3 Seminar Requirements

- 3.3.1 Continuous Seminar Enrollment: After completing one semester of graduate work, students must register for an advanced Biochemistry, Biomolecular Chemistry or other approved seminar course each fall and spring semester of each academic year. Letter grades (A - F) are assigned in semesters when students present a seminar, and grades of S (Satisfactory) or U (Unsatisfactory) are assigned in semesters when students attend, but do not give a seminar.
- 3.3.2 Required Seminar Presentations: During their graduate careers, students are required to present a minimum of three seminars in advanced seminar courses and receive a grade of B or better in each seminar.

- One literature seminar will be given in an advanced seminar course that is related to the student's research area.
- One literature seminar will be given in an advanced seminar course that is unrelated to the student's research area. The goal of this seminar is to develop a broader base of knowledge, and to become familiar with different scientific approaches.

A good rule of thumb for students is to choose a seminar topic that they do not need to know to perform their own research project well. In addition, students should be accessing journals of general significance that they may not necessarily read regularly for their own research.

- One seminar will be presented on their research progress (“IPiB Seminar”) in the interdepartmental graduate seminar (currently BMC 901 / Biochem 729). This will generally occur in the fourth or fifth year of graduate study. Students are required to enroll for two semesters in this seminar series, even though they are required to present a seminar only once. Students may present more than once, especially if they wish to gain more public speaking experience.

The research seminar should take about an hour and cover background literature relevant to the student’s research, research progress to date, and future research plans. About half of the seminar (20 to 25 minutes) should be devoted to background, such as literature relevant to the student’s research, past research in the lab relating to the student’s project, etc. The next half (about 20 to 25 minutes) should describe the student’s research progress (experiments, data, techniques, etc.), and about 5 minutes should be devoted to future research directions and plans. As usual, the student should allow 10 minutes at the end of the seminar for audience questions.

Some students who are supported by fellowships or training grants may have additional seminar requirements that cannot replace those existing in IPiB. However, a training grant presentation may count toward the student’s “inside” seminar presentation requirement.

The form that needs to be completed, signed by the seminar instructor, and returned to the Graduate Student Services Coordinator is found on the IPiB website under “Current Students” and “Download Forms.”

- 3.3.3 Seminar Substitution: A student may petition the ECC to substitute enrollment in an equivalent University advanced seminar course in lieu of those offered by the Departments of Biochemistry and Biomolecular Chemistry if participation in that course seems especially appropriate to the student’s course of study. The IPiB seminar requirement may not be substituted or waived. The Program presentation requirements (two seminars) can be fulfilled through a variety of campus courses and seminar series. These may include, when applicable, series sponsored by training grant programs, such as MBTG, BTP, CBIT, Biophysics, and Virology.
- 3.3.4 Biochemistry 799, Practicum in Teaching: In lieu of one required seminar *presentation* (Section 3.3.2), students may, with the instructor’s consent, enroll in Biochemistry 799 (1 credit). This course provides an opportunity to plan and deliver a graduate-level instructional lecture in Biochemistry 660, and can fulfill the student’s “inside” seminar requirement.
- 3.3.5 Biochemistry 729, Practicum in Undergraduate Teaching: In lieu of one semester of required seminar enrollment, a student may, with the instructor’s and thesis advisor’s consent, enroll in Biochemistry 729 (1 credit).

Biochemistry 729 provides an opportunity to lead a seminar section of Biochemistry 651, in which our undergraduate Biochemistry majors present a seminar on a research paper. Participation in this course provides graduate students with an opportunity to gain additional teaching experience and undergraduates with help in improving their presentation skills. Participation in 729/651 does NOT count toward a required seminar *presentation* or the teaching requirement, but does fulfill the requirement for continuous seminar enrollment.

3.4 Course Load

- 3.4.1 Graduate School Minimum Credit Requirement: For a PhD, the Graduate School requires completion of at least 32 graduate-level credits (16 credits for the MS degree) taken at the University. Transfer credits from another institution do not count toward this requirement. Typically, this necessitates the equivalent of 4 semesters of research and coursework. This requirement cannot be satisfied by summer sessions or part-time attendance only. Acceptable work includes all Program coursework, coursework for the minor, seminar credits, and research credits.
- 3.4.2 Course Load for Non-Dissertators: The Graduate School requires non-dissertators to register full-time for 12 credits of graduate-level courses each fall and spring semester and for 2 credits in the 8-week summer session until all major and minor coursework requirements are met. (Students who are trainees or fellows may need to register for more than 2 credits, depending on the terms of their traineeship or fellowship.) All credits must be in science courses (with a possible exception for international students who require English courses) and may include any didactic courses related to IPiB, as well as research, seminars, and courses taken for the minor.
- 3.4.3 Dissertator Status: Students should achieve dissertator status by the end of the 4th semester if they:
- registered for at least 12 credits per semester and 2 credits each summer (32 credits minimum)
 - completed all required coursework including the minor, but excluding seminar participation and the teaching requirement
 - passed the preliminary examination
- 3.4.4 Course Load for Dissertators: Dissertators should register for 2 credits of advanced research (990) and 1 seminar credit each fall and spring semester and for 3 credits of research each summer session until completion of the degree. Dissertators exceeding 3 credits per session will lose dissertator status and be assessed segregated fees at the non-dissertator rate.
- 3.4.5 Continuous Registration: Once a student's signed preliminary warrant is filed, the student must be continuously registered as a dissertator *through* the day of filing his or her PhD thesis with the Graduate School. For this purpose,

registration in a given academic term extends up to the first day of classes of the following term. If a student delays filing his or her thesis until or after the first day of classes of a given academic term, the student must register for that term. Those who fail to maintain continuous registration are subject to a penalty of 12 times the current per credit fee (dissertator rate), and are personally responsible for payment of this penalty.

3.5 Grades

- 3.5.1 Cumulative GPA: The Graduate School requires all MS or PhD students to achieve a cumulative grade point average (GPA) of 3.0 (B) or better in all lecture and laboratory courses taken at the University. If a course is repeated because of an unsatisfactory grade, both grades are included in the cumulative GPA. Grades in research and advanced seminars, unless letter-graded, are not included in this average.
- 3.5.2 Minimum Grades for Major: The minimal acceptable grade in any Biochemistry, Biomolecular Chemistry, or other approved course applied toward IPiB Course Requirements (3.1, above) is a BC. Any grade of C or lower requires repeating the required course and receiving a grade of BC or better.
- 3.5.3 Satisfactory Progress: Success in the PhD program is determined by adequate progress in both coursework and research. Student coursework is determined by program requirements as well as by the student's thesis committee. In many instances, the committee will suggest additional courses that aim to help the student in his or her research work.

Satisfactory progress in the lab is determined by the student's thesis advisor. This includes, but is not limited to, working regular hours in the lab as set by the thesis advisor, participating in lab-related activities, and keeping laboratory notebooks. If a student is not making satisfactory progress, the thesis advisor will consult with the student's thesis committee and the student may be dismissed from the program.

- 3.5.4 Grade Synopsis: PhD-level coursework requirements for the major and minor are aimed at preparing a student for a career-long profession of advanced study and are not intended to be remedial. A student cannot be "certified for the PhD" (see: 3.8.2) until all required coursework is completed with graded achievements that meet or exceed the minimum standards for the major, the minor, and the Graduate School cumulative GPA.

3.6 Teaching

- 3.6.1 Teaching Requirement: Program candidates for the PhD degree must participate in two semesters of teaching as part of their training. Teaching

consists of assisting in an assigned Program laboratory or lecture course, usually in the second and third years of graduate study.

The call for graduate assistants' (GAs') teaching preferences is issued in early May for the upcoming academic year to all second- and third-year students who need to fulfill their teaching requirements. Assignments are ideally confirmed by mid-June. Students are encouraged to talk with the instructors of courses for which they are interested in serving as a GA, and to share any preferences with the Graduate Student Services Coordinator.

- 3.6.2 Waiver of Teaching Requirement: Students with prior teaching experience while enrolled in another *English-speaking graduate* program may petition the Program's Graduate Teaching Assignment Committee (GTAC) for waiver of one of the two semester teaching requirements. Such application must be made by February 1 of the student's first year in IPiB. Only one of the two semester requirements may be waived.

3.7 Thesis Advisor & Thesis Committee

- 3.7.1 Thesis advisor: Every graduate student must have an IPiB faculty thesis advisor. The thesis advisor advises the student about coursework, supervises the student's research, and acts as a mentor to the student through the student's graduate career. The thesis advisor must approve the student's coursework before registration for a given semester and must also approve any subsequent changes to it.
- 3.7.2 Thesis Committee: A PhD thesis committee is composed of at least five graduate University faculty members, including the thesis advisor. The thesis committee is empowered by the Program to advise the student about certification, administer the preliminary examination, oversee yearly progress reports, approve thesis composition, and conduct the final PhD examination.

Before the third semester of graduate study, students, in consultation with their thesis advisors, should select *four* members of the graduate University faculty to serve on their thesis committee. The Graduate School requires at least one of the student's thesis committee members to be from outside of the IPiB Program, and IPiB program requires at least two IPiB faculty members in addition to the thesis advisor. Students choosing Minor Option A typically include the minor advisor among their selected faculty.

It is the student's responsibility to seek and obtain verbal approval from their *four* selected faculty to serve on this committee. The ECC will designate which committee member from the Program shall serve as Chair for the preliminary exam. All other committee meetings are usually chaired by the thesis advisor. Committee composition must be approved by the ECC prior to a student's First Review Meeting (see 3.8.1).

- 3.7.3 Committee Changes: Typically, a thesis committee is appointed for the duration of a student's degree program. Temporary or permanent committee changes will be considered by the ECC if a written request, signed by the thesis advisor and the student, is submitted to the Student Services Coordinator for ECC consideration. Any requested changes to the committee makeup require prior verbal approval from the substitute member.
- 3.7.4 Challenge to the Student: No one has more at stake in a graduate program than the student. To obtain a quality education, the student must play an active role in choosing a concerned, knowledgeable committee, scheduling the meetings, informing the membership, and designing a challenging, high-quality learning program.
- 3.7.5 Challenge to the Thesis Committee: The thesis committee is responsible for ensuring that the student's formal education has the proper breadth and foundation. Beyond this, the committee should aid in the development of an outstanding, rigorous plan of advanced study, including providing guidance for seminal research in an area of scientific importance. The members should be knowledgeable about courses and other educational opportunities so they may play an active, thoughtful role in the development and evaluation of a student's education. They should be available for consultation outside of scheduled meeting times, and responsive to the scheduling of required student meetings.

3.8 Examination & Review Procedures

- 3.8.1 First Thesis Committee Meeting: The thesis committee must be convened prior to the beginning of the second academic year to evaluate the student's performance in coursework and discuss his or her research project. The thesis advisor and at least 3 committee members must be present at this meeting. In the event any committee member should miss this meeting, the student must contact him or her within one week for an individual reprise of the meeting content, and to obtain the requisite signatures.

The goal of the first meeting is to introduce the student's research area and outline the goals. The second meeting, the preliminary examination, is the proper forum to discuss the route to those goals.

One week before the first meeting, the student prepares a brief outline of the proposed research directions and distributes it to his or her thesis committee. The meeting is typically informal, but it provides an excellent opportunity for the committee members to learn about the student and how they might contribute to his or her career. An outcome of the meeting should be a completed First Thesis Committee Meeting Form (3.2.5), signed by all five committee members.

3.8.2 Year 2 Preliminary Examination:

Exam Expectations: Preliminary or qualifying examinations are a standard feature of PhD Programs. The process serves to evaluate whether a student meets the expected professional standards for educational acumen, scientific background, aptitude for research, and literary competency. The process focuses attention on a candidate's proposed research and provides a realistic appraisal of the likelihood for Program completion.

Exam Timing: IPiB students are expected to complete the preliminary exam process before the end of their fourth semester in residence. (See Section 4.2.6 for preliminary exam scheduling procedures.) Exceptions to the typical exam schedule require ECC approval.

Written Proposal: Students must prepare a written research proposal and present it to their thesis committees for evaluation *no less than two weeks before* the date of the preliminary exam. Students may consult with their thesis advisors in planning the proposed research and during proposal writing. However, the thesis advisor should not proofread the proposal. The proposal is to be prepared in a format similar to that for proposals to the NIH. The maximum length is twenty pages of *double-spaced* text (12 pt. font), *excluding* title page, figures, and references. A good proposal could be shorter.

An electronic copy of the proposal must be given to the Student Services Coordinator when distributed to the thesis committee, and becomes part of the student's permanent record. The thesis committee will have the option to postpone the oral exam if the written research proposal has significant deficiencies.

Title: Should be short and informative.

Summary: In one page, the summary portion defines the problem and objectives (“Specific Aims,” in NIH jargon) of the proposed research. A brief description of the experimental approach and indication of why the expected results should represent a significant advance in the field should be included. If necessary, the summary section may exceed one page as long as the overall proposal (excluding title page, figures, and references) does not exceed twenty pages

Background: The current knowledge in the area should be concisely reviewed within the context of the research problem that will be defined. The student should convey how the research proposal represents a logical and important extension of current knowledge. This section should demonstrate familiarity with, and critical analysis of, the literature in the area. The literature citations should be no longer than two to four pages. The

experimental proposal should flow naturally from the final paragraph of this section.

Proposed Research: This section should be organized according to the “Specific Aims,” describing in turn how each aim will be approached. The student should explain the objective and rationale of the designed experiment, the results expected from the experiment, and how the results will be interpreted. Any preliminary data or results of feasibility studies can be included in this section or in a separate section before this section. Students should be as specific as possible about how the experiments will be carried out, but the details can be elaborated upon during the preliminary exam. Problems inherent to the experimental approach should be discussed, as well as alternate approaches to be tried if one approach fails. From the anticipated results, what new experiments will follow? Students should indicate what specific aims are dependent upon successful resolution of earlier objectives and which are independent, and the level of priority that should be devoted to each objective. This should be the major section of the proposal, approximately six to eight pages.

Possible Extensions and Importance (Optional): In one or two paragraphs, students may wish to indicate new approaches or important extensions that might stem from the proposed research. For example, a discussion of the more speculative ramifications of the research or suggestions of grandiose experiments that might be possible after accomplishment of limited (time-restrained) objectives as a graduate student might be included.

Priorities / Timeline: Students should make clear in what order they plan to pursue the proposed experiments and how long they expect each stage of the research to take.

Oral Preliminary Examination:

At the beginning of the oral examination, the committee chair reiterates faculty and student procedures, and ensures that members from outside IPiB are fairly apprised of Program expectations. The student distributes the appropriate evaluation forms, as provided by the Student Services Coordinator. The student gives a 20-minute, *uninterrupted* oral presentation of the research proposal to the committee, and then responds to committee questions. The thesis advisor does not participate in the question period, except as requested by other committee members, and then only to provide brief points of clarification. The oral examination phase may not exceed two hours.

The student should not attempt to cover every detail of the proposal, as that would be difficult to do in 20 minutes and would be redundant since the

members of the thesis committee will have read and thought about the proposal. Rather, the student summarizes the most significant and interesting features of the proposal to generate enthusiasm for the research project.

The written proposal and oral presentation serve as a starting point for further discussion. The aim of the discussion is to explore not only in-depth knowledge of the specific proposal topic, but also broader knowledge of biochemistry. Examination questions that deal with breadth of knowledge in biochemistry can be drawn from IPiB coursework, and might include discussion of experimental evidence and the practice and theory of techniques.

After the exam is completed, the student is excused and the committee members complete evaluation forms addressing the following criteria:

- A. Quality of the written proposal
- B. Quality of the oral presentation
- C. Ability to answer questions
- D. Knowledge of background material
- E. Quality and quantity of work accomplished so far
- F. Experimental design
- G. Defense of research plan
- H. Feasibility of work completion within a reasonable timeframe

The committee takes a non-binding vote on whether the student should pass, conditionally pass, or fail the preliminary examination. Then the committee discusses the candidate's exam in depth, and formally recommends a pass, conditional pass, or fail.

The committee also provides an overall written evaluation of the exam, summarizing the student's strengths as well as areas for improvement. If the committee recommends a conditional pass or failure, the committee must summarize the reasons for this recommendation. The written evaluations are compiled by the committee chair, with input from committee members, prior to adjournment of the meeting.

Students who fail the preliminary exam have until the end of June of the following year to repeat the exam in its entirety. Students who fail the preliminary exam twice cannot continue in the IPiB PhD Program.

Students who receive a conditional pass will be given specific goals and a timeline by which those goals must be met. The student's progress is reviewed at the next annual committee meeting or as prescribed by the thesis committee. At any time, failure to achieve satisfactory progress may lead to dismissal from the Program.

The evaluation is discussed by the student and the thesis advisor and then given to the Student Services Coordinator to become a part of the student's record.

- 3.8.3 Preliminary Warrant: To initiate the preliminary exam procedure, the student should complete and submit to the Student Services Coordinator a "Request for Preliminary Warrant" at least four weeks before the preliminary defense date. After a successful examination, the student's thesis committee signs this warrant, and the student returns it to the Graduate Student Services Coordinator who retains it until the student has completed all required coursework, including the Graduate School minimum credit requirement. Only after the warrant is completed and filed with the Graduate School is a student "certified for the PhD" and able to enroll as a dissertator.

In IPiB, the advanced seminar requirement and the teaching requirement do not need to be completed before filing the preliminary warrant with the Graduate School. However, students are advised to make diligent progress toward these requirements as quickly as possible. A student may not submit a "Request for MS or PhD Warrant" until the teaching requirement is complete and all seminars (or definitive plan for completion of the required seminars) have received ECC approval.

- 3.8.4 Annual Thesis Committee Meetings: Every year following the attainment of dissertator status, students are required to give a report on their research progress and future plans to their thesis committees. The meetings must take place *no later than May 31 of each academic year*. Regular meetings held early in the year are encouraged to avoid exceeding this deadline and to minimize faculty scheduling conflicts. A two- to three-page summary of aims accomplished and future plans should be distributed to the student's thesis committee no less than two days before the meeting. After a brief oral presentation, the student and committee discuss the progress made and future plans, and complete the Annual Thesis Committee Meeting Form summarizing the discussion. The summary form is returned to the Student Services Coordinator and becomes part of the student's file.

At least three committee members, including the thesis advisor, must be present at each annual thesis committee meeting. The student must meet with any missing members separately to discuss and review the outcomes of the meeting, and obtain their signatures, before returning the Annual Thesis Committee Meeting Form to the Student Services Coordinator.

Perceptive students will welcome these annual meetings as opportunities to apprise their committees regularly, since it is to no one's advantage to have unwarranted surprises at the final defense!

- 3.8.5 Thesis: Students are expected to carry out significant, original research during the entire period of their PhD training and to write a thesis based on this research. The thesis must be formatted according to the guidelines of the Graduate School, present evidence of a substantial experimental effort by the student, and reflect a strong intellectual contribution that meets all standards set by the student's thesis committee. If the work is the result of collaborative enterprises, the writing must clearly define those portions representing the student's own contribution. The thesis must also include a substantive review of literature relevant to the project. It should be written with a high level of literary skill, such as would be found in leading journals in that research area.

The thesis must be completed and distributed to the members of the student's thesis committee *not less than two weeks* before the date of the final oral examination. Students should be prepared to provide hard copies or electronic copies of the thesis, as preferred by individual committee members.

Publication of a PhD thesis is required, since it constitutes a permanent record of research and literary achievement. Students are responsible for knowing and meeting all thesis filing deadlines for degree completion. The Graduate School website provides detailed instructions for the format, defense, and electronic depositing of theses at:

<http://grad.wisc.edu/education/completedegree/ddd.html>

- 3.8.6 PhD Warrant: Two months prior to an anticipated final oral exam date, the student must submit a "Request for MS or PhD Warrant" to the Student Services Coordinator, which is available on the IPiB website under "Frequently Used Forms." This form initiates Graduate School and ECC processes that certify thesis committee membership and completion of degree requirements, resulting in the issuance of a formal "PhD Warrant." Upon successful completion of the final examination, the student obtains the signatures of his or her thesis committee members, and schedules an appointment with the Graduate School for the final review with warrant in hand.
- 3.8.7 Final Oral Exam: The final oral examination deals primarily with the thesis content. Student takes the final exam only after all other degree requirements have been satisfied, including clearing their academic record of incomplete grades and progress grades (other than research credits).

Within IPiB, students traditionally begin their oral exam with a public seminar summarizing their research accomplishments and highlighting the significance to the field. The seminar is not graded. Afterwards, the students meet in a closed setting with their thesis committee and respond to questions. The thesis advisor can take part in the questioning, but may not actively steer the discussion or defend the research. The oral examination (not including the

public seminar) is usually scheduled for up to two hours to allow ample time for the committee members to be satisfied with their individual evaluations. The student is then excused and, after deliberation, the members decide whether or not to endorse the degree completion by signing the PhD Warrant.

To pass the final examination, a student must receive no more than one dissenting vote from the thesis committee. A missing signature on the warrant is considered a dissent. At the discretion of the student's thesis committee, a student may repeat a failed final exam once.

3.9 Progress Toward Degree

3.9.1 Annual Thesis Committee Meetings: The purpose of the Annual Thesis Committee Meetings is to provide guidance and encouragement so the student can complete their PhD research in a timely manner. If, at any point, the thesis committee believes sufficient progress is *not* being made or is unlikely to be made, it may recommend the student's dismissal from the Program.

3.9.2 Graduate School Five-Year Rule: Students have five years from the date of passing their preliminary exams to successfully complete a final oral examination and deposit their theses with the Graduate School. Students who fail to meet this deadline are required by the Graduate School to take another preliminary exam and be admitted to candidacy for a second time.

Exceptions to this rule must be requested in writing by the student's thesis advisor to the Graduate School, explaining the circumstances of the delay. Few exceptions are granted.

3.9.3 Other Employment: Any IPiB student who engages in any form of employment (including part-time or evenings/weekends), in addition to their graduate studies, must report that employment to their thesis advisor. Failure to report outside employment could result in dismissal from the Program.

4. Guidelines for New PhD Students

4.1 Laboratory Rotations & Choosing a Thesis Advisor

Lab rotations are aimed at finding optimal matches between incoming students' research interests and IPiB faculty who share those interests. The NSOC facilitates the process of pairing students with potential thesis advisors and ensures the pairing mechanism is fair and works to everyone's best advantage. Students meet with the NSOC shortly after they arrive and are guided through the rotation procedures as outlined below.

Students who are admitted directly into the laboratories of their thesis advisors ("direct admits") do not participate in laboratory rotations, but still must participate in

all Program orientation events the week before the fall semester in which they matriculate.

IPiB faculty will have the opportunity to meet incoming students and describe their research programs in a series of short presentations during orientation week. The Student Services Coordinator will contact faculty who have indicated that they have lab space and/or funding for new students to schedule these presentations. All new students are required to attend and strongly encouraged to schedule additional meetings with individual faculty during orientation week. Personal discussions about research opportunities, space, and funding are highly encouraged before students submit their first rotation choices at the end of orientation week. Sample questions one might ask of a potential thesis advisor are listed in Appendix 10.G.

- 4.1.1 Laboratory Rotations: The first semester of a new student's graduate studies is divided into three laboratory rotation periods of about four weeks each. During each rotation, the student reports to an assigned lab and participates as a member of that research unit. Occasionally the NSOC also permits a fourth rotation in late December or early January if required for a favorable pairing. However, three rotations are generally sufficient (see 4.1.3) and provide a quick launch to the student's research career, which is a major aim of the process.
- 4.1.2 Rotation Assignments: Before the beginning of each lab rotation, the NSOC compiles a list of IPiB faculty who have lab space and funding for new students. The list is distributed to the new students at the beginning of orientation week. By the end of orientation week, the students submit an initial list of three to four faculty members in whose labs they would like to do a rotation. The NSOC balances these requests against each lab's consideration for space and funding, and, in consultation with the appropriate faculty, matches students with labs for the first rotation. The process is repeated for the second and third rotations. The NSOC is very experienced in pairing students with compatible opportunities. If a student repeatedly requests a particular assignment, the NSOC will facilitate that match as soon as rotation space allows.
- 4.1.3 Student Responsibilities: Rare is the student who enters with such a broad-based knowledge of biochemistry that he or she is ready to immediately focus with absolute certainty on a particular research niche. Selecting only what one knows precludes the possibility of what could be. New IPiB students are encouraged to participate in rotations that expose them to a variety of fields, research methodologies, and laboratory cultures. Each rotation, however, is a serious undertaking, requiring significant student initiative and responsibility.

New Students should:

- Read about each lab beforehand, including in-depth reviews of research publications, technologies, and personnel lists. Check the IPiB web site, too.
- Talk to multiple faculty and their lab members beforehand so they know of the student's interest in their research areas, and so the student can make an informed decision about the research directions he or she might like to pursue.
- Interact consistently and persistently with all members of the rotation lab. Curiosity, interest, and intelligent questions help faculty and their lab members evaluate the student and decide if the student is a good fit for their labs.
- Show up on time to all lab activities and be responsible and aggressive toward whatever project is assigned, even if this means working nights and weekends.
- Discuss what they are learning with other students and especially with the assigned faculty member. Ask about projects that might be available to new students who are assigned to that lab after rotations are completed. Ask about funding opportunities. Ask how many new students, including those from other Programs, are under consideration for potential lab slots. Be proactive and determined in gathering information. This experience is part of your training to be a scientist.

- 4.1.4 Rotation Funding: For students who are not on a fellowship or training grant or are not direct admits, financial support is provided by the Program through the period of the first semester lab rotations. Once the thesis lab and advisor are selected, financial support becomes the responsibility of the thesis advisor.

The student should be assured that if admitted to a laboratory, and provided they are making appropriate progress in the Program, they will be supported regardless of their funding source.

- 4.1.5 Final Assignments: Near the end of the third rotation, students are asked by the NSOC for a ranked list of preferred thesis advisors from among those faculty members with whom the student had a rotation. The listed faculty members are then asked whether they might accept one or more of these students into their labs. The matching process tries to optimize student and faculty choices, with attention to the funding and space in each lab. Traditionally, the thesis lab assignments are announced by the Steering Committee just before the Holiday Party in mid-December, and lab groups welcome their new students as part of the collective celebration.

- 4.1.6 Starting in Your New Lab: Newly assigned students report to their thesis advisors the Monday following announcement of the thesis lab assignments for guidance on registering for the spring semester, lab space assignments, and other orientation procedures. Students should expect to begin working in their new labs immediately.

4.2 Checklist for Degree Progress

The Graduate School and IPiB policies for achieving a PhD are outlined in Section 3. However, the Program takes a keen interest in *every* student's individual progress. The ECC, Program staff, thesis committees, and thesis advisors work continuously to help students achieve a timely completion of all requirements. The guidelines below summarize traditional procedures and timeframes. They are intended to help students anticipate Program deadlines and understand their personal responsibilities.

- 4.2.1 Key Contacts: Contact information for IPiB staff are listed in Appendix 10.C and located on the IPiB website at http://ipib.wisc.edu/fac_people_staff.php.

4.2.2 Year 1 - Fall Semester:

- Students admitted to the Program usually begin their graduate careers in the fall semester. In the previous spring and summer, the NSOC and Program staff will send information about arriving on the University campus and Program orientation procedures.
- Before fall classes begin, Program staff and the NSOC will meet with all new students to describe University registration procedures, the lab rotation process, selection of a thesis advisor, degree requirements, and Program expectations. By the end of the first week, everyone will be properly enrolled, payrolled for their stipend, registered for insurance, and prepared for their first lab rotation.
- First semester coursework usually includes:
 - Biochem 660, Methods in Biochemistry (2 credits)
 - Biochem / BMC 701, Professional Responsibility (1 credit)
 - Biochem / BMC 990, Research (4 - 7 credits, use call number for appropriate NSOC co-chair)
 - Physical and / or Biological Sciences breadth requirements.

Total course load for this semester is 12 credits.

- Once assigned to labs by the NSOC, students should report to their rotation advisors (see 4.1 above), and attend all classes for which they are enrolled.
- For an overview of the timeline to graduation, please see Appendix 10.H.

4.2.3 Year 1 - Spring Semester:

- Students should meet with their thesis advisor (or the assigned NSOC co-chair if a lab assignment has not been finalized) in December to choose coursework for the coming semester.
- Second semester coursework usually includes:
 - Courses applicable to major or minor requirements
 - Biochem / BMC 710: Exploring Biochemical Function of Macromolecules (2 credits)
 - Biochem / BMC Advanced Seminar (1 credit)
 - Biochem / BMC 990, Advanced Research (use call number of thesis advisor)
 - Physical and/or Biological Sciences breadth requirements.

Total course load for this semester is 12 credits.

- In consultation with the thesis advisor, discuss general directions of research project, then draft a plan for completion of all major and minor coursework. Remember, some courses are offered at irregular intervals or only during certain semesters.
- Mid-semester, the Graduate Student Services Coordinator will contact students about graduate assistant teaching assignments for the following academic year. The required teaching assignments are announced before the end of the second semester. (See also Section 3.6, Teaching)
- In consultation with their thesis advisors, students select *four* members of the University graduate faculty to serve on their thesis committee, preferably prior to the end of the second semester or early in the summer. (See also Section 3.7, Thesis Advisor and Thesis Committee)
- It is the student's responsibility to contact all thesis committee members and schedule the First Thesis Committee Meeting (see Section 3.8.1).

4.2.4 Year 1 – Summer Session:

- Enroll in Biochem / BMC 990 (2 credits). Note that students who are trainees or fellows may need to register for more than two credits, depending on the terms of their traineeship or fellowship.

4.2.5 Year 2 - Fall Semester:

- Third semester coursework usually includes:
 - Courses applicable to major or minor requirements (4 - 6 credits)
 - Biochem / BMC Advanced Seminar (1 credit)
 - Biochem / BMC 990, Advanced Research (4 - 7 credits)

Total course load for this semester is 12 credits.

4.2.6 Year 2 - Spring Semester:

- Fourth semester coursework usually includes:
 - Completion any remaining courses for major or minor requirements (4 - 6 credits)
 - Biochem / BMC Advanced Seminar (1 credit)
 - Biochem / BMC 990, Research (4 - 7 credit)

Total course load for this semester is 12 credits.

- Early in the Spring semester, the Graduate Student Services Coordinator directs second-year students to request their preliminary warrants and start arranging their preliminary examinations. The exams are usually held during the months of April and May. Students' written proposals must be in the hands of their committee members and the Graduate Student Services Coordinator *at least 2 weeks* before the scheduled exam. (See also Section 3.8.2).
- The Graduate Student Services Coordinator confirms the completion of the prelim requirements (Section 3.3.3) and submits a formal department-approved request to the Graduate School. After the successful examination, the signed warrant is filed with the Graduate School by the Graduate Student Services Coordinator and the student is notified by the Graduate School of his or her dissertator status.

4.2.7 Year 2 – Summer:

Dissertators register for three credits of 990 advanced research during the 8-week summer session.

4.2.8 Year 3 and Beyond:

- Dissertators register for two credits of 990 advanced research and one seminar credit each fall and spring semester, and three credits of 990 research each 8-week summer session. At least one graded seminar presentation per year should go toward the Program's seminar presentation requirement (3.3.2.).
- *Before May 31 of each academic year* following the preliminary examination, students must convene their annual thesis committee meetings. Scheduling laggards will be warned that their registration authorization may be put on hold by the ECC if yearly meetings are not up-to-date. Perpetual laggards may face Program dismissal.
- When the student and thesis advisor agree it's time to defend, the thesis committee discusses thesis format and content at the final yearly committee meeting, and the student obtains permission to begin writing. If necessary, students can schedule an extra pre-defense meeting for this purpose.

4.2.9 Arranging Your Thesis Defense:

- Students must be registered full-time for the semester in which they intend to defend.
- *At least 4 weeks prior* to the anticipated defense, a student should schedule the final oral exam and closed meeting with his or her thesis committee. The student submits a "Request for MS or PhD Warrant" to the Graduate Student Services Coordinator, who ensures that all other degree requirements have been met and submits a formal warrant request to the Graduate School.
- Students should consult the Graduate School website for specific thesis format requirements and follow them.

<http://grad.wisc.edu/education/completedegree/etd.pdf>

- The Graduate Student Services Coordinator distributes thesis defense announcements to IPiB faculty, staff, students, and postdocs, and reminds committee members two weeks before, one week before, and the day of the final defense.
- Students should visit the PhD Coordinator in the Graduate School (Room 217 Bascom Hall) for a thesis format review, and to answer any questions about the approved use of tables, graphs, charts, etc. This simple pre-check may head off significant rewriting hassles after the defense!
- As part of a successful defense, students should obtain the signatures of all committee members on the warrant, and the signature of the thesis advisor on a copy of the thesis abstract.
- Students must electronically deposit their theses, complete the online Graduate School surveys, and schedule an appointment with the Graduate School (262-2433) for the final review prior to the first day of the semester following the semester in which the student successfully defended. If defending near a degree deadline, students should remember that Graduate School appointment times fill rapidly near the end of each semester. All thesis corrections and revisions must be final *before* this review. No changes can be accepted on the copy that is submitted to the Graduate School after the final review.
- Note: Students in BMC labs are required to submit a bound copy of their thesis within 30 days of depositing the thesis with the Graduate School.

4.2.10 Congratulations!! You're done! You are *no longer* a student. Good luck with your career. The future is yours. You've earned it!

5. Graduation from IPiB with a Master's Degree

The IPiB Graduate Degree Program does not admit students directly into MS candidacy. The following requirements apply only when a PhD student prematurely terminates from the program, by student or committee request, and qualifies for this lesser degree.

5.1 MS Course Requirements:

- 5.1.1 Required Coursework: Coursework for admission (Section 2.2) and IPiB course requirements for the PhD (Section 3.1) must be met.
- 5.1.2 Seminars: After the first semester of graduate work, MS candidates must maintain continuous seminar enrollment each semester in one of the approved advanced (900-level) seminars (Appendix 10.D).
- 5.1.3 Graduate School Requirements: The academic standards for the MS degree are the same as those for the PhD (Section 3.5 above). A minimum of 10 credits of graduate-level didactic or laboratory coursework taken at the University are required for the MS degree, and a minimum of 16 credits (including 990 research or seminars) must be completed, in total.
- 5.1.4 Thesis Committee Determination: Upon completion of the Graduate School's minimum requirements for a Master's degree, whether or not to confer the degree is up to the student's thesis committee and their determination of the student's achievement of scholarly activity.

5.2 MS Thesis committee

In order to leave the IPiB program with an MS degree, the student must obtain a minimum of three signatures on the Graduate School warrant from among his or her thesis committee members, one of which must be from the student's thesis advisor. For more information on this option, students are encouraged to speak with their thesis advisors and / or the Graduate Student Services Coordinator.

6. PhD with Joint Major in IPiB

In the joint PhD major program, the candidate must meet all above IPiB requirements, the other major department's requirements, and the Graduate School requirements for a Minor Option A or Minor Option B (see 3.2).

7. Joint MD-PhD Program

IPiB participates with the Medical School in offering a joint program for students wishing to complete both the MD and PhD degrees. The basic prerequisites and requirements for a PhD in this program are identical to those for a PhD with a major in IPiB (see 6). However, the Graduate School requirement for a minor (Option A or Option B) may be taken in Medical Sciences.

8. Minor Option A in Biochemistry

8.1 Admission to Minor Option A

- 8.1.1 Required Chemistry Courses: Candidates should have an undergraduate degree in biochemistry, chemistry, physics, or one of the biological or medical sciences. A minimum GPA of 3.0 (on a 4.0 scale) is required. In addition to meeting the general requirements of the Graduate School, coursework in biochemistry, physics, organic chemistry, and physical chemistry is required. The student can make up any course deficiencies during the first two years of graduate study.
- 8.1.2 Minor Advisor: A student must identify a member of the IPiB faculty to serve as the minor advisor. The minor advisor will advise the student on his or her minor program, and serve as a member of the student's thesis committee.

8.2 Graduate Coursework for Minor Option A

- 8.2.1 General Biochemistry Course Requirements: A student must complete course Series 1 or course Series 2:
- Series 1: Biochem 507 and Biochem 508
 - Series 2: A total of 6 credits selected from 600- / 700- level courses with approval of the ECC

Students with good preparation in chemistry will preferably select courses from Series 2 to meet this General Biochemistry Requirement.

- 8.2.2 Additional Biochemistry Courses: In combination with those credits earned for 8.2.1, a total of 10 graduate-level credits in advanced biochemistry courses (600-level or above) is required.
- 8.2.3 Transfer Credits: Transfer credit toward the Minor Option A in biochemistry may be given for biochemistry courses taken while at another graduate institution. Students should consult with their minor advisor and with the ECC for approval of these transfer credits. Transfer of six semester credits is the maximum allowed by IPiB.

8.3 Grades

A student must maintain a cumulative average of B or better in all required biochemistry courses, with no grade lower than BC. Courses taken for pass-fail, satisfactory-unsatisfactory, or for audit may not be used toward the Minor Option A.

8.4 Examination & Review Procedures

- 8.4.1 Course Completion: By the time a student is ready for his or her preliminary examination according to the timeline of the major program, all coursework for the Minor Option A should be completed.
- 8.4.2 Exams: No preliminary or final examination in biochemistry is required for Minor Option A students. The minor advisor is authorized to sign the preliminary warrant in the student's major program if the minor requirements (8.2 above) have been met.

9. Personnel Issues

9.1 Changes in Laboratory Assignment

If a student decides that their current laboratory assignment is not suited to their long-term interests, they should contact the Graduate Student Services Coordinator or the Chair of the Steering Committee for guidance. If the issues in the current laboratory cannot be resolved, an effort will be made to reassign the student to a new thesis advisor. Typically, to facilitate the student finding a new lab, the Chair of the Steering Committee will contact professors within IPiB who have expressed an interest in accepting a new student and whose research interests are consistent with those of the student. The Chair of the Steering Committee will also discuss the matter with the current thesis advisor.

Thereafter, the student will participate in a one-month rotation to discover if the new laboratory and advisor are acceptable to both parties (additional rotations might be required to find an appropriate match). If a change in laboratory occurs prior to the preliminary examination, that examination will be postponed for no more than one year. This will allow for generation of sufficient preliminary data in the new laboratory to support a written research proposal and oral examination.

9.2 Grievances & Appeals (adapted from the Graduate School Academic Policies and Procedures)

If a student feels unfairly treated or aggrieved by faculty, staff, or another student, the University offers several avenues to resolve the grievance. Students' concerns about unfair treatment are best handled directly with the person responsible for the objectionable action. If the student is uncomfortable making direct contact with the individual(s) involved, they should contact their thesis advisor or the person in charge of the unit where the action occurred (program or department chair, section chair, lab manager, etc.).

Graduate School Appeal Process:

An official review of procedures can be initiated by the Graduate School if a student feels that their grievance was not appropriately handled or resolved at the

program/department or school/college level or through consultation with other resources listed on the Graduate School's website. Initial contact may be made through the Associate Dean in the student's division (Arts and Humanities, Biological Sciences, Physical Sciences, or Social Studies), 608-262-1044, or through the Assistant Dean of Admissions and Academic Services (AAS), 608-262-2433.

If the student chooses to file an official appeal of a grievance decision, they should consult with the Assistant Dean of AAS. Then, if the student is still not satisfied with the initial appeal to the Graduate School Associate Deans, they may make a final appeal to the Graduate Faculty Executive Committee (GFEC) within 30 days of date of the above written decision.

Please visit <http://grad.wisc.edu/education/acadpolicy/guidelines.html#97> for the latest policies and guidelines.

9.3 **Harassment** (taken from the Graduate School Academic Policies and Procedures)

All students are encouraged to report harassment of any kind, whether it is by a faculty or staff member or another student. Students may contact the Division of Student Life in person (75 Bascom Hall), email dean@studentlife.wisc.edu, call (608) 263-5700 and ask to speak to the Dean on Call, or fill out a Bias Incident Reporting Form at students.wisc.edu/pdf/bias_form.pdf. If the harasser is a student, University disciplinary action may be possible if the harassment involves conduct or behavior beyond words and if the person who is being harassed wants disciplinary action. Other informal means are available to confront offenders. The goal is that students be heard and helped if there is a problem.

If students feel that they may be the victim of sexual harassment, they should talk to someone they trust about the situation. Sexual harassment may or may not involve a tangible injury (e.g., economic loss, lowered grades). A sexually harassing environment, in and of itself, may constitute a harm. Students may feel embarrassed or worried that they did something to provoke the unwanted behavior, but they have the right to pursue their education or perform their job in an environment free from this type of interference.

If students feel comfortable taking this step, they should let the offender know that the behavior is unwelcome by telling him or her directly or in writing. Students need not face the situation alone. Schools, colleges, and divisions have designated Sexual Harassment Contact Persons who are available to anyone wishing to inquire about sexual harassment, discuss an incident, or receive information about options for resolving complaints. To contact a resource for advice please visit oed.wisc.edu/sexualharassment/assault.html. Students may also contact their dean, department chair, supervisor, or labor representative. Students may consult in private with someone from the Division of Student Life to discuss their situation and review options.

Campus resources:

- Office for Equity and Diversity, 179A Bascom, (608) 263-2378; WTRS: 7-1-1; oed.wisc.edu
- Division of Student Life, 75 Bascom Hall, (608) 263-5700 (TTY (608) 263-2400), dean@studentlife.wisc.edu
- UW-Madison Police and Security (for personal safety reasons; non-emergency), 1429 Monroe Street, (608) 262-2957 (TTY (608) 262-2957)
- Bias Incident Reporting Form, [students.wisc.edu/pdf/bias form.pdf](http://students.wisc.edu/pdf/bias_form.pdf).

Please visit <http://grad.wisc.edu/education/acadpolicy/guidelines.html#99> for the latest policies and guidelines.

9.4 Research Misconduct

The University is bound ethically and legally to respond to allegations of scientific misconduct in a fair, objective and timely manner. It has established a policy for dealing with allegations of misconduct in scholarly research as described in ([Faculty Policy II-314](#)). Graduate students and research associates who witness research wrongdoing or misconduct should report such behavior to their faculty supervisor or, if necessary, the department chair. In cases where the department chair is the target or is conflicted, the witness(es) should contact the Associate Vice Chancellor for Research Policy, in the Graduate School, 608-262-1044. Faculty supervisors should discuss the situation with department chair, who in turn should to discuss the situation with the Associate Vice Chancellor for Research Policy. At any time in this process, and particularly if a witness does not believe that due attention has been given to a written report of wrongdoing, the Associate Vice Chancellor for Research Policy may be consulted and will serve as the college's main point of contact in such matters.

Please visit <http://grad.wisc.edu/research/policyrp/researchmisconduct.html> for more information.

10. Appendices

- 10.A IPiB Faculty, Academic Year 2013-14
- 10.B Standing IPiB Committees, Academic Year 2013-14
- 10.C IPiB Staff, Academic Year 2013-14
- 10.D IPiB Graduate Curriculum, Academic Year 2013-14
- 10.E Summer Rotations
- 10.F Organizing and Presenting a Seminar
- 10.G Questions to Ask Prospective Thesis Advisors
- 10.H Timeline to Graduation

APPENDIX 10.A IPIB Faculty, Academic Year 2013-14

Faculty	Phone	Lab	Email
Amasino, Richard M.	5-2170	215B Biochemistry Addition	amasino@biochem.wisc.edu
Ansari, Aseem Z.	5-4690	315C Biochemistry Addition	ansari@biochem.wisc.edu
Attie, Alan D.	2-1372	543A Biochemistry Addition	attie@biochem.wisc.edu
Audhya, Anjon W.	2-3761	5214A Biochemical Sciences Building	audhya@wisc.edu
Bednarek, Sebastian Y.	3-0309	215C Biochemistry Addition	sybednar@wisc.edu
Brow, David A.	2-1475	4204B Biochemical Sciences Building	dabrow@wisc.edu
Butcher, Samuel E.	3-3890	141E Biochemistry Addition	sebutter@wisc.edu
Clagett-Dame, Margaret	2-3450	241E Biochemistry Addition	dame@biochem.wisc.edu
Coon, Joshua	3-1718	4422 Genetics - Biotechnology Center	jcoon@chem.wisc.edu
Cox, Michael M.	2-1181	341B Biochemistry Addition	cox@biochem.wisc.edu
Craciun, Gheorghe	5-3391	2104B Biochemistry	craciun@wisc.edu
Craig, Elizabeth A.	3-7105	441E Biochemistry Addition	ecraig@wisc.edu
Denu, John	5-1859	4214A Biochemical Sciences Building	dmdenu@wisc.edu
Fox, Brian G.	2-9708	141B Biochemistry Addition	bgfox@biochem.wisc.edu
Fox, Catherine	2-9370	5204C Biochemical Sciences Building	cfox@wisc.edu
Friesen, Paul D.	2-7774	721A Bock Labs	pfriesen@facstaff.wisc.edu
Harrison, Melissa	2-2382	6204A Biochemical Sciences Building	mharrison3@wisc.edu
Hayes, Colleen E.	3-6387	5507 Biochemistry/? BSB	hayes@biochem.wisc.edu
Holden, Hazel M.	2-4988	3324A Biochemistry	hmholden@wisc.edu
Hoskins, Aaron	0-3101	2214A Biochemical Sciences Building	ahoskins@wisc.edu
Hull, Christina M.	5-5441	5204B Biochemical Sciences Building	cmhull@wisc.edu
Keck, James L.	3-1815	6214A Biochemical Sciences Building	jlkeck@wisc.edu
Kiessling, Laura L.	2-0541	471B Biochemistry Addition	kiessling@chem.wisc.edu
Kiley, Patricia J.	2-6632	4204C Biochemical Sciences Building	pjkiley@wisc.edu

Kimble, Judith	2-6188	341E Biochemistry Addition	jekimble@wisc.edu
Landick, Robert	5-8475	5441 Microbial Sciences Building	landick@biochem.wisc.edu
Lewis, Peter	316-4388	2178 WID	pwlewis2@wisc.edu
Markley, John L.	3-9349	171A Biochemistry Addition	markley@nmrfam.wisc.edu
Martin, Thomas F.J.	3-2427	241B Biochemistry Addition	tfmartin@wisc.edu
Mitchell, Julie	3-6819	2104D Biochemistry	mitchell@math.wisc.edu
Mosher, Deane	2-4455	4285 Medical Sciences Center	dfm1@medicine.wisc.edu
Ntambi, James M.	5-3700	415B Biochemistry Addition	ntambi@biochem.wisc.edu
Pagliarini, David J.	0-3254	441B Biochemistry Addition	pagliarini@wisc.edu
Palmenberg, Ann C.	2-7519	527B Bock Labs	acpalmen@facstaff.wisc.edu
Pike, J. Wesley	2-8229	543D Biochemistry Addition	pike@biochem.wisc.edu
Raines, Ronald T.	2-8588	371B Biochemistry Addition	rtraines@wisc.edu
Ralph, John	0-2429	2113 Wisconsin Energy Institute	jralph@wisc.edu
Rayment, Ivan	2-0437	3324B Biochemistry	ivan_rayment@biochem.wisc.edu
Record, M. Thomas Jr.	2-5332	3204B Biochemical Sciences Building	record@biochem.wisc.edu
Senes, Alessandro	0-2584	415C Biochemistry Addition	senes@wisc.edu
Sheets, Michael D.	2-9452	5260 Biochemical Sciences Building	mdsheets@wisc.edu
Sussman, Michael R.	2-8608	2320 Genetics - Biotechnology Center	msussman@wisc.edu
Weibel, Douglas B.	0-1342	6424A Biochemical Sciences Building	weibel@biochem.wisc.edu
Wickens, Marvin P.	2-8007	315B Biochemistry Addition	wickens@biochem.wisc.edu
Wildonger, Jill	0-4619	2204B Biochemical Sciences Building	wildonger@wisc.edu

APPENDIX 10.B Standing IPiB Committees, Academic Year 2013-2014

Steering Committee

Composition

4 - 5	Biochemistry faculty
2 - 3	Biomolecular Chemistry faculty
	The above faculty include the chairs of the Admissions and Recruiting Committee, New Student Orientation Committee, Examination and Certification Committee, and Student/Faculty Liaison Committee. The Program Director is appointed by agreement between the Chairs of the Departments of Biochemistry and Biomolecular Chemistry, and serves as Chair of the Steering Committee
1	Trainer
1	Student, President of the SFLC

Responsibilities

- i. Oversight of program and policy recommendations for approval by two departmental faculties
- ii. Confirmation of thesis laboratory assignments
- iii. Oversight of development of programmatic initiatives that will foster interaction among faculty and students in the program, such as faculty lunches to hear about each other's research or joint faculty meetings
- iv. All other issues related to the program that are not dealt with by other committees.

Admissions and Recruiting Committee

Composition

5 - 6	Biochemistry faculty
3 - 4	Biomolecular Chemistry faculty
	Co-chairs are selected from among the faculty members, one or two from each department. One co-chair is appointed to the Steering Committee
1 - 2	Trainers
2	Students, one from each department (non-voting members)

Responsibilities

- i. Review files for admissions and make admissions decisions

- ii. Contact students to make offers and urge acceptance
- iii. Develop and implement recruitment strategies
- iv. Supervise recruits' visits to campus during February and March
- v. Delegate recruiting functions to faculty and students in the Program

New Student Orientation Committee (NSOC)

Composition

2 - 3	Biochemistry faculty
1 - 2	Biomolecular Chemistry faculty
	Co-chairs are selected from among the faculty members, one from each department. One co-chair is appointed to the Steering Committee
1	Trainer

Responsibilities

- i. Supervise orientation activities and advise students prior to assignment to thesis laboratory
- ii. Organize rotations and assignment of students to laboratories

Examination and Certification Committee (ECC)

Composition

1	Biochemistry faculty
1	Biomolecular Chemistry faculty
	Co-chairs are selected from among the faculty members, one from each department. One co-chair is appointed to the Steering Committee
1	Trainer

Responsibilities

- i. In collaboration with the Graduate Student Services Coordinator, ensure that students are effectively tracked to assure timely completion of the degree requirements
- ii. Identify and inform students of undergraduate course work deficiencies that must be rectified before students can achieve dissertator status
- iii. Approve the composition of first year students' proposed thesis committees, assuring that they meet program requirements
- iv. Select the chair of each student's thesis committee for the purposes of the Preliminary Examination. The chair must be an IPiB member other than the student's thesis advisor

- v. For any conditional passes or failures of the Preliminary Examination, monitor students' satisfactory completion of the examination
- vi. Review and rule on requests for substitutions to the pre-approved seminar courses for satisfaction of the seminar requirement

Student-Faculty Liaison Committee (SFLC)

Composition

2 - 3	Biochemistry faculty
1 - 2	Biomolecular Chemistry faculty
	Chair is selected from among the faculty members of either department. and is appointed to the Steering Committee
1	Trainer
8 - 12	Students
	Co-chair and Vice Co-chair are elected by the students. Other student members should include student representatives to other IPiB committees and be distributed among members of laboratories of Biochemistry and Biomolecular Chemistry.

Responsibilities

- i. Serve as a liaison between faculty and students, communicating the wishes, concerns, and problems of the graduate student population to the faculty
- ii. Promote educational and social interaction among students in the program
- iii. Develop programmatic initiatives that foster interaction among faculty and students in the Program, such as retreats, student-hosted seminars, and student-run journal clubs
- iv. Promote interaction with the community through outreach and service

APPENDIX 10.C IPIB Staff, Academic Year 2013-14

Graduate Student Services

Senior Student Services Coordinator – Recruiting and Admissions

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Associate Student Services Coordinator – Current Students

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Payroll and Benefits – Department of Biomolecular Chemistry

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Payroll and Benefits – Department of Biochemistry

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Examination and Certification Committee (ECC)

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New Student Orientation Committee (NSOC)

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APPENDIX 10.D IPIB Graduate Curriculum, Academic Year 2013-14

Courses for Incoming IPIB Students (3.1.2)

Term	Num	Dept(s)	Title	Cr	Instructor/Contact
I	660	Biochem	Methods in Biochemistry	2	Wickens
I	701	Biochem, BMolChem	Professional Responsibility	1	Cox
II	710	Biochem, BMolChem	Exploring Biochemical Function of Macromolecules	2	Sheets, Rayment

Ongoing for All Students

Term	Num	Dept(s)	Title	Cr	Instructor/Contact
I, II, Sum	990	Biochem, BMolChem	Advanced Research	1-12	Thesis advisor

Courses that Meet the Biological Sciences Breadth Requirement (3.1.3)

No ECC approval required

Term	Num	Dept(s)	Title	Cr	Instructor/Contact
I	612	Biochem, Genetics, Micro	Prokaryotic Molecular Biology	3	Gourse, Keck, Landick
II	619	Biochem, NutriSci	Advanced Nutrition: Intermediary Metabolism of Macronutrients	3	Ntambi, Eisenstein
II	620	Biochem, Phmcol-M	Eukaryotic Molecular Biology	3	Ansari, Wassarman
II odd years	621	Biochem, Botany	Plant Biochemistry	3	Bednarek, Maeda, Ralph
I	630	Biochem, Phmcol-M, Zoology	Cellular Signal Transduction Mechanisms	3	Martin, Ruoho, Weaver, Anderson, Miyamoto, Bresnick
II	640	Cell and Regenerative Biology	Fundamentals of Stem Cell & Regenerative Biology	3	Bresnick, Kamp
I occasionally	703	Oncology	Carcinogenesis and Tumor Cell Biology	3	Wei Xu
I even years	711	Biochem, AH&BS	Sequence Analysis	2	Palmenberg
II odd years	726	Biochem, Micro	Regulation of Gene Expression in Prokaryotes	3	Landick, Wassarman

II	750	Pathology and Laboratory Medicine	Cellular and Molecular Biology / Pathology	3	Rapraeger
I, even years	840	Biochem, Botany, Genetics	Regulatory Mechanisms in Plant Development	3	Amasino, Masson, Fernandez

Courses that Meet the Physical Sciences Breadth Requirement (3.1.3)

No ECC approval required

Term	Num	Dept(s)	Title	Cr	Instructor/Contact
I	601	Biochem	Protein and Enzyme Structure and Function	2	Holden, Rayment
I even years	606	Biochem	Math Methods – Structural Biology	3	Mitchell
II even years	609	Biochem, BMolChem, BMI, Math	Math Methods for Systems Biology	3	Craciun
II	625	Biochem	Coenzymes and Cofactors in Enzymology	2	B. Fox
I, II odd years	665 ¹	Biochem, Chem	Biophysical Chemistry	4	Record – Fall Cavagnero - Spring
I	704	Biochem, Chem	Chemical Biology	2	Kiessling, Raines
I	800	Biochem	Practical Nuclear Magnetic Resonance Theory	2	Westler
II	801	Biochem	Biochemical Applications of Nuclear Magnetic Resonance	2	Markley

¹ Rectifies physical chemistry course deficiency, as do Chemistry 561 and Chemistry 565

Advanced Seminar Courses (Requirement 3.3.1)*No ECC approval required*

Term	Num	Dept(s)	Title	Cr	Instructor/Contacts
I, II	872	Biochem, Chem	Selected Topics in Macromolecular and Biophysical Chemistry	1	Jackson (Fall); Record – Section 1 (Spring); Jackson – Section 2 (Spring)
I	901	Biochem, NutriSci	Nutrition and Metabolism	1	Attie, Ntambi, Eisenstein, Pagliarini
Special	902	Biochem	Plant Biochemistry	1	Amasino
I, II	905	Biochem	Biomolecular Structure	1	Holden, Markley, Rayment, Butcher
I, II	909	Biochem	Enzymology	1	Butcher, Fox, Holden, Rayment
I, II	910	Biochem	Molecular Virology	1	Friesen, Ahlquist, Kalejta, Palmenberg
I	912	Biochem	Molecular Mechanisms of Development	1	Kimble
II	913	Biochem, BMolChem	Ribogroup	1	Brow, Wickens
I, II	916	Biochem	Cellular Mechanisms of Protein Biogenesis	1	Bednarek, Craig, Martin
II	945	Biochem, Chem	Chemical Biology	1	Kiessling, Raines, Weibel

Advanced Seminar Presentation Courses (Requirement 3.3.2)

Students enroll the IPiB Seminar according to their thesis advisor's department; e.g., if the student's thesis advisor is in Biomolecular Chemistry, the student registers for BMolChem 901. The two departments alternate administration of the seminars yearly.

I, II	729 / 901	Biochem / BMolChem	IPiB Seminar	1	Clagett-Dame, Senes / C. Fox
I	729	Biochem	Practicum in Undergraduate Teaching	1	Senes

“Experimental” Advanced Seminars Awaiting Formal Approval

II	729	Biochem	Molecular Control of Metabolism and Metabolic Disease	1	Attie
I, II	729	Biochem	Regulation of Gene Expression	1	Landick, Gourse

Additional Seminar Courses Required for Certain Student Trainee Programs

All meet Program seminar requirement 3.3.1. No ECC approval required.

Term	Num	Dept(s)	Title	Cr	Instructor/Contacts
I,II	914	Biochem, Micro, BMolChem, MM&I	Molecular Biosciences (MBTG, non-trainees welcome)	1	Hull
I,II	915	Biochem, BME, BMI, CBE, CompSci, Genetics	Computation and Informatics in Biology and Medicine (CIBM)	1	Pape, Page, Shavlik
I,II	932	Biochem, Micro, ChemEng	Biotechnology Training Program (BTP)	1	Burgess, Forest

APPENDIX 10.E Summer Rotations

Occasionally students are interested in coming to Madison prior to the start of the Fall semester to participate in a summer rotation. Unlike the three fall rotations that are funded by IPiB, the cost of this research experience (stipend, fringe benefits, and lab supplies) must be covered by the faculty who hosts the incoming student. As a consequence, IPiB does not formally support summer rotations, though it can assist students who are interested in finding a suitable mentor.

Note that international students cannot participate in summer rotations because of the length of time required for visa approval.

Those who wish to undertake a summer rotation must first contact the New Student Orientation Committee (NSOC) by no later than May 15 to obtain a list of faculty who are willing to support a student during the summer session. There are no guarantees that faculty will be available for summer rotations. Students may contact those professors who are indicated interest and determine whether a summer research project is mutually beneficial.

If a summer lab is found, the NSOC will review and approve that summer rotation. These negotiations must be finalized before May 31. The Graduate School has strict rules that require students participating in summer rotations to enroll in the summer session prior to its beginning and to be present on campus at its start. The Graduate School must be informed of summer admissions in the first week of June.

A summer rotation should be viewed as a learning opportunity for the student and perhaps an opportunity for the faculty member to advance a research project. Historically, there is no correlation between summer rotations and the final laboratory assignment.

Important notes:

1. A summer rotation cannot substitute for one of the required three fall rotations.
2. Participation in a summer rotation does not place any obligation on the student to join that laboratory.
3. Participation in a summer rotation does not increase the probability of the student joining that laboratory in the fall.
4. A summer rotation cannot be used to pressure a student to join a research program. Final assignment to a laboratory is the responsibility of the NSOC.

APPENDIX 10.F Organizing and Presenting a Seminar

Tips on seminar information content

1. Think of the story you want to tell and organize your talk accordingly. The organization does not need to be historical, and, most times, the talk is much more interesting if it is not historical. It is more engaging to introduce a slide as “they wanted to ask a particular question,” rather than “next they did this experiment.”
2. The introduction of the seminar should 1) highlight the problem/ question that you are addressing, 2) provide the state of the field (usually presented as a model) 3) introduce the questions that you will address, 4) share the new information that the papers provide and 5) explain how the data enhances or disapproves the model. You do not need to provide every detail you know; just those that are necessary to make your points. You do not want to overload the audience.
3. Always make a verbal transition between slides. The transition should logically summarize the slide you have just finished and introduce the next slide. Using the title of the upcoming slide is a good way to facilitate this.
4. Develop slides to introduce methods that are critical to understanding experiments that you are presenting. For example, if a “Chip” assay is being used, then explain the assay in a slide right before you show data.
5. Provide details when the listener needs to know that information.
6. The length of the talk should be at least 45 minutes, leaving additional time for questions. A rough estimate for the number of slides would be in the neighborhood of 38 to 42 slides depending on your slide content.
7. The talk should have, on average, an introduction of the topic, data (taken from papers if a literature seminar), a summary, a future directions slide, and an acknowledgement slide for those who helped you.
8. In presenting data in a literature seminar, be critical. If you think that the conclusions are not supported by the data, then say so.

Tips for Slides

The Biochem 660 syllabus currently includes tips and techniques for making effective slides. If students have questions, they are encouraged to talk with the Biochemistry Media Lab.

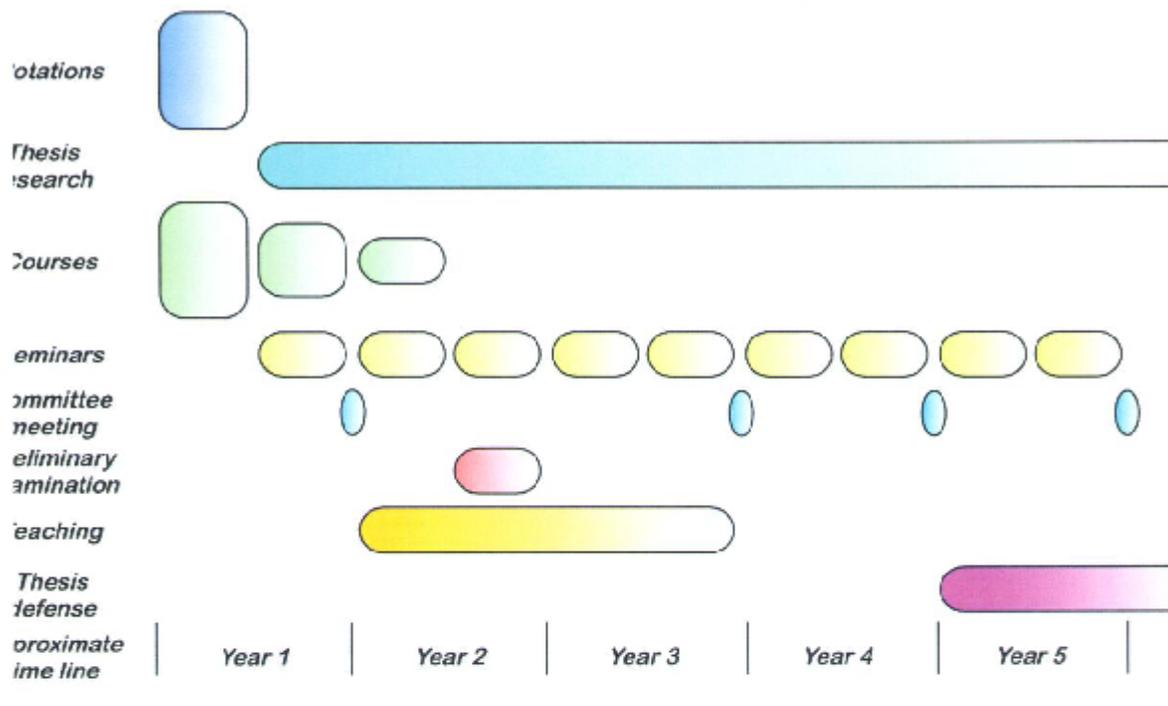
APPENDIX 10.G Questions to Ask Prospective Thesis Advisors

1. What thesis projects would be available to me if I were to join your lab?
2. Would these projects expose me to a variety of different experimental approaches?
3. In general, how available will you be to answer questions I might have?
4. What is your philosophy regarding the amount of guidance the thesis advisor should provide to a student during preparation of the thesis proposal, literature seminars, thesis, etc.?
5. What are your expectations for the amount of time I should spend each day/week in the lab?
6. What regularly scheduled activities (e.g., group meetings, joint group meetings, research clubs) does your lab participate in that provide an opportunity to get outside input on my research project and to hear about the work of other students and postdocs?
7. Do you encourage your students to attend seminars and journal clubs, including those that may be outside of their field of research?
8. Do students in your lab have the opportunity to attend scientific meetings where they can interact with researchers from other institutions?
9. Do you include your graduate students in professional activities that will familiarize them with their field of research, such as reviewing manuscripts and meeting with visiting speakers?
10. How long do you think it should take me to get my Ph.D. degree?
11. What are your former graduate students doing now?
12. What is your general philosophy of graduate training and what goals do you have for your graduate students?

Many of these questions are not simple and may not elicit a quick answer. However, any faculty member should be willing to discuss these important issues with you. You may also want to discuss these issues with any students that are currently in the prospective advisor's lab. This list is by no means complete; you should spend some time thinking about what is most important to you in your graduate training.

APPENDIX 10.H Timeline to Graduation

IPIB - Integrated Program in Biochemistry at the University of Wisconsin, Madison



Rotations: IPIB students carry out three rotations in any of the ~50 program labs in the first semester.

Thesis research: Upon completion of rotations, thesis labs are chosen and thesis research begins.

Courses: Coursework includes formal classes in biochemical techniques, professional scientific development, and the physical and biological sciences. Dozens of courses allow curricula to be tailored to each student's interests and needs. A typical schedule is:

<i>First semester</i>	<i>Second semester</i>	<i>Third semester</i>
•Biochemical Techniques	•Biochemical Functions of Macromolecules	•Cellular Functions of Macromolecules
•Professional Development	•Biological or Physical Science	•Coursework recommended by committee
•Biological or Physical Science Elective	•Biological or Physical Science Elective	

Seminars: IPIB students enroll in a seminar each semester once thesis research begins. Presentations in three seminars are given during a student's graduate training.

Committee meetings: Committee meetings occur annually.

Preliminary examination: The preliminary examination occurs prior to the end of the second year. The student writes an NIH-style grant proposal based on his/her research and defends it before a panel of faculty.

Teaching: Each IPIB student will serve as a student teacher in two courses during the second and third years.

Thesis defense: IPIB students write a formal thesis and defend it at the end of their graduate study. The date for defense will depend upon many factors but the defense typically occurs after 4-5.5 years.