Graduate Program Handbook

2023 – 2024

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1. IPiB organization

1.1 PhD degrees are granted by the Graduate School in collaboration with PhD programs

The IPiB program is designed to prepare students for outstanding professional careers that include research, teaching, and/or science communication. The Graduate School is the ultimate authority for granting MS and PhD degrees at the University of Wisconsin-Madison (hereafter "University"). The doctorate of philosophy (PhD) is the highest degree conferred by the University and it is never conferred solely as a result of any prescribed period of study. 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.

1.2 The IPiB faculty administers the PhD program and promotes student achievement

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. The director of the Program is elected by majority vote of the IPiB faculty and serves as the chair of the Steering Committee. The other members of the committee are appointed by the Chairs of the Departments of Biochemistry and Biomolecular Chemistry, in consultation with the IPiB director. 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, Recruiting, New Student Orientation (NSOC), Education and Career Development (ECDC), and Graduate Leadership and Development (GLDC). The ECDC has several specific functions in arbitrating course requirements and students' thesis committees as described in Appendix C.

See appendices for listings of IPiB committee composition and staff.

1.3 Graduate Assistantship Policies and Procedures govern most IPiB student appointments

IPiB students and trainers are encouraged to familiarize themselves with the Graduate Assistantship Policies and Procedures (GAPP) maintained by the UW-Madison Office of Human Resources at the following URL: https://hr.wisc.edu/policies/gapp/. These policies describe the details of the graduate assistant (GA) appointment, the benefits that the appointment provides, and the procedure for reporting any grievances that may arise under these policies and procedures. Most IPiB students, excepting those supported by fellowships, are appointed as GAs. All IPiB trainers are expected to follow these policies and procedures in supervising IPiB students.

1.4 Stipend support for IPiB graduate students

All enrolled IPiB students will receive a stipend. The stipend level is set by the Program and is $33,000 for the 2023-24 fiscal year (July 1 - June 30). Historically, the IPiB stipend has increased about 2.5 % per year. For the 2024-2025 fiscal year it will increase 9.1 % to $36,000 due to inflation and increased housing costs. Taxes and student fees must be paid from this stipend, so students should plan accordingly. If a student is funded from a fellowship or training grant with a stipend

less than the IPiB stipend, it will be supplemented by the thesis advisor to match the IPiB stipend. All IPiB students other than those supported by a fellowship or training grant should be appointed as Research Assistants. Any exceptions require prior approval from the Program Director.

2. **Laboratory rotations and choosing a thesis advisor**

Lab rotations are aimed at finding optimal matches between incoming students and IPiB trainers. The NSOC facilitates the process of matching students with potential thesis advisors and ensures the matching 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.

Under rare circumstances, a student may be admitted directly to a faculty's research group. This typically arises from an introduction outside the normal admission process. Such students ("direct admits") do not participate in laboratory rotations but must meet the same application and degree requirements as other IPiB students. Direct admits are also required to participate in all Program orientation events before the Fall semester in which they matriculate.

IPiB trainers will have the opportunity to meet incoming students and describe their research programs in a series of short presentations during Orientation. The IPiB Coordinator will contact faculty who have indicated that they have lab space and funding for new students to schedule these presentations. All new students are required to attend Orientation. Personal discussions with faculty about research opportunities, space, and funding are required before students submit their rotation choices. Sample questions one might ask of a potential thesis advisor are listed in Appendix 10.G.

2.1 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 is a member of the matched lab. If needed for a favorable match, the NSOC may arrange a fourth rotation in late December or early January. However, three rotations are generally sufficient (see 2.3) and provide a quick launch to the student's research career, which is a major aim of the process.

2.2 Choosing rotation labs: Prior to Orientation, new students are given a list of IPiB faculty who have lab space and funding to take new students. The Tuesday after Labor Day, students submit a ranked list of three faculty members in whose labs they would like to do their first rotation. This process is repeated for the second and third rotations.

The NSOC is very experienced in matching students with available labs. It balances students' requests with each lab's considerations for space and funding, and, in consultation with trainers, matches students with labs for the first rotation. If a student repeatedly requests a particular lab rotation, the NSOC will facilitate that match as soon as possible.

2.3 Student responsibilities: Rare is the student who enters with such a broad-based knowledge of biochemistry that they are ready to immediately focus with absolute certainty on a particular research niche. Selecting only a research area with which one is familiar precludes exploring new possibilities. 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 website, too.

- Talk to multiple trainers and their lab members beforehand so they know of the students' interest in their research areas, and so students can make informed decisions about the research directions they might like to pursue.

- Interact consistently and persistently with all members of the rotation lab. Curiosity, interest, and intelligent questions help trainers 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 diligent and motivated toward whatever project is assigned.

- Discuss what they are learning with other students and especially with the professor. 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.

2.4 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 satisfactory progress in the Program, they will be supported regardless of their funding source.

2.5 Final laboratory matches: Near the end of the third rotation, students are asked by the NSOC for a ranked list of preferred thesis advisors from among those trainers with whom the student rotated. The trainers 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 available in each lab. Traditionally, the thesis lab matches are announced by the IPiB Steering Committee just before the IPiB Winter Reception in mid-December, when lab groups welcome the new students into their labs.

2.6 Starting in your new lab: Students should meet with their new thesis advisor right after the rotation period ends for guidance on registering for the Spring semester, lab space assignments, and other lab orientation procedures. Students should expect to begin working in their new labs immediately and should discuss their Winter Break plans with

their thesis advisor. Most advisors will expect students to return to the lab shortly after the holidays and well before the Spring semester starts.

3. **PhD requirements for a major in Biochemistry**

The primary requirement for achieving a PhD in Biochemistry from 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, equivalent to a first-author publication in a peer-reviewed journal. 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.

Appendix A lists IPiB's higher learning goals for its graduate students.

3.1 **Course requirements**

3.1.1 Required courses

To provide a solid foundation in modern biochemical research and professional skills, all students must complete the following course series:

- BIOCHEM/BMOLCHEM 701: Professional Responsibility (1 cr., Fall of first year)
- BIOCHEM 719: From Atoms to Molecules (3 cr., Fall of first year)
- BMOLCHEM 720: Paradigms and Experimental Design in Cellular Biochemistry (3 cr., Spring of first year)
- BIOCHEM 721: Biochemical Communication (2 cr., Fall of second year)
- BIOCHEM / BMOLCHEM 990: Advanced Research (see 3.4 below, ongoing)

First-year IPiB students are required to attend the weekly non-credit Biochemistry Colloquium series in their first year of graduate study. Two unexcused absences are allowed per semester; excused absences require approval of the ECDC and requests should be made via the IPiB Coordinator. Excused absences may include unexpected family or medical situations, research that cannot be interrupted, or other unforeseeable circumstances.

3.1.2 IPiB breadth requirement

To fulfill IPiB's breadth requirement, students must complete a minimum of two additional graduate-level (600 or above or that carry the graduate attribute) didactic or laboratory courses, and a minimum of six total credits is required. Courses must be chosen from at least two of the following three categories: biological sciences, physical sciences, or quantitative sciences. One-credit seminars do not count toward the breadth requirements.

The IPiB website lists approved courses that satisfy the breadth requirement. Students may propose additional courses by submitting to the IPiB Coordinator and their thesis advisor the course syllabus and a written request that *specifically* justifies how the proposed course meets the intent of the breadth requirement. The ECDC must approve the request prior to enrollment in the proposed course.

Additional coursework may be taken once a student achieves dissertator status as approved by their thesis committee. However, dissertators cannot register for more than 3 credits each semester.

3.1.3 Optional doctoral minor

The IPiB PhD program has waived the Graduate School's minor requirement. However, an IPiB student may elect to complete a doctoral minor or graduate/professional certificate if approved by their thesis advisor. Only students in non-dissertator status may pursue a minor or certificate.

Students who opt to pursue an Option A, B, or C doctoral minor (the Minor Option) must also complete IPiB's breadth requirement unless waived with approval from ECDC.

3.1.4 Non-University Coursework

With the approval of the ECDC, students may receive credit toward the IPiB PhD requirements for equivalent graduate-level courses taken at another institution if those courses were not applied to an awarded degree. The student may submit a request for a course substitution to the IPiB Coordinator. The ECDC will make the final determination on the course substitution.

The maximal credit toward the Biochemistry major that will be given for courses taken elsewhere is 12 semester credits. Grades for transfer credits will not apply to the student's GPA or to the minimum graduate residence credit.

3.2 **Seminar requirements**

A "seminar" is defined as a one-credit topics course for which attendance is tracked and considered part of the grading scheme. It also includes outside reading and an opportunity for students to present a seminar. Seminars approved and meeting this definition are listed on the IPiB website. See Section 4.3.2 for seminar substitutions.

Students are encouraged to participate in a seminar, journal club or literature review every semester. Journal clubs and literature reviews are not always offered for credit, but can be relevant and valuable for students, particularly in interdisciplinary areas.

Students are required to have a minimum of **five** semesters in which they are registered for and successfully complete a formal, one-credit seminar. This five-semester requirement includes the required two semesters of IPIB seminar (BMOLCHEM 901 or BIOCHEM 729), an inside seminar with presentation, an outside seminar with presentation, and at least one additional formal seminar course with or without a presentation. Students may not fulfill this seminar requirement in their final semester unless they intend to complete the entire semester before depositing their thesis.

3.2.1 Required seminar presentations: During their graduate career, students are required to present a minimum of three seminars in advanced seminar courses and receive a grade of B or better (or S for "Satisfactory") for each seminar presentation. The Seminar Presentation Requirement Form needs to be completed, signed by the seminar instructor, and returned to the IPiB Coordinator for each seminar presentation.

- One literature seminar will be given in an advanced seminar course that is related to the student's research area (the "inside" seminar). Some students who are supported by fellowships or training grants may have additional seminar requirements. These seminars cannot replace those required by IPiB except that a training grant presentation may count toward the student's "inside" seminar presentation requirement.

- One literature seminar will be given in an advanced seminar course that is unrelated to the student's research area (the "outside" seminar). 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 (the "IPiB Seminar") will be presented on their research progress in the IPiB seminar course (currently BMOLCHEM 901 or BIOCHEM 729). This seminar should 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 not exceed one hour. 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 five minutes should be devoted to future research directions and plans. The student should allow ten minutes at the end of the seminar for audience questions.

3.2.2 Seminar substitution: A student may petition the ECDC to substitute enrollment in an advanced seminar course other than 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. IPiB students who are required to take an ethics refresher course late in their graduate career may use that course toward the five-semester seminar enrollment requirement.

Students may, with the instructor's and thesis advisor's consent, enroll in BIOCHEM 729 (1 credit), "Practicum in Undergraduate Teaching." BIOCHEM 729 provides an opportunity to lead a seminar section of BIOCHEM 551, 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 729/551 counts toward the inside seminar presentation requirement or the professional development option (See Section 3.5.2).

3.3 **Semester and career course credit requirements**

3.3.1 Graduate School Minimum Graduate Coursework Requirement: The Graduate School requires completion of at least 51 graduate-level credits for a PhD. The Graduate School's Minimum Graduate Coursework Requirement states that at least 50% of credits applied toward the Program's graduate degree credit requirement must be courses designed for graduate work (this includes but is not limited to online, thesis/research, independent study, and practicum/internship credits). Program requirements stipulate that this graduate coursework must be numbered 700 or above, or numbered 600 to 699 and:

- be specifically designed for graduate students in a graduate program; or
- assess graduate students separately from undergraduate students; or
- have a graduate student enrollment of greater than 50% in any given semester.

The Graduate School's minimum graduate residence requirement stipulates that a minimum of 32 credits must be earned while enrolled as a graduate student at UW-Madison. This requirement cannot be satisfied by summer sessions or part-time attendance only. Acceptable work includes all Program coursework, coursework for the Minor Option (if applicable), seminar credits, and research credits.

3.3.2 Course load for non-dissertators: IPiB requires non-dissertators to register full-time for twelve credits of graduate-level courses each fall and spring semester and for two credits in the 8-week summer session. (Students who are trainees or fellows may need to register for more than two 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 and seminars.

Exceptions to this requirement must be requested of and approved by the ECDC. Contact the IPiB Coordinator for assistance.

3.3.3 Dissertator status: Students should achieve dissertator status by the end of the fourth semester if they:

- registered for at least twelve credits per semester and two credits each summer (32 credits minimum);
- successfully completed all required coursework (including the Minor Option, if selected), excluding seminar participation; and

- passed the preliminary examination

3.3.4 Course load for dissertators: Dissertators should register for two credits of advanced (990) research and one seminar credit (if needed to fulfill the five-semester seminar requirement) each fall and spring semester, and for three credits of advanced research each summer session until completion of the degree. Dissertators exceeding three credits per session will lose dissertator status and be assessed segregated fees at the (higher) non-dissertator rate.

3.3.5 Continuous enrollment: Once a student's signed preliminary warrant is filed, the student must be continuously enrolled as a dissertator *through* the day of depositing their PhD thesis. 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 their 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 enrollment are subject to a penalty of twelve times the current per credit fee (dissertator rate) and are personally responsible for payment of this penalty.

Exceptions to the continuous enrollment requirement may be made for dissertators who accept an internship during the summer session. Students should discuss their options with their thesis advisors, the IPiB Coordinator, and / or the IPiB financial and human resource professionals.

Should a student take a leave of absence as a dissertator, upon their readmittance to the Program they must be enrolled for four full semesters (summer session is considered a semester) before they may defend their thesis. Otherwise, the student will be personally responsible for paying full tuition for the semesters after their leave. This is a UW System requirement.

3.4 Managing grades

While your graduate GPA is unlikely to be a main criterion for selection by a future employer, "A" grades do provide evidence of scholarly ability and knowledge and may well be highlighted in letters of recommendation for employment and fellowship applications. Therefore, you are advised to strive for excellence in your course work.

3.4.1 Grade synopsis: PhD-level coursework requirements for the major (and Minor Option, if applicable) are aimed at preparing a student for a career-long profession of advanced study. A student cannot become a dissertator until all required coursework is completed with grades that meet or exceed the minimum standards for the major, the Minor Option (if applicable), and the Graduate School cumulative GPA. Students also cannot graduate with unresolved incomplete ("I") grades or an unsatisfactory grade in their final semester.

3.4.2 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 for 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.

3.4.3 Minimum grades for the Biochemistry Major: The minimal acceptable grade in any Biochemistry, Biomolecular Chemistry, or other approved course applied toward IPiB course requirements (Section 3.1) is a BC. Any grade of C or lower requires repeating the required course and receiving a grade of BC or better.

3.4.4 Satisfactory Progress: Success in the PhD program is determined by satisfactory progress in both coursework and research. Student coursework is determined by Program requirements as well as by the student's thesis committee. The committee may require or suggest additional courses that aim to help the student in their research.

Satisfactory progress in the lab is determined by the student's thesis advisor and thesis committee. This includes, but is not limited to, adequate working hours in the lab, participating in lab meetings and required training, and keeping detailed laboratory notebooks in the format required by the thesis advisor. 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.

Students who are dismissed from the Program due to unsatisfactory progress may not seek to remain in the Program by changing labs.

3.5 Teaching and professional development requirements

Teaching skills are valuable for a broad range of scientific careers. Facile communication with learners at different levels is required for success in careers in industry, government, and non-governmental organizations. It is the goal of the IPiB program to instill teaching skills in all its PhD students, regardless of career objectives.

3.5.1 Teaching requirement: Program candidates for the PhD degree must participate in one semester of teaching as part of their training. Required teaching consists of assisting in an assigned Biochemistry or Biomolecular Chemistry laboratory or lecture course, usually in the second or third year of graduate study.

The call for graduate assistants' (GA) teaching preferences is issued in April for the upcoming academic year to all who need to fulfill their teaching requirement. 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 IPiB Coordinator.

To meet the teaching requirement for a particular course, GAs must meet the expectations of the course instructors regarding their roles and responsibilities in the course. If these expectations are not met, that course will not be counted toward meeting the teaching requirement. GAs should enquire about these roles and responsibilities soon after their assignment and apprise course instructors of any potential scheduling conflicts, including any planned absences for personal or professional reasons. Any issues should be resolved prior to the start of instruction.

3.5.2 Professional development requirement: In addition to one semester of teaching, students must complete a professional development opportunity that is equivalent to a minimum

of four hours per week for one semester (~60 hours) and includes measurable outcomes (e.g., skills learned).

Professional development options include, but are not limited to, attending workshops, taking additional courses, doing internships in private industry, and engaging in outreach efforts. Students may also opt to teach a second semester of a laboratory or lecture course to fulfill this requirement or a combination of options. Certain officer positions in the GLDC can also satisfy this requirement. An ongoing list of preapproved professional development options can be found here.

Students are encouraged to work with their thesis committees to ensure that their plans fulfill this requirement. Professional development activities must be reviewed and approved by the student's thesis committee by their second annual progress report meetings (i.e., spring semester of their fourth year of graduate study) and are a requirement for graduation from IPiB.

If no professional development opportunity is identified and approved by the student's thesis committee by their second annual progress report meeting, a second semester of the teaching requirement becomes the default for fulfilling this requirement.

3.6 **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 ECDC. Such circumstances might include co-authorship on a multi-disciplinary, very high-profile publication.

3.7 **Individual Development Plan (IDP)**

Graduate students (and postdoctoral fellows) who are supported by National Institutes of Health (NIH) funds are required to create and maintain an individual development plan (IDP) to help them set, track, and achieve their professional goals. The contents of the IDP may be kept confidential by the student, but the student's thesis advisor is required to report IDP activity annually.

As such, IPiB has determined that students should use their annual progress report meetings as the venue for sharing with their thesis committee as much information about their IDPs as they are comfortable sharing. Thesis advisors can use this information to demonstrate their compliance with this NIH requirement.

Students are also encouraged to seek out an informal second mentor, on or off campus, who can advise them on their professional development (Section 3.8.6).

Templates, guidelines, and other resources for IDP development and maintenance are available at https://grad.wisc.edu/professional-development/individual-development-plan/.

3.8 **Duties of the thesis advisor and thesis committee**

3.8.1 Thesis advisor: Every IPiB graduate student must have a thesis advisor that is an IPiB trainer. The thesis advisor advises the student on coursework, supervises the student's

research, and acts as a mentor to the student throughout the student's graduate career and beyond. The thesis advisor must approve the student's coursework before registration for a given semester and must also approve any subsequent changes to it.

3.8.2 Thesis committee: The Graduate School requires a minimum of four graduate University faculty to serve on students' thesis committees. The IPiB Steering Committee recommends that students maintain a five-person thesis committee but will accept a minimum of four per Graduate School policy and a maximum of six. (See also Section 3.8.6 on establishing a second mentor.) A fifth or sixth committee member may be from outside the University. (See "Committees (Doctoral/Master's/MFA)")

Regardless of the size of a student's thesis committee, the majority of committee members must be IPiB trainers: three for a four- or five-person committee, four for a six-person committee.

When composing their thesis committees, students should be aware that two dissenting votes will result in failure of a thesis defense, regardless of whether the student's committee consists of four, five, or six members. The absence of a committee member's signature on the PhD warrant is considered a dissenting vote.

The thesis committee is empowered by the Program to advise the student on becoming a dissertator, administer the preliminary examination, oversee yearly progress reports, approve thesis composition, and conduct the final PhD examination. Thesis committee members are also encouraged to act as secondary advisors to students outside of these milestone meetings.

By May 31 of their first year of graduate study, students, in consultation with their thesis advisor, should select a minimum of four members of the graduate University faculty to serve on their thesis committee. The IPiB Program requires that at least one of the student's thesis committee members be an "outside" member. The outside committee member must have at least a partial appointment in a department other than Biochemistry or Biomolecular Chemistry. Membership in another PhD program is not sufficient to be an outside member of an IPiB thesis committee. The IPiB program also requires that at least three of the committee members, including the thesis advisor, be IPiB trainers. Students choosing the Minor Option typically include the minor advisor among their selected faculty.

An IPiB faculty member may serve as the outside committee member only if they 1) have at least a partial appointment in another department, and 2) represent that department on the student's committee.

It is the student's responsibility to seek and obtain verbal or email approval from their selected faculty to serve on this committee and to submit their choices to the IPiB Coordinator. The ECDC will designate which committee member from IPiB shall serve as Chair for the preliminary exam. Once a student passes their preliminary exam, annual progress report meetings are chaired by the thesis advisor. Committee composition must be approved by the ECDC prior to a student's first thesis committee meeting (see 3.10).

3.8.3 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 ECDC if a written request, signed by the thesis advisor and the student, is submitted to the IPiB Coordinator for ECDC consideration. (A request by email that is copied to the thesis advisor is acceptable to demonstrate advisor approval.) Any requested changes to the committee makeup require prior verbal or email approval from the new member.

If a student requests approval for changing more than one committee member within one year of their final defense, the request must include a detailed justification for the change(s) to be considered by the ECDC.

3.8.4 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 annual progress report meetings; informing the membership; and designing a challenging, high-quality learning program.

3.8.5 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.

Attendance by all thesis committee members at the preliminary examination and the thesis defense is a Program requirement. If a thesis committee member is unable to attend either examination, that committee member should contact the student and the student's thesis advisor immediately, so that the exam can be rescheduled or a substitute/replacement committee member can be found. If a committee member that was expected to attend fails to appear for the exam, the exam may proceed with the remaining committee members and the student should notify the IPiB Coordinator after the exam to report the absence. If two or more committee members fail to appear, the exam must be cancelled and rescheduled.

3.8.6 Informal Establishment of a Second Mentor: Past surveys of graduating students have revealed that many have benefited from establishing a strong interaction with a second mentor who may or may not be a member of the thesis committee. These interactions typically arise from a shared research interest and provide an opportunity to obtain additional guidance in professional development. It may also lead to a second significant letter of recommendation. Students are urged to seek out such mentorship, especially as they approach their fourth year of graduate study.

3.9 **Medical Scientist Training Program (MSTP) student requirements**

MSTP students are typically directly admitted into an IPiB lab ("direct admits"), so they do not participate in the first-semester lab rotations. Their program requirements are the same as those for non-MSTP IPiB students with the following exceptions:

a. MSTP students may count their pre-PhD medical coursework as three credits of biological breadth coursework. They must also complete at least three credits of physical and/or quantitative breadth coursework; and
b. MSTP students are exempt from the professional development requirement but must complete at least one semester of teaching.

3.10 Examination and review procedures

Annual meetings with the thesis committee are essential to timely completion of the PhD. In addition to acting as a means for the student to gauge their rate of progress through the program, the expert advice provided by committee members will help the student succeed in their research project. The written report and PowerPoint slides prepared for the meetings can act as a starting point for seminars, posters, meeting presentations, and publications. The completed meeting forms act as a record of committee expectations for the coming year and feedback on the student's strengths and weakness. Therefore, students should take the lead in organizing these meetings and not allow the Program deadline to pass before convening a meeting.

3.10.1 Year 1: First Thesis Committee Meeting

The student's first thesis committee meeting must be convened prior to the beginning of the second academic year to evaluate the student's performance in coursework, design a coursework plan going forward, and discuss their research project. At a minimum, the student's thesis advisor, one IPiB faculty committee member, and an outside committee member must be present at this meeting. In the event any committee member should miss this meeting, the student must contact them 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 research goals. The second meeting, the preliminary examination, is the proper forum to discuss the route to those goals.

One week before the first thesis committee meeting, the student should distribute to their thesis committee a brief outline of the proposed research aims, together with copies of their undergraduate and graduate transcripts. The meeting is informal as there is no evaluation of the student, but it provides an excellent opportunity for the committee members to learn about the student and how they might contribute to the student's graduate career. An outcome of the meeting should be a completed First Thesis Committee Meeting Form signed by all committee members.

3.10.2 Year 2: Preliminary Examination

Exam Timing: IPiB students are expected to complete the preliminary exam process before the end of their fourth semester in residence. Exceptions to the typical exam schedule require ECDC approval. The IPiB Coordinator initiates the scheduling of preliminary exams at the beginning of the spring semester.

Preliminary Warrant: To initiate the preliminary exam procedure, the student completes and submits to the IPiB Coordinator a Request for Preliminary Warrant at least four weeks before the preliminary defense date.

After a successful examination, the student's thesis committee members sign the warrant, and the student returns it to the IPiB 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. Becoming a dissertator will result in a substantial decrease in required segregated fees.

The advanced seminar presentation requirement and the professional development 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 the PhD warrant until the teaching requirement, professional development requirement, and the seminar attendance and presentation requirements (or definitive plan for completion of the required seminar presentations) are complete.

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 of degree completion.

Written Proposal: The preliminary proposal format is based on that required of applicants for NIH F31 fellowships, described below. For more detailed information, please visit the NIH website that focuses on the F31 grant, https://grants.nih.gov/grants/guide/pa-files/PA-14-147.html. No deviations from these format requirements are allowed, except for the optional Methods section.

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**. An electronic copy of the proposal must be given to the IPiB Coordinator when distributed to the thesis committee and becomes part of the student's permanent record.

Students should consult with their thesis advisors in planning the proposed research and during proposal writing. However, the thesis advisor should not proofread or edit the proposal. It is recommended that the thesis advisor reads the research proposal once and provides a general critique. Questions about the proposal prior to the preliminary

examination should not be asked by members of the student's thesis committee. The thesis committee has the option to postpone the preliminary exam if the written research proposal has significant deficiencies.

Format: Layout matters; students should strive to make their prelim proposals readable. Use single-spaced text (at least 11 pt. font) throughout the proposal. Page limits listed below include all figures and figure legends. Figures and other images should be embedded in the body of the proposal with clear legends. Margins should be at least one-half inch on all sides. There is no limit to the length of the proposal's bibliography.

Title and Abstract: The proposal title should be short and informative. The abstract should be no longer than a half page.

Specific Aims: In one page, the specific aims portion defines the scientific question to be addressed and objectives 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.

Research Strategy: This should be the major section of the preliminary proposal and no more than 6 pages total. This section should be organized into the following subsections: significance (usually 1 to 2 pages) and approach (usually 4 to 5 pages). The goal is to describe the significance of each "Specific Aim" and how the aims 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. 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.

Methods (optional): Students may include up to 2 additional pages to describe the methods they plan to use in their designed experiments to get the results they expect.

Oral Preliminary Examination: At the beginning of the oral examination, the committee chair reiterates committee member and student procedures, and ensures that members from outside IPiB are fairly apprised of Program expectations. All members of the student's thesis committee must be present (see Section 3.8.5 for absence policy).

The student distributes the appropriate evaluation forms, as provided by the IPiB Coordinator, to the committee chair and members. 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 provides brief points of clarification. The entire oral examination 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 each committee member completes the Preliminary Examination Committee Form addressing how well the student conveyed the significance and approach of the proposal by addressing the following criteria:

1. Quality of the written proposal
2. Quality of the oral presentation
3. Ability to answer questions
4. Knowledge of background material
5. Quality and quantity of work accomplished so far
6. Experimental design
7. Defense of research plan
8. 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. A conditional pass is appropriate only when a discrete aspect of the student's performance was deemed inadequate, and that aspect can be remediated without repeating the entire oral exam.

The committee chair also completes an overall written evaluation of the exam (Preliminary Examination Summary Form), summarizing the student's strengths as well as areas for improvement. If the committee recommends a conditional pass or failure, the committee chair must summarize the reasons for this recommendation and the conditions that must be met by the student to achieve dissertator status. The Preliminary Examination Summary Form is completed by the committee chair, with input from committee members, prior to adjournment of the meeting.

The Preliminary Examination Summary Form is discussed by the student, committee chair, and thesis advisor and all three sign the form, which is then given to the IPiB Coordinator by the student to become a part of the student's record. A copy of the form is sent by the IPiB Coordinator to the student and all members of the thesis committee.

Students who fail the preliminary exam must repeat the exam in its entirety within 12 months. Students who fail the preliminary exam twice cannot continue in IPiB.

Students who receive a conditional pass will be given specific goals and a timeline by which those goals must be met. It is the responsibility of the thesis advisor (who is now the committee chair) to ensure that these goals are met in a timely fashion. At any time, failure of the student to achieve satisfactory progress may lead to dismissal from the Program.

3.10.3 Post-prelim Annual Progress Report: Every year following the attainment of dissertator status, students are required to give a written and oral report on their research progress and future plans to their thesis committees. The Annual Progress Report meetings must take place *no later than May 31 of each academic year and should take no longer than 1.5 hours total*. Scheduling meetings well before the deadline is encouraged to avoid exceeding it and to minimize faculty scheduling conflicts. Once a meeting is scheduled, the student should advise the IPiB Coordinator of the date and time and reserve a meeting room.

Students who receive ECDC approval to hold their meetings later than May 31 are still required to hold their next meeting by May 31 of the following year unless the extension was due to an approved leave of absence. Students participating in a summer internship away from campus must complete their annual progress report before leaving for the internship. Students who plan to graduate after August 15 of a given year are similarly required to hold a meeting (a "thesis prospectus" meeting) by May 31 of that year.

At least three committee members, including the thesis advisor, must be present at each annual progress report meeting, but students benefit more by having all members present. The student must meet with any missing committee members separately to discuss and review the outcomes of the meeting and obtain their signatures before returning the Annual Progress Report form to the IPiB Coordinator.

A **2- to 3-page, single-spaced summary of aims accomplished in the last year and plans for the coming year** is distributed to all members of the student's thesis committee no less than two days before the meeting. One page containing figures, tables, and references may be appended to the report. The student should prepare a **maximum 20-minute oral presentation with a recommended maximum of 20 slides** summarizing progress made and plans going forward. Students are advised to allow at least an additional 30 minutes for discussion, which may occur during or after their presentations.

Adherence to these maximums will reflect positively on the student's progress as a researcher and advance their scientific communication skills while also being respectful of the committee members' time. Students are strongly encouraged to effectively manage their annual committee meetings and should meet with their thesis advisors prior to the annual meeting to help identify the most important information to communicate.

After the oral presentation, the student and committee discuss the progress made and future plans. Toward the end of the discussion, the student may be asked to leave the room for a few minutes to allow the committee to confer, which should not cause the

student any concern. It is recommended that the thesis advisor leave the room at some point after the student returns to allow the student to discuss any concerns with the other members of the committee.

The full committee then completes the Annual Progress Report form summarizing the discussion and its recommendations for the coming year. The summary form must be signed by the student, the advisor, and the committee members before it is returned to the IPiB Coordinator and becomes part of the student's file. Copies of the form are distributed to the student and thesis committee by the IPiB Coordinator.

Students should welcome these annual meetings as opportunities to apprise their committees of latest developments and receive timely advice, since it is to no one's advantage to have concerns expressed for the first time at the final defense!

3.10.4 PhD Thesis: Students are expected to carry out significant, original research during 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. A discussion of potential future directions of the completed research is strongly encouraged. 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. Note that publication of the thesis does not meet the IPiB requirement for submission of a first-author publication to a peer-reviewed journal.

IPiB also encourages students to consider including a thesis chapter that describes their scholarly research to a non-science audience. Please visit http://scifun.org/Thesis_Awards/thesis_awards.html for more information on this opportunity sponsored by the Wisconsin Initiative on Science Literacy.

3.10.5 PhD Warrant: At least six weeks prior to an anticipated final oral exam date, the student must submit a "Request for PhD Warrant" to the IPiB Coordinator. This form initiates Graduate School and ECDC 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 their thesis committee members, deposits their thesis, and uploads the signed warrant.

A Student Checklist for Final Defense and Graduation is available on the IPiB website and the IPiB Coordinator will also send you a copy when you do your final defense pre-check two semesters prior to your anticipated defense.

3.10.6 Final Oral Exam: The final oral examination deals primarily with the thesis content. Students take 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).

The oral exam begins with a public seminar in which the student summarizes their research accomplishments, highlighting the significance to the field. This seminar should be no longer than one hour. The thesis committee attends but typically does not ask questions in the public seminar. Following the public seminar, the student meets in a closed session with their thesis committee and responds to questions from the committee. The thesis advisor can take part in the questioning but may not actively steer the discussion or defend the research. The closed session should be scheduled for two hours to allow ample time for the committee members to be satisfied with their individual evaluations. The student is then excused and, after discussion, the members decide individually whether 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 dissenting vote. At the discretion of the student's thesis committee, a student may repeat a failed final exam once within twelve months of the original exam.

If a committee member participates in the final oral exam remotely (e.g., via video chat), the thesis advisor may, with that committee member's permission, sign that committee member's name and initial it.

3.11 Progress toward Degree

3.11.1 Annual Progress Report Meetings: The purpose of the annual progress report meeting is to provide guidance and encouragement so students 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. See Section 3.10.3 for details about the annual progress report meetings.

3.11.2 Graduate School Five-Year Rule: Students have five years from the date of passing their preliminary exam 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's PhD Coordinator, explaining the circumstances of the delay. Students should contact the IPiB Coordinator for assistance.

3.11.3 Other Employment: Graduate students are not precluded from engaging in other employment as long as they satisfy the responsibilities of their RA appointment, as defined in GAPP. However, insufficient progress towards their degree can result in dismissal (see 3.11.1).

4. Graduation from IPiB with a Master of Science degree

The IPiB Graduate Degree Program does not admit students directly into MS candidacy. The following requirements apply only when a PhD student's thesis committee determines that the student's academic and research record merits a terminal MS degree. The academic standards of the Graduate School still apply.

4.1 **MS course requirements**

4.1.1 Required Coursework: IPiB course requirements for the PhD (Section 3.1) must be met.

4.1.2 Seminars: Students must attend the Biochemistry Colloquium (Section 3.1.1) in their first year of graduate study. Thereafter, they must have completed one of the approved advanced (900-level) seminars for each year of their graduate study (not including year one) in order to be eligible for the MS degree.

4.1.3 Graduate School Credit Requirements: A minimum of 16 credits of graduate-level didactic or laboratory coursework taken at the University is required for the MS degree, and a minimum of 30 credits (including 990 research or seminars) must be completed, in total.

4.1.4 Thesis Committee Determination: Upon completion of the Graduate School's and IPiB'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. The thesis committee is also empowered to determine if the student will give either an oral presentation or a written report of their research to the committee.

4.2 **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 their thesis committee members, one of which must be from the student's thesis advisor, one from another IPiB faculty member, and one from an outside committee member. For more information on this option, students are encouraged to speak with their thesis advisor and / or the IPiB Coordinator.

5. PhD with joint major in Biochemistry

In the joint PhD major program, the candidate must meet all above IPiB requirements and the other major department's requirements.

6. Joint MD-PhD Program

IPiB participates with the School of Medicine and Public Health (SMPH) in offering a joint program for students wishing to complete both the MD and PhD degrees: the Medical Scientist Training Program (MSTP). MSTP students who wish to join an IPiB lab and pursue their PhD in Biochemistry should submit a Change of Program request by July 1 to be vetted and admitted for the subsequent Fall semester. The basic prerequisites and requirements for a PhD in this program are slightly different from those for a PhD with a major in IPiB (See Section 3.9).

7. Option A (Focused) Minor in Biochemistry

PhD students from other graduate programs may wish to pursue an Option A Minor in Biochemistry. Such students must create a Minor plan that fulfills the following requirements and is approved by the IPiB ECDC.

7.1 **Minor advisor**

A student must identify a member of the IPiB faculty to serve as the minor advisor on the student's thesis committee. Ideally, the minor advisor serves on the student's thesis committee for the entirety of the student's graduate career; at a minimum, the minor advisor must serve while the student is completing the minor coursework.

7.2 **Graduate coursework for Minor Option A**

Minimum Minor Option A requirements of the Graduate School are available here. IPiB's minimum requirements are as follows:

7.2.1 General Biochemistry Course Requirements: A student must complete course Series 1 or course Series 2:

- Series 1: BIOCHEM 507 (3 cr.) and BIOCHEM 508 (3 cr.)
- Series 2: A total of 6 credits selected from IPiB-approved graduate-level courses with approval of the ECDC

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

7.2.2 Additional Biochemistry Courses: In combination with those credits earned for 7.2.1, a total of 9 graduate-level credits in advanced biochemistry coursework (700-level or above or those carrying the graduate attribute) is required.

7.3 **Grades**

A student must maintain a cumulative GPA of 3.0 or better in all required biochemistry courses, with no grade lower than BC. Courses may not be taken as pass-fail, satisfactory-unsatisfactory, or for audit.

7.4 **Examination and Review Procedures**

7.4.1 Course Completion: By the time a student is ready for their preliminary examination according to the timeline of the major program, all coursework for Minor Option A should be completed.

If a student determines to pursue the Minor Option A after they have achieved dissertator status, they must revert to non-dissertator status while the minor coursework is being completed. This must be approved by the student's home department and the Graduate School.

7.4.2 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 (7.2 and 7.3 above) have been met.

8. Personnel Issues

8.1 **Paid and Unpaid Leave**

The IPiB PhD program follows the campus leave policy for Graduate Assistants (GAs), described at https://hr.wisc.edu/policies/gapp/#leave-benefits, regardless of whether a student is currently appointed as a GA. Any deviation from these policies must be approved by the Program Director. Students wishing to request a leave of absence should discuss the request with their thesis advisor and, if necessary, the IPiB Program Director.

8.2 **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 IPiB Coordinator or the Program Director 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 Program Director 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 Program Director 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 extension will allow the student to achieve sufficient familiarity with the scientific questions of interest and relevant experimental approaches to successfully present and defend a research proposal.

8.3 **Grievances and Appeals**

If a student feels unfairly treated or aggrieved by faculty, staff, or another student, the University offers several avenues to resolve the grievance. When possible, students' concerns about unfair treatment are best handled by speaking directly with the person responsible for the objectionable action. If the student is uncomfortable speaking with the individual(s) involved, or if such discussions do not resolve the issue, the student should contact the direct supervisor of the person responsible for the objectionable action. For example, if it is a lab member, the aggrieved student should contact the PI of the lab. If the PI is the source of the grievance, the student should

contact the PI's department chair.

If the action taken by the supervisor in response to the grievance is deemed inadequate by the student, the student may submit a written report of the grievance to the relevant department chair. Such a report must be submitted within **sixty calendar days** of the event that created the grievance. On receipt of the written complaint, the department chair will refer the matter to a committee comprised of a subset of the IPiB Steering Committee. This subcommittee will request a written response to the complaint from the person to whom the complaint is directed and the response will be shared with the student who lodged the complaint. The department chair will provide a timely written decision to the student on the action taken by the committee.

If either party involved in the dispute is not satisfied with the decision of the subcommittee, they have five working days from the receipt of the decision to contact the office of the Dean of the Graduate School (gsacserv@grad.wisc.edu) to register an intention to appeal the decision.

For additional information, please visit this web page.

8.4 **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 Dean of Students Office in the Division of Student Life in person (75 Bascom Hall), by email (dean@studentlife.wisc.edu), by phone (608) 263-5700 (ask to speak to the Dean on Call), or by filling out a Bias Incident Reporting Form. 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 them 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 the Dean of Student's Office website regarding sexual assault, dating, domestic violence, and stalking. 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.

For a list of confidential support and reporting options, please visit the University Health Services website.

8.5 **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 (postdocs) 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 and Integrity in the Graduate School, RIO@research.wisc.edu. Obligations and protections for graduate students and postdoctoral research associates in reporting wrong doing, non-compliance, or research misconduct can be found here.

Faculty supervisors should discuss the situation with their department chair, who in turn should discuss the situation with the Associate Vice Chancellor for Research Policy and Integrity. 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 and Integrity may be consulted and will serve as the college's main point of contact in such matters.

Please visit the Graduate School's webpage on responsible conduct of research for more information.

9. Appendices

9.A IPiB Higher Learning Goals
9.B Standing IPiB Committees, Academic Year 2023-24
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APPENDIX 9.A IPiB Higher Learning Goals

1. Gain a broad understanding of the biochemical principles that underlie all biological processes.

2. Become aware of the current limitations of the state of understanding of this discipline and the strategies that are required to advance the field.

3. Think critically to address research challenges using a broad range of the theories, research methods, and approaches to scientific inquiry.

4. Develop communications skills that enable the articulation of research to fellow scientists and non-scientists.

5. Develop teaching and mentoring skills in both lecture and laboratory settings.

6. Formulate and design new approaches that extend and apply biochemical principles beyond their current boundaries.

7. Conduct independent research using a diverse breadth of biochemical processes.

8. Collaborate with investigators within the program, university, and beyond since current and future advances in the biomolecular sciences demand interdisciplinary skills.

9. Foster professional and ethical conduct in the sciences, including but not limited to: exposition of the scientific method; ethical design of experimental protocols; reproducibility in science; professional behavior in industrial, government, and academic settings; documentation of scientific results; communication to other scientists and the public; peer review; and confidentiality.

10. Engage in learning, practices, and events/activities that contribute to a diverse, equitable, and inclusive community of researchers and educators

11. Explore career development opportunities in industry, government, and academia to realize professional goals and paths.

APPENDIX 9.B Standing IPiB Committee Descriptions

Membership of each committee is available on the IPiB website.

Steering Committee

Composition

Eight IPiB trainers (5 from Biochemistry and 3 from BMC) and 3 IPiB students are members of the committee. The trainers include: the Program Director, who is determined by vote of the IPiB trainers and serves as chair of the Steering Committee, the co-Director, a representative from each of the following committees: Admissions, Recruiting, New Student Orientation, and Education and Career Development, and two "at large" members. All trainer members other than the Director are appointed by the department chairs in consultation with the Director. The student members include the Chair or Vice Chair of the GLDC and one IPiB student representative from each department's Community Engagement committee. All trainer and student members are voting members. For voting purposes, a quorum will consist of at least 6 trainers and at least two students. The IPiB Program Manager is an ex-officio member of the committee.

Responsibilities

i. Oversight of the IPiB program, including all committees.
ii. Revision or creation of policies or, as required, policy recommendations for approval by the two department faculties.
iii. Updating and revision of the IPiB handbook at least annually.
iv. Updating and revision of the IPiB web site on a regular basis.
v. Confirmation of thesis laboratory assignments.
vi. Make programmatic budgetary decisions as empowered by the department chairs.
vii. Creation and distribution of minutes of each meeting to IPiB trainers and students.
viii. Completion of a written annual report to the department chairs.
ix. Assist the Program Director and Program Manager in the School review of the PhD program.
x. All other issues related to the program that are not dealt with by other committees.

Admissions Committee

Composition

Twelve IPiB trainers (8 from Biochemistry and 4 from BMC) and 4 IPiB dissertators, who are appointed by the co-chairs from applications received. Two of the trainers will be co-chairs, one from each department, one of whom is a member of the Steering Committee. The Admissions and Recruiting Coordinator will attend as requested by the co-chairs.

Responsibilities

i. Determine the target size of the new recruitment class from a survey that is conducted each December.
ii. Decide on selection criteria that are equitable, evaluate candidates holistically, and will promote recruitment of a diverse group of students.
iii. Review graduate applications in a timely manner. Each application is scored by three faculty members and one student member to produce a ranked listed of candidates. Candidates will then be selected for interview based on the rankings and on the projected class size. Ideally, all application reviews will be completed by mid-December.

iv. Create a ranked spreadsheet with detailed information on all candidates to share with the Recruitment chairs.
v. Admissions co-chairs meet with the co-chairs of the Recruiting Committee to make admissions decisions as quickly as possible after the student interviews.
vi. Create a report describing the results of each annual admissions process to be presented to the Steering committee and distributed to trainers and students via the meeting minutes.
vii. Manage selection and distribution of promotional materials for the program with the Admissions and Recruiting Coordinator.

Recruiting Committee

Composition
Two IPiB trainers, one each from Biochemistry and BMC, and 3 IPiB students appointed by GLDC. The trainers will act as co-chairs and one is a member of the Steering Committee. The Admissions and Recruiting Coordinator is an ex-officio member of the committee.

Responsibilities
i. Determine the dates for interviews (may be virtual) and in-person visits.
ii. In collaboration with the coordinator, identify and reserve hotel and meeting spaces for the in-person events.
iii. Create a proposed schedule for the interviews and in-person recruiting visits for approval by the Steering committee early Fall semester.
iv. Create a projected budget for all events for the next calendar year for approval by the Program Director early Fall semester.
v. Recruit trainers for interviews and in-person recruiting events.
vi. Coordinate current students involved in recruitment.
vii. Invite and schedule candidates for interviews (may be virtual) and in-person visits.
viii. Coordinate all student visits.
ix. Solicit feedback on candidates from trainers and students.
x. Co-chairs meet with the Co-chairs of the Admissions Committee to make admissions decisions as soon as possible after student interviews.
xi. Coordinate faculty contacts with admitted students.
xii. Coordinate attendance at outreach meetings (SACNAS, ABRCMS, etc.) and develop other strategies for encouraging application and matriculation of a diverse group of students.
xiii. Assist in writing flex funds application to secure recruitment funds for the next year.

New Student Orientation Committee (NSOC)

Composition
Three IPiB trainers (2 from Biochemistry, 1 from BMC) and 2-3 IPiB students appointed by GLDC. Two of the trainers (one from each department) will be co-chairs, one of whom will be a member of the Steering Committee. The IPiB Program Manager is an ex-officio member.

Responsibilities
i. Plan and supervise orientation activities for each incoming class, including the general orientation sessions, receptions, and faculty research talks.
ii. Advise students prior to assignment to a thesis laboratory.

iii. Organize rotations, a check-in meeting after the first rotation, and matching of students to thesis laboratories.
iv. Assist students who do not find a match during the normal rotation period in securing a thesis advisor.

Education and Career Development Committee (ECDC)

Composition

Four IPiB trainers (two from Biochemistry, two from BMC) and one or two IPiB students appointed by GLDC. Two of the trainers (one from each department) will be co-chairs. One trainer will be a member of the Steering Committee. The IPiB Program Manager is an ex-officio member.

Responsibilities

i. In collaboration with the IPiB Program Manager, ensure that students are effectively tracked to assure timely completion of all degree requirements, including courses and seminars, thesis committee meetings, required teaching, any conditional passes or failures of the preliminary examination, and required professional development.
ii. Approve the composition of first-year students' proposed thesis committees, assuring that they meet program requirements.
iii. Select the chair of each student's thesis committee for the purposes of the preliminary examination. The chair must be an IPiB trainer other than the student's thesis advisor.
iv. Coordinate assignment of students for their one-semester teaching requirement, assure that adequate training is received prior to teaching, and that students receive feedback on their teaching performance.
v. Review and rule on requests for substitutions to the pre-approved seminar courses for satisfaction of the seminar requirement and for additions to the approved courses for the breadth requirements.
vi. Review proposals for the required professional development and confirm completion by the end of the fourth year or assign another semester of teaching.
vii. On an annual basis, assess the required IPiB courses and propose development of new courses and/or revision of the current courses.
viii. In collaboration with the GLDC, plan and execute career development activities for IPiB students.
ix. Approve any requests for a Biochemistry PhD minor.

Graduate Leadership and Development Committee (GLDC)

Composition

This committee is student run and has the IPiB Program Director as an advisor, as needed. It typically consists of a Chair, Vice Chair, and the following subcommittees: New Student Orientation, Recruiting, Events & Communications, Career and Lunch Symposia, Student Invited Speaker, Retreat, Treasurer, and Diversity, Equity, and Inclusion. The Vice Chair or Chair is a member of the Steering Committee.

Responsibilities

i. Serve as a liaison between faculty and students, communicating the wishes, concerns, questions, and opinions 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 broader community through outreach and service.

APPENDIX 9.C IPiB Staff, Academic Year 2023-24

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APPENDIX 9.D 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 have 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 matching with a thesis laboratory is the responsibility of the NSOC.

APPENDIX 9.E 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

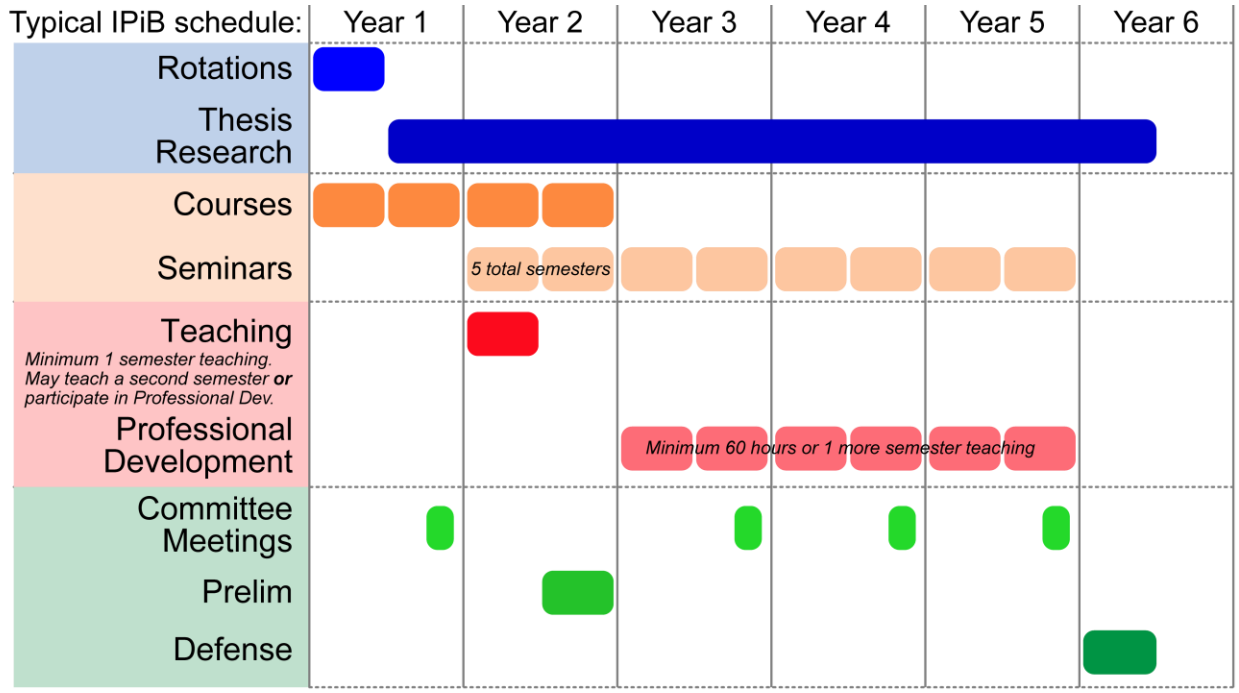
If students have questions about tips and techniques for making effective slides, they are encouraged to talk with the Biochemistry Communications & Events team.

APPENDIX 9.F Questions to Ask Prospective Thesis Advisors

1. How many students are you planning to take all together?
2. What thesis projects would be available to me if I were to join your lab?
3. Would these projects expose me to a variety of different experimental approaches?
4. In general, how available will you be to answer questions I might have?
5. 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.?
6. What are your expectations for the amount of time I should spend each day/week in the lab?
7. 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?
8. Do you encourage your students to attend seminars and journal clubs, including those that may be outside of their field of research?
9. Do students in your lab have the opportunity to attend scientific meetings where they can interact with researchers from other institutions?
10. 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?
11. How long do you think it should take me to get my PhD degree?
12. What are your former graduate students doing now?
13. 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 9.G Timeline to Graduation



Rotations: IPiB students carry out research rotations in three of the ~50 program labs in their first semester.

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

Courses: Coursework includes core classes in biochemical principles and approaches, professional development, and science communication, and electives in the physical, biological, and quantitative sciences. Dozens of courses allow curricula to be tailored to each student's interests and needs.

Seminars: IPiB students enroll in a seminar for at least five semesters starting in the second year of graduate study. Presentations in three seminars are given during a student's graduate training.

Teaching: Each IPiB student will teach in at least one biochemistry course, typically during the second year.

Professional development: At least 60 hours of approved activities or an additional semester of teaching.

Annual progress reports: Meet with your thesis committee for an oral and written report by May 31st.

Preliminary examination: The preliminary examination occurs prior to the end of the second year. The student writes an NIH-style grant proposal based on their research and defends it before their thesis committee.

Thesis defense: IPiB students write a research thesis and defend it at the end of their graduate study. The timeline for defense will depend upon many factors, but it typically occurs after 5-6 years.

APPENDIX 9.H Proposed Standards for Examining Dissertations

Excerpted from the Report by the Ad Hoc Committee on the Future of the Dissertation University of Wisconsin-Madison, April 11, 2016

An acceptable dissertation completed in partial fulfillment of the PhD degree at the University of Wisconsin-Madison must have the following attributes, as recognized by the student's dissertation committee:

1) **Focus:** A dissertation must clearly articulate a research problem or problems, a question, or questions. It must specify the limits of the dissertation's investigation with respect to theory, knowledge, or practice within the field of study.

2) **Appropriateness:** The methods and techniques applied in the execution of the dissertation must be recognized as appropriate to the subject matter and as fitting, original, and/or aesthetically effective.

3) **Clarity:** The dissertation should communicate complex ideas in a form and manner that is clear and understandable to area specialists and, as appropriate, to readers beyond the specialty area.

4) **Durability:** The description of the research and its major conclusions should be in a durable form (written or otherwise capable of being permanently archived).

5) **Novelty:** The dissertation should embody scholarship that makes a substantive contribution to the field of study. The ideas, concepts, designs, and/or performances should move beyond the current boundaries of knowledge within the field of study.

6) **Connectedness**: The dissertation should demonstrate a professional level of familiarity with, and understanding of, contemporary work in the field.

7) **Quantity**: The dissertation should demonstrate an appropriately comprehensive investigation of the student's research area or artistic form.

8) **Documentation and Replicability:** Documentation in the dissertation should be sufficiently thorough and of an appropriate standard and made available to ensure that the dissertation provides a useful starting point or reference for subsequent researchers, scholars and/ or artists.

9) **Professionalism:** A dissertation should reflect high ethical and professional standards.

*****In developing these criteria, we drew on "The University of Melbourne Additional Information for Examiners when a Candidate is Submitting a Dissertation and Creative Work for an MPhil or Masters by Research Degree." In addition, we drew on the graduate level learning goals adopted by the UW-Madison Graduate Faculty Executive Committee on November 14, 2014.

APPENDIX 9.I Checklist for Graduation

Student Checklist for Final Defense and Graduation

_____ 1. Confirm with Kate completion of degree requirements (*recommended at least two semesters before anticipated graduation*)

_____ 2. Schedule final exam with committee (Kate will reserve your rooms)

_____ 3. Request warrant no less than *6 weeks prior to exam date*

_____ 4. Apply to graduate through your MyUW Student Center

_____ 5. Review Completing Your Degree and Guide to Preparing your Doctoral Dissertation on the Graduate School website

_____ 6. Circulate thesis to thesis committee *2 weeks before exam date*

_____ 7. Complete and submit Summary of Accomplishments

_____ 8. Determine thesis deposit date (this is your last day as a graduate student)

_____ 9. Defend; have committee members sign paper warrant (you keep this). Kate initiates e-sign and submits warrant

_____ 10. Complete Online Doctoral Surveys

_____ 11. Deposit dissertation ($90 deposit fee) and certificates of completion of Online Doctoral Surveys

_____ 12. Remind your PI to give you a final S grade for your 990 research

_____ 13. *Celebrate! Relax! Pat yourself on the back!*