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Administration of Graduate Program

This manual is intended to give new Biochemistry graduate students a convenient reference of useful information. This manual supersedes prior editions of the Biochemistry Department Graduate Program Manual. Policies and procedures of Purdue University and the Biochemistry Department are subject to change from time to time as a result of actions by federal and/or state government, trustees of Purdue University, and/or administrators of the Department of Biochemistry Graduate Program.

Staff and Resources

Graduate Program Coordinator: Traci Jordan tljordan@purdue.edu

The program coordinator works with all Graduate Chairs, Major Professors, Dept. Head, and Graduate School to oversee the BCHM graduate program; providing guidance for Biochemistry PhD students as they navigate their graduate education in the Biochemistry graduate program.

First Year Graduate Chair: Dr. Scott Briggs sdbiggs@purdue.edu

Until a Major Professor is selected, the First Year Graduate Chair’s role is to help new students understand the academic requirements of the program; advise them and oversee their progress until they have a thesis advisor. He/she meets with students to determine rotation schedules and final lab placements. She/he is available to meet with graduate students about any problems or concerns.

Major Professor/Thesis Advisor: To be determined after lab rotations

The Major Professor has supervisory responsibility for a student’s research. She/he meets with students about their research and offers advice on problems or issues that may arise in their graduate career.

Preliminary Exam Graduate Chair: Dr. James Forney forney@purdue.edu

This faculty member serves dual roles. As Preliminary Exam Graduate Chair, he/she oversees prelim examinations, approves prelim examination proposal topics, assigns prelim exam committees, and meets with graduate students about issues that may arise regarding preliminary exams.

Department Head: Dr. Andrew Mesecar amesecar@purdue.edu

He/she is the head of the Biochemistry graduate program. She/he is available to meet with graduate students about any problems or issues that may arise throughout their graduate career.

Graduate Program Chair: Dr. Elizabeth Tran etran@purdue.edu

He/she oversees the graduate program; acts as mentor to BCHM GSO (Graduate Student Organization).

Office of Graduate Assistance and Conflict Resolution (OGACR) The OGACR provides a safe and secure environment for graduate students to seek information, advice and request assistance for effective conflict resolution. The office provides ombuds services, and facilitative mediation to help students succeed in their graduate education, related research, and scholarly endeavors.

Counseling & Psychological Services (CAPS) https://www.purdue.edu/caps/services/therapy/index.html Clinicians are available for mental health emergencies. Hours for walk in are 8 am to 5 pm Monday – Friday. To speak to a clinician, call (765) 494-6995 and press #1 for consultation and/or referral.
Graduate Student Milestones

Orientation Week
Submit final transcripts
Attend Orientation as scheduled.
Discuss courses with First Year Grad Chair
Obtain all safety training and certifications.
Take English Speak Test (international students).
Interview faculty in the department to help in lab rotation preferences.
File a DRAFT Plan of Study.
Attend annual research retreat.

1st Year - fall
- Attend faculty research talks.
- Participate in lab rotations; present research after each rotation period.
- Attend Tuesday seminar series.
- Attend Friday grad/postdoc seminar series.

1st Year – spring
- Participate in lab rotations; *present research after third rotation.
- Attend Tuesday seminar series.
- Attend Friday grad/postdoc seminar series.
- Submit Major Professor selection to the First Year Graduate Chair.
- Receive a permanent laboratory assignment.

1st Year – summer
- Select a Thesis Advisory Committee and revise your draft plan of study to reflect your permanent lab and thesis committee. Submit POS for approval.

2nd Year - fall
- Attend Teaching Assistant Orientation.
- Hold first Thesis Advisory Committee meeting. For early prelim, have meeting before September 30.

3rd Year – fall
- Take the Preliminary Examination – unless you passed an early prelim exam.

Future Years
- Meet the teaching requirement.
- Complete all coursework.
- Continue with research, attending seminars and retreats, and holding annual Thesis Advisory Committee meetings.
- Work on first author publication

Final Semester
- Complete the manuscript publication requirement by the time of the Final Examination thesis deposit.
- Review thesis information on Graduate School website.
- Attend a Thesis Format and Deposit Workshop.
- Request the Final Examination at least two weeks prior to the exam.
- Hold and complete the Final Examination by semester deadline.
- Deliver the Report of the Final Examination by semester deadline.
- Prepare the Deposit Copy of the thesis.
- Schedule a final deposit appointment with the Thesis/Dissertation Office.
- Submit electronic Deposit Copy to the Thesis/Dissertation Office by semester deadline.
- Deliver a bound hard copy to the BCHM Office and Major Professor.
- Deliver a Thesis Receipt to the Graduate Records office by semester deadline.
- Pay diploma fee and Ph.D. thesis fee to the Bursar.

NOTE: Each year, reasonable progress should be made in order to stay in the program. Each semester, a research acknowledgment form and form 23 are to be given to the Graduate coordinator before the deadline in order for her to register your BCHM 699 research credits. It is your responsibility to check your registration for accuracy and remove any holds from your registration prior to the start of each semester. If you are not registered, contact the grad coordinator. Students who miss the registration deadline will incur a $200 late registration fee.
Expectations for excellence in the Biochemistry Graduate Program

To help students gauge their progress, listed below are milestones he/she is expected to accomplish during each year of the BCHM PhD program. By achieving these milestones, students will be competitive in securing a position after graduation. Many of our graduate students continue their research careers by becoming post-doctoral fellows in high profile laboratories or by accepting positions in the biotechnology sector. Recent graduates have accepted positions in data analytics, medical research, and drug discovery or as post docs in higher education.

Year 1

- Can handle course material efficiently and effectively
- Balances course work with commitments to laboratory research
- Attends lab meetings as well as departmental and other relevant seminars
- Makes presentations at lab meeting that demonstrate a basic knowledge of research area
- Works professionally with others in the laboratory
- Shows initiative and effort in first-year laboratory rotations with regard to both experimental work and intellectual understanding of the project
- Is sufficiently proficient at research that he/she has already generated several completed figures for their own first manuscript, or a manuscript being prepared by someone else in the lab
- Recognizes that his/her position is a professional appointment with professional responsibilities, rather than a continuation of their undergraduate studies
- Understands that stipends and research supplies come directly from grants awarded to faculty members by the federal government, private foundations, or other outside sources, and as a recipient of these funds he/she has an obligation to contribute to the scientific enterprise by publishing their findings
- Understands that his/her reputation in the department will be based in part on their productivity in the lab as shown by the generation of new data and publications

Year 2

- Has completed course work with a GPA greater than 3.5
- Has assembled thesis advisory committee
- Schedules and holds first advisory committee meeting
- Attends lab meetings as well as departmental and other relevant seminars
- Makes contributions to lab meetings
- Has become acquainted with most literature in areas directly related to research topic.
- Makes presentations at lab meetings that demonstrate an advancing knowledge of research area
- Presents research findings as a poster during the Biochemistry Research Retreat
- Works professionally with others in the laboratory
- Fulfils lab responsibilities as requested
- Has demonstrated a strong commitment to research and gives his/her scientific endeavors highest priority
- Designs experiments and conducts research in consultation with their advisor
- Has the research for their first manuscript almost complete, most figures assembled, and an outline of the manuscript drafted.
Year 3

- Has successfully completed preliminary examination
- Attends lab meetings as well as departmental and other relevant seminars
- Makes substantial contributions to lab meetings
- Has mastered prior literature in areas directly related to research topic
- Makes presentations at lab meeting that demonstrates a good knowledge of research area
- Presents research findings as a poster or oral presentation during the Biochemistry Department Retreat
- Works professionally with others in the laboratory
- Takes initiative to deal with lab responsibilities and lab issues as they arise
- Can perform research sufficiently well that he/she can manage and benefit from the assistance of trained undergraduates
- Has begun to design and conduct experiments independently
- Has first manuscript in press
- Makes presentation at national meeting

Year 4-5

- Attends lab meetings as well as departmental and other relevant seminars
- Makes major contributions to lab meetings, making helpful suggestions to more junior students
- Keeps up with new literature directly and peripherally related to research topic
- Makes presentations at lab meeting that demonstrate a thorough knowledge of research area, setting an example for more junior students
- Presents research findings orally during the Biochemistry Department Retreat
- Works professionally with others in the laboratory
- Sets an example for and mentors newer graduate students in all aspects of their professional development
- Takes initiative to deal with lab responsibilities and lab issues as they arise, and provides leadership in dealing with the operation of the lab
- Can train undergraduates to complete tasks with which they are not already familiar and can mentor undergraduate students in the theory and practice of specific laboratory experiments
- Designs and conducts all experiments independently and gives advice to newer graduate students on research techniques and experimental design
- Identifies new research opportunities that are based upon current experimental goals
- Has second manuscript in press and the research for their third manuscript almost complete
- Can critically evaluate and review the manuscripts of others
- Has begun to make inquiries concerning post-doctoral or industrial positions

When appropriate

- Fulfills Teaching Assistant responsibilities efficiently and effectively
Change of Name: If a student marries, they may officially change their name on Purdue records by presenting the marriage certificate to the Registrar’s Office. The Graduate Program Coordinator and Biochemistry business office should also be informed of any name change.

Change of Address and Telephone Number: After the appointment is active in the payroll system (ECP), students can change personal and self-identification information in Employee Launchpad – SuccessFactors. Student will get access to Employee Launchpad – SuccessFactors on or after the hire date. All changes to graduate appointments are processed through SuccessFactors Employment Central.

Resident Status: An emancipated student is classified as a resident if he/she is domiciled in the State of Indiana prior to the 1st day of classes of the semester that resident classification is sought. An un-emancipated student will qualify for resident classification if a parent or guardian was domiciled in the State of Indiana prior to the 1st day of classes in the semester in which resident status is sought. To be considered domiciled in Indiana, he/she must reside continuously in Indiana for a predominant purpose other than attending a higher learning institution for at least 12 months immediately preceding the 1st day of classes of the term that resident status is sought.

Changes from Non-resident to Resident Status: Application for resident status/classification is submitted on a form supplied by the Registrar’s Office any time after the domiciled requirement, including one year of residence, has been met, but no later than 15 days after the day on which classes begin for the academic session for which reclassification is sought. The Registrar will render a decision no later than 30 days after the application is filed.

Parking Permits: All parking is regulated and permits are required to park on the West Lafayette Campus. Vehicles must be registered for license plate recognition and linked to a purchased parking permit. Graduate staff employed less than 30 hours per week are eligible to purchase a C permit for $100 with limited parking availability. Only students employed by Purdue at least 30 hours per week may purchase an "A" permit for $250 or a "B" permit for $100 per year and can be payroll deducted. Parking Facilities is located at 700 Ahlers Drive in the Materials Management and Distribution Center (MMDC) Email parking@purdue.edu; call 765 494-9497. https://www.purdue.edu/parking/permits/students/index.html Hours: 7:30 am – 4:30 pm Monday-Friday.

Printing: Graduate students get an $80 annual print/copy quota (= 2,000 BW copies) for academic use at any ITaP printer locations on campus. See: https://www.itap.purdue.edu/facilities/instructionallabs/printing/faq.html#quota A student copy machine is also located in BCHM 110A.

Keys: Keys are issued to you for the outside door of the laboratory/building you are assigned. Some buildings require you to swipe your PU ID for entrance to the building.

Mail: After assignment to a Major Professor, mail will be delivered to that lab mailbox. Mailboxes are located in BCHM 17.

Email: All students have an @purdue.edu address. This email will be used for important student information.

Pay: You will be paid every other Wednesday; a Biweekly Calendar of Pay Dates can be found at: https://www.purdue.edu/business/payroll/Calendars/index.html Employees are paid via direct deposit (i.e., directly into their checking or savings account in any bank, credit union, or US financial institution that is a member of the Automated Clearing House (ACH). Most banks and credit unions are members. A detailed earning statement and direct deposit notice of net pay indicating applicable tax deductions, benefits premiums, and other deductions is available through Employee Launchpad - SuccessFactors.
Fiscal-Year Staff: Fiscal-year, Benefits-Eligible Graduate Student Staff are granted vacation leave at the staff member’s normal rate of pay. Graduate staff paid on a fiscal year receive paid vacation which begins to accrue in accordance with the schedule below from the date of the graduate student’s employment up to a maximum of 22 working days per fiscal year. Vacation credits in excess of 22 days are forfeited. One day is accrued in the months of September and March and two days in all remaining months. Vacation leave must be requested through the SuccessFactors system.

Graduate student staff employed on a fiscal-year basis terminating their employment with the University will not be paid for unused vacation allowance nor may their appointments be extended to cover any unused vacation. Graduate student staff transferring to any other employment classification (i.e., administrative professional, faculty, etc.) cannot transfer their unused vacation balance to the new position.

Graduate students transferring from a fiscal-year graduate staff position to another fiscal-year graduate staff position are able to transfer accrued vacation to the new position, as long as there is no break in service. Fiscal-year, Benefits-Eligible Graduate Student Staff receive paid leave for all official University holidays.

Holiday schedule for 2020-21:

- Independence Day: July 3, 2020
- Labor Day: September 7, 2020
- Thanksgiving Holiday: November 26-27, 2020
- Observation of Labor Day: December 23, 2020
- President’s Holiday: December 24, 2020
- Christmas Holiday: December 25, 28, 2020
- Winter Recess: December 29 –31, 2020
- New Year’s Day: January 1, 2021
- Martin Luther King, Jr. Day: January 18, 2021
- Memorial Day: May 31, 2021

Class Breaks: Classes are not in session, but graduate students are in work status unless they take vacation leave.

- Spring Break: March 15-20, 2021

Leave of absence: All leaves must be requested using the SuccessFactors system.

All leaves lasting up to and including 22 days must be approved by the supervisor, department head.

All leaves of absence greater than 22 consecutive work days, for any reason except vacation or Family and Medical Leave Act of 1993 (FMLA) related leave, require the approval of the supervisor, department head, HR leaves group, and dean of the Graduate School (when applicable). Graduate staff members, employed at least half-time, are eligible for leaves of absence (see specific leave section for additional eligibility requirements). Questions regarding leaves of absence should be directed to Human Resources – Employee Benefits at 765.494.2222 or e-mail hr@purdue.edu.

Fiscal-year graduate staff, employed at least half-time, may qualify for unpaid Leaves of Absence (and retain Graduate Staff Medical Insurance) during the Summer (only) when their graduate program enables them to hold an off-campus internship, participate in Study Abroad, or engage in other academic or professional development activities (not part of their graduate staff employment.) Graduate staff members who receive approval for a leave of absence will continue to receive Graduate Staff Medical Insurance coverage, without interruption. For more details, please contact Staff Benefits at 765.494.2222 or e-mail hr@purdue.edu.
Sick Leave: Graduate student staff are eligible for two weeks (10 working days) per year of paid sick leave for illness. “Illness” is defined as a staff member’s own illness, disabling injury, or pregnancy. This includes childbirth and complications of pregnancy, miscarriage, abortion, and confined recovery therefrom, for the period during which the employee is unable to perform normal duties as determined by a physician.

Illness in Family: Graduate student staff are eligible for three working days per fiscal year paid leave for immediate family illness. “Immediate family” is defined as spouse, same-sex domestic partner, parents, children, grandparents, grandchildren, sisters, brothers, and corresponding in-laws and step-relatives. Family members not included here, but who reside in the employee’s home, are considered immediate family.

Bereavement Leave: Graduate student staff are eligible for up to five (5) working days per occurrence of paid bereavement leave for a death in the immediate family. “Immediate family” is defined above under “Illness in Family.” One work day is allowed for other relatives or fellow employee. Refer to the Graduate School Student Manual for more detail, or check with the business office.

Jury and Witness Duty: Graduate student staff are eligible for paid leave of absence as a juror or court witness. Jury duty or duty as a court witness is the service and time spent away from a University job as a result of a subpoena issued by a court. Service as a volunteer expert witness or other volunteer court duty is not included in the provisions in this leave of absence.

Military Leave: Graduate student staff who are members of the Indiana National Guard, or members of the reserve components or retiree personnel of the naval, air, or ground forces of the United States, and who are under authority to report for 15 days or less, are entitled to a leave of absence for military duty. Such leave is available without loss of benefits, time, or pay not to exceed 15 regular work days in any calendar year. Travel time required for reporting to the place of military duty is included in the 15-day allowance. This policy is further outlined in University Policy IV.10.2 and in the “Policy Concerning Graduate Assistants or Fellows Called to Active Military Service,” dated October 31, 1990, and issued by Robert L. Ringel, Executive VP for Academic Affairs. Questions may be directed to HRs – Employee Benefits at 765-494-2222 or e-mail at hr@purdue.edu.

Paid Parental Leave Policy: Since October 1, 2008, Purdue University has provided Paid Parental Leave to benefits eligible employees, including graduate student employees. To qualify, graduate staff must have been employed by the University for at least one continuous year (12 months), half-time or more, in a benefits-eligible position. Based on full-time employment, birth mothers may receive up to 240 hours; other eligible employees who become parents may receive up to 120 hours of Paid Parental Leave. The University provides Paid Parental Leave during the first 12 months following birth or adoption. If the need for Paid Parental Leave is foreseeable, an Eligible Employee must give his or her supervisor at least 30 calendar days advanced notice of the need for leave, or as soon as is practicable. Questions regarding Paid Parental Leave Policy may be directed to HR – Employee Benefits at 765-494-2222 or e-mail at hr@purdue.edu.

Insurance

Graduate research and teaching assistants with appointments of 50% or greater are covered under Purdue’s insurance program for graduate student staff. Each graduate staff member pays an annual premium via payroll deduction and the University covers the remaining cost.

A graduate staff member has the option of insuring his or her spouse and dependents under the same plan. The graduate staff member is responsible for 100% of these premiums. Eligible graduate staff who have medical coverage through other sources can “opt out” of the coverage.

International students are required to obtain health insurance. Information is provided by the Bursar’s Office at registration time.

Worker's compensation covers accidents occurring while on the job in the lab.
Fringe Benefits & Privileges of Graduate Assistants and Graduate Instructors

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident Insurance</td>
<td>Worker's compensation</td>
</tr>
<tr>
<td>Group Medical Insurance</td>
<td>Graduate staff are covered by Purdue’s insurance program for graduate student staff if funded graduate appointment or fellowship is at 50% or greater.</td>
</tr>
<tr>
<td>Fee Reduction</td>
<td>Tuition is waived. Current graduate fees are $298 per semester. Summer session fees are $149. Student’s employment is certified each semester with the Registrar’s Office by the Graduate Program Coordinator</td>
</tr>
<tr>
<td>Staff Dependent Fee Reduction</td>
<td>Yes, staff spouse/staff child reduction</td>
</tr>
<tr>
<td>Purdue Village</td>
<td>Student rate</td>
</tr>
<tr>
<td>Parking Privileges</td>
<td>Yes, C permit, A/B permit if employed 75% or more</td>
</tr>
<tr>
<td>City Bus</td>
<td>Free with ID</td>
</tr>
<tr>
<td>Co-Rec Gymnasium</td>
<td>Included in fees</td>
</tr>
<tr>
<td>Athletic Tickets</td>
<td>At staff rate</td>
</tr>
<tr>
<td>Purdue University Hospital</td>
<td>Included in fees</td>
</tr>
</tbody>
</table>

Admissions

**Official Transcripts:** The Graduate School requires final official transcripts from each university previously attended by the end of the first semester of residence. An official copy shows the type of degree and date the degree was awarded. Students are not allowed to register for subsequent semesters until this requirement is met.

**Immunizations Required:** Indiana state law requires all new, regularly-enrolled students attending residential campuses of Indiana public universities to meet all immunization requirements by the end of the first semester of residence. Please see the list of immunizations: [https://www.purdue.edu/push/Immunization/](https://www.purdue.edu/push/Immunization/) Students will not be allowed to register for subsequent semesters until this requirement is met.

**Oral English Proficiency Test for International Students:** Graduate students are required to teach one semester (one-half time) during their program. All students whose first language is not English must pass a test of spoken English with a score of 50 or greater. Certification to teach is determined by the results of this examination and/or satisfactory completion of ENGL 620. Failure to complete the spoken English requirement by the end of the first year of graduate study may result in the student not being permitted to register and progress in the program.

**Change of Departments:** If a student wishes to transfer from the Department of Biochemistry to another department, he or she should write a letter to request this change. The letter should be signed by the student and by the current Major Professor. A completed G.S. Form 17 (Request for Transfer of Department) should also be submitted and will be forwarded (after being signed by the Head of the Department of Biochemistry) to the department to which transfer is requested. The other department may request copies of any application forms, transcripts, GRE scores, etc. it wishes to aid in making a decision and for their permanent records. The BCHM Graduate Office will send such copies of the student's records if requested by the student. A student who has completed a Master's degree program in another department and has not entered into any other degree program in the University needs to apply to the Biochemistry Ph.D. program by completing a Graduate School Application (not by submitting the G.S. Form 17).

**Grievances:** Grievances that arise may be submitted in writing to the Graduate Program Coordinator. Matters, which are deemed to be of a policy nature, will be forwarded to the Department Head.
Registration

Students are responsible for registering all non-research courses each semester, including summer through the mypurdue portal. A registration form 23 must be completed with CRN (course registration number) and PI signature, then given to the Graduate Program Coordinator – one for each semester. The Graduate Coordinator registers all research credit hours. BUT, it is the student’s responsibility to check his or her registration for accuracy each semester. Register early for best course selection and to avoid paying a late fee.

Candidacy: If a student expects a degree at the end of the semester for which he/she is registering, he/she should notify the graduate program coordinator. He/she must register as a candidate and list the appropriate course registration number on the registration Form 23.

Auditing a Course: Anyone wishing to "audit" a course on a non-credit basis must get an Auditor Permission Form from the Office of the Registrar. Audited courses should not be listed on the course registration form 23.

Course Loads: Students are expected to make certain that the requested academic load is compatible with any appointment held under regulations and rules of the Graduate School.

If a student holds a half-time graduate assistantship in research or a graduate teaching appointment, they may register for up to 12 credit hours for coursework plus a minimum of six (6) hours of research ("698 or 699").

If a student holds a 1/4-time teaching appointment and a 1/4-time research appointment, they may register for up to 15 credit hours of coursework plus a minimum of three (3) hours of research ("698" or "699").

If registering for "degree only" or "exam only," the Form 23 will be submitted by the Graduate Program Coordinator to the Graduate School for approval and system entry.

Degree Only: A student who has been registered for a minimum of three (3) credit hours in the preceding session and who has finished all degree requirements except depositing the thesis and for whom a positive Report of the Final Examination is received in the Graduate School prior to the first day of the academic session of graduation but has not been awarded the degree may request registration for “Degree Only” at a reduced fee. This registration will remain valid only if a Thesis Receipt is received in the Graduate School by the eighth week of the semester (fourth week of a summer session).

Exam Only: If all academic requirements are completed except the Final Examination and deposit of thesis prior to the first day of the academic session, a student can request to register for “Examination Only” at a reduced fee. This registration will remain valid only if both a positive Report of the Final Examination and a Thesis Receipt are received in the Graduate School by the eighth week of the semester (fourth week of a summer session).

Transfer Credits: In general, transfer credits will be considered under the following conditions:

The student has a minimum cumulative graduate index at Purdue of 3.00 or better.

The student has obtained approval from the Thesis Advisory Committee for the requested transfer of credits.

The request from the student includes documentation about the content of the transfer course and the level at which it was taught (undergraduate or graduate). Transfer credits will be accepted only after one semester of satisfactory work in residence at Purdue.

Research in Absentia: A doctoral student who has satisfied all of the qualifications and wishes to leave the University to continue doctoral research should request to register in absentia for doctoral research (69900).

A PhD student, with approval of the Major Professor and head of the graduate program, may petition to register in absentia for doctoral research. To do so, a Request for Ph.D. Degree Candidate Research in Absentia (G.S. Form 12) must be received by the Graduate School at least one month prior to the session for which registration in absentia is sought. Please see the graduate school manual for more information on this process.

Lab Rotations

Students will participate in three lab rotations with the option of a fourth if it’s needed. Rotation periods will last approximately eight weeks. At the end of each rotation, students will prepare and present a presentation of their work. Students not placed in a permanent lab after the third rotation may have a fourth rotation within the Department of Biochemistry. Additional details are given during orientation week.

During orientation week, students are expected to interview as many professors as they can within the biochemistry department to facilitate their preferences/choices for lab rotations. Faculty web pages briefly describe the type of research and laboratory work of each professor. Students will also attend Faculty Research Talks during Orientation week. Please feel free to ask questions during these talks.

Selection of the Major Professor: The Major Professor is the primary thesis advisor and has supervisory responsibility for a student’s research. She/he will meet with students as needed and is available to guide them through their graduate education. Each student will have adequate opportunity to investigate various laboratories and to become acquainted with professors who have lab positions and funding available.

The selection of the Major Professor is based upon the student’s choice and the availability of openings in the various laboratories. The selection must be a mutually acceptable arrangement between student and professor. Selection and assignments occur after three (or optional four) rotations in the first year.

Plan of Study

A draft Plan of Study is prepared by the student electronically using mypurdue during the first few weeks of the fall semester. The first-year chair will serve as the advisory committee chair and members of the Postdoc-Graduate Program Committee (PGPC) serve as the additional members of the committee. The initial Plan of Study includes BCHM 601, BCHM 602, BCHM 603, BCHM 604, BCHM 605, BCHM 610, and GRAD 612. Courses taken with a pass/no pass option cannot be used on a Plan of Study.

The final Plan of study is to be drafted in consultation with the Major Professor and discussed at the student’s first Thesis Advisory Committee meeting (the fall semester of second year). The final Plan of Study should be submitted by the end of that fall semester and approved by each committee member and the Department Head.

Additional elective choices should be made in consultation with the Major Professor. Any course(s) beyond program requirements but related to the field of study must be added to the Plan of Study. Courses not related to the field of study are not be included. All courses listed on the Plan of Study are included in the GPA calculation. Changes to the Plan of Study are submitted electronically using mypurdue. Deletion of courses will require the electronic approval of the Major Professor. Changes must also meet the approval of the Graduate Career Chair.

Teaching Requirement

Teaching Requirement: Each Ph.D. graduate student is expected to fulfill a teaching requirement of one semester as a half-time teaching assistant or two semesters as a quarter-time teaching assistant. The teaching requirement may be fulfilled by serving as a teaching assistant in a course taught in another department on campus but the course topic should be in the natural sciences or applied life sciences. If a student gained equivalent teaching experience at the college level while a graduate student elsewhere, they may petition to have the experience fulfill the requirement. The petition must include a brief description of the course content and the name of the supervising professor. If a recommendation from the professor is not on file in the BCHM Graduate Office (as part of the application file for admission), one must be obtained and submitted with the petition.
Course Selection and Grading

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Course Title</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCHM 60100</td>
<td>Critical Thinking &amp; Communication in Biochem Research I</td>
<td>fall</td>
<td>2</td>
</tr>
<tr>
<td>BCHM 60300</td>
<td>Introduction to Grad Research in Biochemistry I</td>
<td>fall</td>
<td>6</td>
</tr>
<tr>
<td>BCHM 60501</td>
<td>Macromolecules</td>
<td>fall</td>
<td>3</td>
</tr>
<tr>
<td>BCHM 60200</td>
<td>Critical Thinking &amp; Communication in Biochem Research II</td>
<td>spring</td>
<td>2</td>
</tr>
<tr>
<td>BCHM 60400</td>
<td>Introduction to Grad Research in Biochemistry II</td>
<td>spring (1st ½ semester)</td>
<td>3</td>
</tr>
<tr>
<td>BCHM 61000</td>
<td>Eukaryotic Gene Expression</td>
<td>spring</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 66200</td>
<td>SEM Methods Prof Dev I</td>
<td>fall or spring</td>
<td>3</td>
</tr>
</tbody>
</table>

At least 2 credits in a course with a quantitative approach to biochemistry are required such as:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 60000</td>
<td>Bioenergetics</td>
<td>fall</td>
<td>2</td>
</tr>
<tr>
<td>BIOL 59500</td>
<td>Xray Crystallography</td>
<td>spring</td>
<td>3</td>
</tr>
<tr>
<td>*STAT 50300</td>
<td>Statistical Methods Biology</td>
<td>fall/spring/summer</td>
<td>3</td>
</tr>
<tr>
<td>STAT 51100</td>
<td>Statistical Methods</td>
<td>fall/spring/summer</td>
<td>3</td>
</tr>
<tr>
<td>STAT 51200</td>
<td>Applied Regression Analysis</td>
<td>fall/spring/summer</td>
<td>3</td>
</tr>
</tbody>
</table>

*Most students take STAT 503 as their elective.* To take a quantitative course not listed above, send the course syllabus to your Major Professor for approval, then the post-graduate committee for their approval.

An additional graduate level elective of 2-3 credits is required and could include courses such as:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCHM 61100</td>
<td>Chromatin Biology</td>
<td>fall</td>
<td>2</td>
</tr>
<tr>
<td>BCHM 61501</td>
<td>Pathways</td>
<td>fall</td>
<td>3</td>
</tr>
<tr>
<td>BCHM 62000</td>
<td>Protein Mass Spectrometry &amp; Proteomics</td>
<td>spring (alt. yrs.)</td>
<td>2</td>
</tr>
<tr>
<td>BCHM/HORT 64000</td>
<td>Metabolic Plant Physiology</td>
<td>fall (alt. yrs.)</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: For a Non-thesis MS degree, 30 credits are required; research credits are not eligible.

Computational Life Sciences (CLS) Program: Biochemistry is a participating home department in the Computational Life Sciences program. CLS is an interdisciplinary graduate area of specialization offered at the MS and Ph.D. levels. Students participating in this program will perform Ph.D. thesis research in a laboratory in our department while simultaneously developing skills in the computational life sciences. A student’s participation in the program is indicated on the transcript as a specialization in “Computational Life Sciences.” An approved CLS plan of study enables participants to become proficient in the use of computational tools and techniques employed in the life sciences, preparing them for the discovery and implementation of algorithms that facilitate the understanding of biological processes. The CLS Ph.D. plan of study includes a minimum of 12 credit hours with 6 of these credits obtained from CLS-relevant courses specified by Biochemistry. Remaining credits come from one of two CLS bridge courses, CLS core courses, and CLS relevant courses specified by the CLS graduate committee. Dr. Andy Tao is the Biochemistry representative to the CLS program.

BCHM 698 and 699 Syllabus - Goals and Objectives: Graduate research in biochemistry consists of an original experimental or theoretical investigation beyond the undergraduate level that is performed by a graduate student in consultation with the Major Professor. Graduate research involves acquiring thorough knowledge of the field of inquiry based on the scientific literature. Students performing graduate research are expected to devote the majority of their time towards obtaining scientific data through experimentation that will form the basis of published manuscripts in scientific journals and the doctoral dissertation. Students should be diligent in their data collection using an organized and transparent record keeping system. They will apply their skills in critical thinking to design appropriately controlled experiments, to analyze their results and to arrive at conclusions that are supported by the evidence and by the existing knowledge in the field. Graduate students, in conjunction with their faculty advisors, will exercise the highest integrity in collecting, analyzing, and reporting their scientific data, and will adhere to strict ethical standards in all aspects of their degree program.
Grade Requirements: In addition to the standards set by the Graduate School, the following requirements apply to students enrolled in the Biochemistry Program.

Students who finish their first year with a coursework GPA below 3.0 in courses which are normally in their Plan of Study are required to hold a meeting of their rotation advisors and their chosen Major Professor (if one has accepted the student) or the head of the Department of Biochemistry if Major Professor has not been selected. The meeting must take place before the beginning of the third semester of the student’s studies. The professors will determine whether the student has shown sufficient indications of scientific understanding and growth in the laboratory experiences to warrant continued support in the program. If the answer is affirmative, there shall be assessments made by the Major Professor and the Thesis Advisory Committee within a month of the end of each semester thereafter until the student has surmounted the academic deficiencies. If the answer is negative, the student may pursue a Master’s thesis at the discretion of the Major Professor or may be asked to leave the program. A non-thesis Master’s degree requires 30 credit; research credits are not eligible.

Only grades of A, B, and C are acceptable on a Plan of Study. Incomplete grades are not acceptable on the Plan of Study. Incomplete grades must be cleared during the semester following the session in which the incomplete grade was received. In the case of a course offered once a year, the incomplete grade must be cleared during the next semester the course is offered. A Thesis Advisory Committee may require higher performance than C in certain courses.

The Graduate School considers a GPA of below 3.00 as performance below that expected of a graduate student and grade reports will so indicate. Students with unsatisfactory academic records (scholastic index below 2.70) will be placed on probation within the Department of Biochemistry. Failure to remove probationary status can become the basis for terminating the training of a student.

Continuation in the graduate program also requires satisfactory effort in performing research. Any student receiving an unsatisfactory grade (“U”) will be placed on probation. When a student is assigned a grade of “U”, the Major Professor will provide the student with a written explanation on the Student Progress Feedback Form that describes the specific deficiencies that resulted in the unsatisfactory grade. Research credits for which a student receives a grade of “U” cannot count toward satisfaction of the residency requirement. When a student receives “U” grades in research for two consecutive sessions, the BCHM Program is mandated to take action by informing the Graduate School either that the student will discontinue in the program or that conditions are being set for the continuation of the student’s graduate study.

Master’s Degree

The Biochemistry Graduate Program currently accepts PhD students to its graduate program. If a graduate student wishes to leave the program early for whatever reason, the program has a non-thesis master’s degree option. A non-thesis MS in Biochemistry requires 30 credits of 500-600 level coursework, at least a 3.0 GPA on the Plan of Study courses, and no grade less than a C. Please ask the graduate coordinator for the Non-thesis Master’s Degree Policy which details all requirements.

M.S. Thesis Advisory Committee: This committee will consist of the Major Professor as chairman and two additional professors. It is not a requirement to have a member outside the Department of Biochemistry. No grade lower than a C is allowed for a course on the Plan of Study. A student must maintain at least a 2.7 grade point average on those courses included in the Plan of Study and deficiencies must be removed prior to graduation.
Until a Major Professor is selected, the progress of a student is the concern of the First Year Graduate Chair. During the first summer of work in a Major Professor's laboratory, students will, in consultation with the Major Professor, select a Thesis Advisory Committee. This committee will consist of the Major Professor as chairman and three additional professors. The committee must include at least three biochemistry faculty members and a faculty member outside the Department of Biochemistry. (In special circumstances, committee may have two Biochemistry professors and two from other departments.) The Thesis Advisory Committee will counsel and review the student’s progress in both thesis research and course work throughout their graduate study. On the rare occasion that a student needs to choose an advisor outside of the Department of Biochemistry, the Thesis Advisory Committee shall consist of the Major Professor, at least two faculty members from the Department of Biochemistry, plus one additional member.

Meetings are held with the specific purpose of helping students upgrade the quality of research by critical discussion. It is required that students hold Thesis Advisory Committee meetings at least annually beginning their second year. Students are responsible for arranging each committee meeting and may schedule the meeting any time before their deadline except the last week of classes. Once you schedule your Advisory meeting, send the date, time and location to the Graduate Program Coordinator.

A committee report is to be prepared and distributed to the Thesis Advisory Committee at least one week prior to each meeting. Students will prepare their first committee report in the form of a proposal. This proposal is on their own research topic and should be hypothesis-driven where applicable and contain a series of aims that are justifiable with precedence, preliminary data, or prior publications. The committee report/proposal should follow the guidelines of the Content and Organization of the Written Preliminary Examination Document. Committee reports after a student has passed his/her preliminary exam should follow the format of a paper, emerging from the student’s research. An Annual Progress Report will be attached to the written summary as an appendix. This report will resemble a curriculum vitae and will document the student's major achievements as she/he progresses toward the Ph.D. degree. The Committee Report, the most recent version of the Annual Progress Report, a Thesis Advisory Committee Proposal, Advisory Committee Report & Rating Form, will be placed on file along with other material pertaining to progress toward the degree objective. Registration for subsequent semesters will be contingent upon compliance with this rule. In addition to these documents, students should also provide an overview of their IDP during their committee meeting presentation (see below).

Changes to the Thesis Advisory Committee: If a student finds that their research has changed substantially, and upon the advice of the Major Professor, determines that the composition of the Thesis Advisory Committee must be changed, the student should submit an electronic Change of Advisory Committee in the Plan of Study using mypurdue. This also applies should a professor leave the university and be replaced on the committee. If a committee member is absent from campus only at the time of the final examination, please see the Graduate Program Coordinator for alternate options.

Individual Development Plan (IDP): IDP provides a planning process that identifies annual progress, professional development needs, and career objectives for graduate students. The IDP serves as a communication tool between a student and their Major Professor and offers a platform for broader discussion. Identifying short-term goals will give students a clearer sense of expectations and help identify milestones along the way to achieving specific objectives. In doing so, students will have a process that assists in developing and achieving long-term career goals. The IDP is to be completed yearly about a month before their annual Thesis Advisory Committee meeting. Students should take primary responsibility for completing this document, scheduling time to review the document with their Major Professor and for submitting it to their thesis committee members. Students should provide a brief (1-2 slides) overview at each committee meeting, and ask for assistance with areas of weakness.
Publication Requirement

At the time of thesis deposit, a Ph.D. candidate is required to show that at least one first author (or equivalent, i.e. co-first author) paper from his/her thesis research was accepted to, or published in, a reputable scientific journal. It is preferred to have manuscript(s) covering all major results of thesis research published prior to the defense.

ORCID ID# https://orcid.org/ Please register for an ORCID ID number and send this number to the graduate program coordinator. This helps the department track student publications.

Guidelines for authorship (Purdue University): A commonly accepted standard states that all authors of a scholarly publication should satisfy three conditions:

1) Each author should have made a significant contribution to the work described. (A significant contribution entails a substantial role in the conceptualization, design, execution, or interpretation of data, and a clear understanding of the goals and outcomes of the work.)

2) Each author must be prepared to take responsibility for all aspects of their work described in the publication. They should be sufficiently familiar with the total project that they are comfortable with the description, methods, and conclusions and that they are willing to accept responsibility for the content of the publication.

3) Each author should have read and approved the final draft of the manuscript and explicitly consented to the submission of the manuscript to a publisher. Individuals who have contributed to the project, but whose contributions do not rise to the level justifying authorship, should be recognized in an Acknowledgements section of the manuscript.

Seminar Series

The biochemistry program has a weekly Tuesday seminar series. Presentations are given by Purdue faculty as well as external-invited speakers. All graduate students are required to attend.

Graduate and Postdoctoral Seminar Series: The biochemistry program has a seminar series organized by graduate students and postdocs. The purpose is to allow the graduate/postdocs students to showcase their research and receive important scientific feedback from their peers. It is intended to help the presenters get important feedback, but also allow attending graduate students to think critically and ask insightful questions. Graduate students and postdocs will present their research and all graduate students are expected to attend. Graduate-Postdoc seminars are held every other Friday and students will present during their third and fifth (or above), post-docs will present every other year. Two faculty members will attend to serve as evaluators, providing feedback and distributing that feedback to the students’ committee members.

In general, the talks are expected to last 20-25 minutes with 5-10 minutes of discussion. The presentations should incorporate a good introduction that explains the research to BCHM students who have very diverse research interests. Methods and rational for using the methods should be explained. Results should be presented and discussed in a way that is easily readable and interpretable. Lastly, conclusion should include an overview of where the research fits in their respective scientific fields.

Third year graduate student may be expected to spend more time on introduction, precedence (in the literature and from the lab) and rationale, whereas, fifth years may focus more on results and discussion and telling a clear cohesive story. Methods-based presentations may include a different format.

First year students will present their research at the end of each 8 week rotation period. The Rotation presentations/talks will replace the Grad Postdoc Seminars on those three occasions.
PRELIMINARY EXAMINATION

Students are required to defend a hypothesis-driven research proposal as the basis for their preliminary examination. This proposal must be original and designed to advance the current state of knowledge in the chosen field. Preliminary examination proposals cannot be directly based on the student’s own research project or other past or ongoing projects from the major advisor’s laboratory. The Preliminary Examination is normally taken in the fall semester of the third year of study. The general process and steps to prepare for the exam occur over a period of roughly six months.

Early Preliminary Exam

Students who wish to take the Preliminary Exam in the second semester of their second year must have the approval of their thesis advisor and their thesis committee. They must also schedule and hold their first thesis advisory committee meeting by October 31st in their 2nd year.

The student is responsible for obtaining approvals, and conveying to the Preliminary Exam Chair and Graduate Program Coordinator via email immediately following the first committee meeting. The deadline for submitting the specific aims document and written proposal will be determined by the Preliminary Exam Graduate Chair.

Overview of Exam Process

1. Selection of Topic and Specific Aims Document – Student selects a topic, develops a hypothesis and creates a specific aims document.

2. Certification of Specifics Aims Document by Thesis advisor – The student’s thesis advisor must certify that the specific aims do not overlap with the student’s thesis project or other work in the PI’s laboratory.

3. Submission of Specific Aims to Program Coordinator – The Request for Preliminary Exam form is submitted to the Graduate Program Coordinator along with the specific aims document and the Advisor Certification of Preliminary Examination Topic form. The deadline for submission of these documents will be set by the Preliminary Exam Graduate Chair; it is usually late in the spring semester for exams scheduled in the fall semester.

4. Assignment of Exam committee, feedback on specific aims, scheduling exam – Once the Specific Aims document is approved, the Prelim Exam Graduate Chair assigns an examining committee. The student will send their Specific Aims document to their committee for comments after the committee is assigned. The student is responsible for scheduling the exam and location before the deadline (typically 3-4 months in advance).

5. Preparation of the Written Preliminary Proposal – The Written Preliminary Proposal should be submitted to the Graduate Program Coordinator and examination committee at least 4 weeks before the date of the exam. The Graduate Program Coordinator screens the document for evidence of plagiarism using iThenticate and sends the results to the exam committee chair for evaluation.

6. Submit G.S. Form 8 – Two to three weeks before the exam, you need to submit an electronic G.S. Form 8 Request for Appointment of Examining Committee through myPurdue for approval of the exam committee and date.

7. Feedback on Written Proposal – Two weeks after submitting the full proposal to their committee, the student will meet with the chair of his/her preliminary exam to receive written and verbal feedback on the proposal.

8. Day of Preliminary Exam – Timeline for the day student takes the Preliminary Exam. Student will learn their outcome at the end of the exam.

9. Exam Pass and Exam Fail – If the student passes, they have no further obligations. If they fail, they will be given a second attempt to pass the Preliminary Exam the following semester. A second exam failure results in automatic withdrawal from the PhD program.
Six forms are used during the preliminary exam process. Three forms are completed or distributed by the student: i) Request for Preliminary Exam – Appendix 1, ii) Advisor Certification of Preliminary Exam Topic – Appendix 2, and iii) G.S. Form 8 (electronic) Request for Appointment of Examining Committee. The other three forms: iv) Committee Report of Oral Examination – Appendix 3, v) Outcomes Rating of the Preliminary Examination – Appendix 4, and vi) Student Feedback Form for Preliminary Examination – Appendix 5, are completed by the examining committee. These are mentioned in the appropriate sections below. All forms are located on the Biochemistry Intranet under Resources on our home page. https://ag.purdue.edu/biochem/  

1. Selection of Topic and Specific Aims Document  

The preliminary exam is based on a hypothesis-driven research proposal that is designed by the student to advance the current state of knowledge in the field. Although the prelim proposal may address a topic related to the thesis project, it must focus on a research problem that is clearly differentiated from the student’s current or past research project(s). In addition, the proposal topic and aims cannot overlap with other current or past projects in the student’s home laboratory. Proposals that are primarily descriptive or technology-based will generally not be acceptable.  

Students who transfer to the Biochemistry Graduate Program are not permitted to defend a proposal based on a project developed as part of graduate studies conducted in a laboratory prior to their transfer. Similarly, any student who transfers between laboratories within the Biochemistry Graduate Program may not select a project topic developed under their previous advisor. If a transfer student selects a research topic in an area similar to that of their previous project, they may be required to provide a brief summary of previous projects and/or have their previous advisor verify that their proposal topic and specific aims meet the criteria of an original proposal.  

In addition to these limitations, students cannot submit the same research proposal that was developed in a graduate course (e.g. BCHM 602). The rationale is that each of these proposals has already received feedback from faculty so it is no longer an original proposal by the student.  

In summary, student proposals must satisfy the following criteria:  

▪ No specific aim/objective can be identical to or overlap with objectives of current or past research projects that the student has performed.  
▪ No specific aim/objective can be identical to or overlap with any goal(s) of ongoing research projects in the advisor’s lab including those conducted by the advisor, postdocs, graduate students, undergraduates, or technicians.  
▪ The specific aims/objectives must be different from those of research groups actively collaborating with the advisor’s laboratory.  
▪ The specific aims/objectives must be different from those submitted as assignments in graduate courses.  

Students should prepare proposals with a scope in line with a graduate student fellowship to the NIH. Typical proposals have three specific aims, but from two to four may be appropriate depending on the proposal topic and the hypotheses to be evaluated. Experiments should be designed so that all aims could be completed by a single graduate student within 4 years.  

The specific aims document should be a concise summary of the research plan and rationale for the proposed project. It should begin with a short paragraph that gives a brief, concise description of key background information, states the hypotheses or model that underlies the proposal, explains what will be learned when the research is complete, and gives a rationale for experimental approaches and/or aims listed. It should contain a concise list of the specific objectives/aims of the proposed research.  

The specific aims document submitted for approval must conform to all formatting guidelines. The complete document must be no longer than 3.5 pages with 1.5 line spacing, 11 point Helvetica or Arial font, containing
title page (1 page), the specific aims (up to 1.5 pages) and references (no page restriction). The specific aims will become the first 1.5 pages of the full written proposal, but they may be modified after submission to the Preliminary Exam Graduate Chair. See #5 “Preparation of the Written Preliminary Proposal” for additional formatting details.

2. Certification of specific aims document by thesis advisor

The student will provide their thesis advisor with the specific aims document along with the Advisor Certification of Preliminary Exam Topic form containing the required information so that the thesis advisor can verify that the topic and specific aims/objectives meet the criteria of being independent from research in the advisor’s lab (as described in section 1 above). To certify the topic and specific aims meet all criteria, the advisor will submit a signed Advisor Certification of Preliminary Exam Topic form directly to the Graduate Program Coordinator. If the advisor believes the proposal topic or specific aims cannot be certified, the student must select a new topic and/or set of specific aims/objectives. The advisor may explain why the certification was not approved, but is not permitted to assist the student in selecting a new topic or modifying the aims so that they are acceptable. It will be the student’s responsibility to make the necessary revisions.

3. Submission of “Request for Preliminary Examination” form and documents

After the thesis advisor certifies the specific aims, the student will submit their specific aims document and BCHM Request for Preliminary Examination Form, to the Graduate Program Coordinator (currently Traci Jordan). These documents will be forwarded to the Preliminary Exam Graduate Chair (PE-Chair) who will review the specific aims proposal, the Advisor Certification form and the BCHM Request for Preliminary Exam form to verify that the advisor certification was obtained and determine if the proposal is hypothesis-driven and suitable for the preliminary examination.

If the proposal is approved, the Preliminary Exam Graduate Chair will assign a preliminary examining committee and set a deadline for holding the preliminary exam.

If the proposal is not approved, the student may meet with the Preliminary Exam Graduate Chair to discuss why the specific aims document was rejected. The Preliminary Exam Graduate Chair will explain the general reasons for rejection but will not provide specific advice on selecting a new topic.

The approved specific aims document may be revised prior to submission of the final written proposal. However, a change in topic or major alterations in the aims/objectives requires re-certification by the thesis advisor and Preliminary Exam Graduate Chair that the topic does not overlap research in the student’s home laboratory.

4. Assignment of exam committee, feedback on specific aims and scheduling the exam

The Preliminary Exam Graduate Chair will assign members of the examination committee and the chair after approval of the specific aims document. The committee consists of four graduate faculty from the Department of Biochemistry or other departments and usually includes members of the thesis committee with the exception of the Major Professor. A copy of the specific aims document will be sent to the exam committee chair and distributed to the committee members for comments. The committee will provide limited feedback to the student through the exam committee chair within two weeks of the distribution of the document. The goal is to provide some early feedback that the student can incorporate into the full proposal. There is no official “failing” grade for the specific aims document and resubmission after feedback is not required.

It is the responsibility of the student to schedule the exam to meet their assigned deadline. Committee members should be contacted 3-4 months in advance to obtain their travel and teaching schedule, then a Doodle poll containing two weeks of options for exam times should be sent to identify a specific date and time for the exam. It is the student’s responsibility to identify and schedule a conference room for the exam and inform the committee and graduate coordinator of the date, time and location. In special circumstances, deadlines can be
postponed, but only with the approval of the Preliminary Exam Graduate Chair. Students and prelim exam committees do not have the authority to independently change deadlines.

5. Preparation of the written preliminary proposal.

The preliminary examination is primarily an oral defense of the proposal. However, students should be aware that the written description of the proposal is very important to the committee who will use it to prepare for the examination. The written document gives the examining committee their first impression of the proposal and the scientific quality and merit of the ideas. It is important to remember that the evaluation of the preliminary examination performance includes a rating of the ability to communicate scientific ideas in writing. Thus, a poorly prepared document might lead to the committee having an initial negative view of the proposal and adversely affect the overall evaluation of the exam.

As described in section #1 (Selection of Topic and Specific Aims Document), students should prepare proposals with a scope in line with a graduate student fellowship to the NIH or NSF. Typical proposals have three specific aims, but from two to four may be appropriate depending on the proposal topic and the hypotheses to be evaluated. Experiments should be designed so that all aims could be completed by a single graduate student within 4 years. The written proposal must be sent to the committee at least 4 weeks before the date of the preliminary exam.

Content and Organization of the Written Preliminary Examination Document

Guidelines for preparing the written prelim document are outlined below. The Chair of the Preliminary Examination Committee may refuse any document that exceeds page limitations and does not conform to the guidelines. The specific aims through the research plan sections of the proposal can be no longer than 12.5 pages. There is no page restriction on references or figures and tables.

I. Cover/Title Page (1 page) This page should include: student name, proposal title, list of Exam Committee Members, the date, time and location of the exam, and a section where the student can sign to verify iThenticate screening (Example Cover Page below).

<table>
<thead>
<tr>
<th>COVER PAGE EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITLE</td>
</tr>
<tr>
<td>Student Name</td>
</tr>
<tr>
<td>Preliminary Exam Committee</td>
</tr>
<tr>
<td>Dr. XXX, Dr. YYY, Dr. ZZZ, Dr. CCC</td>
</tr>
<tr>
<td>Preliminary Exam November 15, 2019</td>
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<tr>
<td>2:30 PM</td>
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<tr>
<td>BCHM 101</td>
</tr>
</tbody>
</table>

This document has been submitted for screening by iThenticate and a PDF report generated from this screen will be sent to the prelim examining committee chair.

________________________________________ (Student Signature)
II. Specific Aims (1.5 page)

See Section #1 “Selection of topic and specific aims page” for content of this section.

III. Significance and Innovation (3 pages)

This section should explain the importance of the topic/problem and how scientific knowledge will be improved as a result of the project. It should include an introduction to key background information (prior knowledge) that is required to understand the proposal and formulate the hypothesis. Describe any controversial issues or inconsistent findings in the area of study. Innovations that challenge current paradigms or have the potential to shift research directions should be identified. Clearly explain the impact that the results of the proposed research will have on the field. Explain where there are gaps in fully understanding the field or problem and how the proposed work will overcome this lack of knowledge.

IV. Experimental Approach (8 pages)

This section should concisely describe the experiments that will be performed to achieve the goals of each aim a student lists on the specific aims page. Thus, this section should be organized so that research plans are presented for each aim.

Give the rationale for selecting the methods and analyses that will be utilized to achieve the specific aims. Several major experimental approaches may be used for each aim. For each approach, outline the experiments that will be performed. Briefly, explain how data will be collected, analyzed, and interpreted. Student should discuss potential caveats, pitfalls and alternatives. It is crucial to understand that a student will not be able to provide detailed procedures in the written report.

Although they cannot be accommodated in the written proposal, details are likely to be important in the oral exam where a student will be expected to understand the mechanics of experiments, underlying physical and chemical principles, and the basic operation of any instrumentation required. They will also be expected to understand and evaluate the strengths and limitations of the methods selected.

V. References: (no page limit)

In the text of the proposal, a student should cite references for important work in the field. This is essential for the committee to obtain supplemental information as well as to evaluate whether the proposal is novel or derivative.

References must be formatted according to the style used for the journal Molecular and Cellular Biology. Most personal bibliography programs (e.g. Endnote) have this style set up. See example shown below.


VI. Tables and Figures (no page limit)

Figures and tables, if used properly, can greatly enhance the document by making it easier for the committee to follow and understand the proposal. Figures can contain models and diagrams that enhance presentation of background material. Figures and/or tables may also be employed to illustrate the data and results the student expects to obtain from the proposed experiments.

Figures and tables must be legible and of publication quality. Each figure or table must have a title and should be accompanied by a suitable legend. Place the text for the legend on the same page as the figure. As long as the
figures are legible, more than one figure and accompanying legends can be on a single page. If data is plotted, all axes must be properly labeled. If figures are taken from the literature, they must be appropriately acknowledged and the source cited. Make sure that all figures and tables print properly. We recommend using the Journal of Biological Chemistry as a source of examples illustrating high quality figures and tables.

**Formatting**

Font - Use only 11 pt Arial or Helvetica fonts for the text. 10 pt Arial or Helvetica fonts are acceptable only for legends accompanying tables or figures. Other fonts may only be used for Greek characters, symbols, or other special characters.

Margins - Use 1-inch margins at the top and bottom of pages; 0.8 to 1 inch margins are acceptable on the left and/or right.

Line Spacing - 1.5 line spacing

Page Numbers - Number all pages including those containing figures and tables.

**iThenticate Screening**

All proposals will be evaluated for plagiarism by screening through iThenticate. See “iThenticate Screening and Avoiding Plagiarism” section below.


At least two weeks before the Examination date, the student must submit file G.S. Form 8 Request for Appointment of Examining Committee (this is an electronic form you can access in myPurdue.) This form is routed to all committee members and then approved by the Graduate School.

7. Feedback on Written Proposal

Two weeks after submitting the full proposal to their committee, the student will meet with the chair of his/her preliminary exam to receive written and verbal feedback on the proposal. This will include an assessment of the significance of the proposed project, the clarity of the presentation, the justification of the experimental aims, experimental approach, controls and analysis of data. The goal is to provide the student with an indication of strengths and weaknesses before the exam. Nevertheless, a strong written proposal does not guarantee success in the preliminary exam and correspondingly a weak written document does not predetermine failure. If the student strengthens the proposal and provides a solid intellectual defense, then a weak written document can result in a successful preliminary exam.

8. Preliminary Exam – Day of Exam Schedule

The Purdue Graduate School states the Preliminary Exam should last no longer than 2 hours. The entire exam meeting should be scheduled for 2.5 hours to accommodate committee discussion and paperwork following the exam. The exam will begin with a short student presentation of the background, hypothesis or model to be tested and a brief description of each aim and the experiments proposed. This presentation should be designed for no more than 20 minutes (12-15 slides). The student may bring additional slides to clarify information or details later in the exam. The committee may interrupt the presentation with questions for clarification, thus the talk may last longer than 20 minutes. Nevertheless, the student should prepare a talk that can be delivered in 20 minutes.

After the presentation there will be a period of general questioning by the examination committee. There are no restrictions on what committee members may ask. Questions may pertain to details of the experimental approach(es), the measurements that were made, data interpretation, significance of the results, justification for the proposed study or fundamental principles of biochemistry that relate to the proposed project. General
knowledge expected may consist of mastery of the content of any major upper-level biochemistry text book (e.g. Stryer, Lehninger, etc.) and Lewin’s GENES XII. Accordingly, many questions may probe basic knowledge of biochemistry, molecular biology or other relevant topics even if they are not directly mentioned in the proposal.

If a committee member is unable to attend the exam, the preliminary examination can proceed if three of the four committee members are present (note: passing requires approval from three members). Alternatively, the student has the option to request that the exam be postponed so that all four committee members can be present. In the event of a student-requested postponement, the Preliminary Exam Graduate Chair will be notified and the examination must be rescheduled within three weeks.

Three of the four committee members must judge the overall performance in defense of the original proposition to be satisfactory in order for the student to pass the examination. The student’s performance in each of five major categories will be assessed using the Outcomes Rating of the Preliminary Exam form. The ratings will represent the consensus opinion of the committee, and will be recorded by the committee chair and submitted to the Graduate Program Coordinator together with a report that specifies the result of the exam and contains written comments from each committee member. A copy of the Outcomes Rating of Preliminary Exam Form and the Student Feedback Form for Preliminary Examination will be sent to the student and Major Professor, and a copy of each will be kept in the student file.

The best preparation for the Oral Preliminary exam is a “pre-prelim” practice session with senior graduate students and/or postdoctoral scientists. The most useful pre-prelims are scheduled well in advance of the exam and before the submission of the written proposal. Students need to use their own judgement to decide which, if any, suggestions to incorporate into their proposal. More than one pre-prelim may be helpful.

9. Exam Pass and Exam Fail

In the event that a student fails the Preliminary Examination on the first attempt, one reexamination will be scheduled within six months or per the deadline given by the Preliminary Exam Graduate Chair. The Graduate School policy requires a semester (or 4 months) between exams unless a student requests the reexamination sooner. However, the second exam cannot be taken in the same semester as the first.

For the second preliminary exam, another GS Form 8 must be submitted with the new exam date – see step 6.

The student will be assigned the same Preliminary Examination Committee for the second exam. However, the student may seek a change in composition of the committee for their second exam by appealing to the Preliminary Exam Graduate Chair. The Preliminary Exam Graduate Chair then has the option to replace some or all of the initial members of the original Preliminary Examination Committee.

The examination committee will not provide any additional feedback on the quality of the written proposal.

The student may change the topic of the second exam. This will require certification of the new topic by the Major Professor and approval by the Preliminary Exam Graduate Chair using procedures described above. If there is a substantial change in topic for the second exam, the Preliminary Exam Graduate Chair may elect to change the committee membership to better match the expertise of the committee to the topic.
iThenticate Screening and Avoiding Plagiarism

Before submission to the Preliminary Examination Committee, written proposals must be screened using the iThenticate system to detect potential plagiarism. Students will submit their written proposals to the Graduate Program Coordinator, who will run the iThenticate screen and send a summary report (PDF format) via email to the chair of the Preliminary Examination Committee and the student. Students will sign the cover page of the written proposal to verify it has been screened and contains no significant evidence of plagiarism. The Biochemistry office will also store the iThenticate output file electronically. The iThenticate report must be generated using the final version of the written prelim proposal that will be submitted to the prelim committee. After reviewing the iThenticate report, the chair of the examination committee will determine whether the proposal contains substantial evidence of plagiarism and communicate their findings by email to the Graduate Program Coordinator, other members of the exam committee, and the student. Other prelim examining committee members may request a copy of the iThenticate report by contacting the Biochemistry office.

If the chair finds no evidence of potential plagiarism, no further action will be necessary by the student. If the document contains substantial segments of text that have clearly been inappropriately duplicated from the work of others, the chair may conclude that the proposal contains evidence of potential plagiarism. Upon notification by the chair, the student must arrange a meeting with the chair of the examining committee to discuss the problem(s) found in the iThenticate report at the earliest mutually agreeable date.

If a limited number of sentences or phrases have been improperly copied from other sources, the chair will request that the student modify the problematic text and provide a revised proposal to the committee no later than one week prior to the exam. The revised proposal must be rescreened by iThenticate as described above.

If the chair finds evidence of flagrant plagiarism in the iThenticate report generated from the screen of a revised proposal, the student will fail the scheduled preliminary exam.
Guidelines for Evaluation of Preliminary Exam Performance

Criteria listed below are given as a guide to assist in evaluating a student’s overall performance on the preliminary examination. Committee members may use their own discretion in assigning a weight to each of these criteria.

Overall Breadth of Knowledge

- Student exhibits knowledge of pertinent literature and underlying theoretical concepts
- Student understands and can discuss data supporting the major concepts/hypotheses/models in the field
- Student understands principles and/or theory underlying proposed experimental techniques
- She/he is able to synthesize knowledge from multiple fields or disciplines

Originality and Significance of the Proposal

- Proposal is original and addresses important issues in the field where there may be a gap in understanding or a reason to challenge existing hypotheses or dogma
- Student can articulate the significance of anticipated findings and explain how they may advance the field.
- Proposal does not simply involve the application of a standard or well-established experimental paradigm to a new system or organism; creative and innovative ideas and approaches will be viewed favorably
- The student independently developed at least one aim/objective
- Student understands the scientific method and has critical thinking skills expected of a Ph.D. candidate
- Student can rigorously evaluate and interpret experimental results or observations
- Student questions the validity of scientific conclusions, hypotheses, and models based on experimental results and can recognize and identify invalid assumptions, inconsistencies, or alternative explanations
- Student formulates testable hypotheses or models

Experimental Design

- Student can explain how and why the proposed experiments will provide an adequate test of the hypotheses or models
- The rationale for experimental approaches for each aim/objective is strong and clearly articulated
- Student explains how expected results will be interpreted, and defines conditions under which data will support or contradict the hypothesis
- Student understands the limitations of proposed experiments and includes potential alternative methods

Communication Skills (Written)

- Document is organized in a concise and logical manner
- Writing style is scientifically rigorous and precise; the text contains no jargon or vague terminology
- Writing is of a quality adequate for publication
- There are few errors in grammar, punctuation, spelling and word use
- Literature is adequately cited
- Figures have properly labeled axes; figures and tables contain clear and concise legends

Communication Skills (Oral)

- Background information is presented in a logical, clear and coherent manner
- Slides/overheads are clear, properly labeled, not crowded with text or data, and well organized
- Responses adequately address the questions/issues posed by committee members
- Responses to questions are clear and reveal depth of knowledge and command of subject
- Student exhibits confidence, is comfortable fielding questions and performs well on her/his feet
- Student is able to draw models, flow charts, etc. on the board when requested
- Student provides detailed background information, experimental strategies and alternative strategies when asked
At least two sessions (including summer), but no more than five years, must elapse and be devoted to research between Preliminary Examination and the Thesis Defense.

Including Publications and Collaborative Work in a M.S. or Ph.D. Thesis:

Unpublished work: If all the figures, legends or tables within thesis chapters are not the student’s sole effort, please describe the student’s own contribution and acknowledge other researchers that contributed to the generation of data. If significant data or findings from collaborators are described in the thesis but not shown in figures or tables, text to acknowledge their contribution(s) should be included in a footnote of the chapter.

Published work: Text, figures and tables prepared for publication often have significant contributions from co-authors, including thesis advisors. If the thesis contains previously published materials where multiple authors contributed to the text, experimental design, figures, or analysis, a “declaration of collaborative work” page should be included that clearly indicates the contributions of the candidate and others to the publication (e.g. figures contributed, analysis, writing and editing).

Students must be prepared to defend all of the data, results and conclusions included in their thesis, whether or not they were the primary data gatherer. That is why it is important to carefully consider whether or not to include publications to which they made relatively minor contributions. Copyright permission may be required if journal-formatted publications are used as thesis chapters.

Final Examination: The Final Examination must be held before the last week of classes of the semester. A Ph.D. candidate has to meet the publication requirement. Once the Ph.D. thesis is written, the Ph.D. candidate will present their thesis research in an open seminar of no longer than forty minutes. Immediately after, the candidate is examined on the material in the thesis and on related topics by members of their Thesis Advisory Committee. If the thesis is acceptable and they pass examination, the candidate is recommended to the Graduate School for a Doctor of Philosophy degree. The Report of the Final Examination form must be fully approved at least a week before the last day of classes of the semester in which the degree is expected. The electronic deposit copy, incorporating all changes/modifications requested by the examining committee, and complying with all University and departmental format requirements, is to be deposited in the Thesis/Dissertation Office before the last day of classes of the semester and a Thesis Receipt must be sent to the Graduate School by the same deadline. Two bound hard copies are to be submitted to the Graduate Coordinator and the Major Professor.

Important Notes: A GS Form 8, Request for Final Exam, (through myPurdue) must be submitted online AT LEAST two weeks prior to the exam. The Form 8 must be approved by all members of the thesis examining committee and Graduate School before the final exam date; this is why we allow at least 2 weeks for needed approvals.

A first draft of the thesis should be in the hands of the Major Professor at least six weeks before the final exam deadline of the session in which conferral of the degree is expected.

Your thesis should be submitted to the Major Professor at least three weeks before the end of the session in which the degree is to be conferred. The thesis must be approved by the professor who has directed the research before it is submitted to the final examining committee. Each member of the examining committee must receive a copy of the thesis at least two weeks before the date of the final oral examination. Please ask your committee if an electronic version via email is acceptable. Failure to meet this two-week deadline may result in a member refusing to honor the defense date, which could affect the student’s graduation date and financial support.

Ph.D. Completion Policy: A graduate student must defend their Ph.D. thesis within six years of entering graduate school at Purdue University. The student may request an extension of the time limit through their Thesis Advisory Committee that must be approved by the Head of the Department. The student will meet yearly with the Thesis Advisory Committee. At meetings starting one year after passing preliminary examinations the committee will discuss with the student and Major Professor the time table for completion of the thesis. The committee’s report will include a statement as to when it can be expected that the student will be ready to write a thesis.
All candidates must meet certain requirements in thesis preparation. Thesis format requirements have been separated into two categories:

a) departmental format requirements that will be reviewed by the student's department, covering such matters as how figures are prepared and numbered; style of references; placement of notes; headings; chapter headings; etc., and

b) University format requirements that will be reviewed by the Thesis/Dissertation Office, covering paper requirements; typeface and quality; spacing; margins, page numbering; title page; and abstract.

1. When ready to begin writing, plan to attend the next thesis format/deposit workshop offered. Workshops are scheduled once a semester and may be attended as often as needed.

2. Register as a Candidate the session the degree is expected with the Graduate Program Coordinator.


5. Submit a first draft of the thesis to the Major Professor six weeks prior to the end of the session in which conferral of degree is expected.

6. At least two – three weeks before the Final Examination date, submit an electronic request for approval of the Final Examination G.S. Form 8 located in mypurdue portal. Final examinations must be held before the last week of classes.

7. Prepare a final copy of the thesis. This Deposit Copy will incorporate all editorial changes and modifications requested by the members of the Examining Committee and will comply with both University and departmental format requirements. Once a committee member has signed the Thesis Acceptance, the document is approved by that individual.

8. All manuscripts are submitted electronically. Deadlines for deposition are established by the Graduate School for each term and are normally the last day of classes prior to final examination week. Formatting compliance will be checked at that time. No changes may be made to the thesis after it has been deposited.


10. Students should provide a bound copy of the thesis to the Graduate Program Coordinator to keep on file and their Major Professor.
Guidelines for Preparation of the Annual Progress Report

To document the progress towards the Ph.D. degree, students will report annually major achievements and milestones that are crucial to the completion of their thesis research and development of a successful scientific career. This Annual Progress Report will be attached as an appendix to the written summary that is presented to the Thesis Advisory Committee at the annual Thesis Advisory Committee Meeting. This will be placed on file along with other material pertaining to the progress toward the degree objective.

The content and organization of this Progress Report is outlined below and an example is attached. The report will be organized by academic years in the program. For the purpose of this document, an academic year extends from September 1 to August 31 of the following year (e.g. Sept 01, 2007 to Aug 31, 2008). For each academic year, students will list their major academic, professional and scientific accomplishments as described below.

The first section of the document will list the student’s name, thesis advisor’s name, the date in which they entered the program, and the date when they expect to complete their thesis research. For each academic year, a student should list the following information documenting major achievements and milestones:

1. Give courses completed with grades earned.

2. Include formal oral presentations of the student’s research along with dates when they were given. These may include rotation talks, formal presentations given at lab group meetings, talks presented at the annual Biochemistry retreat, presentations given at journal clubs or other seminar series on campus, and presentations given at professional meetings.

3. Poster presentations given at local meetings on campus or at national or international meetings should be listed. Include the name of the meeting, location, and dates. Be sure to list any special awards or recognition that their poster may have received.

4. Include all peer-reviewed publications that a student authors or co-authors. Publications that have been submitted to a journal, are in press, or have been published should be included. Do not list publications that are “in preparation”. A student may also list book chapters, published presentations from academic conferences, scientific publications on the World Wide Web, or special technical reports, but they must be clearly distinguished from standard peer-reviewed articles.

5. List any competitive fellowship applications submitted whether funded or not. Include the date submitted, the funding agency, and the outcome (pending, not funded, or funded).

6. List any special recognition or Awards received that are related to your scientific endeavors. Include the name of the award, the organization bestowing the award, and the date received.

7. Include the date when the Preliminary Exam was completed.

8. List service as a teaching assistant and include the course, semester, and instructor of the course.

9. Serving as a mentor for an undergraduate student or a beginning graduate student in their laboratory can be included. To list such service, a student must play a substantial role in guiding and instructing the mentored student that is acknowledged by their Major Professor.

10. There may be other professional achievements that are suitable for inclusion. Please consult with the Major Professor to determine whether an activity or achievement is appropriate for this document.

An example of an Annual Report below illustrates an appropriate format. Variations of this format are acceptable provided the font is 10 pt or greater and the organization according to academic year in the program is maintained.
Jane Doe (Student Name)

**Major Professor:** Boris Badenov

**Date of Entry into Graduate Program:** Fall 2003

**Proposed Year of Graduation:** Spring 2008

### Year 1 Sept 2003 - August 2004

**Courses Completed:** BCHM 659 A; BCHM 660 B; BCHM 663 A; BCHM 665 A; BCHM 668 B; BCHM 667 A; BCHM 593 A; BCHM 693 B; BCHM 695M A; BCHM 601 A

**Oral Presentations:** 4 Rotation Presentations

### Year 2 Sept 2004 - August 2005

**Courses Completed:** BCHM 664 A; BIOL 541 B; MCMP 625 A; ENTM 612 A; BCHM 690 (1) A

**Oral Presentations:** 1st Annual Thesis Committee Meeting

**Fellowship:** NSF Pre-doctoral Fellowship, Nov 2004 - Not Funded

### Year 3 Sept 2005 - August 2006

**Courses Completed:** BCHM 690 (2) A

**Passed Preliminary Exam** Nov 2005

**Oral Presentations:** 2nd Annual Thesis Committee Meeting Lab Group Meetings (4): Sept 2005, Dec 2005
Feb 2006, May 2006

**Poster Presentations:** Biochemistry Annual Retreat, October 2005 Characterization of the MP2 kinase, Doe, J., and Badenov, B.


**Fellowship:** American Heart Association Predoctoral Fellowship, January 2006-Dec 2008

**Mentoring:** Supervised Maxwell Smart, undergraduate student, Summer 2006

### Year 4 Sept 2006 - August 2007

**Teaching Assistant:** BCHM 561, Spring 2007, Dr. Kirchmaier

Feb 2007, April 2007 Biochemistry Annual Retreat, October 2006

**Poster Presentations:** Purdue Cancer Center Retreat; Sept 2006; Identification of Substrates for the MP2 kinase; Doe, J., and Badenov, B.

FASEB Summer Research Conference; Protein Phosphorylation; July 13-18, 2007; Snowmass Village Conference Center Snowmass Village, CO; Mechanism of Regulation of the MP2 kinase. Doe, J., Smart, M., and Badenov, B.


**Mentoring:** Helped Supervise Nell Fenwick, new graduate student, Fall 2006
Responsible Conduct of Research/Ethics Training: All graduate students in the Biochemistry Program are expected to follow the guidelines set forth by the Graduate School regarding Responsible Conduct of Research. All students are required to take GRAD 612, which provides an overview of values, professional standards, and regulations that define responsible conduct in research. Typically this course is taken the spring semester of a student’s first year. University policy on Research Misconduct can be found at https://www.purdue.edu/policies/ethics.html.

Plagiarism: Purdue University is committed to the highest standards of ethical behavior with respect to writing and reporting. Plagiarism is considered to be a form of academic dishonesty at Purdue and is not permitted as stated in the Student Code of Conduct. Moreover, plagiarism is not tolerated in the scientific community and attempts to publish plagiarized material can have severe consequences. Through a contract with the company iThenticate, the Graduate School and Office of the Vice President for Research now offer Purdue students electronic document screening as a safeguard to check work for plagiarism. iThenticate reports for all preliminary exams will be reviewed by the chair of the preliminary exam committee as required by the department. The Graduate School requires that iThenticate reports for all theses be reviewed and approved by the chair of the thesis committee. Please see the Graduate Program Coordinator to run the iThenticate report.

**Guidelines for Avoiding Plagiarism, Self-Plagiarism, and Questionable Writing Practices**

(The following guidelines are taken directly from “Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing: by Miquel Roig St. Johns University 3/12/09)

**Guideline 1:** An ethical writer ALWAYS acknowledges the contributions of others and source of ideas.

**Guideline 2:** Any verbatim text taken from another author must be enclosed in quotation marks.

**Guideline 3:** We must always acknowledge every source that we use in our writing; whether we paraphrase it, summarize it, or enclose it quotations.

**Guideline 4:** When we summarize, we condense, in our own words, a substantial amount of material into a short paragraph or perhaps even into a sentence.

**Guideline 5:** Whether we are paraphrasing or summarizing we must always identify the source of the information.

**Guideline 6:** When paraphrasing and/or summarizing others’ work we must reproduce the exact meaning of the other author’s ideas or facts using our words and sentence structure.

**Guideline 7:** To make substantial modifications to the original text resulting in a proper paraphrase, an author must have a thorough understanding of the ideas and terminology being used.

**Guideline 8:** A writer has an ethical responsibility to readers, and author/s from whom s/he is borrowing, to respect others’ ideas and words, to credit those from whom we borrow, and whenever possible, to use one’s own words when paraphrasing.

**Guideline 9:** When in doubt as to whether a concept or fact is common knowledge, provide a citation.

**Guideline 10:** Authors who submit a manuscript for publication containing data, reviews, conclusions, etc., that have already been disseminated in some significant manner (e.g., published as an article in another journal, presented at a conference, posted on the internet) must clearly indicate to the editors and readers the nature of the previous dissemination.

**Guideline 11:** Authors of complex studies should heed the advice by Angell & Relman (1989). If the results of a single complex study are best cited as a ‘cohesive’ single whole, they should not be partitioned into individual papers. If there is any doubt as to whether a paper submitted for publication presents fragmented data, authors should enclose other papers (published or unpublished) that might be part of the paper under consideration (Kassirer & Angell, 1995). Similarly, old data that is merely augmented with additional data points and that is then presented as a new study can be an equally serious ethical breach.
Guideline 12: Because some instances of plagiarism, self-plagiarism, and even some writing practices that might otherwise be acceptable (e.g., extensive paraphrasing or quoting of key elements of a book) can constitute copyright infringement, authors are strongly encouraged to become familiar with basic elements of copyright law.

Guideline 13: While there are some situations where text recycling is an acceptable practice, it may not be so in other situations. Authors are urged to adhere to the spirit of ethical writing and void reusing their own previously published text, unless it is done in a manner consistent with standard scholarly conventions (e.g., by using of quotations and proper paraphrasing).

Guideline 14: Authors are strongly urged to double-check their citations. Authors should always ensure that each reference noted in the body of the manuscript corresponds to the correct citation listed in the reference section and vice versa. Each source listed in the reference section must be cited at some point in the manuscript. Authors should only use the original paper’s citation (e.g., spelling of authors’ names, volume number of journal, pagination) rather than a citation that appears on a secondary source to be certain it’s correct. Finally, you should ensure that you credit those authors who first reported the topic or phenomenon being studied.

Guideline 15: The references used in a paper should only be those that are directly related to its contents. The intentional inclusion of references of questionable relevance for purposes of manipulating a journal’s or a paper’s impact factor or a paper’s chances of acceptance is an unacceptable practice.

Guideline 16: Authors should follow a simple rule: Strive to obtain the actual published paper. When the published paper cannot be obtained, cite the specific version of the material being used, whether it is conference presentation, abstract, or an unpublished manuscript.

Guideline 17: Generally, when describing others’ work, do not rely on a secondary summary of that work. It is a deceptive practice, reflects poor scholarly standards, and can lead to a flawed description of the work described. Always consult the primary literature.

Guideline 18: If an author must rely on a secondary source (e.g., textbook) to describe the contents of a primary source (e.g., an empirical journal article), s/he should consult writing manuals used in her discipline to follow the proper convention to do so. Above all, always indicate the actual source of the information being reported.

Guideline 19: When borrowing heavily from a source, authors should always craft their writing in a way that makes clear to readers, which ideas are their own and which are derived from the source being consulted.

Guideline 20: When appropriate, authors have an ethical responsibility to report evidence that runs contrary to their point of view. In addition, evidence that we use in support of our position must be methodologically sound. When citing supporting studies that suffer from methodological, statistical, or other types of shortcomings, such flaws must be pointed out to the reader.

Guideline 21: Authors have an ethical obligation to report all aspects of the study that may impact the independent replicability of their research.

Guideline 22: Researchers have an ethical responsibility to report the results of their studies according to their a priori plans. Any post hoc manipulations that may alter the results initially obtained, such as the elimination of outliers or the use of alternative statistical techniques must be clearly described along with an acceptable rationale for using such techniques.

Guideline 23: Authorship determination should be discussed prior to commencing research collaboration and should be based on established guidelines, such as those of the International Committee of Medical Journal Editors.

Guideline 24: Only those individuals who have made substantive contributions to a project merit authorship in a paper.

Guideline 25: Faculty-student collaborations should follow the same criteria to establish authorship. Mentors must exercise great care to neither award authorship to students whose contributions do not merit it, nor to deny authorship and due credit to the work of students.

Guideline 26: Academic or professional ghost authorship in the sciences is ethically unacceptable.
The Department Intranet is located under Resources on our home page. [https://ag.purdue.edu/biochem/Pages/](https://ag.purdue.edu/biochem/Pages/).

Please check out the program guidelines document, committee forms and other information in the Graduate Students section at the top of the page.

The appendices on pages 32 – 36 are for reference only; don’t copy from this document. These forms can be found in the Graduate Students section of the Intranet.

Click on Graduate Students at the top of the page, then Prelim Exam Forms folder.

Appendices 1 and 2 can be found there.

Appendices 3-5 are in the Day of Exam folder.
Appendix 1: Request for Preliminary Exam

Request for Preliminary Examination Form

Student Name

Thesis Advisory Committee Members:
Major Professor

Title of Preliminary Examination Proposal

Have the topic and specific aims for your proposal been approved by your advisor? [ ] Yes [ ] No
Has the specific aims document for your proposal been attached? [ ] Yes [ ] No
Has this proposal been used for a class? [ ] Yes [ ] No

Please indicate if any of the following apply to you:
- [ ] I transferred to the Biochemistry Program from another graduate program at Purdue.
- [ ] I transferred to the Biochemistry Program from a graduate program at another institution.
- [ ] I have changed thesis advisors within the Biochemistry Program.

If you transferred to the Biochemistry Program or changed advisors as indicated above, did you develop or initiate a thesis research project before transferring? [ ] Yes [ ] No
If you answered yes above, is your preliminary exam proposal focused on a field or area of research closely related to the project initiated before transfer? [ ] Yes [ ] No

Student Signature

Date

Send the completed form to Traci Jordan by email (tjordan@purdue.edu)
Appendix 2: Advisor Certification Form

Advisor Certification of Preliminary Examination Topic

Students should fill in the following section and provide this form and their specific aims document to their major professor for the certification process.

Student _______________________
Proposal Title _______________________
Major Professor _______________________

Major Professor:

Students are not permitted to base their preliminary examination proposal on their thesis research projects. However, they may select a topic or research problem that is closely related to their area of research as long as the central issues addressed and specific aims or objectives of their proposal clearly differ from their current or past thesis projects in your lab.

As part of the process for approving preliminary exam topics, major professors are asked to verify that their student’s prelim proposal topic and specific aims or objectives fulfill the criteria listed below. The student should provide you with the specific aims for their preliminary exam proposal along with this form. After examining the specific aims document, please decide whether your student’s aims or objectives satisfy these criteria and indicate your decision by checking the appropriate box. In making your decision, you may discuss the proposal with your student. However, you are not permitted to assist your student in developing their proposal or preparing for the preliminary examination.

Regardless of the topic, student proposals must satisfy all of the following criteria:

1. No specific aim/objective can be identical to or overlap with objectives of current or past research projects that the student has performed in their advisor’s laboratory.

2. No specific aim/objective can be identical to or overlap with any goal(s) of ongoing research projects in the advisor’s lab including those conducted by the advisor, post docs, graduate students, undergraduates, or technicians.

3. The specific aims/objectives must be different from those of research groups actively collaborating with the advisor’s laboratory.

☐ The proposal topic and specific aims satisfy all the criteria above.

☐ The proposal topic and specific aims do not meet the criteria for an acceptable preliminary exam proposal. I have informed my student of my opinion.

If you decline to provide certification, then you should inform your student why you believe their proposal and/or specific aims/objectives are not appropriate. However, please do not give the student specific advice on how to redesign their aims/objectives. This is the responsibility of the student and it is imperative that their proposal be original and of their own design.

(Advisor Signature)

Typing your name in the signature box above and/or typing your name at the end of an e-mail message used to transmit this form will serve as your signature.

(Date) (mm/dd/yyyy)

Please send the completed form to Traci Jordan via email (tljordan@purdue.edu). This form must be returned by the major professor. Forms submitted by students will not be accepted.
Appendix 3: Committee Report of Oral Examination

BIOCHEMISTRY PROGRAM

Committee Report of Oral Preliminary Examination

Name of Student: 
Name of Major Professor: 
Name of chairperson of the Examination Committee: 
Meeting date:

*Committee’s comments are recorded below.

<table>
<thead>
<tr>
<th>Signature</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(This section to be completed by the Examining Committee)

Chairperson to complete.

Committee’s Vote Summary:

- Number of Passing Votes
- Number of Failing Votes

*To obtain a passing performance there must be 3 of 4 votes of “pass”. If there are only three committee members present a unanimous vote of “pass” is required.
Appendix 4: Outcomes Rating of the Preliminary Examination

Outcomes Rating of the Preliminary Exam

Please rate the student's performance in each of the five major categories listed below. These categories will not necessarily be ranked equally in making the overall pass/fail evaluation. Thus, depending on the competency displayed in other areas, a poor evaluation in a single category will justify an overall failing evaluation.

These ratings will also be used by the Biochemistry Grad Program to identify areas where our students display the greatest shortcomings and will be important in devising changes in instruction and program policies that will improve our students preparation for this exam.

Student

<table>
<thead>
<tr>
<th>Category</th>
<th>Excellent</th>
<th>Satisfactory</th>
<th>Improvement needed</th>
<th>Fails to meet minimal expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Depth and Breadth of Knowledge</td>
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<tr>
<td>Originality and Significance of the Proposal</td>
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<tr>
<td>Critical Thinking and Experimental Design</td>
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<tr>
<td>Communication Skills (Written)</td>
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<tr>
<td>Communication Skills (Oral)</td>
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</tbody>
</table>

Examinining Committee Chair

Please Print
Appendix 5: Student Feedback Form for Preliminary Examination

BIOCHEMISTRY PROGRAM
Student Feedback Form for Preliminary Examination

Student: ________________________________
Major Professor: ________________________________
Examination Chair: ________________________________
Date: ________________________________

Summary of comments from the Preliminary Examination (to be prepared by the committee chair):

______________________________ (Chair)