# Table of Contents

Administration of Graduate Program ........................................................................................................... 2

Resources .......................................................................................................................................................... 2

Graduate Student Milestones ............................................................................................................................. 3

Expectations for excellence in the Biochemistry Graduate Program ............................................................... 4

Business and HR Information .......................................................................................................................... 6

Insurance ......................................................................................................................................................... 7

Vacation, Sick Time and Holidays .................................................................................................................... 7

Fringe Benefits & Privileges of Graduate Assistants and Graduate Instructors ........................................... 9

Admissions ...................................................................................................................................................... 10

Registration .................................................................................................................................................... 10

Lab Rotations .................................................................................................................................................. 12

Plan of Study .................................................................................................................................................. 12

Course Selection and Grading ......................................................................................................................... 13

Ph.D. Thesis Advisory Committee .................................................................................................................. 15

Teaching and Publication Requirement ......................................................................................................... 16

Seminar Series ............................................................................................................................................... 17

Masters Degree ............................................................................................................................................... 17

Preliminary Examination ................................................................................................................................ 18

Guidelines for Evaluation of Preliminary Exam Performance ......................................................................... 21

GUIDELINES FOR THE PRELIMINARY EXAMINATION .................................................................................. 22

COVER PAGE EXAMPLE .................................................................................................................................. 25

Content and Organization of the Written Preliminary Examination Document ........................................... 25

Agenda for Oral Preliminary Exam .................................................................................................................. 28

Thesis Defense ................................................................................................................................................ 29

THESIS PREPARATION, APPROVAL, AND DISTRIBUTION ...................................................................... 30

Guidelines for Preparation of the Annual Progress Report ........................................................................... 31

Annual Progress Report Example .................................................................................................................. 32

Plagiarism and Code of Research .................................................................................................................... 33

Appendix 1: Advisor Certification Form .......................................................................................................... 36

Appendix 2: Request for Preliminary Exam ..................................................................................................... 37

Appendix 3: Committee Report of Oral Examination ...................................................................................... 38

Appendix 4: Outcomes Rating of the Preliminary Examination ...................................................................... 39

Appendix 5: Student Feedback Form for Preliminary Examination .............................................................. 40
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.

Resources

**Graduate Program Coordinator:** Traci Jordan tjordan@purdue.edu

She/he works with all Graduate Chairs, Major Professors, the Department Head and the Graduate School to oversee the BCHM graduate program. Provides guidance and resources to help students navigate through all phases of the graduate program.

**First Year Graduate Chair:** Dr. Frederick Gimble fgimble@purdue.edu

Until a Major Professor is selected, the progress of a student is the concern of the First Year Graduate Chair. The Chair’s role is to help students navigate through the academic requirements of the program and to oversee students first year progress. Meets with students to determine rotation schedule and final lab placements. She/he is available to meet with graduate students about any problems or issues that may arise during their first and subsequent years of graduate study.

**Major Professor:** To be determined after lab rotations

The Major Professor has the supervisory responsibility for a student’s research. She/he is available to meet with students about any problems or issues that may arise throughout their graduate career.

**Preliminary Exam Graduate Chair/Graduate Career 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, reads and approves all preliminary exam committee reports, and meets with graduate students about issues that may arise regarding preliminary exams. As the Graduate Career Chair, he/she reads and approves all thesis committee reports and is available to meet with students if there are problems or issues that may arise in their second and subsequent years of graduate study.

**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).

**Ombudsman and Peer Ombudsman:** Tom Atkinson / Colleen Gabauer **Contact:** snewberr@purdue.edu

The ombudsman is a neutral, and, in most cases, confidential resource for new and continuing graduate students to raise questions or concerns about any aspect of their graduate experience. Since the Graduate School offers an ombudsman to assist graduate students, faculty, and staff, The Graduate School also offers peer ombudsman to assist graduate students as well. These ombudsman are trained graduate students who provide a peer's perspective regarding a student's concerns. A student may schedule a meeting with an ombudsman and/or peer ombudsman through the graduate school website.
Graduate Student Milestones

Orientation Week

- Submit final transcripts
- Attend Orientation as scheduled.
- Discuss courses with First Year Grad Chair and adjust registration as needed.
- 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.**

2nd Year - spring

- Optional “early” Preliminary Examination.

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.

*(must present research after two of the three rotation periods – randomly assigned)
Expectations for excellence in the Biochemistry Graduate Program

Many of our graduate students aspire to continue their research careers by becoming post-doctoral fellows in high profile laboratories or by accepting positions in the biotechnology sector. To enable students to 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 to pursue their choice of laboratories or companies as a post-doctoral fellow or employee.

**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
Business and HR Information

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 the name change.
- Students can add their Preferred Name to their personal information in their mypurdue portal. They also may choose to have it appear on the front of their Purdue ID card. Their legal name will still be printed on the back of their PUID.

Change of Address and Telephone Number: Students should inform the Registrar’s Office, the Graduate Program Coordinator and the BCHM Business office of permanent address or telephone change. Students can change their address, personal, and banking information in Employee Self-Service by logging in to the OnePurdue (SAP) portal. Located on the One Campus page: https://one.purdue.edu/

Resident Status: An emancipated student is classified as a resident if the student is domiciled in the State of Indiana prior to the first 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 has been domiciled in the State of Indiana prior to the first day of classes in the academic session in which resident classification 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 twelve months immediately preceding the first day of classes of the term that resident classification is sought.

Changes from Non-resident to Resident Status: Application for classification as a resident shall be submitted in writing 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 fifteen days after the day on which classes begin for the academic session for which reclassification is sought. The Registrar shall render a decision no later than 30 days after the application is filed.

Automobile Parking Permits: All parking on the West Lafayette Campus is regulated. Permits are required to park on campus. Students employed by Purdue at least 30 hours per week are eligible to purchase an "A" permit for $250 per year or a "B" permit for $100 per year by completing the Student A/B Permit Application. Purdue Parking portal: https://purdue.t2hosted.com/Account/Portal. The Parking Facilities Office located at 700 Ahlers Drive in the Materials Management and Distribution Center (MMDC) Hours are 7:30 a.m. to 4:30 p.m. Graduate staff employed less than three quarter time are eligible to purchase a C permit which provides limited parking availability.

Clerical Assistance: Graduate students may obtain clerical assistance in the Biochemistry main office for any official university-related business approved by a faculty member. Please see the Graduate Program Coordinator as the first point of contact. There is a copy machine in the Mail Room / BCHM 110A.

Keys: Keys are issued to you for the outside door of the laboratory/building you are assigned.

Mail: Mailboxes are located in BCHM room 110A. Before receiving permanent laboratory assignments, mailboxes will be shared with other incoming graduate students. It is important that the mailbox be checked daily. After assignment to a Major Professor, mail will be delivered to that lab mailbox.

Email: All students will have an @purdue.edu address. Instructions for setting up accounts are distributed the summer prior to arrival and in graduate orientation packets.

Paychecks: Payday is the last working day of each month, pay is direct deposited into a bank account. Salary statements are posted in Employee Self Service. A student’s first check (half monthly stipend) will be issued either at the end of August or middle of September.
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.

Graduate students not covered by the graduate staff policy can obtain student coverage. Information and directions are available from the Office of the Bursar and the Student Hospital. 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.

Vacation, Sick Time and Holidays

**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 leave as follows:

Vacation leave credits begin 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. **Staff members may not use paid vacation leave until they have completed three months of service.** Vacation must be requested on HRS Form 33 ABSENCE.

Graduate student staff employed on a fiscal-year basis terminating their employment with the University may not be paid for any 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., faculty, administrative/professional, 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 2018-19:**

- Independence Day: July 4, 2018
- Labor Day: September 3, 2018
- Thanksgiving Holiday: November 23-24, 2018
- Christmas Holiday: December 24-25, 2018
- Winter Recess: December 26-28, 2018
- President’s Holiday: December 31, 2018
- New Year’s Day: January 1, 2019
- Martin Luther King, Jr. Day: January 21, 2019
- Memorial Day: May 27, 2019
Class Breaks: Classes are not in session, but graduate students are in work status unless they take vacation leave.

- **Fall Break:** October 8-9, 2018
- **Winter Break:** December 16, 2018-January 6, 2019
- **Spring Break:** March 11-17, 2019

**Leave of absence:** All leaves of absence greater than 10 consecutive work days, for any reason except vacation leave or Family and Medical Leave Act of 1993 (FMLA) related leave, require the approval of the dean of the Graduate School. To obtain approval, a Request for Absence from Campus (HRS Form 33 ABSENCE) must be processed. All other leaves require approval by the appropriate vice president or dean or designee on the same form (HRS Form 33 ABSENCE). Questions regarding leaves of absence should be directed to Human Resource Services, Employee Relations.

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 via a Request for Absence from Campus (HRS Form 33 ABSENCE) will continue to receive Graduate Staff Medical Insurance coverage, without interruption. Upon the graduate student’s return to the graduate staff position, the summer health insurance premiums will be deducted from the student’s pay. If the graduate student does not return, the insurance will be cancelled back to the separation date. For more details, please contact Staff Benefits at 765.494.2222.

**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. Leave related to family illness must be requested on HRS Form 33 ABSENCE.

**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 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.
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 should be directed to Human Resource Services.

Fringe Benefits & Privileges of Graduate Assistants and Graduate Instructors

- **Accident Insurance**
  - Worker's compensation
- **Social Security**
  - No
- **TIAA**
  - No
- **Group Medical Insurance**
  - Yes, if funded by a graduate research, teaching or Purdue fellowship appointment of 50% or greater, the graduate staff member is covered under Purdue’s insurance program for graduate student staff.
- **Group Life Insurance**
  - No
- **Fee Reduction**
  - Tuition is waived. Current graduate fees are $252 per semester. Regular summer session fees are $126. If student holds a fellowship responsible for both tuition and fees in conjunction with employment, full tuition and fees will be assessed to the grant. Student’s employment is certified each semester with the Registrar’s Office by the Graduate Program Coordinator
- **Staff Dependent Fee Reduction**
  - Yes, staff spouse/staff child reduction
- **Purdue Village**
  - Student rate
- **Parking Privileges**
  - Yes, C permit, A/B permit if employed 75% or more
- **CityBus**
  - Free with ID
- **Co-Rec Gymnasium**
  - Included in fees
- **Tenure**
  - No
- **Sabbatical Leave**
  - No
- **Athletic Tickets**
  - At staff rate
- **Purdue University Hospital**
  - Included in fees
Admissions

Official Transcripts: Official copies of transcripts from each university previously attended are required by the Graduate School. An official copy of the final transcript showing the date of graduation (with the title of the degree listed) is required by the end of the first semester of residence. Students will not be allowed to register for subsequent semesters until this requirement has been met.

Immunization Requirement: Indiana state law requires all new, regularly-enrolled students attending residential campuses of Indiana public universities be immunized against Rubeola (10 day measles), Rubella (German measles), Mumps, Diphtheria, and Tetanus. Evidence of immunizations is required by the end of the first semester of residence. Students will not be allowed to register for subsequent semesters until this requirement has been 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 will be determined by the results of this examination and/or satisfactory completion of ENGL 620, which may be required as a result of this examination. Failure to complete the spoken English requirement by the end of the first year of graduate study will 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 the Graduate Career Chair requesting this change. The letter should be signed by the student and by the current Major Professor. The letter should be accompanied by a completed G.S. Form 17 (Request for Transfer of Department), which 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 desires for making a decision and for their permanent records. The BCHM Graduate Office will send copies of the student's records to the other department if requested to do so 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 should 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 and their Major Professor (or the First Year Graduate Chair) will plan their program each semester. **Students are responsible for registering each semester, including summer.** You will register all non-research courses through the mypurdue portal. **A registration form 23 must also be completed and signed for each semester and given to the Graduate Program Coordinator.**

The Graduate Program Coordinator will register research credit hours. **However, it is the student’s responsibility to check his/her registration for accuracy each semester.** Plan to register early for the 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.
Visiting a Course: Anyone wishing to "visit" a course on a non-credit basis must get a Visitor Permission Form from the Office of the Registrar. These courses should not be entered on the course request.

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 has been 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). Otherwise, the registration for the current session will revert to normal registration.

Exam Only: If all academic requirements have been completed except the Final Examination and depositing the thesis prior to the first day of the academic session of graduation, the 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 have been received in the Graduate School by the eighth week of the semester (fourth week of a summer session). Otherwise, the registration for the current session will revert to normal registration.

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). (Master’s students are not eligible to register for Research in Absentia).

A doctoral student may, with the approval of the Major Professor and head of the graduate program, petition for permission to register in absentia for doctoral research. To do so, a completed 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 beginning of the initial session for which registration in absentia is sought. To learn further about this option, please see the graduate school manual:

Lab Rotations

Students will perform three lab rotations with the option of a fourth if it’s needed. These rotations will each be for approximately eight weeks. At the end of each rotation, students make a presentation of their work. Students not placed in a permanent lab after the third rotation will have a fourth rotation. Additional details are given during orientation week.

During orientation week, students are expected to interview at least five professors in the department and are encouraged to interview more. Faculty web pages briefly describe the laboratory work of each professor. Students will attend Faculty Research Talks during the fall semester of their first year. Each faculty presents a 30-minute talk about their research.

Selection of the Major Professor: The Major Professor shall have the supervisory responsibility for a student’s research. She/he is available to meet with students about any problems or issues that may arise throughout their graduate career. Each student will be given adequate opportunity to investigate various laboratories and to become acquainted with professors who have positions available.

The selection of the Major Professor will be 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, BCHM 690, 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 must be submitted by the end of that fall semester and approved by the Graduate Career Chair, each committee member and the Department Head.

The choice of the additional electives will be made in consultation with the Major Professor. Any additional course(s) beyond the requirements and related to the student’s field of study should also be included in the Plan of Study. Courses not related to the student’s field of study should not be included. All courses listed on the Plan of Study are included in the GPA calculation.

Changes to the Plan of Study: 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.
## 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 Analysis Biochemical Research Literature 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 Analysis Biochemical Research Literature II</td>
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</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>GRAD 61200</td>
<td>Responsible Conduct of Research</td>
<td>fall or spring</td>
<td>1</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 Title</th>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 60000</td>
<td>Bioenergetics</td>
<td>fall</td>
</tr>
<tr>
<td>BIOL 59500</td>
<td>X-ray Crystallography</td>
<td>spring</td>
</tr>
<tr>
<td>*STAT 50300</td>
<td>Statistical Methods Biology</td>
<td>fall/spring/summer</td>
</tr>
<tr>
<td>STAT 51100</td>
<td>Statistical Methods</td>
<td>fall/spring/summer</td>
</tr>
<tr>
<td>STAT 51200</td>
<td>Applied Regression Analysis</td>
<td>fall/spring/summer</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.

**BCHM 69000** Seminar in Biochemistry fall 1

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

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

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

**taken year 2

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**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 an individual graduate student in consultation with his/her Major Professor. An essential component of 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. They will 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.

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.
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. Advisory meetings must be communicated 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 Summary 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.
Teaching and Publication 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.

Publication Requirement: A Ph.D. candidate is required to show, at the time of thesis deposit, that at least one first author (or equivalent, i.e. co-first author) paper from his or her thesis research has been accepted to, or published in, a reputable scientific journal. This requirement is to be viewed as an absolute minimum, and it is much preferred to have manuscript(s) covering all major results of the thesis research published prior to the defense.

ACS Publications has an educational video series, Publishing Your Research 101, found at, http://pubs.acs.org/r/publishing101

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

First, 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.)

Second, each author must be prepared to take responsibility for all aspects of the work described in the publication. However, 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.

Finally, 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 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.

**Master’s Degree**

*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. The deadline for completing a Master's degree and the requirement of holding Thesis Advisory Committee meetings for Master's students will be made by each student's Thesis Advisory Committee.

**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.

**Track 1:** (for students entering directly into the BCHM M.S. program): The requirement is a total of 11 hours of course work above BCHM 561/562 (or equivalent) including BCHM core courses BCHM 601, BCHM 602, BCHM 605, BCHM 610 and one semester of BCHM 690, one semester of an ethics course, plus a thesis and the defense of the thesis.

**Track 2:** (for students who work with a BCHM faculty member, but entered through an interdepartmental program, e.g. BMB, PGP, PULSe): If the student has fulfilled all course requirements for the Ph.D. in an interdepartmental program and the Major Professor is a BCHM faculty member, then the Department of Biochemistry will accept the completed Plan of Study and require a Master Thesis and successful defense. The Thesis Advisory Committee as established for the Ph.D. is acceptable for the Master Degree.
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. Although the proposal may address a topic within a field or area closely related to that of the thesis project, it must focus on a research problem that is clearly differentiated from the student’s current or past research project(s). For example, a student whose thesis project investigating the cell cycle-dependent regulation of protein kinase D by the protein activator Q could do a prelim proposal to evaluate hypotheses regarding the role of protein kinase D in triggering the onset of cytokinesis. In addition to the student’s research, the proposal topic and aims cannot overlap with other lab projects.

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 a previous advisor. If a transfer student selects a research topic in an area similar to that of a project developed prior to their transfer, they may be required to have their previous advisor verify that their proposal topic and specific aims meet the criteria listed above.

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 advisors 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 Preliminary Examination is normally taken in the fall semester of the third year of study. However, students can apply for an early preliminary exam if they wish. The early preliminary exam would be held in the spring of the second year, rather than the fall of the third year. The student and Major Professor must mutually agree on the early exam and this must be approved by the thesis committee. **THIS THESIS ADVISORY COMMITTEE MEETING MUST BE HELD BEFORE THE END OF SEPTEMBER TO HAVE AN EARLY PRELIM EXAM**

The student is responsible for obtaining approvals, which should be conveyed to Preliminary Exam Graduate Chair and Graduate Program Coordinator via email immediately following the first committee meeting.

The Preliminary Exam Graduate Chair must approve the preliminary examination proposal topic and specific aims before a Preliminary Examination Committee can be assigned and an examination date scheduled. Procedures for approval involve several steps carried out in the following order. Students will select a topic or research problem, a title, and develop a tentative set of specific aims. A document containing the specific aims will be required for seeking approval of the thesis topic and must be prepared according to guidelines for preparing the written prelim proposal. The specific aims document submitted for the approval process must conform to all formatting guidelines. The complete document must be no longer than 2.5 pages with 1.5 line spacing, containing a title page (1 page) and the specific aims (up to 1.5 pages).

The student will provide their thesis advisor with the specific aims document so that the thesis advisor can verify that the topic and specific aims/objectives meet the three criteria listed earlier. To certify the specific aims and topic meet all criteria, the advisor will submit a signed Advisor Certification 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 given, 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.

Once the advisor certifies the specific aims, the student will submit their specific aims document and Request for Preliminary Examination Form, to the Graduate Program Coordinator. Then, the Preliminary Exam Graduate Chair will review the specific aims and submitted forms (Advisor Certification Form, Request for Preliminary Exam) to verify that advisor certification has been obtained and determine if the proposal is hypothesis-driven, defensible, and suitable for the preliminary examination.

If the proposal is approved, the Preliminary Exam Graduate Chair will assign a preliminary examining committee consisting of four graduate faculty members and set a deadline for holding the preliminary exam. The examining committee may be comprised of members of the student’s Thesis Advisory Committee with the exception of the Major Professor, other Biochemistry faculty members, or appropriate faculty members from other departments at Purdue University.

If the proposal is not approved, the student may meet with the Preliminary Exam Graduate Chair to discuss why the proposal was rejected. The Preliminary Exam Graduate Chair will explain the general reasons for rejection of the proposal but will not provide to the student specific advice on selecting a new topic or developing an acceptable set of new specific aims. The student must submit a second Request for Preliminary Examination Form that will be automatically approved without review by the Preliminary Exam Graduate Chair and result in the assignment of a Preliminary Examination Committee. Thus, students have only one opportunity to receive feedback from the Preliminary Exam Graduate Chair on their proposal.

The specific aims submitted for approval are considered tentative and may be revised prior to submission of the final written proposal. However, a change in topic will require approval by the Preliminary Exam Graduate Chair.

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 conduct 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. The iThenticate report must be submitted to the prelim exam committee chair no later than two weeks before the examination date, which is the same day the written proposal is to be distributed to the entire examining committee. Other prelim examining committee members may request a copy of the iThenticate report by contacting the Biochemistry office. After reviewing the iThenticate report, the chair 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.

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 the date of the exam. The revised proposal must be rescreened by iThenticate as described above.

If large sections of text have been copied and the document will require extensive corrections, the chair has the option to recommend a delay in the oral examination so that the student has sufficient time to revise the proposal. In this case, the student must reschedule the exam no later than six weeks after the original
examination date and submit the revised document to the examining committee at least two weeks in advance of the new date. 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 exam forfeiting the opportunity

At least two weeks before the Examination date, the student must file a form (G.S. Form 8) with the Graduate School requesting approval of the Committee, and must submit copies of the written Preliminary Examination proposal to the Committee members. At least one week prior to the Examination date, the student must meet with the Committee Chairperson. If a majority of Examining Committee members agree that the written report contains severe deficiencies, the Committee Chairperson will inform the student that the Committee recommends that he/she does not proceed with the Examination at that time. At this point, the student may select one of two options: (1) he/she can proceed with the Examination despite the Committee’s recommendation, or (2) he/she may address these weaknesses in a revised written report and take the oral Examination within two months. Failure to do so will obligate the student to enter the Master’s Degree track. Students who elect to delay the exam can discuss general deficiencies in their proposal during their meeting with the Committee Chairperson.

In the event that one committee member is unable to attend, the preliminary examination can proceed since only three of the four committee members must be present. However, if a committee member is absent, the student has the option to request that the exam be postponed so that the examination can be rescheduled at a time when 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 criteria that the Preliminary Examination Committee will use in assessing student performance. 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 of the committee members. A copy of the Committee Report of Oral Preliminary Examination Form, the Outcomes Rating of Preliminary Exam Form and the Student Feedback Form will be sent to the student and Major Professor, and a copy of each will be kept in the student file. The student will submit two copies of the written proposal to the Graduate Program Coordinator.

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 attempt, the student will not be given the option to revise the written proposal and the examination committee will not provide any additional feedback on the quality of the written exam.

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 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.
Guidelines for Evaluation of Preliminary Exam Performance

The criteria listed below are presented as a guide to assist in evaluating the student’s overall performance on the preliminary examination. Committee members may use their own discretion in determining the relative weight assigned to 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 findings would 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

Analytical and Critical Thinking

- 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 any 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 employed in each aim/objective are 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 approaches

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
- Student exhibits no distracting mannerisms or nervous habits when speaking
- 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

GUIDELINES FOR THE PRELIMINARY EXAMINATION

The following includes procedures for obtaining approval of the Preliminary Examination topic and guidelines for preparing the written prelim document including mandatory formatting requirements. A brief outline of the agenda and time restrictions for the oral examination are also given.

The preliminary examination is primarily an oral defense of the proposal. However, a student 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. When it is first received, the Examining Committee will screen the written proposal and may recommend that the student not proceed with the exam if there are serious deficiencies. 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 might result in the delay the prelim exam and/or affect the overall evaluation of the exam.

Preliminary Examination Topic and Approval: Students are required to defend a hypothesis-driven research proposal as the basis for the preliminary examination. Proposals that are discovery-based or involve primarily characterization and description of a biological system or macromolecule will generally not be acceptable. The proposal must be original, and designed to advance the current state of knowledge in the topic area. The proposal cannot be based on the student’s own thesis research project or include objectives from the thesis research.

Although the topic must not be directly derived from or overlap with the thesis research, students may address a distinct problem in an area closely related to their research. However, regardless of the topic, the specific aims or objectives of the proposal cannot include any part of their own Ph.D. research or that of graduate students, postdoctoral fellows, and technicians in the advisor’s laboratory. The aims cannot overlap with the work of any other labs having active collaborations with the thesis advisor.

Scope of proposal: There are no specific policies delineating the breadth and scope of preliminary examination proposals. Typical proposals have three specific aims, but from two to five may be appropriate depending on the proposal topic and the hypotheses to be evaluated. Most grants prepared for NSF or NIH, two major federal funding agencies, are designed to be completed in three to five years and it may help to keep this timeframe in mind when developing the research plan. Assuming all aims are successfully executed, a proposal of reasonable scope should yield sufficient findings to publish a manuscript in biochemical journals such as the Journal of Biological Chemistry or Biochemistry.

Before the Preliminary Examination Committee can be assigned and a preliminary examination scheduled the topic must be approved by the Preliminary Exam Graduate Chair (PE-Chair).

The specific aims of the proposal are required for approval of the preliminary exam topic: To start the preliminary exam topic approval process, a student must have prepared the specific aims section of the written prelim proposal. Thus, they should start by carefully selecting the preliminary examination research
problem/question bearing in mind the requirements and rules regarding the preliminary exam topic. Once they have settled on a topic or research problem, a student will begin to develop the specific aims/objectives and research plan of the proposal.

Students do not necessarily have to write the entire prelim proposal before submitting the specific aims document for the approval process. The specific aims section should be a concise list of what they plan to achieve or learn in the proposed project, whereas the research plan has the details and can be fully developed later after they devise the aims or objectives. The specific aims a student submits are viewed as tentative and may be revised or modified after the approval process is complete. However, any significant change in the topic will require that they restart the approval process.

**Timeline for Proposal Preparation and Approval:** Since the specific aims document is required to initiate the approval process, it is important to remember that it is never too early to begin planning the proposal, selecting an appropriate topic, and devising the objectives. It would be wise to initiate the research and reading required to select the proposal topic in the second year of graduate studies or earlier. Topic selection should begin no later than the end of the fall semester of the second year. Once the topic is selected, development of the specific aims should take place during the spring semester of the second year. An outline of the major steps for getting the proposal approved is given below. This process will take place during the spring semester of the second year. The deadline for submitting the Request for Preliminary Exam to the PE-Chair will be near the end of the spring semester thus advisor certification of the specific aims should be initiated shortly after the middle of the semester.

The Guidelines for preparing and formatting requirements for the specific aims are discussed below. The specific aims won’t be accepted for consideration if they don’t precisely conform to formatting guidelines. The final specific aims document should be a Microsoft Word or PDF that can be submitted and handled electronically. Following is an outline of the major steps for getting the proposal approved:

**Step 1:** A student must provide the thesis advisor with a copy of the specific aims document along with the completed Advisor Certification Form with all required information. After examining the specific aims, the advisor will determine whether the topic is different from the current or past research project(s) in their lab and verify whether the specific aims/objectives of the proposal meet the criteria for acceptable prelim topics. If the advisor confirms that the specific aims fulfill these criteria, she/he will sign the Advisor Certification Form (electronically) and send it via email to the Graduate Program Coordinator. Students are responsible for ensuring that their advisor submits the approved Advisor Certification Form in a timely manner.

If the advisor believes that the proposal does not meet all necessary criteria, a student may discuss the reasons for this decision with their advisor. This is important to make sure they have a clear understanding of why the proposal is viewed as being based on or derived from the thesis project. However, it is the student’s responsibility to redesign the proposal to comply with the criteria for acceptable proposals. The student’s advisor is not permitted to help redesign the proposal, and should not ask or expect the advisor to assist them.

To avoid wasted effort, a student proposing a topic that is related to their research should discuss the possibility of any overlap in topic or research objectives with their advisor early in the process of proposal development. However, the advisor may not assist the student in designing or developing the proposal and specific aims.

**Step 2:** When the thesis advisor has certified the prelim topic, students should submit the specific aims document and a Request for Preliminary Exam form to the Graduate Program Coordinator. The specific aims should be prepared as a PDF file or Word document so that it can be submitted electronically via email along with the Request for Preliminary Exam form (PDF document).

**Step 3:** The Graduate Program Coordinator will forward the appropriate documents to the PE-Chair for final approval of the preliminary examination proposal topic. Prior to topic approval, the PE-Chair may request that transferring students provide a brief description of any projects they pursued in another laboratory. The PE-
Chair may request that a student that has transferred have their previous advisor verify that their proposal is not based on a project developed in the lab of the former advisor.

If the PE-Chair approves the proposal, a Preliminary Examination Committee will be selected and a schedule for holding the examination will be set up. If the proposal is not approved, the student may discuss the reasons for rejecting the proposal with the PE-Chair. It will be the student’s responsibility to contact the PE-Chair to make the necessary arrangements for this discussion. Students should expect to have an understanding of the reasons why the proposal was not accepted, but they should not expect the PE-Chair to advise or assist them in developing a new proposal or making the changes necessary for the proposal to be acceptable. It is the student’s responsibility to develop an acceptable proposal and the advisor and the PE-Chair are not permitted to assist them.

If the proposal is not approved, a second request for topic approval must be submitted. The second submission will automatically move forward and result in the assignment of a prelim examination committee. Thus, a student will have only one opportunity for the proposal to be evaluated by the PE-chair to determine whether it is hypothesis-driven and has reasonable potential to be defended.

As noted above, the specific aims used for proposal approval are tentative and may be revised or modified as the student further develops and prepares the written proposal. However, any changes in topic or any major alterations in aims/objectives that affect the topic of the proposal must be approved by the PE-Chair. This approval may require that they reinitiate the approval process as described above.

**Preparation of the Written Proposal:** The purpose of the written proposal is to provide the examination committee with adequate background and details to understand the current state of the relevant area of research and to conduct an initial evaluation of the proposed experiments. The quality of the writing and attention to detail is important. The ability to clearly communicate the background information for the proposal, explain its significance, and outline the research plans is an important component of the exam that will be evaluated by the examining committee.
COVER PAGE EXAMPLE

TITLE
Student Name
Thesis Committee
Major Professor: Dr. xxxxxxxxxxx
Dr. xxxxxxxxxxx
Dr. xxxxxxxxxxx
Dr. xxxxxxxxxxx
Preliminary Exam
November 15, 2016
2:30 PM
BCHM 101

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)

Content and Organization of the Written Preliminary Examination Document

Guidelines for preparing the written prelim document are outlined below. The document must conform to these instructions. 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.

1. Title Page (1 page)

This page should include: student name, proposal title, list of Thesis Advisory Committee Members including Major Professor, the date, time and location of the exam, and a section where they can sign to verify iThenticate screening (see AVOIDING PLAGIARISM and the Example Cover Page below).

2. Specific Aims (1.5 page)

The specific aims pages may 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. The specific aims pages should also contain a concise list of the specific objectives/aims of the research proposed. Typical proposals have three aims or objectives. However, there is no minimum or maximum number and two to four objectives/aims would be reasonable.

3. Introduction (2 pages)

This section gives a brief introduction to key background information needed to understand the hypotheses and proposal. Describe current knowledge in the field that relates to the proposal. Try to stick to the significant
findings, and describe any controversial or unclear issues in the area a student proposes to study. The introduction should provide the information used to formulate and support the hypotheses. It is very important for the student to use literature citations wisely. The literature citations may help the examining committee if they want to learn more about the research area relevant to the proposal. The introduction may conclude with the formulation of the hypothesis or model that the student will test for the proposal.

4. Significance (1 page)

State concisely the expected outcome(s) of the proposed research. Clearly explain the impact that the results of the proposed research will have on the field. It should be clear why the student expects the proposed studies will advance the field. For example, explain where there are gaps in fully understanding the field and how the proposed work will overcome this lack of knowledge. This section is extremely important for the committee to grasp and the student should do their best in conveying the significance of the proposed research.

5. Research Plan (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. It is crucial to understand that a student will not be able to provide detailed procedures in the written report. A student may also want to list alternative approaches, should the original proposed experiments fail or yield ambiguous results.

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.

6. 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.


7. 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

Fonts - 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 lines; 20 pt

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

Avoiding Plagiarism

It is essential that the written preliminary examination document conform to commonly accepted standards of scientific integrity and to Purdue University policies on academic dishonesty. A major concern in writing the proposal is to avoid unintentional plagiarism. Plagiarism occurs when a student uses or incorporates the writing of someone else in their own work without appropriate acknowledgement or citation. Plagiarism is not tolerated in academic institutions or in the scientific community. In many cases, plagiarism can also lead to copyright infringement. For more information on plagiarism, a student may want to examine the “Avoiding Plagiarism” section of the Purdue Online Writing Lab (OWL) website. It is essential that a student understands what plagiarism is and how it can be avoided before they begin writing the proposal. In addition to OWL, there are many online resources to help with this. A student may also discuss plagiarism with their advisor, but remember that the advisor is not allowed to assist in any way with creating, designing, and writing a proposal.

Before submitting the written proposals to the preliminary examining committee, they must be screened for potential plagiarism using the iThenticate system. This system compares the document to a huge database of scholarly articles from journals, magazines, and web pages and will detect similarities between the work and that of others. Students will submit the written proposals to the Graduate Program Coordinator, who will run the iThenticate program and provide the student with a copy of the summary report and other relevant output.

Using the output from the iThenticate screen, students will determine whether there is a substantial problem with inappropriately duplicated text in the proposal. If there is no substantial evidence of plagiarism, they will sign the cover page of the written proposal verifying it has been screened by iThenticate and contains no significant evidence of plagiarism. The Preliminary Examining Committee Chair will not accept a written proposal that has not been screened by iThenticate and signed by the student. If the iThenticate system indicates there is a serious problem suggesting potential plagiarism, the student must revise the proposal and eliminate inappropriately duplicated text. The revised proposal should not exhibit problems with duplicated text when re-screened by iThenticate.

On the title page of the proposal, it should include a place for the student’s signature verifying the document was screened by iThenticate and shows no problems with inappropriately duplicated text. Please see the example cover page at the end of these guidelines and use the exact text shown in the example cover page for the signature.

It is imperative that students allow sufficient time for iThenticate screening and any revisions needed to correct problems revealed by iThenticate. It is best to initiate iThenticate screening at least three or four weeks before the written proposal must be submitted to the Preliminary Examination Committee.
Students will be responsible for reserving the examination room for 3 hours.

The exam will begin with the presentation of a short talk. This presentation should be no longer than 25 min. This talk should provide a concise discussion of the background information relevant to the proposal, the model or hypotheses underlying the proposal, and a brief description of the experiments planned for each aim. Generally, there should be 15-20 slides for this talk. Students may bring additional slides for clarification during other parts of the exam. The committee may interrupt this presentation with questions of clarification, thus the talk may last longer than 25 min. Nonetheless, a student should make sure the talk is prepared to be no longer than 25 min.

After the presentation, there will be a period of general questioning by the examination committee. There is no restriction on what may be asked by the committee. A rough guide for the preparation would consist of mastery of the content of any major upper-level biochemistry textbook (e.g. Stryer, Lehninger, etc.) and Genes X. Accordingly, many questions may probe basic knowledge of biochemistry, molecular biology and other relevant topics and may not be directly related to the proposal. The exam will last no longer than 2.5 hours.

In advance of the examination date, students should make arrangements to consult with the Chair of the Preliminary Examination Committee to discuss the agenda in further detail.

Proposal Critique and Pre-prelim

A student may have peers or postdoctoral fellows read and critique their written proposals, but faculty members are not allowed to provide input or assistance. It is best to seek the help of senior graduate students who have passed their preliminary exams or postdocs. A student should select those colleagues who are willing to give direct and thorough criticism if needed. Student’s should remember that they should seek input well in advance of the exam date (at least several weeks) so that those reviewing the proposal have sufficient time to read the proposal and provide thoughtful feedback, and the student has enough time to respond to the input received.

A student may practice the oral defense of the proposal as a “pre-prelim.” It is important to make sure they include experienced senior grad students or postdocs in the audience of this pre-prelim. A student should hold the pre-prelim at least two weeks prior to the actual exam so that they have time to make any needed adjustments in the proposal. Students should use their own judgment in deciding to implement the suggestions of other students.

Seeking outside help

While originality in design of the experimental approach is essential, seeking outside help on details of experimentation and analysis is encouraged. For example, if the student does not understand the principles behind fluorescence energy transfer, they are permitted to seek the advice of an expert. As long as they seek advice on specific technical issues the student may consult with faculty members. However, please remember faculty members are not permitted to give general advice on the proposal or help them design and develop the proposal.

Examination deadlines

Individual examination deadlines are assigned randomly. In special circumstances, deadlines can be postponed, but only with the approval of the PE-Chair. Students and prelim committees do not have the authority to set deadlines.
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:** The committee recommends that all figure legends or tables within thesis chapters that are not the student’s sole effort describe the student’s own contribution and acknowledge other researchers that have contributed to the generation of the data. In cases, where significant data or findings from collaborators are described in the thesis but not shown in figures or tables, text clearly acknowledging the contribution of the collaborator(s) must be included in the chapter in a footnote.

**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 in which 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:** Once the Ph.D. thesis has been written, the Ph.D. candidate will present the thesis research in an open seminar of no longer than forty minutes duration. The Final Examination must be held before the last week of classes of the semester. A Ph.D. candidate is required to have met the publication requirement. Immediately thereafter, the candidate will be examined on the material in the thesis and on related topics by the members of his/her Thesis Advisory Committee. If the thesis is acceptable and if the examination is passed, the candidate will be recommended to the Graduate School for the degree of Doctor of Philosophy. The Report of the Final Examination form must be delivered to the Graduate School at least a week before the last day of classes of the semester in which the degree is expected. All thesis documents are deposited electronically and a bound Deposit Copy is no longer required by the Graduate School. The electronic deposit copy, incorporating all changes and modifications requested by the final examining committee, and complying with all University and departmental format requirements, is to be prepared and deposited in the Thesis/Dissertation Office before the last day of classes of the semester. Two additional bound hard copies are to be submitted to the head of the department and the Major Professor. A Thesis Receipt must be delivered to the Graduate School before the last day of classes of the semester.

**Important Notes:** A GS Form 8, Request for Final Exam, 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 before the final exam date; this is why we allow at least 2 weeks for needed approvals. The Form 8 is available online in the mypurdue portal.

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.

A typed copy of the thesis and three duplicate copies must 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 bear the written approval of 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. 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.

THESIS PREPARATION, APPROVAL, AND DISTRIBUTION

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 three weeks before the Final Examination date, submit an electronic approval request for 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. Contact the Thesis/Dissertation Office located in YONG to make an appointment to deposit the thesis. Appointments need to be made at least 24 hours in advance. 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, their Major Professor and each member of their Thesis Advisory Committee.
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


**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


**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 the source of his/her 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:** In order to make substantial modifications to the original text that result in a proper paraphrase, the author must have a thorough understanding of the ideas and terminology being used.

**Guideline 8:** A responsible writer has an ethical responsibility to readers, and to the 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 previously put forth by Angell & Relman (1989). If the results of a single complex study are best presented as a ‘cohesive’ single whole, they should not be partitioned into individual papers. Furthermore, if there is any doubt as to whether a paper submitted for publication represents 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 have been merely augmented with additional data points and that are subsequently 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. Specifically, authors should always ensure that each reference notation appearing in the body of the manuscript corresponds to the correct citation listed in the reference section and vice versa and that each source listed in the reference section has been cited at some point in the manuscript. In addition, authors should also ensure that all elements of a citation (e.g., spelling of authors’ names, volume number of journal, pagination) are derived directly from the original paper, rather than from a citation that appears on a secondary source. Finally, authors should ensure that credit is given to those authors who first reported the 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.
Appendix 1: 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 advisors 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)

(Advisor’s Name)  (Date) (mm/dd/yyyy)

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.

Please send the completed form to Traci Jordan via email (ljjordan@purdue.edu). This form must be returned by the major professor. Forms submitted by students will not be accepted.
Appendix 2: 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 (ttjordan@purdue.edu)
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>(This section to be completed by the Examining Committee)</td>
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</tbody>
</table>

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.
### 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.

<table>
<thead>
<tr>
<th>Category</th>
<th>Excellent</th>
<th>Satisfactory</th>
<th>Improvement needed</th>
<th>Fails to meet minimal expectations</th>
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</thead>
<tbody>
<tr>
<td>Overall Depth and Breadth of Knowledge</td>
<td></td>
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<td></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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<td></td>
</tr>
</tbody>
</table>

Examine 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)