



GRADUATE PROGRAM HANDBOOK

2022–2023

Department of Biochemistry and Biophysics
Texas A&M University

Introduction

Welcome to the Department of Biochemistry and Biophysics at Texas A&M University! The *Graduate Program Handbook* describes relevant BCBP and TAMU policies and should serve as a guide throughout your graduate tenure. While every attempt has been made to ensure that the university policies outlined herein are accurate, be advised that the 2022–2023 TAMU Graduate Catalog remains the authoritative source for TAMU rules and regulations. All policies are subject to change.

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Graduate and Professional School Calendar | 2022–2023

Fall 2022

June 10	Friday	Last day to submit Degree Plan to GPS for Dec 2022 graduation
July 18	Monday	Electronic Thesis / Dissertation System opens for Dec 2022 degree candidates
August 17	Wednesday	First day to apply for degrees to be awarded in Dec 2022
August 17	Wednesday	First day to clear dissertation for Dec 2022 graduation
August 23	Tuesday	Last day to register for Fall classes
August 24	Wednesday	First day of Fall classes
August 30	Tuesday	Last day to clear Thesis & Dissertation Services to avoid Fall registration
August 30	Tuesday	Last day to add/drop courses for Fall semester
September 23	Friday	Last day to apply for Dec 2022 graduation <i>without a late fee</i>
October 5	Wednesday	Last day to submit <i>Request and Announcement of the Final Examination</i> to GPS (or 10 working days prior to the examination)
October 21	Friday	Last day to take final examination / defend dissertation for Dec 2022 graduation
October 28	Friday	Last day to submit a signed approval form / PDF of dissertation
November 18	Friday	Last day to drop courses with no penalty (Q-drop)
November 18	Friday	Last day to apply for Dec 2022 graduation

BCBP Resources

The Graduate Office

The BCBP Graduate Office is led by Prof. Jean-Philippe Pellois, Associate Head of the Graduate Program, and comprises three committees: *Advisory*, *Admissions*, and *Outreach & Recruiting*. Membership and committee responsibilities are described below.

Administration | All questions about program protocols should be directed to Prof. Jean-Philippe Pellois.

Associate Head – Prof. Jean-Philippe Pellois
BICH 438A
pellois@tamu.edu

Department Head – Prof. Josh Wand
BICH N315A
wand@tamu.edu

Program Coordinator – Dr. Praveena Kanchupati
BICH 103C
praveena.kanchupati@ag.tamu.edu

Program Assistant – Raquel Masco
BICH 103B
rmasco@tamu.edu

Advisory Committee | The *Advisory Committee* guides pre-candidacy students in rotation selections, choice of elective coursework and journal club, and formation of a thesis committee.

Chair – Prof. Lanying Zeng
BICH 419A
lzeng@tamu.edu

Prof. Margy Glasner (interim member)
BICH 237A
margy.glasner@tamu.edu

Prof. Cecilia Tommos
BICH N315B
tommos@tamu.edu

Prof. Michael Polymenis
BICH 333A
polymenis@tamu.edu

Raquel Masco (*ex officio*)
BICH 103B
rmasco@tamu.edu

Admissions Committee | The *Admissions Committee* evaluates prospective graduate student applications, nominates incoming students for internal awards, and hosts Recruitment Weekend.

Chair – Prof. Paul Straight
BICH 435A
paul_straight@tamu.edu

Prof. Libo Shan
Reynolds 108
lshan@tamu.edu

Prof. Tatyana Igumenova
BICH N118A
tigumenova@tamu.edu

Prof. Vishal Gohil (*ad hoc*)
ILSB 2146A
vgohil@tamu.edu

Prof. Vlad Panin
BICH 341A
panin@tamu.edu

Dr. Praveena Kanchupati (*ex officio*)
BICH 103C
praveena.kanchupati@ag.tamu.edu

Prof. Hays Rye
BICH 239A
haysrye@tamu.edu

BGA – Evan Kurtz
Mullet Lab
evank17@tamu.edu

Prof. Dmitry Kurouski
BICH 216
dkurouski@tamu.edu

Outreach & Recruitment Committee | The *Outreach & Recruiting Committee* seeks to attract quality graduate students to our program through scientific community engagement and partnership with regional institutions.

Chair – Prof. Jen Herman
BICH 305A
jkherman@tamu.edu

Prof. Jorge Cruz-Reyes
BICH
cruzrey@tamu.edu

Prof. Mary Bryk
BICH 234
bryk@tamu.edu

Dr. Praveena Kanchupati (*ex officio*)
BICH 103C
praveena.kanchupati@ag.tamu.edu

BGA – Evan Kurtz
Mullet Lab
evank17@tamu.edu

Biochemistry Graduate Association

Established in 1992, Biochemistry Graduate Association (BGA) seeks to improve the welfare and educational experience of BCBP graduate students. Elected BGA representatives sit on the *Admissions* and *Outreach & Recruitment* committees to enhance communication between students and faculty. Similarly, a faculty member (selected by the BGA) is appointed to the BGA in a non-voting advisory capacity.

The BGA sponsors a variety of activities including research and professional development seminars, as well as the annual vendor show and research competition. The organization also offers travel grants and dissertation expense relief. Inquiries should be directed to the BGA President.

BGA Officers | 2022–2023

President – Matthew Theodore
Zeng Lab
matttheodore@tamu.edu

Vice President – Staci Hammer
Polymenis Lab
sehammer@tamu.edu

Secretary – Vacant

Treasurer – Nathan Williams
Pellois Lab
nrwilliams@tamu.edu

Graduate Outreach and Recruitment – Evan Kurtz
Mullet Lab
evank17@tamu.edu

GPSC Representative – Jason Snowden
Pellois Lab
jason_snow58@tamu.edu

Outreach Representative – Amelia Brave
Straight Lab
braveamelia@tamu.edu

Faculty Advisor – Prof. Jen Herman
BICH 305A
jkherman@tamu.edu

Program Representative – Max Errickson
Rauchel Lab
merricks@tamu.edu

General Information

Website: bcbp.tamu.edu

Main Office: 979-845-1012 | 800-482-6246

Address: 300 Olsen Blvd. | 2128 TAMU

Directory | Select Office Staff

For the full directory of office staff, please visit our [website](#).

Betty Cotton

Senior Administrative Coordinator II

BICH 103D | 979-458-0630

blcotton@tamu.edu

Sarah McLaughlin

Senior Business Administrator I

BICH 103H | 979-845-6848

smclaughlin@tamu.edu

Terry Lovingshimer

Manager Operations

BICH 209 | 979-845-3785

terryll@tamu.edu

Sherry Coronado

Business Administrator III

BICH 103GA | 979-845-8852

s-coronado@tamu.edu

Austin Johnson

Facilities Coordinator III

BICH 209 | 979-845-3785

atravis26@tamu.edu

Divina Page

Technical Stockroom Supervisor

BICH 112 | 845-1524

Divin3_28@tamu.edu | <https://stockroom.tamu.edu/>

University and College Resources

Graduate and Professional School (GPS)

Website: grad.tamu.edu
Main Office: 979-845-3631 | grad@tamu.edu
Address: 204 Nagle Hall | 1113 TAMU

The Graduate and Professional School “serves Texas A&M graduate students as an advocate for their graduate education and houses the Ombudsperson for Graduate Education.” Please refer to the GPS website for academic calendars, forms, rules, and regulations.

College of Agriculture and Life Sciences | Advising Office

As of Spring 2021, the College of Agriculture and Life Sciences (COALS) has moved to a centralized advising structure. They have “assembled a diverse and knowledgeable advisor community dedicated to providing our students with high-quality graduate advising services.” **Amber D. Salvato** (amber.salvato@tamu.edu) is the graduate advisor assigned to BCBP; she can assist with all bureaucratic requirements and most interdepartmental (i.e., Office of Admissions, International Student Services, etc.) communications.

Student Loans

Website: financialaid.tamu.edu
Main Office: 979-845-3236 | financialaid@tamu.edu
Address: Pavilion 2nd Floor | 1252 TAMU

TAMU offers emergency loans for tuition / fees and short-term loans for other expenses.

Student Health Insurance

Students classified as Graduate Assistant – Teaching (GAT) or Graduate Assistant – Research (GAR) are considered TAMU employees and are eligible for all associated benefits. GATs and GARs will receive benefits information during orientation. ***International students require additional insurance for evacuation and repatriation. Please contact [International Student Services](#) for more information.***

Students who are supported by individual fellowships and/or training grants are not considered TAMU employees and must acquire their own health insurance. The TAMU Student Health Plan is available for purchase. Please speak with [Sherry Coronado](#) for more information.

Information about [Graduate Student Employee Benefits](#) is available through TAMU Human Resources.

Division of Student Affairs

Website: studentaffairs.tamu.edu

Main Office: 979-845-4728 | vpsa@tamu.edu

Address: John J. Koldus Building, Suite 117 | 1256 TAMU

The Office of the Vice President for Student Affairs (VPSA) houses a wealth of resources, including:

[Counseling & Psychological Services \(CAPS\)](#)

[Disability Resources](#)

[Multicultural Services](#)

[Student Health Services](#)

[Veteran Resources and Support Center](#)

[Student Assistance Services](#)

[Student Legal Services](#)

VSPA can also provide **emergency funds for unexpected medical expenses** on a case-by-case basis. Please contact the Director of Business Operations, [Cari Tawney](#), for more information.

Equal Opportunity

The TAMU System and BCBP are committed to equal employment opportunity, without regard to race, color, sex, religion, or age.

Title IX Office

As outlined in Texas A&M System Policy 08.01.01, Texas A&M University does not tolerate acts of discrimination, harassment, or retaliation based on a protected class. The Department of Civil Rights and Equity Investigations is committed to protecting equal access to University programs, activities, and services by conducting fair, equitable, and thorough investigations and by supporting Texas A&M's commitment to promoting diversity and inclusion.

Website: titleix.tamu.edu

Main Office: Medical Sciences Library | 202 Olsen Blvd, Suite 007

Phone Number: (979) 458-8407

Email: civilrights@tamu.edu

International Students

International Student Services

[International Student Services](#) (ISS) serves as an information resource for all partners in the international education process. In addition to issuing documents used to obtain non-immigrant student visas, the office works with BCBP to ensure that our international students remain educated on Department of Homeland Security requirements. ISS also offers counseling on immigration, employment, financial issues, medical insurance, adjustment to the U.S., and income taxes.

English Language Proficiency Certification

The state of Texas requires that all non-native English speakers attain English proficiency certification before serving as a teaching assistant. International graduate students can be certified *prior to enrollment* by achieving requisite scores on the oral component of the TOEFL or IELTS standardized tests. International graduate students who have not been certified prior to enrollment must take the [English Language Proficiency Exam \(ELPE\)](#) offered by TAMU Testing Services.

Level	TOEFL Speaking	IELTS Speaking	ELPE Oral Exam (TAMU)
1	26–30	≥8.0	≥80
2	23–25	7.0–7.5	≥75
3	<23	<7.0	<75

Level 1	Eligible for teaching assignments
Level 2	Conditionally eligible for teaching assignments <i>for one semester only</i> ; must participate in the Center for Teaching Excellence English Language Proficiency (CTE-ELP) instruction and achieve a Level 1 scores by the end of the semester
Level 3	Not eligible for teaching assignment; must participate in the Center for Teaching Excellence English Language Proficiency (CTE-ELP) instruction

Doctor of Philosophy Degree

The Department of Biochemistry and Biophysics seeks to foster an inquisitive and diverse community of scholars with a common interest in the chemical and physicochemical processes that occur within living systems. On successful completion of the program, our Ph.D. students are equipped to address pressing scientific challenges through cohesive application of both empirical and theoretical methods. We are committed to training students who will contribute to the advancement of knowledge in the fields of biochemistry, biophysics, and genetics, and work to improve the health and welfare of society at large.

Typically, our Ph.D. students must complete at least 96 credit hours, accumulated through a combination of traditional coursework, journal clubs, and dissertation research. However, students who enter the program with a master's degree from an accredited U.S. college or university need only complete 64 credit hours. The viability of transfer credits is determined by the *Advisory Committee* and the Office of Graduate and Professional Studies.

Accredited universities offering the Ph.D. degree are required to examine students for suitability to be admitted as candidates for the degree. This divides your graduate experience into two parts: "pre-candidacy" and "candidacy." The goal of the pre-candidacy phase is to prepare you for dissertation research. This is achieved through didactic coursework, laboratory rotations, and other activities. After approximately eighteen months in the program, students sit the "preliminary examination," one of the formal requirements for ascension to Ph.D. candidacy. The remaining requirements are detailed below.

Orientation Event

All incoming graduate students are required to attend Orientation Event, which is typically held in the weeks preceding the first day of Fall classes. During Orientation, you will learn about TAMU policies, BCBP procedures, student resources, safety requirements, and the terms/conditions of your employment.

Prerequisite Coursework

Incoming graduate students should have a strong foundational knowledge in biology, chemistry, mathematics, and physics. **Recommended** prerequisite coursework includes:

- Two semesters of Biochemistry (equivalent to BICH 410/411)
- One semester of Physical Chemistry (equivalent to CHEM 328)
- One semester of Molecular Genetics (equivalent to BICH/GENE 431)
- Two semesters of Organic Chemistry (equivalent to CHEM 227/228)
- One semester of Physics
- One semester of Calculus

The schedule outlined below is meant to represent a typical Degree Plan for students who entered the program after 2018. All others should refer to the ["OLD" Degree Plan](#) in the Forms section.

Individual Development Plans

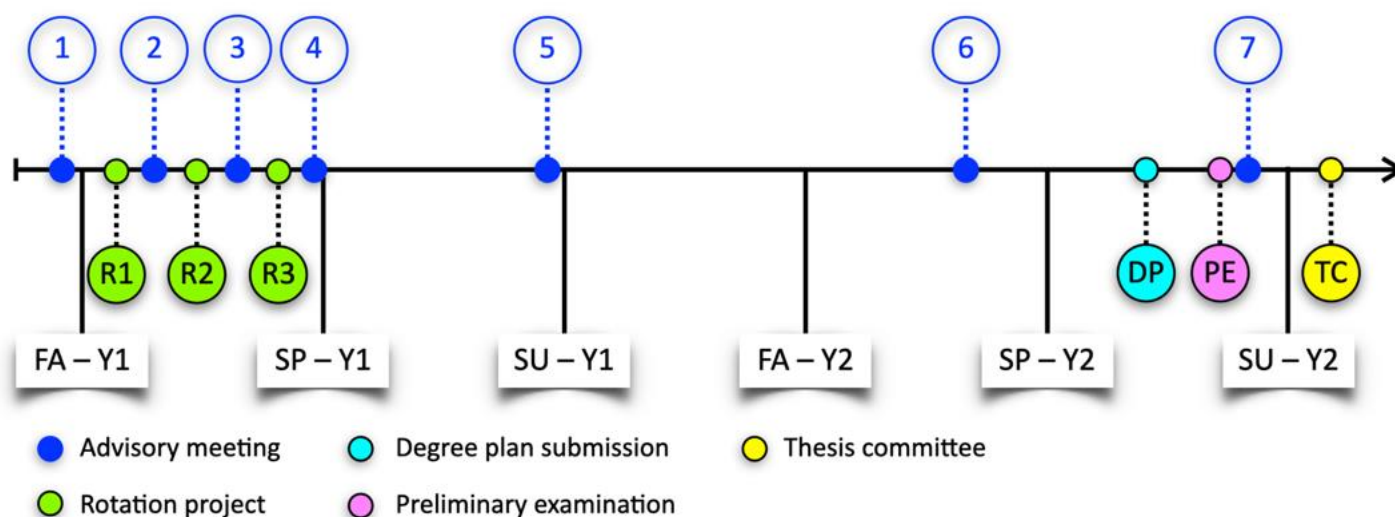
As of August 2021, all graduate students are required to maintain Individual Development Plans (IDPs). IDPs are a collaborative tool used to guide the scientific, professional, and personal development of students. These "living documents" are expected to evolve over the course of your graduate studies. Incoming students will participate in an IDP workshop during Orientation and will be asked to review their Year 1 document with the Advisory Committee (*vide infra*) during their introductory meetings. In August of Year 2, you will review your updated IDP with both the Advisory Committee and your Research Advisor. Following ascension to candidacy,

you will be expected to update and review your IDP with your Thesis Advisor every August. A copy of all IDPs should be submitted to the Graduate Office. The departmental IDP forms can be found on the departmental website.

The Advisory Committee

The *Advisory Committee* is comprised of four faculty members whose goal is to guide you through the pre-candidacy period of your Ph.D. studies. They will help orient you to the program and assist you in developing a curriculum that strengthens your weaknesses, buttresses your strength, and introduces you to the possibilities for advanced study and research in biochemistry and biophysics. You will meet individually with the advisory committee several times during your pre-candidacy term; a typical schedule is outlined below. The *Advisory Committee* will review your transcripts and make recommendations for elective coursework based on your interests and current research. **You should come prepared to help guide the discussion; your updated IDP can and should be used as a meeting outline.** As you approach your preliminary examination, the committee will also offer guidance on thesis committee selection.

Rotations, Advisory Committee Meetings, and Preliminary Examination Schedule:



Year 1

During the Fall of your first year of graduate studies, you will take 4 courses and participate in three 5-week laboratory rotations. During Orientation, students will meet individually with the Advisory Committee to discuss procedures and recommendations for selecting laboratory rotations.

BICH 603	Principles of Biochemistry and Biophysics	3 cr.
BICH 608	Critical Analysis of the Biochemical Literature	2 cr.
BICH 631	Biochemical Genetics	3 cr.
BICH 658	Application of Scientific Values	1 cr.
Rotation 1 Rotation 2 Rotation 3		

In the Spring, you will take our modular course series. Designed with flexibility in mind, you will select six 5-week courses to create a course schedule tailored to your research interests. Modular course offerings change every year; please refer to the Course Schedule for the current selection. Most students will select a laboratory

in which to begin work toward their preliminary examination. ***Most students will pass the Preliminary Examination advance to candidacy for the Ph.D. degree.*** We commit a significant effort towards preparing each student. Nevertheless, it is important to recognize that formal association with a Thesis Advisor becomes official only upon advancement candidacy. Finally, all first-year students must serve as Teaching Assistants. Expectations and requirements are detailed below.

BICH 6XX	Advanced Modules*	6 cr.
BICH 690	Theory of Biochemistry Research	2 cr.
BICH 697	Teaching	1 cr.

* Previous offerings include: *Metabolism, Quantitative Analysis in Biochemistry and Biophysics, Quantitative Analysis in Genomics / Molecular Biology, Advanced Ligand Interactions, NMR Spectroscopy, and Biochemical Kinetics, among others.*

You will continue your lab work throughout the Summer, enrolling in 6 research credits hours to maintain full-time status. You will also meet with the *Advisory Committee* to ensure that you remain on track – They will offer suggestions for elective coursework and Journal Club selection.

BICH 691	Research	6 cr.
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Year 2

You will take six elective course credits during your second year. A non-comprehensive list of electives can be found in the [Appendix](#). Note that not all courses are offered every semester; be sure to confirm current offerings in the Course Schedule. Though you may spread the electives out over both semesters, it is strongly recommended that you take both in the Fall semester. If you opt to take only one elective in the Fall, your BICH 691 credits should be adjusted to ensure that you remain enrolled full time. You will also complete your final required semester of Teaching Assistantship.

ELECTIVE	Elective (2)	6 cr.
BICH 6XX	Journal Club	1 cr.
BICH 697	Teaching	1 cr.
BICH 691	Research	1 cr.

In the Spring, you will continue to take Journal Club and Research credits. In preparation for your upcoming Preliminary Examination, you will enroll in Oral and Written Scientific Communication courses. All Preliminary Examinations will be held in April. Immediately after your Preliminary Examination, you will submit your formal Degree Plan and select a Thesis Committee. Your Degree Plan formalizes your intent to earn a doctoral degree and establishes the required coursework. You must submit the plan through the [OGAPS Document Processing Submission System](#). The Graduate Office is available to guide you through the process. More information on thesis committee selection can be found below.

BICH 689	Written Communication	2 cr.
BICH 689	Oral Communication	1 cr.
BICH 6XX	Journal Club	1 cr.
BICH 690	Theory of Biochemistry Research	2 cr.
BICH 691	Research	3 cr.

Year 3 and Beyond

Spring and Fall: Once all core coursework is complete, you should continue to enroll in Journal Club, Theory of Biochemistry Research, and Research credits, such that you maintain full-time registration status (9 credit hours).

Summer: You should continue to enroll in Research credits, such that you maintain full-time registration status (6 credit hours).

You will be required to hold at least one committee meeting every academic year. Meeting protocols are outlined at the end of this chapter.

BICH 6XX	Journal Club	XX cr.
BICH 691	Research	XX cr.

Grades

While research is the primary goal of your graduate studies, academic performance is also critical to your success. Per the Office of Graduate and Professional Studies, you must maintain a GPR of 3.0 and may not receive failing grades (D or F) in any BCBP core classes. If your GPR falls below 3.0, you may be placed on academic probation; you will receive written notice that you have one year to improve your grades, or risk loss of assistantship and funding. If your GPR falls below a 3.0 **and** you receive at least one failing grade in a core class, you risk loss of assistantship and funding.

Rotations and Lab Selection

Prior to joining a research group, you will participate in three laboratory rotations during your first semester. These rotations are designed to be mutually beneficial to both you and the faculty member. For you, this is an opportunity to learn about a broad array of research topics and determine your preferred subdiscipline. You should also use this time to evaluate the lab environment and PI mentorship style – Can you confidently commit to completing your PhD in the group? At the same time, the PI will be assessing your motivation, technical skills, and intellectual abilities. Finally, you should consider each rotation an opportunity to contribute substantively to a research project (perhaps even gaining authorship on publications!) and cultivate relationships with faculty who may eventually serve on your Thesis Committee and/or provide letters of recommendation on your behalf.

You will meet with the Advisory Committee before every rotation period – They can offer advice and help you select a rotation advisor based on your evolving research interests. After each meeting, you will receive a link to submit a ranked-order list of three faculty names to the Graduate Office. Before submitting your preferences, you **must** communicate your intention to all faculty members listed. Rotation assignments will be made by the Associate Head, using your preference list and pending faculty approval. The order of rotations may or may not match your priority list; this mainly has to do with how many students select the same laboratory. The three faculty names chosen will nonetheless be used to establish a schedule of rotation for rotations 1, 2, and 3 (in other words, #1 faculty choice may be scheduled for rotation 1, 2, or 3; importantly, it will be scheduled). Hence, it is important to remember that each rotation is equally important (i.e. rotation 1 is not the rotation with most interest/highest priority). Students will be given the option to change their choices before the beginning of each rotation. If no changes are made, the schedule determined before the beginning of rotation 1 will be maintained.

Before the end of the Fall semester, you should meet with prospective advisors to determine whether they are willing to permanently accept you into their lab. If you are unable to find satisfactory placement, you may opt to complete a fourth rotation. This option is only available to students who remain in good academic standing.

A list of PIs that will be accepting rotation students for Fall 2022 will be provided, along with a brief description of their research program. They will also present their work during Graduate Student Orientation. *If a faculty member is not listed, they will not accept rotation students unless alternative arrangements have been made.*

Doctoral Research Proposal and Preliminary Examination

The Preliminary Examination will require that you initiate a form. This form can be found at:

<https://grad.tamu.edu/knowledge-center/forms/preliminary-examination-checklist-and-report>

The University will require you to establish a degree plan with a Thesis Committee in this checklist. In BCBP, your Thesis Committee will be your Advisory Committee before your Preliminary Exam. Your Thesis Committee will be formed after you progress to candidacy.

Written Doctoral Research Proposal

A well-written proposal is organized according to the National Institutes of Health (NIH) Grant Guidelines and includes the following sections; all descriptions are adapted from [“Detailed Guidelines for the NIH Proposal”](#) (Main Medical Center Research Institute). The Spring Year 2 communication courses are designed to assist you in designing and describing your research proposal both in written and verbal form.

Specific Aims	1 page	Identifies the primary objectives the project, including the problem to be addressed, the current state of knowledge, and the potential contributions to the research field.
Research Strategy	5 pages	Comprises three sections: Significance, Innovation, and Approach. <i>Significance</i> Provides a terse and scholarly background, including only literature review that pertains directly to the topic and demonstrates a modern understanding of the field. <i>Innovation</i> Explains how the proposal challenges current research or seeks to establish novel concepts, approaches, or methods. Advantages over known methods should be detailed. <i>Approach</i> Delineates the strategy, methodology, and analytical techniques to be used. Preliminary results should be included here.
Bibliography	No limit	All references should be formatted according to the NIH standards .

The proposal should not exceed six pages, single-spaced in Times New Roman 11-point font with uniform 0.5” margins. The bibliography does not count toward the total page count. Figures should be integrated as appropriate. Your final proposal should be submitted to the Graduate Office no more than 14 days after your preliminary examination.

Oral Preliminary Examination

Your Oral Preliminary Examination will be scheduled well in advance and evaluated by an *ad hoc* examination committee selected by the Graduate Office. Your Written Doctoral Research Proposal should be submitted to each committee member 14 days before the meeting. At the examination, the committee will first meet separately from the student for preliminary discussion of the proposal. Should the written proposal be found lacking, the meeting will be rescheduled. The student will give an oral presentation aided by no more than 8 slides (approximately 15 minutes). The committee will refrain from interrupting the presentation. Following the presentation, the Chair will open the meeting to questions, which may range from proposal specifics or broader questions underlying the theme of the proposal. **The Preliminary Examination is not meant to be a comprehensive examination.** Following conclusion of the question period, the Committee will meet in the absence of the student and vote pass or fail on the written proposal and on the presentation. A failing grade on the written proposal will require remediation within two weeks. A failing grade on the oral presentation will require a repeat oral examination within 3 months. During this period, the student is placed on academic probation and is subject to dismissal from the program if a passing grade is not achieved on a second attempt.

Evaluation forms for your Preliminary Examination can be found on the BCBP website. It is imperative that you carefully review and understand each point of evaluation. Where appropriate, your presentation should demonstrate mastery of each skill identified on the form.

You will advance to candidacy upon passing your preliminary exam. Failing your preliminary exam will result in dismissal from the program. In such instance, students can pursue obtaining a Master degree.

The results of your Preliminary Examination expire after 4 calendar years. This means that graduation with a PhD degree should happen within this timeframe. Students requiring an extension may submit a *Petition for Extension of Time Limits* through [DPSS](#).

Candidacy

Students must meet the following requirements before advancement to candidacy:

- Complete all graded coursework (S/U courses may remain) on the degree plan.
- Earn a GPR of at least 3.0. No grades on the degree plan may be lower than a C.
- Pass the Preliminary Examination.
- Submit an approved doctoral research proposal.
- Meet the residence requirement.*

*Students who enter the doctoral program with a baccalaureate degree must spend at least two academic years in resident study to meet the residence requirement. Students who enter with a master's degree must spend at least one academic year in resident study to meet the residence requirement.

Thesis Committee | Structure and Responsibilities

After advancing to candidacy, you will choose a Thesis Committee. Thesis committees are comprised of a Chair and three members, as outlined below. Your committee should be a broad representation of departmental expertise, including at least one member who identifies as a biophysical researcher and one who identifies as biochemical researcher. OGAPS requires that one member have a primary appointment outside of BCBP.

Title	Affiliation	Responsibilities
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Chair	BCBP	Moderate the committee meetings; complete all required paperwork (with input from members); ensure that the student is offered the opportunity to meet with the committee in the absence of the Thesis Advisor; serve in a scientific and professional development advisory capacity
<i>Ex officio</i> Member	BCBP Thesis Advisor	Research mentorship
Member	BCBP	Serve in a scientific and professional development advisory capacity
Member	Non-BCBP	Serve in a scientific and professional development advisory capacity

Your Thesis Committee should be selected by you and your advisor. It will need to be approved by the Associate Head. You and the Associate Head will also agree on the person who chairs the committee. **Before the end of SU 2**, email the Associate Head with your choices. Upon approval, submit your Thesis Committee and update your degree plan.

Committee Meetings | Post-Candidacy

You are required to hold at least one committee meeting every academic year. In the early and late phases of your dissertation research the meetings may be more frequent. You are responsible for coordinating the meeting; rooms can be scheduled through the main office. The meetings are meant to be concise advisory sessions and will commence with a discussion between the committee with thesis advisor(s) in the absence of the student. The goal is to have a frank discussion about the advisor's view of the student's progress and any issues that may impede progress towards completion of dissertation work. The student is then to present a concise overview of progress since the last meeting. This presentation should not exceed 20 minutes; a draft of the presentation should be provided to the committee 14 days before the meeting. The Chair will then open the meeting for discussion, which should be restricted to no more than 40 minutes. The Thesis Advisor should then be excused so that the committee and student can discuss any issues that may impede progress towards completion of dissertation research. The Chair will file the *Thesis Committee Meeting Report* and *Thesis Advisor Report* with the Graduate Office. The forms should include recommendations on timing of future meetings, the anticipated date of completion of dissertation research, and whether there are sufficiently serious issues to warrant intervention by the Associate Head of the Graduate Program.

Ph.D. Dissertation and Thesis Defense

You may petition your Thesis Committee for permission begin composing your dissertation at any time following advancement to candidacy. Note that the Thesis Committee, *not the Thesis Advisor*, are the primary wardens and will assess your readiness collectively. In very rare cases, the Associate Head for the Graduate Program may overrule a denial by the Thesis Committee for permission to write and defend a dissertation. Once permission to write and defend has been granted, the defense must occur within three months or the committee will need to be reconvened for permission. The timeline and forms required by OGAPS are delineated below. TAMU has [extensive requirements](#) for preparation of your dissertation. You should review the guidelines carefully *before* you begin writing. As you begin to outline your dissertation, be sure to identify sources; science is an inherently collaborative endeavor and all contributions (e.g., data, tables, figures, etc.) should be properly acknowledged.

Please consult the COALS Advising Office to coordinate the oral defense of your thesis. To initiate the process, you must first receive approval from OGAPS by filing the [Request and Announcement of the Final Examination](#). All OGAPS protocols and deadlines should be carefully reviewed. Your written dissertation must be given to each committee member at least 14 days before the scheduled defense. You will also need to provide the date, time, location, and title to Raquel Masco at least 14 days before the scheduled defense. A detailed protocol for the public defense is provided at the end of this chapter.

If your only remaining requirement is the defense and you will not be on TAMU payroll for the entire semester, you may register for one credit hour (BICH 691) and be reclassified as a temporary research assistant. ***International students must consult ISS before moving forward with reclassification.***

Letter of Completion

It is not uncommon for students to accept a job offer in the period between completion of the degree requirements and formal issuance of the diploma. Many universities, companies, etc. will accept a Letter of Completion as sufficient proof of degree. Students must have completed **all** requirements for the degree before a Letter of Completion can be issued by OGAPS. This includes dissertation clearance, university debt resolution, and an approved graduation application. Please contact the COALS Advising Office if you wish to request a Letter of Completion.

BGA Town Halls

In the spirit of student involvement and open communication, the Graduate Office hosts a BGA Town Hall every semester to discuss program initiatives, changes, and concerns. Attendance is mandatory.

Teaching Assistantship

All graduate students are required to serve as Teaching Assistants (TAs) for two semesters, generally in the spring of their first year and the fall of their second year. To be a TA, students must be certified through the Center for Teaching Excellence (CTE) [Teaching Assistant Institute \(TAI\)](#) program – Details are sent before the start of each semester. BCBP graduate students are usually assigned to undergraduate lab courses or recitation sections. International students must demonstrate [English language proficiency](#) before receiving a TA assignment.

Conference Travel

Attendance at (inter)national conferences is critical to scientific development and among the most formative elements of graduate training. This in mind, the Department has committed **\$50,000 per year** to support increased travel among graduate students. As of Fall 2021, all matriculating students in good academic standing will attend **at least two conferences**, with the opportunity to request funding for **up to four conferences** throughout their academic career. This high-impact initiative has the potential to transform BCBP graduate education.

In the summer between **Years 1 and 2**, all new students will attend one conference of broad scientific interest together. To help maximize the experience, a faculty mentor will accompany the group. Attendance, travel, and lodging will be **paid in full** by the Department. Students are not required to present at the meeting but will be required to present a 10-minute conference highlights talk at Thursday Seminar. *Eligibility: Must be in good academic standing; must attend at least 75% of the BCBP seminar series in Year 1.*

In the summer between **Years 2 and 3**, all students will attend a conference of their choosing. Attendance, travel, and lodging will be paid by a 50/50 Department/Advisor match. Students are required to present (poster or oral) at the conference. In preparation, students must present a practice talk at Thursday Seminar; after the conference, students must present a 10-minute conference highlights talk at Thursday Seminar.

Eligibility: Must be in good academic standing; must attend at least 75% of the BCBP seminar series in Years 1 and 2. [Ineligible students will still be required to attend a conference, at full cost to the Advisor.]

Post-candidacy students (Years 3–6, inclusive) may request non-competitive funds to attend a national conference. Attendance, travel, and lodging will be paid by a 50/50 Department/Advisor match. Students are required to present (poster or oral) at the conference. In preparation, students must present a practice talk at Thursday Seminar; after the conference, students must present a 10-minute conference highlights talk at Thursday Seminar. *Eligibility: Must be in good academic standing; must be in Year 3, 4, 5, or 6; must attend at least 50% of the BCBP seminar series in the request year. Only one award per student; the department may limit the number of awards per group per year based on funding availability.*

Post-candidacy students (Years 3–6, inclusive) may apply for one of two competitive named awards to attend a national or international conference. Attendance, travel, and lodging will be paid in full by the Department (up to \$4,000). Students are required to present (poster or oral) at the conference. In preparation, students must present a practice talk at Thursday Seminar; after the conference, students must present a 10-minute conference highlights talk at Thursday Seminar. The named awards include the **John Mack Prescott** (winner selected by Department) and the **James C. Hu Travel Award** (winner selected by BGA). *Eligibility: Must be in good academic standing; must be in Year 3, 4, 5, or 6; must attend at least 50% of the BCBP seminar series in the application year. Only one award per student.*

To ensure accurate processing of awarded funds, you will be assigned a Departmental Travel Card. The card will physically remain in the Business Office but can be checked out to cover approved travel expenses. Full details will be provided during Orientation.

Full Course Waiver

If your thesis defense and dissertation submission are the only remaining requirements, and you will not be on TAMU payroll for your final semester, you may register for 1 credit hour of BICH 691 and be reclassified as a Research Assistant on wages. This is a one-time appointment for 3.5 months. International students should contact ISS before changing employment classification.

Annual Leave

Graduate students are entitled to two weeks of paid vacation per year, in addition to the standard state employee holidays. Please seek permission from your Thesis Advisor for any period of absence longer than one full work day in advance. Refer to the [TAMU Student Rules](#) for class attendance policies.

Seminars

The Department hosts nationally and internationally renowned scientists across a range of disciplines for our regular seminar series. Graduate students are expected to attend these lectures throughout their time in the program. Seminars are held each Wednesday (Fall and Spring) at 4:00pm in BICH 108, unless otherwise noted. Please speak with the Graduate Office to receive notifications for out-of-department seminars.

Responsible Conduct of Research Training

In support of responsible and ethical conduct of research and scholarship, TAMU abides the federal and state guidelines regarding Responsible Conduct of Research (RCR). All students are required to complete a Core

face-to-face training and CITI training. *BICH 658: Application of Scientific Values in Daily Research Practice* is an approved course equivalent that satisfies the Core face-to-face requirement. All students are responsible for completing the CITI training independently; **this training must be completed by the end of your first semester**. Please review the [CITI RCR Training Instructions](#) for more information.

Committee Meetings | Overview and Protocols

A summary of the required committee meetings / OGAPS action items is provided. **As of September 14, 2020, OGAPS requires that all forms be approved using DocuSign. Please visit the OGAPS website for more information and [form initiation links](#).**

Electronic versions of the department forms can be found on the [BCBP website](#). You **must** inform the Graduate Office of your intent to hold a meeting *at least 14 days ahead time*.

Years 1 and 2

	Advisory Committee Meeting	
<i>Purpose:</i>	Guide pre-candidacy students through their first- and second-year coursework, rotation, and thesis committee selections.	
<i>Protocol:</i>	Students will meet with a standing Advisory Committee. The Advisory Committee will recommend elective coursework and offer suggestions for rotation selections based on student research interests. After meeting 4, the student should complete an Individual Development Plan; proof of submission should be sent to the Graduate Office.	
<i>Forms:</i>	Individual Development Plan (IDP).	

SPRING | Year 2

	OGAPS – Degree Plan	
<i>Purpose:</i>	Formally establish a Degree Plan with the Office of Graduate and Professional Studies.	
<i>Protocol:</i>	Students must submit a Degree Plan through https://ogsdps.tamu.edu .	

	Preliminary Examination	
<i>Purpose:</i>	Assess student’s readiness to ascend to PhD candidacy.	
<i>Protocol:</i>	Students will meet with Preliminary Examination Committee. Students should submit a written proposal 14 days before the meeting and prepare a concise research presentation of 8 slides (approx. 15 min) to be given during the meeting. After the presentation, the Chair will open the meeting to questions (approx. 45–60 min). The Chair of the Preliminary Examination Committee should complete the Committee Meeting Report with input from the other Committee Members. <i>Recommended duration: 1.5 hours.</i>	
<i>Forms:</i>	Preliminary Examination Checklist [OGAPS] Report of the Preliminary Examination [OGAPS] Research Proposal Approval Form for Thesis, Dissertation, or Record of Study [OGAPS] Committee Meeting Report [BCBP] Laboratory Notebook(s)	

Years 3 and 4

	Annual Committee Meetings	
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Purpose: Assess research and professional development progress.

Protocol: Students will meet with Thesis Committee. The Thesis Advisor should complete the **Advisor Report** before the meeting. Students should prepare a concise research presentation of 8 slides (approx. 15 minutes) to be given during the meeting. After the presentation, the Chair will open the meeting to questions (approx. 30 min). The Committee should meet with the student in the absence of the Thesis Advisor, and with the Thesis Advisor in the absence of the student (approx. 5–10 min each). The Chair of the Thesis Committee should complete the **Committee Meeting Report** with input from the Thesis Advisor and Committee Members. *Recommended duration: 1 hour. At least one Committee Meeting should be held per academic year.*

Forms: **Committee Meeting Report** [BCBP, previous scores will be completed by Graduate Office prior to meeting; you **must** inform Megan Teel of your committee meeting dates]
Advisor Report [BCBP]
Laboratory Notebook(s)
CV

Year 5 and Beyond

	Annual Committee Meetings	
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Purpose: Establish an exit strategy.

Protocol: Students will meet with Thesis Committee. The Thesis Advisor should complete the **Thesis Advisor Report** before the meeting. Students should submit a thesis outline 14 days before the meeting and prepare a concise research presentation of 8 slides (approx. 15 minutes) to be given during the meeting. After the presentation, the Chair will open the meeting to questions. The Committee should meet with the student in the absence of the Thesis Advisor, and with the Thesis Advisor in the absence of the student. *Recommended duration: 1 hour.*

Forms: **Thesis Outline** [template provided]
Committee Meeting Report [BCBP, previous scores should be completed by Graduate Office prior to meeting]
Advisor Report [BCBP]
Laboratory Notebook(s)
CV

	Thesis Defense	
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Purpose: Defense of Ph.D. thesis.

Protocol: Students will meet with Thesis Committee. Students should prepare a research presentation (approx. 45 minutes) to be given at a public forum. After the presentation, the Chair will open the meeting to public questions. The Chair will then close the public session. The Chair will open the private session to Committee questions. The written thesis should be given to the Committee for review. Once approved, the student should submit the thesis to OGAPS. All OGAPS guidelines for thesis submissions should be carefully reviewed.

Forms: **Request and Announcement of the Final Examination** [OGAPS; should be submitted at least 10 working days prior to the defense date]

Written Dissertation (Ph.D., Dr. PH) or Record of Study (Ed.D, D.En.) Approval Form

Thesis, Dissertation, and Record of Study Copyright and Availability Form [OGAPS]

Report of the Final Examination [OGAPS, sent directly to PI; *the student should not handle the signed document at any time*]

Master of Science Degree

Students may elect to pursue a thesis or non-thesis Master of Science (M.S.) degree in Biochemistry, pending approval of the research advisor and Thesis Committee. M.S. students are required to successfully complete all BICH core coursework and fulfill all [OGAPS](#) requirements.

Thesis Option

Students on the thesis track (MS-THO) are guaranteed full stipend support for the duration of thesis research. To fulfill departmental requirements, students must:

- Complete a minimum of 32 semester credit hours, including all core coursework and research hours.
- Submit a degree plan for approval by the thesis committee and OGAPS. Degree plans must be submitted to OGAPS the semester before the intended graduation date.
- Submit a thesis proposal for approval by the thesis advisory committee and Associate Head of the Graduate Program.
- Schedule and pass an oral defense of the thesis.
- Submit a written thesis for approval by the thesis advisory committee.
- Provide two copies of an approved written/signed thesis to the OGAPS Thesis Office.
- Receive thesis approval by the OGAPS Thesis Office.

Domestic Students: Degree level changes must be made no later than the 20th day of class (FA/SP) or the 4th day of class (SU).

International Students: Degree level changes must be made no later than the 12th day of class (FA/SP) or the 4th day of class (SU). International students must have all immigration documentation corrected with the International Student Services (ISS) office no later than the 15th day of class.

Non-Thesis Option

Neither a written thesis nor an oral defense is required for the non-thesis track (MS-NTO). Once the degree change petition has been approved, students may not enroll in BICH 691 (Research); credits previously earned for BICH 691 are not applied to the total credit hour requirement. Two credit hours of BICH 690 (Theory of Research) may be applied, though any combination of credits earned for BICH 684, BICH 685, BICH 690, and BICH 695 may not exceed 25% of the total credit hour requirement. To fulfill departmental requirements, students must:

- Complete a minimum of 36 semester credit hours, including all core coursework. The thesis committee must approve any elective coursework.
- Pass a final comprehensive exam. No examination may be held prior to the mid-point of the semester in which the student will complete all remaining coursework.

TAMU Policies

Petitions

All requests to change an approved Degree Plan – including thesis committee restructuring and coursework adjustments – must be submitted by [electronic petition](#). Petitions must be approved electronically by all members of your thesis committee, the Associate Head of the Graduate Program, and the COALS Advising Office.

Continuous Registration Requirement

Per University policy, all full-time graduate students supported by an assistantship must register for 9 credit hours every Fall and Spring semesters, and 6 credit hours every Summer. You must also maintain a 3.0 GPR for the duration of study. If you fail to register for the required credit hours, **your graduate assistantship will be terminated, and your out-of-state tuition waiver will be revoked.** Please coordinate with the Graduate Office to ensure compliance.

Tuition and Fees

Graduate teaching assistants, research assistants, and non-teaching students who are employed at least one-half time at a Texas institution of higher education – with job duties that are related to teaching or research in an academic program associated with their field of study – are entitled to resident tuition and fees for themselves, their spouse, and their children. Biochemistry graduate students are limited to 7 years (or 130 doctoral hours) of resident tuition.

Paychecks

Paychecks for the preceding month are posted on the first weekday of the following month (e.g., your May paycheck will arrive on the first weekday in June). Note that your first paycheck will be posted the first weekday in October; please prepare your finances accordingly.

Right to Review Records

You have the right to review your education records, except those excluded by law (e.g., parents' financial statements, physician records). Various records are maintained by BCBP, the Admissions and Records Office, Student Financial Aid, the Career Center, and the Dean of the College of Agriculture and Life Sciences.

Code of Conduct

The Aggie Code of Honor affirms that ***an aggie does not lie, cheat or steal, or tolerate those who do.*** Academic dishonesty is any form, including cheating, plagiarism, deception of effort, or unauthorized assistance, may result in a failing grade and/or suspension or dismissal from the Graduate Program. Manipulation or falsification of data is grounds for immediate dismissal.

Ownership of Data

All data generated in the course of your study is the property of TAMU through the Principal Investigator. NIH guidelines require that data and lab notebooks remain with TAMU and the Principal Investigator. Final decisions on publication and authorship are made by the Principal Investigator.

Leave of Absence

Under unusual circumstances, a student may petition for a leave of absence through [DPSS](#). The entire thesis committee (if formed) and the Department Head or the Chair of the Intercollegiate Faculty (if appropriate) must approve and route the petition to OGAPS. If the Associate Provost for Graduate and Professional Studies approves the petition, the registration requirement will be lifted during the period of leave. Leave will be granted only under conditions that require the suspension of all activities associated with pursuing the degree. For certain types of approved leave, such as medical, the time period for the completion of the degree will stop with the leave and begin when the student returns to the program. Other types of leave may not stop the time limit for the degree. Please refer to the OGAPS regulations for degree time limits. A leave of absence is granted for one year. In cases of extenuating circumstances, the leave of absence can be extended by the student's committee and the Associate Provost for Graduate and Professional Studies. A student who returns to the University after an approved leave of absence will not be required to apply for readmission. International students should consult ISS to determine if/how a Leave of Absence may impact their stay or reentry into the U.S.

Fellowships and Awards

While you are guaranteed funding for the duration of your studies, we encourage you to seek additional fellowships and awards. If you receive an external scholarship or fellowship, your departmental support may be renegotiated, and you may be eligible for an increased stipend.

External Fellowships

All fellowships have a U.S. citizen / permanent resident requirement, unless otherwise noted. Finally, the University of Illinois Graduate College [Fellowship Finder](#) offers a comprehensive database of graduate fellowships and awards.

Fellowship	Description	Deadline
DOE CSGF	The Department of Energy Computational Science Graduate Fellowship provides full tuition and fees, an annual \$38,000 stipend, and an annual \$1000 travel allowance for up to 4 years.	January
DoD SMART	The Department of Defense Science Mathematics and Research for Transformation includes full tuition and fees, an annual stipend of \$25,000–\$38,000, health insurance allowance of up to \$1200, and an annual \$1000 travel allowance for up to 5 years. It also includes employment by DoD upon graduation	December
Ford Foundation	The National Academy of Sciences, Engineering, and Medicine on behalf of the Ford Foundation provides 3 years of support including an annual stipend of \$27,000.	November
NSF – GRFP	NSF Graduate Research Fellowship Program provides up to 3 years of support including \$34,000 annual stipend, and \$12,000 yearly tuition and fees allowance.	October
NDSEG	National Defense Science and Engineering Fellowship Program provides up to 3 years of support including a \$3,200 monthly stipend and an annual health insurance allowance of \$1,200.	December
Smithsonian Programs	Smithsonian offers program in Genomics and Medical Science . They also offer the Smithsonian Institution Fellowship Program , and Secretary’s Distinguished Research Fellowship . See fellowship web pages for award amounts and durations.	Varies
Hertz Foundation Fellowship	Hertz Foundation provides up to 5 years of support, including a stipend of \$34,000 / 9 months; this fellowship can be accepted in the same term as other fellowships.	October
AHA Fellowship	American Heart Association fellowship provides 1–2 years of support including an annual stipend of \$24,816, \$4,200 a year towards health insurance, and \$2,000 a year of project support.	August
National Academy of Sciences, Engineering, and Medicine Science Policy Fellowship	National Academy of Sciences, Engineering, and Medicine Science Policy Fellowship for students who have finished or are finishing their PhD and want to transition into science policy. This fellowship includes an annual stipend of \$55,000–\$60,000, \$5,000 towards professional development and additional funding to attend conferences.	March
NIH Kirschstein Fellowship	The Ruth L. Kirschstein National Research Service Award Individual Predoctoral Fellowship to Promote Diversity in Health-Related Research (Parent F31 – Diversity) provides up to 5 years of support that includes an annual stipend of \$24,324, tuition and fees, and project support of \$3,100–\$4,200.	April, August, December

NIH GPP	Graduate Professional Partnership program where part or all of dissertation research is conducted under PI at NIH. Funding must be provided by the PI you work under.	No deadline
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Dissertation Fellowships

Fellowship	Description	Deadline
AAUW	AAUW American/International Dissertation fellowships for international and domestic women provide \$20,000 for the year of dissertation writing.	November
Dissertation Fellowship	The TAMU Office of Graduate and Professional Studies provides \$1,600 monthly stipend and up to \$2,634 for health insurance in order to assist with the writing and organization of the dissertation	Nov 1

TAMU Awards and Fellowships

Fellowship	Description	Deadline
TAMU Distinguished Dissertation Award	The TAMU Distinguished Dissertation award provides \$1000 to a recipient of TAMU doctoral degree whose dissertation made a significant and impactful contribution to their discipline.	March 2
Distinguished Grad Student Award	The Association of Former Students offers the Distinguished Graduate Student Award to a student that exemplifies excellence in research as well excellence in teaching. Recipients are awarded with an engraved watch and framed certificate.	February
U.S. Senator Phil Gramm Doctoral Fellowship	The U.S. Senator Phil Gramm Doctoral Fellowship is awarded to current grad students who exemplify the meaning of scholar/mentor through their demonstrated abilities in teaching and research.	
Montgomery Award	The Montgomery Award is given to a student leader whose service has impacted the TAMU grad student body at large and includes a personalized award plaque and \$1000.	April
George W. Kunze Endowed Graduate Student Award	The George W. Kunze Endowed Graduate Student Award is given to doctoral students near completion of their degree.	

Travel Awards and Fellowships

Fellowship	Description	Deadline
ASM Capstone Fellowship	The American Society for Microbiology Research Capstone Fellowship is a professional development fellowship providing up to \$2,000 for underrepresented minorities to attend the ASM Microbe Meeting and the ASM Microbe Academy for Professional Development.	March

[ACS Women Chemist
Committee and Eli
Lilly Travel Award](#)

The Women Chemists Committee/Eli Lilly Travel Award is given to female chemists to present their research at an ACS National Meeting.

March 1
or
September
15

[OGAPS Travel Awards](#)

The Office of Graduate and Professional Studies Travel Awards are of varying amounts for both domestic and international travel

See
website

Appendix | Recommended Electives and Journal Clubs

A non-comprehensive list of *recommended* elective courses is provided; you may choose elective courses that are not listed, pending Advisory Committee approval. **Note that not all classes are taught every semester.** At least 3 of the 6 elective credits must be at the 600 level. In preparation for your Advisory Meetings, be sure to review the course description, prerequisite requirements, and current offerings for each elective that you are considering.

BIOCHEMISTRY		
BICH 464	Bacteriophage Genomics	3 cr.
BICH 628	Computational Biology	3 cr.

BICH 650	Genomics	3 cr.
BICH 654	Structural Biochemistry	3 cr.
BICH 655	Crystallography Methods	3 cr.
BICH 656	RNA Biology	3 cr.
BICH 657	Introduction to Structural Biology	1 cr.
BICH 661	Advanced Genome Annotation with Ontologies	1 cr.
BICH 662	Eukaryotic Transcription	1 cr.
BICH 664	Fluorescence Spectroscopy	1 cr.
BICH 665	Biochemical Kinetics	1 cr.
BICH 667	Molecular Probes	1 cr.
BICH 689	Special Topics	X cr.

BIOLOGY		
BIOL 601	Biological Clocks	3 cr.
BIOL 602	Transmission Electron Microscopy	3 cr.
BIOL 603	Advanced TEM Methodologies in Life and Material Sciences	3 cr.
BIOL 604	Fundamentals of Scanning Electron Microscopy	2 cr.
BIOL 606	Microbial Genetics	3 cr.
BIOL 608	Light Microscopy	3 cr.
BICH 611	Developmental Genetics	3 cr.
BIOL 613	Cell Biology	3 cr.
BIOL 635	Plant Molecular Biology	3 cr.
BIOL 636	Plant Cell Biology	3 cr.
BIOL 644	Neural Development	3 cr.
BIOL 647	Digital Biology	4 cr.
BIOL 651	Bioinformatics	3 cr.
BIOL 689	Special Topics	X cr.

CHEMISTRY		
CHEM 446	Organic Chemistry III	X cr.
CHEM 603	Modern Chromatographic Separation Methods	3 cr.
CHEM 610	Organic Reactions	3 cr.
CHEM 615	Organic Synthesis	3 cr.
CHEM 618	NMR Spectroscopy	3 cr.
CHEM 619	Analytical Spectroscopy	3 cr.
CHEM 621	Chemical Kinetics	3 cr.
CHEM 627	Principles of Biological Chemistry	3 cr.
CHEM 628	Coordination and Bioinorganic Chemistry	3 cr.
CHEM 633	Principles of Inorganic Chemistry	3 cr.
CHEM 635	Introduction to X-ray Diffraction Methods	3 cr.
CHEM 641	Structural Inorganic Chemistry	3 cr.
CHEM 646	Physical Organic Chemistry	3 cr.
CHEM 658	Molecular Modeling	3 cr.
CHEM 672	Bioorganic Reaction Mechanisms	3 cr.
CHEM 689	Special Topics	X cr.

GENETICS		
GENE 603	Genetics	4 cr.
GENE 626	Analysis of Gene Expression	2 cr.
GENE 631	Biochemical Genetics	3 cr.
GENE 654	Analysis of Complex Genomes	3 cr.

GENE 689	Special Topics	X cr.
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PHYSICS		
PHYS 408	Thermodynamics and State Mechanics	4 cr.
PHYS 412	Quantum Mechanics I	3 cr.
PHYS 689	Special Topics	X cr.

STATISTICS		
STAT 645	Applied Biostatistics and Data Analysis	3 cr.
STAT 651	Statistics in Research I	3 cr.
STAT 652	Statistics in Research II	3 cr.
STAT 661	Statistical Genetics	3 cr.

VETERINARY MICROBIOLOGY		
VTMI 601	Pathobiology	5 cr.
VTMI 663	Molecular Biology of Viruses	3 cr.

VETERINARY PHYSIOLOGY & PHARMACOLOGY		
VTPP 676	Genetic and Molecular Toxicology	3 cr.
VTPP 677	Fluorescence Detection: Steady State, Time Resolved, and Imaging	4 cr.

Recommended Journal Clubs are listed below. You are required to take Journal Club every Fall/Spring semester from your second year on.

JOURNAL CLUBS		
BICH 625	Nucleic Acids–Protein Interactions	1 cr.
BICH 671	Macromolecular Folding and Design	1 cr.
BICH 672	Biological Membranes	1 cr.
BICH 673	Gene Expression	1 cr.
BICH 674	Protein Folding and Stability	1 cr.
BICH 675	Plant Biochemistry and Genomics	1 cr.
BICH 676	Bacteriophage Biology	1 cr.
BICH 677	Chemical Genetics and Drug Discovery	1 cr.
BICH 678	Metal Ions	1 cr.



TEXAS A&M UNIVERSITY

Biochemistry & Biophysics

Ph.D. Degree Plan (NEW)

FA – Year 1

BICH 603	Principles of Biochemistry and Biophysics	3 cr.
BICH 608	Critical Analysis of the Biochemistry Literature	2 cr.
BICH 631	Principles of Molecular Genetics	3 cr.
BICH 658	Application of Scientific Values	1 cr.

SP – Year 1

BICH 6XX	Advanced Modules*	6 cr.
BICH 690	Theory of Biochemistry Research	2 cr.
BICH 697	Teaching	1 cr.

*Students must take six 1-credit modules.

SU – Year 1

BICH 691	Research	6 cr.
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FA – Year 2

ELECTIVE	Elective (2)	6 cr.
BICH 6XX	Journal Club	1 cr.
BICH 691	Research	1 cr.
BICH 697	Teaching	1 cr.

SP – Year 2

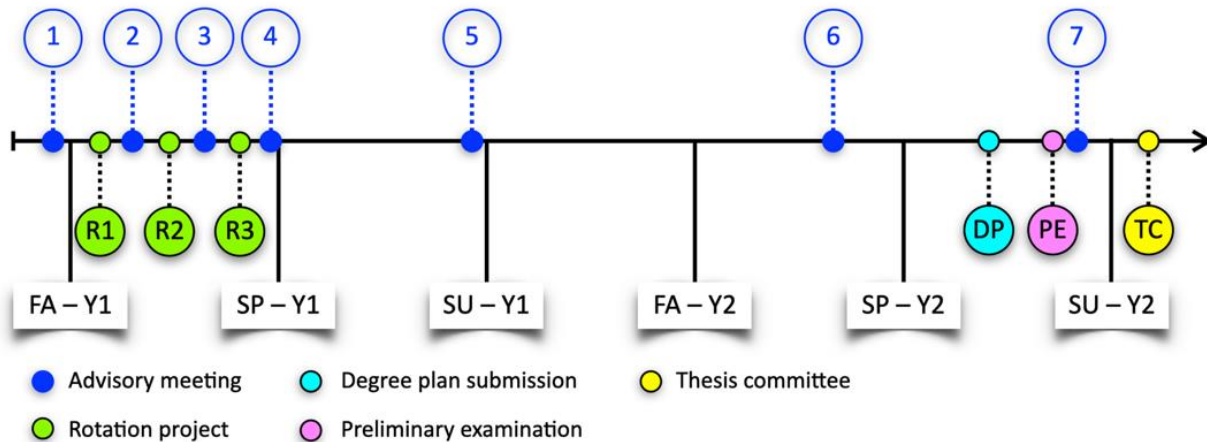
BICH 689	Written Communication	2 cr.
BICH 689	Oral Communication	1 cr.
BICH 6XX	Journal Club	1 cr.
BICH 690	Theory of Biochemistry Research	2 cr.
BICH 691	Research	3 cr.

SU – Year 2 and Beyond

BICH 6XX	Journal Club	XX cr.
BICH 690	Theory of Biochemistry Research	XX cr.
BICH 691	Research	XX cr.

TOTAL = 96 credit hours (minimum)

Rotations, Advisory Committee Meetings, and Preliminary Examination Schedule:



**Ph.D. Degree Plan (OLD)****FA – Year 1**

			grade
BICH 603	Principles of Biochemistry and Biophysics	3 cr.	
BICH 608	Critical Analysis of the Biochemical Literature	2 cr.	
BICH 631	Principles of Molecular Genetics	3 cr.	
BICH 689	Application of Scientific Values	1 cr.	
Rotation 1		Rotation 2	
		Rotation 3	

SP – Year 1

BICH 681	Seminar	1 cr.	
BICH 681	Seminar	1 cr.	
BICH 6XX	Module:	1 cr.	
BICH 6XX	Module:	1 cr.	
BICH 6XX	Module:	1 cr.	
BICH 6XX	Module:	1 cr.	
BICH 6XX	Module:	1 cr.	
BICH 6XX	Module:	1 cr.	
BICH 685	Directed Studies	1 cr.	

SU – Year 1

BICH 691	Research	6 cr.	
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FA – Year 2

BICH 6XX	Journal Club	1 cr.	
BICH 690	Theory of Biochemistry Research	2 cr.	
BICH 691	Research	5 cr.	
BICH 697	Teaching	1 cr.	

SP – Year 2

ELECTIVE	Elective	3 cr.	
BICH 6XX	Journal Club	1 cr.	
BICH 690	Theory of Biochemistry Research	2 cr.	
BICH 691	Research	2 cr.	
BICH 697	Teaching	1 cr.	
OGAPS – Degree Plan Submission			

SU – Year 2

BICH 691	Research	6 cr.	
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FA – Year 3

ELECTIVE	Elective	3 cr.	
BICH 6XX	Journal Club	1 cr.	
BICH 690	Theory of Biochemistry Research	2 cr.	
BICH 691	Research	3 cr.	

SP – Year 3

BICH 6XX	Journal Club	1 cr.	
BICH 690	Theory of Biochemistry Research	2 cr.	
BICH 691	Research	6 cr.	
	Preliminary Examination		

SU – Year 3 and Beyond

BICH 6XX	Journal Club	X cr.	
BICH 690	Theory of Biochemistry Research	X cr.	
BICH 691	Research	X cr.	
	Annual Committee Meetings		
	Thesis Defense		

TOTAL = 96 credit hours (minimum)