

Biochemistry, Cell and Developmental Biology Program

STUDENT & FACULTY HANDBOOK *2025-2026*

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Notes on terminology: Despite the common usage within the Biochemistry, Cell & Developmental Biology Graduate (BCDB) program to refer to all research as “dissertation research” and all committees as “dissertation committees”, the Laney Graduate School (LGS) uses these terms more specifically. Dissertation is the more appropriate term for the research and document resulting in a doctorate (PhD), while thesis is reserved for those resulting in a master’s degree. Similarly, the LGS refers to the committee of faculty members that advise the student during the dissertation research as the dissertation committee. In addition, the LGS uses the term DGS for what we in Graduate Division of Biological and Biomedical Sciences (GDBBS) call the Program Director; while we in GDBBS typically use that term/acronym (DGS) for the person, typically working closely with the Program Director, who deals more immediately with student issues. **Thus, on all LGS forms where it asks for the signature of the DGS, students should actually get the signature of the BCDB Program Director.**

Abbreviations used in the text include:

BCDB, Biochemistry, Cell & Developmental Biology Graduate Program

DGS, Director of Graduate Studies

GDBBS, Graduate Division of Biological and Biomedical Sciences

LGS, Laney Graduate School

MSTP, Medical Scientist Training Program

PLE, Post-rotation Laboratory Experience

IMPORTANT

BCDB students are accountable for compliance with the policies and requirements of the LGS, the GDBBS, and the BCDB Program. The LGS Handbook defines minimal requirements for all of its students. The GDBBS Handbook may have additional or more stringent requirements, and the BCDB Program may have additional or more stringent requirements. Students must comply with the most stringent version. In case of confusion or ambiguity, students should contact the BCDB Program Administrator, DGS or Director for clarification and resolution.

These guidelines of the policies and expectations of the BCDB Program are continually reviewed and updated in an effort to keep them current. Official decisions on any aspect are rendered by the BCDB Executive Committee in consultation with the Program Director, Director of Graduate Studies (DGS), and the faculty of the Program. The BCDB Program provides students with the opportunity to develop theoretical and practical

research competence in Biochemistry, Cell and Developmental Biology and related disciplines. Research interests of the faculty are described on-line at the GDBBS and BCDB Program websites.

PART I. ADMISSION TO GRADUATE STUDIES

A. Admission Requirements and Procedures

The BCDB Program is designed for students pursuing a PhD degree or the combined MD/PhD degrees. Application material, admission requirements, financial information and degree requirements are all available on the GDBBS website. All applications are made to the GDBBS with an indication of interest in the BCDB Program. The BCDB Program Admissions and Executive Committees evaluate applicants by having at least four faculty review the entire application file. Applicants are evaluated principally on research experience, educational background, and letters of recommendation. A successful applicant typically has a strong science background in chemistry, mathematics, physics or biology. Students wishing to study for a terminal master's degree are not admitted.

Applicants interested in the combined MD/PhD Program should contact the Medical Scientist Training Program, Office of the Dean, Emory University School of Medicine, Woodruff Health Sciences Center Administration Building, Atlanta, GA 30322.

B. Transfers to Other Programs at Emory

Students admitted to the BCDB Program are supported by the GDBBS in the first 21 months of graduate school. As such, they may choose to do rotations or dissertation research with any of the Graduate Training Faculty of the Division regardless of their program affiliation, with the exception of the first rotation which must be with a BCDB faculty member. Thus, a student may be in the BCDB Program and their advisor could be a member of a different GDBBS graduate program. In this case the dissertation research committee still must be selected according to the guidelines established by the BCDB Program.

In some cases, the student may wish to transfer to the graduate program where the proposed Advisor holds a training appointment. This can result in changes in required coursework or exam scheduling to meet the requirements of the new program. A letter of intent requesting the transfer should be sent to the student's current program, to the intended program, and to the GDBBS Director. All parties must agree to the request for it to be approved. The Dean of the LGS provides final approval of transfer.

PART II. TRAINING FACULTY MEMBERSHIP CRITERIA

A. Admission Requirements

BCDB Training Faculty members must be full-time independently funded Emory Faculty in good standing and should have demonstrated expertise in the fields of Biochemistry, Cell or Developmental Biology or comparable molecular biological sciences. The Training Faculty must have, or have the prospect of acquiring, sufficient extramural funding to ensure support of the student's research projects. Examples of documented expertise include doctoral and/or postdoctoral training in the field, and publications in major peer reviewed journals of the areas represented by the program. In the BCDB program, there are two levels of Faculty membership – Full and Affiliate faculty membership. Full membership equates to full rights and privileges, including the right to serve on any GDBBS committee or in an administrative position, and to act as a dissertation advisor. Affiliate faculty members can serve on dissertation committees but can not host rotation students without Executive Committee approval. Affiliate faculty members are also not required to meet the Teaching requirements of BCDB. The goal of offering Affiliate BCDB membership is to allow faculty to participate in certain aspects of the Program when, for example, they may no longer run an active research

group in which they wish to train new graduate students. Affiliate faculty members can serve as co-mentors to BCDB students in partnership with a Full faculty member with Executive Committee approval. Full faculty members who are currently training PhD students are not allowed to become Affiliate faculty members.

An application for membership of the BCDB training faculty requires the items as listed on the *GDBBS Faculty Appointment Checklist* and the *BCDB Faculty Application* form, both available on the BCDB Program website. Please note that BCDB accepts faculty under the categories of Full and Affiliate faculty membership. The letter from the BCDB Program Director will be provided once the candidate is approved for membership by the BCDB Executive Committee.

The complete application packet should be submitted through the GDBBS Faculty Appointment Application form (<https://forms.office.com/r/XmsejdwSwt>), where it will be forwarded to the BCDB Program Director and Chair of Faculty Membership. Once received, the applicant will be contacted by the BCDB Program Director to discuss the expectations for BCDB faculty. The BCDB Program Director, DGS and Chair of Faculty membership then will review the application and, if approved, recommend an invitation for the applicant to present a research seminar open to the Emory community and specifically advertised to the Program faculty and students. The candidate's application will be made available to all Program faculty members at that time. Following the seminar, the entire BCDB faculty will be polled on the acceptability of admission administered by the Program Administrator.

The Program Administrator will forward the results of the faculty ballots to the BCDB Program Director and Chair of Faculty Membership, who will review the vote and render a final decision on whether to accept the candidate into the Program. Following a favorable decision by the BCDB Program, the application will be forwarded to the Division Director with the candidate's dossier. According to Graduate School guidelines, the candidate's dossier will be forwarded to the Dean of the Graduate School for final approval.

Current GDBBS guidelines restrict faculty membership to a maximum of two programs in the Division. In some rare cases the candidate can petition the Division Director for admission to more than two programs.

B. Faculty Responsibilities

Full faculty members are expected to participate actively in Program functions. This includes the honor and responsibility of serving as advisors to graduate students in the Program. The dissertation research advisor is financially and intellectually responsible for the development of that student and is the major overseer of the student's successful completion of the PhD program. Such agreements should not be entered into without careful thought and consideration.

Full and Affiliate faculty members are expected to additionally contribute in more than one of the following areas including, but not limited to, student admissions, attendance at research seminars given by Program students during Advanced Seminar, advising first-year student laboratory rotations, Program administration, participation in the preparation and grading of qualifying exams, attendance at Program faculty meetings, voting on admissibility of new faculty members, and service on dissertation research committees.

Teaching is valued by the Program and BCDB Full Faculty members are expected to teach in the Program's flagship course, **Foundations in BCDB**, to fulfil the Program's teaching requirement. Other teaching and directing of courses that would satisfy this requirement include the Introductory Graduate Seminar course (BCDB570r), the Hypothesis Design and Scientific Writing course (IBS522r), Ethics, and Foundations in BCDB (BCDB501/502) as described in section C.1 below.

C. Faculty Review

Each year Program Full and Affiliate faculty members will submit an annual report via a GDBBS survey which is then sent to the Chair of Faculty Membership and the Program Director who will evaluate all completed reports and inform the Executive Committee of any faculty member found deficient in Program participation. Training faculty found to have not been sufficiently active in the Program will be notified, suggestions given to help them regain a full level of participation. Any faculty who do not meet participation standards will be dismissed from the program. The member can prepare a rebuttal statement and request immediate reinstatement through an appeal to the members of the BCDB Executive Committee. Re-appointment to training faculty status following a lapse in membership of more than one year will be considered by the same mechanisms described above for *de novo* admission.

Satisfactory Program participation requires displaying adequacy in **1) Teaching** and **2)** at least one of the other two categories, **Research Training** or **Administration**. Teaching is evaluated each year at the end of the Spring semester based on teaching activities of the recently completed academic year and the anticipated teaching participation proposed for the upcoming academic year. Research Training and Administration are evaluated annually on the basis of activities in the recently completed academic year. Examples of each category are given below.

1. Teaching

- Teaching in Foundations in BCDB as the instructor of record for a minicourse consisting of at least an average of 4 contact hours/year of classroom teaching time.
- Co-Directing Foundations in BCDB for one semester.
- Co-Directing Advanced Graduate Seminar class (BCDB 790r), including Professionalization and Ethics sessions for an entire school year as the instructor of record.
- Co-Directing the Introductory Graduate Seminar class (BCDB 570r) for an entire school year as the instructor of record.
- Co-Directing in the Hypothesis Design and Scientific Writing (“Grant Writing”) class (IBS522r) for a semester as instructor of record.

2. Research Training

- Membership on dissertation committees of **BCDB** students.
- Consistent attendance at Advanced Seminar, Ethics, and public dissertation seminars. The goal is for faculty to attend at least half of these seminars.
- Attendance at relevant faculty research seminars.
- Having a dissertation student in your lab.

3. Administrative

- Participation in admissions/new student recruitment is required, including attending events and conducting interviews, during the annual admissions season or individual field visits to recruit at undergraduate conferences or academic institutions.
- Holding any executive office of the BCDB Program, including Program Director, Director of Graduate Studies, Executive Committee member, or active participation in other BCDB committees.
- Holding an executive office in the GDBBS or LGS (but not within the administrative structure of another program), or as an administrator elsewhere at Emory University (e.g., Dept. Chair).

PART III. ADMINISTRATIVE STRUCTURE

All graduate degrees offered by the BCDB Program are granted by the LGS and the GDBBS. The Dean of the LGS and the GDBBS Director are assisted in the formulation of policy and the resolution of problems by a

GDBBS Executive Committee, which consists of the Directors of individual GDBBS Programs offering graduate training. In addition, a Divisional Student Advisory Committee (DSAC), consisting of students from each of the Programs, affords a way for student concerns to be raised and discussed.

It is important to note that BCDB students must adhere to the policies and requirements of the LGS and GDBBS, as documented in their handbooks. The LGS, GDBBS, and BCDB Handbooks are all accessible online, and students are expected to be familiar with all of them.

A. Program Director & Director of Graduate Studies (DGS)

The Program Director will chair meetings of the Program membership and act as the liaison between the Program and the GDBBS. The Program Director will also serve as the Chair of the Executive Committee of the Program. Candidates for the Program Director position will be nominated and elected by a majority of the voting Program Faculty during a secret ballot vote. The Program Director may not be a departmental chairperson, serves a term of three years, and also is approved by the Dean of LGS.

The DGS shall be elected by a majority vote of the Program membership at large for a three-year term, and also is approved by the Dean of LGS. The DGS will serve as Vice-Chair of the Executive Committee. The DGS is the primary Program resource for the students of the Program and serves as students' advisor until they have permanent lab assignments.

B. BCDB Executive Committee

The BCDB Executive Committee functions in an advisory role in all matters concerning graduate students and the Program. It consists of the following faculty members: Program Director, DGS and ten others elected by the Program faculty. All serve three-year terms. In the event that an at-large position becomes vacated mid-term, the Program Director shall appoint a BCDB Program faculty member to serve out the remainder of the vacated term. If the Program Director or DGS position is vacated mid-term, the Executive Committee may appoint a qualified BCDB faculty member to serve the remainder of the term. Two student representatives, elected for staggered two-year terms by the student body, will also serve on the Executive Committee. The duties of the Executive Committee include reviewing applications for admission, graduate student curricula, student advancement toward degrees, faculty membership and participation, and administering the Qualifying Examinations. The Principal Investigator of any relevant training grant(s) will be considered *ex officio* member(s) of the Executive Committee. The Executive Committee will meet as frequently as needed to handle programmatic issues but at least two times per year.

C. Process for Nominations and Elections of DGS and Program Director, DGS and Executive Committee members

The Director and DGS are elected for 3-year terms, and programs should make every attempt to stagger elections so that both the Director and DGS are not rotating off at the same time. Nominees for these positions should be concurrent or past members of the Program Executive Committee or have the strong support of the current Program Director. The Program submits each nominee's name and CV to the Division Director for review and approval before announcing the nominees to the Program faculty for their vote.

The GDBBS Division Director must review and approve the appointment of any Program Director or DGS before the appointment is officially confirmed. Final approval comes from the Dean of the LGS.

The Division requires that an open election be held for at least one seat on the Program Executive Committee at least once each year. This allows for new faculty to join the Executive Committee and become familiar with

BCDB Program leadership responsibilities. This also ensures that new voices and new ideas have the opportunity to be heard. The Program holds an open nomination and election process with the Program faculty.

1. Admissions Chair

An Admissions Chair is selected from among the serving members of the Executive Committee of the Program on a year-to-year basis. The Admissions Chair serves as the head of an Admissions Committee, which is composed of a broad representation of the research interests of the BCDB Program. The committee's main function is to review applications, interview recruits, and advise the Admissions Chair.

2. Rotations Chair

The Rotations Chair is charged with overseeing all aspects of the required first-year Laboratory Rotations course (described below) and serves as course director. This includes organization of faculty presentations in the Fall prior to the start of the first rotation period, advising students in Advisor selection, ensuring rotation selection forms are completed, collecting and grading rotation reports, and assigning final overall grades for the Rotations course. The Rotations Chair appoints a Rotations Committee comprised of faculty and senior students to assist in the assessment and grading of rotation reports. While the size and composition of the Rotations Committee may be adjusted from year to year, typically it will consist of three BCDB faculty (on three-year appointments) and three senior students (on one-year appointments). Students and faculty are paired, and each pairing will grade and provide written critiques for one report from each first-year student throughout the rotations course. The Rotations Chair will report and obtain approval from the Executive Committee for each rotation selection in a non-BCDB laboratory. Students who do not find an Advisor after three rotations are required to conduct a 'Post-rotation Laboratory Experience (PLE)' after the end of the rotations course. The PLE must obtain approval from the DGS, who will oversee the PLE.

3. Curriculum Chair

The Curriculum Chair is charged with ensuring an optimal plan for the curriculum; including regular oversight and review of all required courses and their content, identifying and oversight of course directors, and student evaluations of both courses and training faculty/course directors. The Curriculum Chair has the authority to appoint a Curriculum Committee of representative faculty and students, as needed, to assist and advise the Chair.

4. Qualifying Exam Chair

The Qualifying Exam Chair is charged with the oversight of the oral Qualifying Exam, ensuring appropriate examining committee composition (students should also consult with the Student Progress Chair) and timeliness of the exams. The Chair appoints a Qualifying Exam Committee of faculty and student members to assist in these duties. Finally, the Qualifying Exam Chair will report the results of the oral Qualifying Exam to the entire Executive Committee with a recommendation for any remedial action. Details of the oral exam is described in PART IV, Section F.

5. Mentorship and Equal Opportunity Chair

The Mentorship and Equal Opportunity (MEO) Chair is responsible for activities that foster an inclusive and equitable environment for the BCDB program. This includes heading a BCDB Program MEO Committee consisting of students and faculty. Among the duties of the MEO Chair is to organize student and faculty training related to mentorship. The Chair also tracks success of the BCDB program in achieving goals related to

MEO, as well as serves as a primary contact to help students and faculty who have either been subject to or witnesses of discrimination.

6. Faculty Membership Chair

The Faculty Membership Chair is charged with reviewing any applications of new faculty to the Program and making recommendations to the Executive Committee, first, as to whether to proceed with the faculty seminar, and later, as to the suitability for admission. The Faculty Membership Chair is also charged with collecting information from all faculty members annually and reviewing the level of participation. The results of that review will be reported to the Executive Committee for any corrective action deemed necessary. It is noted that this Executive Committee position should be filled by a tenured Faculty member due to the sensitivity. The Faculty Membership Chair shall work with the Director to assist in these reviews.

7. Communications Chair

The Communications Director is charged with oversight of the BCDB website and with interfacing with GDBBS and/or LGS staff to ensure accuracy and compliance with any issues surrounding the website or other communications including social media. This will require monitoring the content of the web site and liaising with GDBBS to accomplish needed edits and updates. The Communications Chair also oversees production of the BCDB newsletter. The Communications Chair may appoint a Communications Committee of faculty members and students as deemed necessary.

8. Student Representatives to the Executive Committee

The two student representatives of the Executive Committee are elected by BCDB students to serve two-year terms on the Executive Committee and act as full voting members in issues that affect the student body and the program in general. Student members are charged with providing the Executive Committee with student concerns, suggestions, and feedback as well as communicating Executive Committee actions back to the student body. Student representatives will be excused from any discussion relating to specific students or faculty members.

9. At-large positions

Three At-Large positions will be available on the BCDB Executive Committee. Two At-Large Positions will be filled by Assistant Professors who have not been promoted and/or tenured. These positions provide an opportunity for junior faculty to participate on the Executive Committee and to gain insight into the administrative organization and decision-making processes of the BCDB Program without having a specific task. The two junior faculty At-Large positions will be for three years and are non-renewable (however, individuals in these positions would be eligible to run for election to the EC in another role). The third At-Large Position is reserved for the immediate former Director, at the discretion of the current Director, or another senior faculty member in BCDB who has previously served in a leadership role. In this capacity, the former Director/ senior faculty member can provide guidance and/or historical perspectives on specific items discussed at the Executive Committee. This position will be for a maximum three-year term. All three positions would have voting rights on the Executive Committee.

PART IV. PROGRAM REQUIREMENTS

It is the student's responsibility to meet the LGS and GDBBS requirements for a degree within a reasonable timetable.

All students should familiarize themselves with and adhere to the LGS Student Honor Code and Student Conduct Code as found in LGS Handbook (<http://gs.emory.edu/handbook/>). The Honor Code and Student Conduct Code address the professional standards and conduct demanded of all graduate students, as well as the procedures for reporting and adjudicating any violations. **Continuance of stipend support is predicated upon satisfactory progress by the student toward a degree and adherence to the Honor Code.**

A. Coursework

BCDB students take the required coursework in years one and two. This core curriculum is intended to give each student the necessary foundation to be successful in biomedical research, including graduate training in the basic sciences and formalized instruction in oral and written scientific presentations. Students may take additional coursework; the core curriculum is intended to indicate the **minimum** requirements for all BCDB students.

BCDB students in year two and beyond must register for, attend, and pass the weekly graduate student seminar series (BCDB790r Advanced Graduate Seminar), in both the Fall and Spring semesters. First-year students are required to attend the Advanced Seminar as part of their Introductory Seminar class. Each student in year two and beyond is required to present their research results annually in this forum. A senior student who plans to complete their dissertation defense within a given semester may request being excused from presenting in BCDB790r **only** if their scheduled seminar date is within three months of their dissertation seminar date, and after consultation with the DGS and the Course Director of BCDB790r.

NOTE ABOUT ELECTIVES: The list of available courses is continually changing so students must consult the current LGS Course Atlas to obtain accurate information. Not every elective course is offered every semester or every year.

BCDB Core Curriculum		
Course #	Course name	Credits
<u>Year 01-Fall</u>		
BCDB501	Foundations in BCDB I	10
BCDB570r	Introductory Graduate Seminar	2
BCDB597r	Laboratory Rotations *	2
JPE600	Scholarly Integrity Core Class	0
<u>Year 01-Spring</u>		
BCDB502	Foundations in BCDB II	10
BCDB570r	Introductory Graduate Seminar	2
BCDB597r	Laboratory Rotations*	2
<i>*Credits for Fall Term Laboratory Rotations are awarded in Spring Term, when final grade is determined after completion of all 3 rotations.</i>		
<u>Year 01-Summer</u>		
BCDB699R	Advanced Graduate Research	9
TATT600	TATTO training Advisor chosen (~end of 3 rd rotation), Research underway	1
		TOTAL: 37
Course #	Course name	Credits
<u>Year 02-Fall</u>		
IBS522r	Hypothesis Design and Scientific Writing	4
BCDB790r	Advanced Graduate Seminar	2
BCDB699r	Advanced Research	3
TATT605	Teaching Assistantship	2
	<i>(either Fall or Spring semester)</i>	2
<u>Year 02-Spring</u>		
IBS538	Statistical Design and Analysis of Experiments	4
BCDB790r	Advanced Graduate Seminar	2
BCDB699r	Advanced Graduate Research	3
Oral Qualifying Exam	<i>Must be administered after IBS522r class and before March 1 – scheduled by each student</i>	
<u>Year 02-Summer</u>		
BCDB699r	Advanced Research (until approved for candidacy)	9
or		
BCDB799r	Dissertation Research (after candidacy approved)	9
<u>Year 03 - end</u>		
BCDB790r	Advanced Graduate Seminar	2
Elective(s)		
BCDB699r	Advanced Research (until approved for candidacy)	Variable**
or		
BCDB799r	Dissertation Research	Variable**
<i>** Adjusted to make total units = 9 per semester</i>		

B. Laboratory Rotations

Laboratory rotations are intended to provide students an opportunity to sample different laboratory environments, assess available research projects and determine whether a potential Advisor will be suitable for them as a PhD. dissertation research Advisor. Equally, laboratory rotations afford faculty an opportunity to assess students' knowledge, research skills, motivation, work ethic, and how they might fit into their research program.

Rotations Timetable and Advisor Selection. The first rotation period typically begins in the second full week of the Fall semester following presentations by faculty and time for students to meet one-to-one with potential Rotation Advisors. Students have a wide choice of potential rotation advisors from within the BCDB Program. The only restrictions upon rotation advisor selection are that the advisor for the first rotation must be a faculty member of the BCDB program and all rotation advisors must be members of the GDBBS training faculty. Prior to each rotation, a *Rotation Advisor Selection Agreement* form must be submitted via DocuSign indicating the Rotation Chair as the approver. Forms and a detailed schedule of specific dates and deadlines will be provided at the start of the fall semester and are also available on the BCDB webpage.

For BCDB Faculty to be eligible to host a Rotation Student, they must have completed either online or in person training related to Mentorship and Equal Opportunity, that will be updated every year.

The DGS will serve as advisor until a student has acquired a PhD dissertation research Advisor. After completion of the rotations course requirements, typically at the end of the third rotation period, each student **should** have an advisor who has the primary responsibility for direction of course and research activities necessary for a graduate degree in BCDB. **Paperwork for PhD dissertation Advisor selection must be submitted to the DGS within two weeks of the end of the third rotation.** If the Advisor that is selected by the BCDB student is outside the program, this selection requires approval by the BCDB Executive Committee. Forms will be forwarded by the Program Administrator for formal confirmation by GDBBS and LGS.

Laboratory Rotations Course Requirements. Students who are not in the MSTP program must complete a minimum of three laboratory rotations of 8 weeks each, as part of their Year 1 curriculum. Research reports are required from the student after each rotation, as they are graded and factored into the Rotations course grade. Details of the content and format of the written report, along with tips for writing, are provided on the BCDB webpage. It is expected that Advisors will assist by reading draft(s) of the report and providing general comments for discussion. It is in the student's interests to get such feedback during the composition of the report, but it is also the student's responsibility to allow sufficient time for this to happen and to meet any agreed deadlines for providing the draft copy. Rotation Advisors are required to submit a letter grade for performance in the lab along with written comments supporting their grade. Grades for individual rotations are a combination of grades from the Rotation Advisors and members of the Rotations Committee who critique the reports. The Chair of the Rotations Committee will assign an overall grade for the laboratory rotations course using individual grades awarded for each rotation. Note that Laboratory Rotations is a two-semester course. For the fall semester, students will be graded based on the feedback from their first rotation report and mentor evaluation. For the spring semester, students will be graded based on feedback from their second and third rotation reports and evaluations that will be equally weighted.

Post-rotation Laboratory Experience (PLE). After the third rotation period, a student without a dissertation Research Advisor needs to request approval from the DGS to postpone Advisor selection and obtain additional laboratory experience during the Spring semester. Such requests should be made as soon as possible but **no later than** one week after the end of the third rotation period. The PLE will be shorter at ~4 weeks. Any student

who does not meet these deadlines or is without a research advisor for more than two weeks will be considered not to be making satisfactory progress toward the degree. Further PLE(s) as needed are permitted in principle but require prior approval of the DGS and prospective research advisor. Although it is sometimes referred to as a "fourth rotation", a PLE is not officially part of the formal Rotations course, no written report is required, and the student may proceed to formal research advisor selection at any time with approval of the research advisor and DGS.

All PLEs must be completed by April 30th of Year 1 unless prior approval of the DGS is obtained. Any student still unable to find a member of the GDBBS faculty who will agree to serve as dissertation research advisor before the end of Summer semester of Year 1 will be considered not to be making satisfactory progress towards the degree and may be Recommended for Dismissal from the BCDB Program after review by the BCDB Executive Committee. **It is the primary responsibility of each student to have an advisor, as the advisor and associated lab resources are essential requirements for the student to make scientific progress.**

C. Grade Criteria

Students must attain an average grade of B or better in coursework each semester to be in good academic standing with the Program and LGS. Advisors will assign grades in IBS699r (Advanced Research) or BCDB799r (Dissertation Research) and are encouraged to use grading that reflects progress made each semester. Students with an average grade of less than B or who receive a grade of less than B in a required course will be placed on academic probation, subject to review by the Executive Committee. Students on academic probation due to their grade point average have one semester to bring their grade point average above the minimum. Those who have received an unacceptable grade may not receive a grade less than B in any subsequent coursework. Failure to satisfy these criteria is grounds for termination from the Program.

Repeat assessment of unsatisfactory progress by the student's committee also constitutes grounds for termination from the Program.

D. Dissertation Research Advisor Selection

One of the most important decisions made by a graduate student is the choice of Research Advisor. The following criteria are among those that should be considered when evaluating potential advisors.

1. Likely projects leading to publications

What is the lab's track record for publication? Are these publications in quality journals?

No creditable and competitive degree in an experimental science should be awarded without one or more full-length publications with the student as a First Author resulting from research. Any faculty member should be able to provide any student with their publication record.

2. Support for the research

Is there a research grant, e.g. peer-reviewed funding, which can facilitate the purchase of necessary materials and services needed? How committed are funds toward other people and projects?

An important measure of the quality and importance of the research effort is that external review by scientists knowledgeable in the field has led to the competitive award of money to support the project area. Such grants also reflect the judgment that training and past production of the principal investigator warrant the grant. Faculty members who have grant support will typically provide a copy of the scientific portion of the application to a student who wishes to peruse it. Some federal grant information can also be found online, e.g. for NIH from NIH Reporter website (<https://projectreporter.nih.gov>).

3. Nature, scope and training to be provided by the dissertation project

How certain are positive, publishable results? Is it likely that a breadth of techniques can be learned such that future development and versatility of the student are well served?

First-class training for a modern scientist must provide a breadth of research experiences that significantly augment formal lecture and laboratory courses. It can be argued that a good research problem would be sufficiently open-ended as to allow several aspects of a major question to be approached by diverse methodologies.

Before finalizing your choice of a dissertation Research Advisor, discuss possible projects with several potential advisors. No final commitments should be made to a faculty member by the student (or vice versa) until completion of three rotations. At this time, the GDBBS Advisor-Advisee Agreement and the BCDB Addendum forms (available on the BCDB program website) should be completed and submitted to the Program Administrator. Final approval of advisor choice is decided by the BCDB Executive Committee.

E. Student Dissertation Committees

1. Function of the Dissertation Committee

The duties of the dissertation committee include assisting the student in creating and executing an original, publishable research project, assisting in the preparation of an acceptable dissertation, and administration of the final oral examination (*aka* dissertation defense). The first committee meeting must be held no later than six months after the oral Qualifying Exam. Any later change in the membership of the committee must be approved by the DGS and is subject to approval by the Executive Committee. Students are encouraged to meet with committee members outside of committee meetings to seek advice on research, career, and other issues. The formation of the Dissertation Committee, as well as any subsequent changes, must be documented and submitted according to LGS procedures.

2. Formation of the Dissertation Committee

A dissertation committee must be selected, and paperwork submitted ***no later*** than **December 1st of Year Two** in residence. The committee is selected by the student in consultation with the dissertation research advisor. If the student is co-mentored by two dissertation research advisors, one advisor must be designated the “contact” advisor. The *Dissertation Committee* form (available on the BCDB Program website) must be submitted to the Program Administrator for approval by either the Program Director or DGS. Dissertation committees are comprised of the dissertation advisor plus at least four other faculty members, at least **three of whom must be BCDB faculty members**. Co-mentors should both sign the Mentor Selection form in Year 1 and fill out the *co-mentoring plan form* that encompasses both scientific and financial responsibilities of each mentor. If a student is officially co-mentored, the dissertation committee still needs to include three other BCDB faculty members. It is not necessary for the dissertation advisor to be a member of the BCDB program. In this case, a non-BCDB dissertation advisor will need approval by the Executive Committee. The LGS considers the dissertation advisor to be the Chair of the *Dissertation Committee*. The *Dissertation Committee* will also work together to assign a Faculty Member to be the Lead member of the committee, whose role is to act as a student advocate and who can ensure that committee meetings meet all BCDB requirements. It is highly recommended that the Lead Committee member have a faculty rank of Associate Professor with tenure or higher.

Affiliate faculty members can serve as co-mentors to BCDB students in partnership with a Full faculty member with Executive Committee approval. Co-mentors should both sign the Mentor Selection form in Year 1 and submit a co-mentoring plan that details both the planned scientific and financial responsibilities of each co-mentor. If a student is officially co-mentored, the dissertation committee must still additionally include three other BCDB faculty members.

The advisor must be present at all examinations and thesis committee meetings, as well as both the private and public defense. All committee members who are eligible to participate (see below), must be present for the oral Qualifying Exam, and the full committee must be present for the private dissertation defense. While it is

recommended that all members be present, in some circumstances, the committee may allow **one member** to be absent from a dissertation committee meeting or the public defense seminar.

Note that, unlike the *Dissertation Committee*, the *oral Qualifying Exam Committee* must be composed entirely of faculty who are members of the BCDB program (4 examiners not including the advisor; see section G-1 below). The Dissertation Committee and oral Qualifying Exam Committee will typically consist of the same group of faculty, except that a BCDB faculty member must be included as an oral Qualifying Exam-only committee member in the event that there is a non-BCDB faculty member who will be part of the future Dissertation Committee. Students are encouraged to discuss their proposed committee membership with the BCDB Director, the DGS, or the Student Progress Chair (Section B-7, above).

3. Format of Dissertation Committee Meetings

A student scheduled to meet with their committee is encouraged to prepare a brief written summary (2 pages max) of items to cover during the meeting and distribute it to the committee at least one week prior to the meeting. *Rather than re-stating the entire project, this document should focus mainly on the outcome of experimentation conducted since the previous committee meeting.* This will help the committee to determine the extent of interim progress made, allow time for feedback prior to the meeting and help focus the content of the meeting. In addition to the written update, students are required to include the Individual Development Plan (IDP) slides as part of their presentation as well as discussing research progress. The IDP slides include updates on the following topics:

Scientific Update

- Papers published/submitted/in progress (list titles, authors, your contribution, and status)
- Grants applied for/awarded
- Meetings attended/abstracts (meeting name and date, abstract title, poster or talk)
- Awards/recognition
- Service (program, GDBBS, LGS, departmental, national, society, etc.)
- Techniques developed or learned since last meeting

Short Term Goals

- Describe your goals for the next 6-12 months in the lab and explain how you will achieve them?
- Describe your goals for the next 6-12 months in terms of professional development and how you will achieve them?

Goals Beyond Graduate School

- What are your goals after graduate school? Have they changed over the last year and if so, why?
- How do your short-term goals align with your long-term goals and what are the gaps?
- What measures could be taken to fill those gaps?

After the main dissertation committee meeting, the student is temporarily excused and the committee briefly meets with the advisor to discuss any concerns related to student progress. Then, the student is invited to return and the advisor is excused to provide an opportunity for the student to discuss any concerns related to their advisor with their committee. These individual meetings are not meant for further discussion of research progress or other topics where it would be more appropriate for everyone to be involved in the conversation.

Students experiencing significant difficulty in scheduling a committee meeting should contact the DGS or Student Progress Chair for advice.

4. Frequency of Dissertation Committee Meetings

The first formal committee meeting must be held no later than six months after passing the oral Qualifying Exam. This first committee meeting should follow closely the student's first research talk in the Wednesday seminar class (BCDB 790r Advanced Graduate Seminar) whenever possible. Thereafter, BCDB Program students are required to meet with their committee **every six months, up to and including year five of graduate study**. In the sixth and subsequent years, students are required to meet with their committee at least every four months. An important function of the committee is to determine at each meeting whether adequate progress is being made. Thus, the frequency of meetings may be increased at the discretion of the committee at any time during this period. In cases where student progress is deemed to be inadequate, the committee may opt to identify specific goals for the following period. If the committee subsequently determines that lack of progress is due to insufficient effort on the part of the student, this may constitute grounds for suspension of stipend support or termination from the Program.

5. Documentation and Tracking of Dissertation Committee Meetings

The BCDB Dissertation Committee Meeting Summary and Progress Report Form (available on the BCDB website) **must be filled out, electronically signed by the committee members present at the meeting and certified as soon as possible after the committee meeting**. It is allowable for one committee member (not the advisor) to miss a meeting. A committee member who misses a meeting should not sign the meeting form, so the student should not delay turning in the form in order to meet with that member. If the student wishes to document a subsequent meeting with an absent member, a separate form should be used. The completed form is forwarded to the BCDB Program Administrator via Docusign and serves as a record to indicate progress in graduate research. The form also contains specific feedback to the student regarding goals to be accomplished before the next meeting. Committee members are strongly encouraged to fill out this section of the form, as it has proven to provide useful guidance and tracking for the student. Compliance with guidelines for committee meetings will be monitored by the Student Progress Chair and periodically reported to the BCDB Executive Committee. Students should be aware that the summer months are notoriously difficult times in which to organize a committee meeting. It is suggested that summer meetings be planned well in advance of the deadline. **Delinquency of committee meetings may be considered grounds for cancellation of stipend support or termination from the Program.**

F. Admission to Candidacy– Requirements

Candidacy status is an indication that a doctoral student has developed sufficient mastery of a discipline to produce an original research contribution in their field. Students are expected to apply to LGS to become a candidate for the PhD degree, as soon as they are eligible.

Students must meet the requirements of the LGS regarding total credit hours of coursework. To be eligible for Candidacy, students must have earned at least 54 credit hours at the 500 level or above, as well as additional requirements for Candidacy as outlined below. Most BCDB students will meet the coursework requirement by the end of Spring semester in Year 2.

Eligibility Requirements:

- Complete all BCDB requirements for coursework and other training required by the degree, including BCDB JPE (ethics) training.
- Create your dissertation committee, and submit the Dissertation Committee Form to the LGS.
- Complete BCDB oral Qualifying Exam.
- Complete TATTO 600, TATTO 605, and JPE600.
- Resolve any Incomplete (I) and/or In Progress (IP) grades.
- Be in good standing with a minimum cumulative 2.70 GPA.
- Have earned at least 54 credit hours at the 500 level or above.

Students enter candidacy by submitting the application, which is available on the LGS web site. Students are considered “in candidacy” when the Dean has approved the application to enter candidacy. At that point, it is documented on the transcript.

Most BCDB students will be eligible for candidacy by the end of Spring semester in Year 2 and should apply at that time. The deadline for BCDB students to apply for candidacy is the end of Spring semester in Year 3. To clarify, students should apply for candidacy as soon as they are eligible and there should be a justifiable reason for delay. Students **must** reach candidacy by September 15 of their fourth year in order to be in compliance with LGS requirements. Students who do not meet this deadline will be placed on academic probation, will not be eligible for PDS funds, and may forfeit financial support. These sanctions will be lifted when the student enters candidacy.

G. Steps to Degree

1. Oral Qualifying Exam

The oral Qualifying Exam is an exam designed to assess the student's ability to integrate different aspects of the first year and a half of graduate training and to demonstrate that they are prepared to succeed in their dissertation research. The exam is usually ~ two and a half hours and **must be completed on or before March 1st in the spring semester** of the student's second year in residence. If March 1st falls on a weekend, the exam deadline is the first Monday after the 1st. **It is the student's responsibility, though with consultation with the advisor, to assemble the committee and schedule the exam.** Because the time period to complete oral Qualifying Exam overlaps with winter break, **the student is advised to schedule the exam at least two months in advance.**

Two weeks prior to the examination the student must distribute a research proposal to the examining committee. **The proposal is typically the grant proposal written in the Hypothesis Design and Scientific Writing class (IBS522r), though it may be modified/updated by the student in efforts to optimally illustrate the proposed dissertation project.** The written proposal will not be evaluated by the examining committee but will serve as a focal point for questions and discussions.

The composition of the oral Qualifying Exam Committee will be made up of the Dissertation Committee assembled by the student and advisor as described above (Section E-2). The deadline for assembling a Dissertation Committee is December 1st to allow approval by the Program Director or DGS. If the dissertation committee includes a current member of the BCDB Executive Committee, that person will act as Chair of the exam. If no member of the BCDB Executive Committee is present on the examining/dissertation committee, or if the dissertation research advisor is the only member of the Executive Committee, then the BCDB Program must be alerted, and an Executive Committee member will attend the exam to serve as non-voting Exam Chair. The Chair is responsible for being fully apprised of all rules surrounding the exam. Prior to the start of the exam itself, the Exam Chair will describe to all the purpose of the exam, the rules of engagement, and the criteria by which the evaluation will be performed. The four examining faculty (which does not include the advisor) must be drawn from the BCDB program. If the student intends for the final dissertation committee to include a person who is not a member of the BCDB Program, a current BCDB faculty member who is part of the BCDB Executive Committee must substitute for the non-BCDB Dissertation Committee member in the oral Qualifying examination. A BCDB faculty member who is selected by the student to participate in the oral Qualifying examination is not required to remain on the final Dissertation Committee. The advisor is present as an observer throughout the exam is not allowed to actively participate in the question and answer portions of the examination.

The examination consists of two parts. In the oral presentation, the student presents a summary or description of their research project, emphasizing the significance, hypotheses, specific aims, and the methods proposed. The presentation is followed by the oral examination, in which the student responds to questions from the examination committee.

Oral Presentation

The oral presentation is limited to 15 minutes, though it may be extended by questions from the committee. The oral presentation should provide a brief background of the subject of the proposed dissertation research, the significance of the work, the hypotheses to be tested, the research design, and the interpretation or analyses of predicted outcomes. Committee members should limit interruption of the student during the oral presentation except in cases to clarify specific points. Students are encouraged to rehearse the oral presentation in front of others; however, these rehearsals must exclude faculty participation other than the research mentor. Following the oral presentation, the committee members are permitted to ask brief questions regarding the presentation.

Oral Examination

The focus of the exam is the student's dissertation research project. The exam is not meant to test a broad range of general knowledge, except for topics that arise during the examination with some basis originating from the dissertation research project and application. After the student's presentation and any brief questions on points of clarification, each committee member is given ten minutes to ask any question they deem appropriate, without interruption by other committee members. At the end of each members ten-minute question period, all committee members are allowed to participate in related follow-up questions for five minutes on the topics covered. This format continues until each of the four exam committee members has had the opportunity for two, ten-minute periods in which to ask questions (i.e., twice around the table, in total 8 x 15 minutes). A five to ten-minute break between rounds may be called for by the student or any member of the committee. The second round of ten-minute question periods per committee member may be shortened at the discretion of each committee member.

Requirements to Pass the Oral Qualifying Exam

Following the completion of the oral examination, the student and advisor are excused from the room and the student's performance discussed by the committee. The student must have demonstrated a good grasp of the background of their project and a more detailed knowledge relevant to the research proposal. The ability to integrate different aspects of the first two years of their graduate training will also be assessed including coursework and lab work with data interpretation, hypothesis development, research design, and presentation of research. That is, the committee is asked to assess whether the student is poised to embark upon an independent research project in which the student will supply the majority of the planning, execution, and interpretation of the data and write up the results for publication. At least three of the four voting members of the examination committee must cast a passing vote in order for the student to pass the exam. **The student is informed of the results of the exam by email as soon as possible, but no later than 24 hours after completion of the exam.** In the case of a failed exam, the examining committee will send their decision of the failed exam to the BCDB Executive Committee and may propose a follow up. However, the Executive Committee will decide whether the appropriate response is to allow the student to re-take the exam or there is sufficient cause for termination from the Program. If a re-take is approved, it will be conducted by the BCDB Executive Committee and must be scheduled within 30 days of the original exam. Any student failing the re-examination will be recommended for dismissal from the PhD program but may, with the approval of the examination/dissertation committee and advisor, petition the Executive Committee to write a Master's Thesis.

2. Application for Admission to Candidacy, Doctor of Philosophy

This application should be made as soon as preliminary requirements are met, but students **must** reach candidacy by September 15 of their fourth year. The *Application for Admission to Candidacy* form is available on the LGS, GDBBS, and BCDB Program websites.

3. Dissertation and Final Oral Exam (Dissertation Defense)

During the period of research, the dissertation committee must meet with the student at least every six months up to and including year five of graduate study, and every four months in year six and beyond, to review the progress of the research and the preparation of the dissertation. Upon completion or anticipated completion of the dissertation research, the committee grants permission to the student to write. This “permission to write” is indicated by the check box in the committee meeting report. A maximum period of six months (four months for students in year six and above) is permitted between the time a student receives approval from their committee to write and the private examination (dissertation defense) takes place. Failure to meet this deadline will require another committee meeting at which a decision must be made as to whether to extend this deadline or take alternative actions resulting from failure to progress toward the degree. An *Application for Degree* form (available on the LGS and BCDB Program websites) must be completed and submitted in the semester in which the degree will be awarded. Petitions for exceptions must be made in writing by the student to the BCDB Program Director and DGS.

Dissertation Completion

Students are expected to complete their dissertations and apply for their degrees within six years. Once students begin the sixth year, it is important to review the LGS Handbook for current policies and procedures regarding the timeline for completion, including penalties for non-compliance.

The LGS and BCDB Program require the successful completion of three tasks before a degree will be granted: (1) submission of the written dissertation, (2) a closed-session oral examination (dissertation defense or private defense) and (3) an advertised oral dissertation defense (public defense). Each requires the unanimous approval of the student’s committee before proceeding to the next task. The BCDB program requires that these be completed in order, and each is described in more detail below.

a) Written dissertation. The general organization of the dissertation should be discussed and approved by the advisor and committee before it is written. The written dissertation must conform to LGS guidelines, but in general will consist of an original account of the background, approach, experiments, and conclusions of the dissertation research. Instructions for the format (e.g., font, margins, figures, etc.) of written dissertations can be found on the LGS website. The candidate will verify that the dissertation meets all graduate school requirements.

Published manuscripts may be bound as chapters in the dissertation, with approval of the committee, but original introductory and concluding chapters must be added. After the dissertation has been read and approved by the dissertation research advisor, the student must provide a finalized copy to all members of the committee. The written dissertation should be provided to the thesis committee at least two weeks before the scheduled oral dissertation defense (private defense). This length of time should give committee members enough time to read the dissertation thoroughly before the meeting.

An essential step towards completion of the PhD degree is the publication of a first-author paper in a **peer reviewed** scientific journal. Except in very rare circumstances, there will be **at least one** first author, primary, peer-reviewed paper authored by the student that will have been accepted for publication before the dissertation is written or the private defense is scheduled. Examples that **do not** meet the publication requirement include 1) submission of a first-author manuscript for review at a scientific journal 2) an online publication of a Reviewed Preprint (e.g. an eLife submission that does not meet Version of Record standards) and 3) online publication of a non-peer-reviewed manuscript using a pre-print service (e.g., bioRxiv).

In the event that the manuscript is in the submission phase, a clear plan for finalization of the manuscript for publication including how potential additional experiments that may need to be performed before the manuscript's acceptance will need to be discussed and **approved by the Director, DGS and the Dissertation Committee**. This information should be documented under the permission to defend box on the Thesis Committee form. The *Permission to Defend* form must be completed and signed by the advisor, Director and DGS. Any exceptions to proceeding to the thesis defense without an accepted first-author publication must be approved by the BCDB Executive Committee.

b) Oral dissertation defense (private defense). No sooner than two weeks after distribution of the dissertation, the private defense must be held. Recommendations for substantive changes to the dissertation by committee members should be provided to the student before this meeting and can be discussed at this meeting. Minor editing of the written dissertation may occur at later times between this meeting and the public defense. Unanimous approval of the written dissertation is required at the public defense. All members of the committee must approve and sign off on the written dissertation and passing of the private defense before the public defense seminar can be scheduled. It is the responsibility of the Research Mentor to ensure all minor updates have been made to the thesis.

At the oral dissertation defense, approval by the entire committee of both the written dissertation and oral defense are required. At no time during the oral defense should the advisor answer questions posed to the student. The student should consult the committee well before the defense date as to the details of the format to be used. Some committees may prefer a short (up to 15 minutes) presentation to help focus the examination, while others may feel the dissertation provides an adequate source of topics for the exam. The candidate must orally defend the dissertation and related areas to demonstrate an appropriate level of knowledge and expertise in research design and interpretation. After the exam, the student will be excused, and the student's performance will be discussed and evaluated by the committee. All committee members must confirm in writing that the student has successfully defended the dissertation. Alternatively, any perceived deficiencies must be documented in a specific plan for remediation at this meeting. With the unanimous approval of successful completion of the oral dissertation defense, the student shall schedule the public seminar to be held no sooner than two weeks after the dissertation defense. During this interval it is expected that all final changes to the written dissertation will be completed such that the final document is available to the committee before the public seminar.

c) Dissertation seminar (public defense). The public dissertation seminar is a formal scientific presentation and is part of the dissertation defense process. The atmosphere should be one that encourages critical questioning so that the student can demonstrate their expertise in an open forum. At no time should the student or members of the audience be led to believe that a pass is automatic. The dissertation research advisor will outline the format of the seminar and introduce the student and their research in a manner similar to other research seminars. The seminar consists of a 40-50-minute oral presentation by the candidate of a summary of the project, its significance, and future directions. After the student's presentation, questions from the audience are encouraged. **The committee and advisor will meet with the candidate immediately after the seminar to evaluate the seminar and provide feedback and final approval that all requirements for the PhD have been successfully completed.** While unanimous approval of the seminar is required by the committee, it is allowable for one (and only one) member of the committee to be absent from the public seminar, to facilitate scheduling and timely completion of required components of the degree. The student will schedule a separate meeting with that absent committee member to satisfy this requirement. Personal comments, congratulations and acknowledgements are more appropriate for the celebration following a successful completion of the dissertation seminar.

4. Report of Completion of Requirements for Doctoral Degree

Upon submission of a written dissertation, completion of a successful oral defense, and seminar, the student must complete and submit to the Division office the *Report of Completion of Requirements for Doctoral Degree* form (available on the LGS, GDBBS, and BCDB Program websites).

H. Master's Degree

The BCDB Program is a doctoral program and as such does not normally support work toward a terminal Master of Science (MS) degree. However, under certain circumstances, a student may request permission to terminate graduate study by completing the requirements for a master's degree. These circumstances include failure to pass the oral Qualifying Exam, poor progress during dissertation research, or simply a request on the part of the student to leave the program with an MS instead of a PhD. Based upon the student's performance, as assessed at various times during the degree program, the Executive Committee may also recommend such action.

To receive a terminal master's degree from a GDBBS program, a student must meet all LGS requirements for a terminal master's, which among other requirements include 30 hours of course work, at least 15 of which are not dissertation research, and the successful defense of a master's thesis. Details can be found in the LGS student handbook.

Students who declare their intention to seek a master's degree after passing the oral Qualifying Exam may then discontinue enrollment in didactic coursework and Teaching Assistant Training and Teaching Opportunity (TATTO) activities. However, to remain in standing as a full-time student, the student must continue to enroll for the required number of credit hours of thesis research. Instead of either BCDB699r (Advanced Graduate Research) or BCDB799r (Dissertation Research), Master's degree candidates must enroll in BCDB599r (Thesis Research). The student will have one year from the date of declaration to complete the requirements for the master's degree.

When a student declares an intention to seek the MS degree during the third year in residence (i.e., after successful completion of oral Qualifying Exam), the student must complete the requirements before August 1 of the third year in residence.

If a student has been in residence for three years or more, having met all requirements for the doctoral program up to that point, and then declares for the MS, the student will have three months to complete the MS requirements. Students who have been approved for a terminal MS degree and fail to meet the requirements within the specified time will not be eligible for receiving stipend support from any source, and will be asked to leave the Program.

Requirements for the MS degree include satisfactory completion of all required coursework, passing the oral Qualifying Exam, and completion and defense of a master's thesis. Students seeking an MS degree are not required to participate in the TATTO program. A thesis committee must be formed as described for the committees in the doctoral program. The thesis must minimally describe the significance of the research proposal, the hypotheses being tested, the experimental approach(es) undertaken, any data generated (with appropriate analyses, controls, limitations, etc.), conclusions drawn, and a proposal for future work. The thesis must represent a scholarly body of work indicating a rigorously applied research effort. Both the written thesis AND its oral defense must be passed by the thesis committee before a degree is awarded. The decision by the thesis committee to award the degree must be unanimous. A Master's thesis presentation may be closed to the

public, i.e., attended by only the thesis committee members. The BCDB Executive Committee will be notified when the defense is scheduled.

An Application for Degree must be completed and submitted by the deadline for the semester in which the student expects the degree to be awarded. Upon completion of all of the requirements, the student must complete a Report of Completion of Requirements for master's degree, which the members of the thesis committee must sign indicating their PASS or FAIL vote. This form must also be signed by the Program Director or DGS. These forms are available on the LGS and GDBBS web sites.

I. Changing Advisor

While it is expected that most students will continue their research work with their faculty advisors until they complete their PhD degrees, this relationship may be ended at any time and by either party (student or faculty). Should this occur, the student and the advisor should contact the DGS immediately. The DGS will then serve as an interim advisor during a transition period while the student identifies a new advisor. The length of the transition period should be as short as possible (~4 weeks), consistent with the ability of the student to make a careful choice of a new advisor but must not exceed sixty days.

Students have a wide choice of potential research advisors from within the BCDB Program and the wider community of faculty in the GDBBS. It is the primary responsibility of each student to have an advisor, as the advisor and their lab resources are essential requirements for the student to make scientific progress.

Advisor Leaving Emory. If an advisor decides to leave Emory, a student may have to make decisions regarding the completion of the PhD degree. For example, the student might have the option of moving with the advisor while continuing to be enrolled at Emory; or of staying at Emory and working with a faculty collaborator. In every case, it is imperative for the student to notify the Program Director and/or DGS and the Program Administrator, who will assure that GDBBS is notified. GDBBS must be involved, in order to ensure that the student's resources, such as funding, health insurance, and academic support are uninterrupted.

Official LGS policy regarding faculty who relocate to another institution may be found here in the LGS Handbook

J. Professional Conduct

Behavioral Expectations for Graduate Professional Education

The BCDB curriculum is prepared and delivered by subject matter experts to a select group of professional students. The faculty and students share responsibility for maintaining a professional environment both in the classroom and in all program and laboratory situations. In the classroom, faculty responsibilities include beginning and ending class on time, presenting material that is relevant and current, responding to pertinent questions, and leading and moderating discussions related to the content of the class. Student responsibilities include arriving on time, active participation in class discussions, attention to presentations or discussions led by other students or faculty, raising pertinent questions, and maintaining a disciplined environment to maximize the learning experience for all.

To maintain a professional classroom environment students and faculty will be: (1) *Respectful* to those presenting or discussing the material and to those trying to listen to and understand the material, (2) *Quiet*, outside of participation in active discussion because *extraneous* talking is disruptive and distracting and will not be permitted (electronic devices will be silenced, cell phones will not ring or be answered during class, and laptop computer use will be confined to taking notes and other class-related activities at the direction of the instructor), (3) *Punctual* (a) Faculty will start on time, (b) students must arrive before class and be ready to

begin at the scheduled time; students entering late and or exiting the classroom after the class starts should make every effort to minimize disruption (c) faculty will finish at the scheduled time.

Recommendations for Optimal Classroom Learning and Professional Behavior

Faculty members recognize that methods of learning vary and are unique to individuals. Discussion and active listening, note-taking and asking appropriate questions during classroom activities maximize the learning experience. Because electronic communication (texting, e-mailing, twitter, Facebook, etc.) during classes interferes with the learning of nearby students and may be disruptive to the classroom as a whole, *all participants will refrain from these practices and focus on the classroom content.*

Faculty and students have the shared responsibility to maintain a positive learning environment for all students. Faculty members have the right to reprimand politely and/or excuse anyone disrupting the classroom experience, in order to maintain an optimal learning environment for students. A student(s) and/or their class representative(s) are encouraged to first register any concerns or complaints to the individual faculty member to resolve the issue at the local level and in a timely manner. If this does not lead to appropriate resolution, then the student(s) may contact the BCDB program DGS and/or Program Director or GDBBS Director to discuss and resolve any issue relevant to maintenance of a professional environment.

Students should expect the faculty to establish and maintain a classroom environment conducive to effective learning, including modeling appropriate professional behavior and holding themselves and students accountable. The faculty appreciates and expects students' understanding, commitment, cooperation, and contributions to maintaining an appropriate and enriching teaching and learning environment. Students share at least some of these responsibilities and are encouraged to promote professional conduct at all times.

The research laboratory, seminars, and other program or departmental activities should also be viewed as professional events and the same rules of conduct should be observed. The use of cell phones and music in the laboratory should be discussed with the PI but in general should be kept to a minimum and only when not disruptive to others.

PART V. OTHER ACTIVITIES

A. Teaching Experience

The LGS requires each student to serve as a Teaching Assistant (TA) (course designation: TATT605) for at least one semester during their graduate career, usually during the second year. The primary purpose of the teaching experience is to aid students in strengthening organization and communication skills in addition to acquiring teaching skills. Prior to beginning the teaching experience, students are required to participate in the Teaching Assistant Training and Teaching Opportunity (TATTO) course (TATT600).

Teaching opportunities for GDBBS students vary by the type of course, amount of responsibility, and time commitment associated with the teaching assignment. Teaching experiences range from overseeing one component of a laboratory course meeting once each week to co-teaching an undergraduate class with one or two professors. Students are encouraged to contact the instructor of record for a course they are interested in TAing and also should seek guidance from their Dissertation Advisor. Students should consider their time commitments during the semester they will be teaching as well as their professional goals when choosing which courses to TA. For students wishing to gain more pedagogical experience, additional teaching opportunities may be available beyond the one-semester requirement, some of which may provide additional academic credit or a small additional stipend. Any student seeking additional TA experience should consult with their Dissertation Advisor and obtain their approval prior to making a commitment to teach.

Additional guidelines and information about TATTO can be found on the GDBBS webpage and on the LGS website.

B. Ethics Training and Professionalization Workshops

All students are required to participate in the Jones Program in Ethics (JPE) administered by the LGS. There are three elements to the program. Completion of all elements (1) and (2) are required for candidacy, and (3) is required for graduation.

1. Students will take a 6-hour core course (JPE600) in scholarly integrity, supported by the LGS in collaboration with the Emory Center for Ethics. This course has no associated credit hours but must be completed in order to fulfill graduation requirements. Incoming students beginning their first year in their graduate studies will register for JPE600 with the exception of incoming international students, who will take JPE600 in their second year. Students should discuss the appropriate time to register for the course with the Program Administrator. Participation in this course will be recorded on the student's transcript.
2. Students will complete a minimum of 6 hours of training in program-based ethics material. The disposition of this time is at the Program's discretion. This training may take place within existing courses, such as methodology or professionalization courses. It may also take the form of faculty-led workshops or journal clubs. The intention of this part of the program is to promote student discussions with their own program faculty, and to integrate explicit attention to ethics into the regular course of graduate education. Separate registration is not required for this element. Students will be directed by their programs towards any requirements above and beyond regular course study. Student participation in this element of JPE will be monitored by the student's program. The Program will indicate on the candidacy form that students have fulfilled the minimum of 6 hours of program-based material.
3. Students will also participate in a minimum of 4 public topical workshops, training sessions, or lectures, designated by the LGS as eligible for ethics training credit. These lectures and workshops will be sponsored by the LGS and the Emory Center for Ethics and will include any other relevant occasional lectures or workshops. Students will bring their ID cards to the workshops to track attendance. Participation will be recorded on the student's transcript as sections of JPE610.

In addition to the JPE program, the program Executive Committee is specifically empowered to make attendance at other events a requirement for all or a subset of students. Examples include:

1. All first- and second-year students are required to attend and participate in all sessions of BCDB Ethics workshops. Students in years three and above are required to attend at least one per semester.
2. All first- and second-year students are required to attend all BCDB Professionalization Workshops. Students in years three and above are required to attend at least one per semester.
3. All incoming/first-year students are required to attend the BCDB Program Retreat.

C. Seminars, Journal Clubs, and Symposia

Seminars hosted by a variety of programs and departments are given by invited speakers throughout the academic year. Students are encouraged to participate in the scientific discussions and, when possible, arrangements are made for students to meet with guest speakers. In addition to the numerous seminars, other opportunities to participate in scientific discussions include journal clubs, data clubs, and yearly student-

organized symposia. Attendance and participation at any BCDB symposium are mandatory for all training grant-supported students and strongly encouraged for all BCDB students. The BCDB training grant also supports a journal club; attendance is encouraged for all BCDB students and faculty and is required for first-year students. These activities are not credited courses, but a well-rounded graduate education will typically involve routine attendance at these events, which should be seen as an opportunity to learn about work in other fields.

D. Regional and National Scientific Meetings

Students are encouraged to present their research at regional and national scientific meetings. Some travel money (Professional Development Support (PDS)) is available for students making presentations at scientific conferences. This includes partial financial support for domestic or international travel each academic year (September 1 – August 31). The amount of support is determined by the LGS and applications for PDS support are made directly to the LGS. Travel funds from the LGS are limited in amount per year, and in total amount per student and so are unlikely to cover all costs. Students are encouraged to apply for travel awards from meeting organizers and other outside sources, with consultation from their advisor.

E. Time Expectations for Graduate Students

Graduate study is a full-time endeavor. Students receive a stipend and are expected to be actively attending classes or conducting research and working toward the degree year-round, including the period between terms. The time between terms (along with Fall and Spring Break) is considered an active part of the training period and is not considered time-off or a holiday. Students will continue to receive stipends during approved time-off and official University holidays. Students on training grants and fellowships may receive leave for the same approved time-off and holidays available to individuals in comparable training positions at Emory.

Unauthorized absences may result in an unsatisfactory research grade for the term (i.e., in fall, spring, or summer), and could thereby lead to probation. Students who wish to take time-off must discuss this with their DGS (if in the first year) or Dissertation Advisor (after advisor assignment) and receive approval at least two weeks before the planned absence. Students who wish to take additional periods of time off must get approval from their Program's DGS and their Dissertation Advisor. In any year of training, if a student wishes to take time off that totals three weeks or more, per year, they must get approval from the BCDB Program Director at least one month before the planned absence.

F. Parental Leave

LGS Parental Accommodation Policy is for students with substantial parenting responsibility as a result of childbirth, care of newborn, or a newly adopted child. This policy guarantees PhD students a minimal level of accommodation during the transition of parenthood. For more information on the policy, eligibility requirements, and application procedure, please see the LGS Handbook.

G. Leaves of Absence

Requests for an unpaid leave of absence for any student must adhere to LGS policy (LGS Handbook), must be approved by the BCDB Executive Committee, and then forwarded to the GDBBS office for the Director's approval. The Dean of the Graduate School must give the final approval for any leave. For more information, please see the LGS Handbook.

H. Outside Employment

Doctoral education demands full-time effort. Students receive stipends and tuition fellowships in order to allow them to commit the necessary time to their studies and research. Unrelated employment serves as a distraction and interferes with the ability of students to meet degree requirements in a timely manner. For these reasons, employment not directly related to students' degree requirements and professional development goals is strongly discouraged.

If additional income is absolutely necessary while a student is enrolled in the degree program, they must receive **prior** approval from their advisor and the Program Director/Director of Graduate Studies. The Program Director/Director of Graduate Studies has the prerogative to bring the request to the program's Executive Committee for discussion. Requests to work more than 10 hours a week require written approval from the GDBBS Director and then the Dean of the LGS. Students who wish to request permission to seek employment should allow 30 days for review. In the rare cases in which approval is granted, students must ensure that employment does not interfere with research performance, progress toward degree, or any program requirements, including seminar attendance.

PART VI. BCDB GUIDELINES FOR THE MD/PHD DEGREE PROGRAM

A. Participation in BCDB Program

Medical Scientist Training Program (MSTP) students choose a graduate program and dissertation research advisor under the guidelines of the MSTP Program. Unless otherwise specified, the MSTP student is expected to fulfill all the requirements for the degree and participate fully in the BCDB Program. MSTP students are subject to the rules outlined by the BCDB Handbook as outlined above.

Since MSTP students enter the PhD phase of their training after 3 years of medical school, the course of study for MSTP students for the PhD portion of their training differs from that of PhD-only students. The PhD training is more condensed than PhD-only training and must be completed in a Spring semester so that the student can re-enter the M4 year of MED training. It is important that new MSTP students meet with the DGS to tailor their training and avoid any possible confusion.

B. Coursework Requirements and Timing of Qualifying Exam

Laboratory Rotations. MSTP students typically begin Laboratory Rotations immediately after taking the USMLE Step 2 (CS/CK) exam in March of the M3 academic year. If the rotation begins during spring or early summer (while in MED enrollment), the rotation grade will be pass/fail (MD/PhD Program course). If the majority of the rotation takes place in fall (while in LGS enrollment), the rotation will be graded (BCDB course). Students document each rotation via MD/PhD specific forms and BCDB specific forms.

Two Laboratory Rotations are required, a third Rotation is allowed as needed. Laboratory Rotations should last 4 - 8 weeks and are administered under rules as outlined by the MSTP. The Laboratory choices are typically made in consultation with the BCDB Director and DGS. Laboratory Rotations should be continuous, i.e., no excessive time gaps should occur between the USMLE Step exam and the first rotation, or between rotations. Students should be ready to commit to a laboratory by the start of the Fall semester of G1 enrollment if possible; if not, rotations can continue into the Fall semester and the student should enroll in BCDB597r. There is no requirement for MSTP students to enroll in BCDB597r once they have chosen a dissertation research laboratory. Instead, MSTP students who have chosen a dissertation research laboratory should enroll in Advanced Graduate research (BCDB699).

First year coursework. MSTP students will enroll in first year coursework including the Fall and Spring Foundations of BCDB courses (BCDB501, BCDB502), and Introductory Graduate Seminar (BCDB570R).

IBS522r and Qualifying Exam. MSTP students are required to take the Hypothesis Design and Scientific Writing class (IBS522r) once they have found a dissertation research laboratory. MSTP students may take IBS522r in either Fall semester of year G1, Spring semester of year G1 or Fall semester of year G2. The Qualifying Oral Exam may be taken at any time after completing IBS522r, however, the exam must be completed before March 1 in the Spring semester of the student's second full year of their PhD training.

Requests for exceptions to these course requirements must be submitted in writing to the Program Director and DGS of the BCDB Program and will be evaluated on a case by case basis.

C. Teaching Requirement

The teaching requirement of the Graduate School is to be fulfilled by the end of the MSTP student's G2 year. Exceptions to meet the teaching requirement beyond the G2 year will be granted on a case-by-case basis.

D. Length of Time to Degree

MSTP guidelines encourage the completion of the PhD portion of the degree in three and a half years so that they can resume their MD Curriculum for the M4 year in August. While every effort will be made to meet this guideline, it should be recognized that the student is expected to complete a dissertation based upon original research, and that this dissertation must meet both MSTP and BCDB standards. Expectations regarding authorship on publications or other standards for the PhD degree must meet or exceed those set by both programs. Consequently, it may be necessary to extend the PhD degree program. If so, this will be done in consultation with the DGS and the MSTP Program.

PART VII: APPEALS AND GRIEVANCE POLICY

Appeals

Students who believe that an assigned grade is incorrect should first discuss the assigned grade with the course instructor. After discussion, students who do not think the problem has been resolved in this manner should address their concern to the Program Director or DGS, who will seek to resolve the matter with the instructor and the student. Consistent with principles of academic freedom, responsibility for evaluation of a student's course performance rests with the course instructor. Use of this procedure for resolution of a grade dispute will not prejudice in any way a student's rights under their Program, GDBBS, LGS, or University student grievance procedures.

Grievance Policy

Students who have a potential grievance related to some aspect of their Program may discuss it with their DGS, Program Administrator, the GDBBS Assistant Director of Student Affairs and/or the LGS Assistant Dean of Student Affairs for consultation before taking action, if desired. If the student decides they want to file an official grievance, they should notify their Program Director and/or DGS by providing a letter addressed to the Director and/or DGS that describes the grievance and relevant details. If the grievance is related to an academic component or milestone, the student should submit their grievance letter within 30 days of the date the outcome was conveyed (i.e. notice of qualifying exam result or posting of grade to transcript). The Director and/or DGS may try, if possible and deemed appropriate, to resolve the grievance informally in conversation with the

student and relevant parties. If this is not successful or not appropriate, the Director and/or DGS will inform the Division Director and Assistant Director of Student Affairs for GDBBS that the student is moving forward with a formal grievance process. Next, the Director and/or DGS will convene a meeting of the Program Executive Committee, which will review the grievance and provide an appropriate response. The Director and/or DGS may gather additional relevant information and will provide all information and the student's grievance letter to the Committee. The Committee will meet face-to-face to discuss the grievance and review relevant materials. A majority of the Executive Committee must be present and only those present may vote on the outcome. Votes will be taken via electronic ballot to ensure confidentiality. In all cases grievance decisions are confidential and should not be shared outside of the grievance meeting. The Director and/or DGS will notify the Division Director and Assistant Director of Student Affairs for GDBBS of the outcome. Finally, the Director and/or DGS will provide a letter to the student via email notifying them of the outcome and options for next steps.

If the grievance concerns the Director and/or DGS, the student should review the GDBBS Grievance Policy found in the GDBBS Handbook for guidance.

If the grievance concerns the GDBBS Director, the student should bypass the Program and Division and follow the LGS Grievance Procedure found in the LGS Handbook under Honor, Conduct, and Grievance, Section 4. Finally, if the student does not feel their situation is resolved at the conclusion of the Program Grievance process, they can refer to the GDBBS Grievance policy for guidance on additional options for seeking resolution.