

GSBS Faculty Handbook 2016-2018

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Purpose of this document

This document summarizes the many ways by which Graduate School of Biomedical Sciences faculty can serve the school in its mission to train doctoral students in the biomedical sciences. The document also lists the responsibilities attendant to membership in the Graduate School of Biomedical Sciences faculty.

GSBS Mission

The Graduate School of Biomedical Sciences (GSBS) at the University of Massachusetts Medical School is a faculty-initiated and faculty-organized school with a mission to:

- Engage in leading-edge research that advances our understanding of biology in health and disease by
 - engaging in fundamental biological discovery
 - translating discovery into treatments that transform the practice of medicine;
 - determining the effectiveness and outcomes of primary, secondary and tertiary health interventions on patients and populations
- train the next generation of scientific leaders, teachers and advocates

GSBS Learning Objectives

To accomplish this mission, the GSBS has integrated the following learning objectives into its curriculum and research training programs.

- *Scientific Knowledge and Critical Thinking:* The GSBS graduate is conversant in a common set of biological/biomedical principles and
 - Demonstrates substantial and up to date core knowledge of broad areas in basic biomedical, translational, or clinical research applicable to their area of study.
 - Demonstrates the ability to accurately and critically evaluate their own scientific work and the work of others.
- *Research Skills and Problem Solving Ability:* The GSBS graduate can identify important problems and knows how to address them and
 - Demonstrates advanced understanding of a range of technical and conceptual approaches used in biomedical research.
 - Can design, carry out, and interpret research projects that generate new knowledge that advances the biomedical sciences and human health.
- *Specific Expertise:* The GSBS graduate is competitive in their chosen field, interest area, specialty or discipline and
 - Can articulate the significance of their own work to their chosen research area in both historical and forward-looking contexts.
 - Demonstrates mastery of a range of technical and conceptual approaches used in their selected research area.
- *Communication:* The GSBS graduate has the ability to successfully engage in written and oral discourse with peer and lay audiences and
 - Demonstrates the oral, written and media communication skills required to be effective communicators, teachers and mentors of peers, future scientists and scientifically literate citizens
- *Ethics and Advocacy:* The GSBS graduate applies the highest standards of ethics to
 - Their research (data management, research subjects, stewardship of research funds)
 - Their interactions with colleagues and the public.
 - And advocates for the role of science in medicine and society
- *Career Development:*
 - The GSBS graduate has the ability to choose from a range of career options and
 - Can articulate an appropriate set of desired potential career paths, and is aware of the preparation and initiative required to pursue these paths

Responsibilities and Roles of the GSBS Office

Service to the Mission

The GSBS staff and faculty leadership are committed to helping our students and faculty fulfill the GSBS mission by facilitating the GSBS Learning Objectives

Service to Graduate Students

Curriculum

The GSBS staff and faculty leadership work with faculty and students to design, implement, evaluate and refine a curriculum, which prepares all students to fulfill our learning objectives

Tracking student research progress and professional skills development

The GSBS staff and faculty leadership work with faculty and students to insure that all students in good standing attain their research and professional skills objectives and satisfy GSBS learning objectives in an efficient and timely manner

Service to Postdoctoral Scholars

The mission of the Office of Postdoctoral Scholars (OPS) is to promote, support, and enhance postdoctoral training at UMMS. The OPS works with faculty and postdoctoral scholars to develop and/or strengthen programs of interest, which include professional development, education in the responsible conduct of research, optimization of training environments, and exchange of research ideas.

Career Planning & Development

The mission of the Center for Biomedical Career Development is to prepare doctoral and postdoctoral scholars for success in careers that promote the scientific enterprise in the Commonwealth of Massachusetts and beyond.

Service to GSBS Faculty

The GSBS staff and faculty leadership are committed to

- Assisting the GSBS faculty in their roles as teachers, research advisors and mentors.
- Seeking and acting on advice from the faculty on the recruitment and training of our students.

GSBS Faculty Appointments

All faculty who wish to formally teach graduate students in the classroom or research settings must be members of the GSBS faculty.

Faculty Responsibilities

In order to maintain Graduate Faculty membership, faculty members must assume one or more of the following responsibilities:

- Serve as course coordinator or instructor in core and/or advanced-level graduate courses.
- Participate in the training of graduate students by:
 - Sponsoring laboratory rotations
 - Serving as a Thesis Advisor
 - Serving on Qualifying Exam Committees as a member or chair
 - Serving on Research Advisory Committees as a member or chair
 - Serving on Dissertation Committees as a member or chair
- Contribute to the administration of the GSBS by:
 - Serving on the GSBS Assembly
 - Serving on GSBS Assembly standing or ad hoc committees
 - Serving on committees supporting GSBS career and professional development
 - Serving as a GSBS Program Director or Student Advisor
 - Serving on the GSBS Admissions Committees
 - Meeting with and/or interviewing applicants

Requirements for Membership (see Table 1).

To become a Member of the GSBS faculty, the individual must:

- Hold a PhD, MD or equivalent degree from an accredited institution
- Hold a faculty appointment within an academic department of the University of Massachusetts Medical School or Graduate School of Nursing at the level of Assistant Professor or above.
- Show evidence of active research and/or scholarly activity during the past five years with publication(s) in refereed journals

To be reappointed as a Member of the GSBS Faculty at each 5-year periodic review, the individual must:

- Fulfill all requirements for initial appointment to the GSBS faculty
- Have demonstrated competency in GSBS teaching in classroom and/or research settings and/or have contributed materially to GSBS administration

Contributing Members

In some cases, a UMMS faculty member may be exclusively interested in serving the training mission of the GSBS and one or more of its affiliate Programs of doctoral study. Such faculty may not take students in rotation or thesis research. Neither may they serve on Qualifying Examination or Dissertation Examination Committees. However, they may offer unique expertise in the classroom, in curriculum design, on advisory committees etc. These GSBS faculty are called Contributing Faculty and they make essential contributions to the GSBS mission.

Affiliate Members

In exceptional cases, individuals at external institutions who are not eligible to be members but who can contribute to Programs of the Graduate School of Biomedical Sciences may be appointed as *Affiliate* Members by the Dean upon recommendation of the GSBS Program Director and subject to the approval of the GSBS Assembly. Such appointments will require the approval of the *Affiliate* Member's departmental chair or supervisor. All such appointments are for 3 years only with reappointment subject to the same requirements for the initial appointment and review by the GSBS Dean.

Table 1 Roles available to GSBS Faculty			
GSBS Role	Faculty type		
	*Faculty	Contributing Faculty	Affiliate Faculty
Classroom Teacher	YES	YES	YES
Qualifying Examination Committee Member	YES	NO	NO
General Examiner	YES	NO	NO
Thesis Research Advisory Committee Member	YES	YES	YES
Thesis Research Advisory Committee Chair	YES	NO	NO
Dissertation Examination Committee Member	YES	NO	NO
Rotation Advisor	YES	NO	NO
Co-Rotation Advisor	YES	NO	YES
Thesis Advisor ^b	YES	NO	NO
Co-Thesis Advisor	YES	NO	YES
GSBS Assembly member	YES	NO	NO
GSBS Assembly subcommittee member	YES	At the discretion of the Dean ^c	NO
Faculty Eligibility	Full Professor	Full Professor	Full Professor
	Assoc Professor	Assoc Professor	Assoc Professor
	Assist Professor	Assist Professor	Assist Professor
		Instructor	or equivalent

^aMust show evidence of ongoing independent research at the time of application

^bMust have funds and Departmental Chair approval to support the doctoral candidate

^cAt the discretion of the Dean indicates contributions may be made in these area only with Prior approval of the Program Director and Dean.

How do I apply?

Selecting a Program

The GSBS comprises 11 doctoral programs and 1 master's level program at this time. Faculty membership in any given program is determined by faculty research interests and program educational mission. A faculty member may seek membership in multiple programs but must be approved by the program's faculty and program director(s) before seeking approval by GSBS Assembly. For program details, please visit: <http://www.umassmed.edu/gpbs/prospective-students/programs-of-study/>

Application process

Appointment to GSBS faculty status

UMMS faculty may be asked by GSBS faculty or may petition (with GSBS faculty support and approval by a relevant GSBS Program Director) to become GSBS faculty.

Faculty status allows a faculty member to serve as:

1. Rotation Advisor or co-advisor
2. Thesis Advisor or co-advisor
3. Qualifying Examination Committee member or chair or General Examiner
4. Thesis Research Advisory Committee member or chair
5. Dissertation Examination Committee member or chair
6. Classroom instructor
7. GSBS Assembly Committee or subcommittee member

(see Table 1) subject to approval by the appropriate GSBS Program Director and by the Dean. Appointment to GSBS Faculty status requires evidence of ongoing independent research at the time of application. Service as a Thesis Advisor requires the availability and commitment of sufficient faculty research funds and/or departmental funds to support the student in doctoral research. The minimum academic rank of a Thesis Advisor is Assistant Professor.

Procedure:

Individuals seeking GSBS faculty status may do so by seeking appointment as faculty to the GSBS and one of its affiliate programs of doctoral study.

The candidate will seek faculty status in the GSBS by completing a GSBS faculty application with appropriate justification and sponsorship (http://www.umassmed.edu/PageFiles/54976/form_application_gsbs_faculty.doc).

The completed application will be reviewed by GSBS Assembly at the first available opportunity.

The successful applicant will be subject to review at 5 year intervals by GSBS Assembly via the Faculty Review Committee.

Appointment to GSBS Contributing Faculty status

UMMS faculty may be asked by GSBS faculty or may petition (with GSBS faculty support) to become Contributing GSBS faculty.

Contributing Faculty status allows a faculty member to serve as:

1. Thesis Research Advisory Committee member
2. Classroom instructor
3. GSBS Assembly Committee or subcommittee member

(see Table 1) subject to approval by the appropriate GSBS Program Director and by the GSBS Dean. GSBS Contributing Faculty status does not permit a faculty member to serve as

Research Rotation Mentor, Thesis Advisor or on Qualifying Examination Committees, Dissertation Examination Committees or GSBS Assembly.

Procedure:

Individuals seeking GSBS Contributing Faculty status may do so by seeking appointment as contributing faculty to the GSBS and one of its affiliate programs of doctoral study.

The candidate will seek Contributing Faculty status in the GSBS by completing a GSBS faculty application with appropriate justification and sponsorship (http://www.umassmed.edu/PageFiles/54976/form_application_gsbs_faculty.doc).

The completed application will be reviewed by GSBS Assembly at the first available opportunity.

Choosing this pathway normally means that the candidate is exclusively interested in serving the training mission of the GSBS and one or more of its affiliate programs of doctoral study.

The successful candidate will be subject to annual review by their GSBS program director and to 5-year review by GSBS Assembly via the Faculty Review Committee.

Appointment to GSBS *Affiliate* Faculty status

Research scientists employed by academic institutions other than UMMS or scientists holding a doctoral degree and employed in industry may be asked by GSBS faculty or may petition (with GSBS faculty support) to become affiliate GSBS faculty.

Affiliate Faculty status allows a faculty member to serve as:

1. Rotation co-advisor
2. Thesis co-advisor
3. Thesis Research Advisory Committee member
4. Classroom instructor

(see Table 1) subject to approval by the appropriate GSBS Program Director and by the Dean.

Procedure:

Individuals seeking GSBS Affiliate Faculty status may do so via one of two pathways:

- I. By first seeking Affiliate Faculty status in the UMMS Graduate School of Nursing or in a department of the UMMS School of Medicine.
 - a. Procedures for seeking such an appointment are outlined in <http://www.umassmed.edu/ofa/academic/appointments/ranks-pathways-and-track/affiliate/>
 - b. The affiliate GSN or SOM faculty member may then seek affiliate faculty status in the GSBS by completing a GSBS faculty application with appropriate justification and sponsorship (http://www.umassmed.edu/PageFiles/54976/form_application_gsbs_faculty.doc).
 - c. The completed application will be reviewed by GSBS Assembly at the first available opportunity.
 - d. Choosing this pathway normally requires an annual commitment of service to the GSN or SoM department of appointment as discussed with the GSN Dean or SoM departmental chair and approved by their faculty.
 - e. The successful candidate will be subject to annual review by their department of appointment, to annual review by their GSBS program director and to 5-year review by GSBS Assembly via the Faculty Review Committee.
- II. By seeking direct appointment as Affiliate Faculty to the GSBS and one of its component Programs of doctoral study.

- a. The candidate will seek Affiliate Faculty status in the GSBS by completing a GSBS faculty application with appropriate justification and sponsorship (http://www.umassmed.edu/PageFiles/54976/form_application_gsbs_faculty.doc).
- b. The completed application will be reviewed by GSBS Assembly at the first available opportunity.
- c. Choosing this pathway normally means that the candidate is exclusively interested in contributing to the training mission of the GSBS and one or more of its affiliate programs of doctoral study. Such members are not committing to serve the SOM or the GSN
- d. The successful candidate will be subject to annual review by their GSBS program director and to 5-year review by GSBS Assembly via the Faculty Review Committee.
- e. GSBS Affiliate Faculty will have access to the UMMS library catalog and may receive UMMS email privileges.

GSBS Program Association Inactivation

The Graduate Program Director will notify the GSBS via an email to the GSBS Assembly administrative assistant (annette.stratton@umassmed.edu) when a faculty ceases to be associated with their program. If a faculty member is no longer a member of any GSBS Programs, their GSBS faculty membership will be inactivated unless a request is made to the dean for the faculty to retain affiliate or contributing membership. The GSBS will notify in writing the faculty and the relevant Graduate Program(s) Directors. If, after 30 days, the faculty member does not have a GSBS Program association, the GSBS Program association will be terminated. The UMMS Office of Faculty Administration will be informed of all changes in Program Associations.

Resignations and/or Retirement

A faculty member who resigns or retires from the University will be inactivated as a GSBS Faculty member effective on the date of resignation or retirement as indicated in the faculty's record in the UMMS Faculty Affairs office. A faculty member can remain active upon request to the GSBS Dean seeking Affiliate or Contributing membership status.

If the faculty is a Thesis Advisor for any GSBS students, their GSBS faculty membership will be maintained until the student graduates or selects another Thesis Advisor at which time, the status of such faculty will be inactivated.

If the faculty is serving on a student's active QEC, TRAC or DEC, the student's Program Director, in consultation with the student's Thesis Advisor and the student, will either nominate a replacement committee member for approval by the Dean or petition the Dean to allow the faculty to remain on the committee. If the faculty will remain on the committee, their GSBS faculty membership will be retained until the committee is no longer active. This faculty cannot serve as the external member to the DEC. The faculty will be unable to serve on any newly formed committees.

The Graduate School will notify in writing the faculty, the relevant affiliated Program(s) Directors and the UMMS Office of Faculty Affairs when the GSBS faculty status is inactivated.

Faculty Administration

The GSBS will notify the UMMS Faculty Administration when a faculty becomes a Member of the GSBS and when a faculty changes their status as a GSBS faculty member. The UMMS Office of Faculty Administration will also be notified of the Faculty's GSBS Program affiliations.

GSBS Faculty roles in education

Teaching opportunities

Core Curriculum

Purpose and Process

The core curricula of the GSBS are designed to develop the foundational knowledge, analytical skills and critical thinking skills that are necessary for student success in the research setting.

Core curricula are taken throughout year 1 of graduate study and comprise classroom, small group discussion, problem solving and communication skills sessions.

Any student receiving a grade of C or lower in any class will be reviewed by the Academic Advancement Committee which may recommend remediation or dismissal. Alternative remediation plans are at the discretion of the course director.

No first-year student may be waived from core curricula classes.

MD/PhD students are exempt from elements of GSBS Core Curricula unless additional course work is required by their selected research track or by their Thesis Advisor. Additional curriculum required by the Thesis Advisor or research track, when taken for credit, must be completed with a passing grade by the end of the Spring Semester of the second year of graduate study.

The Thesis Advisor must advise the MD/PhD student of any curricular requirements in addition to those specified by their Program and the MD/PhD student must agree to these requirements before finalizing their selection of thesis advisor. MD/PhD students are required to complete all aspects of their curriculum in accordance with GSBS Standards. If a thesis advisor requires an MD/PhD student to enroll in additional courses, the thesis advisor is responsible for the student's stipend, insurance and fees while the student is completing this requirement.

Additional elements of core curricula (Professionalism and Research Conduct, Writing workshops, Career Pathway workshops, Use of Animal and/or Human Subjects etc.) are scheduled at developmentally-appropriate times during graduate study or, in some cases, are available on-line for self-directed study. Each program lists its curricular and research requirements for completion in the GSBS Catalog and on the GSBS web site.

Faculty roles

Faculty may serve as course directors, course designers, classroom instructors and/or small group leaders. Please contact the GSBS office for a list of current core courses and their directors.

Elective Courses

Purpose and Process

Students must select elective courses that are relevant to their research interests and program requirements. Elective courses are designed to lead the student beyond the foundational material of core curricula into the more specialized material characterizing one or more major foci of the program. Courses may be introductory in nature or may present the student with leading edge developments in the field.

Elective courses introduce graduate students to leading edge content, methodologies and hypotheses in a field of study through lectures, paper presentations, written and oral critiques of scientific articles, grant writing assignments and the use of research methodologies. These topics build on the foundations established by Core Curricula. Electives meet for two or more hours each week for one full semester.

Electives are graded using a letter grade system, provide substantial information content and develop research-relevant student capabilities. These courses provide instruction or training in essential skills such as critical assessment of the literature, integration of knowledge in a specific field, experimental design and interpretation, or hypothesis development and testing. The method of evaluation is explicitly stated in the courses Grading Policy document and assesses student integration of course contents by one or more written exams, or one or more graded, focused writing assignments, proposals or projects. Attendance and participation alone are not adequate for grade assignment

Requirements

1. To meet the GSBS minimum requirement for specialization, all students are required to take two graded electives of 3 credits or more plus one graded elective of two credits or more.
2. All students must have successfully completed (or be currently enrolled and in good standing in) an elective course prior to taking their qualifying exam.
3. Students enrolled in the MD/PhD Program are not required to take any Electives unless so directed by their Thesis Advisor or TRAC.

While all PhD students must take elective courses, not all GSBS Programs may offer their own electives.

First year students admitted through the Umbrella Admissions Program (UAP) in fall 2016 and beyond are required to take two Electives in the spring semester. First year students admitted through the Umbrella Admissions Program (UAP) in fall 2015 and earlier are required to take one Elective in the spring semester. All second year students must choose advanced coursework in accordance with GSBS and Program requirements.

Additional Requirements for MD/PhD students

MD/PhD students must fulfill all of the requirements for both SOM and Graduate School to be eligible for the award of the respective MD and PhD degrees. The MD/PhD Program offers two research tracks; basic biomedical science (BBS) and clinical research (CPHR). The specific curricular requirements of each track are available in the GSBS Catalog and on the program's GSBS web site.

Faculty roles

Faculty may serve as course directors, course designers and/or classroom instructors/facilitators. Please contact either the GSBS office or your Program Director(s) for a list of current courses and course directors.

Workshops, Journal Clubs and other

Purpose and process

Individual programs often require students to attend seminars, which offer students the opportunity to see leading edge research presented by senior research leaders in the field. Programs may require students to take a Journal Club course. Individual Programs may have additional requirements above and beyond Electives. These requirements are stated and described on the Program Home Page.

- Journal Clubs (Research Discussions): Courses take a journal club format in which students read and present a series of selected research articles central to a specific field.
- Seminars: Students attend and contribute to Program-specific research seminars and/or are required to give a seminar on a specific research topic.

- Tutorials are designated as such. Please speak with your program director to determine whether particular Tutorial meets the Program requirements. Tutorials may not be used to meet the minimum GSBS requirement.

Faculty members occasionally offer courses or workshops on analytical procedures or on the use of specific organisms in biomedical research. These workshops may be germane to the student's proposed thesis research and may extend across the entire semester or may be concentrated in a shorter period of time.

Each program has specific requirements that must be met in order for their students to proceed into the Qualifying Exam and thesis research areas of their training. Advanced and elective courses are selected by students within guidelines set by the program of specialization. Students should generally meet these requirements upon completion of year two.

Faculty Roles

Faculty may serve as small course directors, course designers and/or classroom instructors. Please contact either the GSBS office or your Program Director(s) for a list of current workshops, 1 credit hour courses and course directors.

Faculty roles in the curriculum

Course coordinator

The course coordinator is responsible for:

- Class scheduling and timely coordination of scheduling with the GSBS for student registration
- Faculty recruitment as teachers or course designers
- Integration of course learning objectives into student assessment instruments
- Submission of the course description and schedule to the GSBS for:
 - initial approval by the GSBS Assembly
 - ongoing scheduling purposes to facilitate student registration and to assess faculty educational effort
- Submission of grades to the Registrar
- Coordination the post-course review (a NEASC and LCME accreditation requirement) and reporting its recommendations to the GSBS Associate Dean for Curriculum and Academic Affairs using the Post-Course Review template (see <http://www.umassmed.edu/gpbs/resources/student-forms/bbs-forms/>)

Course design

GSBS Program faculty may initiate the design of new courses or significant redesign of existing courses. Faculty engaged in the design of a course need not be involved in the course as classroom instructors or course coordinators.

Any new course or significant redesign of an existing course must be reviewed by the GSBS Assembly Curriculum Committee and subsequently approved by GSBS Assembly before being offered to students. The GSBS Assembly Curriculum Committee meets 2 months prior to the beginning of each semester (i.e. 1 month prior to registration) thus curriculum design must proceed in a timely manner. Please contact the GSBS Associate Dean for Curriculum and Academic Affairs (MaryEllen.Lane@umassmed.edu) to discuss GSBS Assembly requirements for timely course approval.

Curriculum requirements

Each Course must include the following in order to expedite course review:

- An abstract summarizing the course description
- A list of learning objectives

- A schedule of classes, their titles, instructors and formats
- The format of assessment instruments to be used to determine student performance
- A suggested credit hour assignment for the course (1 credit hour is 1 hour of classroom time plus 2-3 hrs. of out of classroom study for 15 weeks)
- A course coordinator
- Whether or not the course seeks designation as an Elective or as Workshop/Journal Club/Methodology course.
- Approval by the GSBS Program Director(s)

Please contact Ms. Tricia Doane (Tricia.Doane@umassmed.edu) for a worksheet.

Classroom instructor

Teaching is a responsibility of GSBS faculty and faculty may be approached by a course coordinator or course designer seeking your participation in teaching. This participation could be as a lecturer, small group facilitator, workshop instructor, student presentation coordinator or evaluator etc.

Please contact your Program Director(s) for a list of course coordinators in your program if you would like to explore opportunities for teaching.

Course evaluations

All GSBS Core Curriculum, Electives and Workshops/Seminars/Journal Club courses are subject to student evaluation during, or upon completion of the course. These on-line evaluations, initiated and coordinated by the GSBS, play an essential role in our continuing efforts to enhance the curriculum for subsequent student classes.

In order that we obtain a representative evaluation of each course, it is vital that all students contribute to course evaluations. Student evaluation of the courses in which they are registered is, therefore, mandatory. Students must submit their evaluations within 2 weeks of the request for evaluations, or their grade will be recorded as Incomplete.

Student Grades

The Course Coordinator will determine the appropriate grading for a course based on the content, structure and objectives of the course. The assigned grades should be consistent with the course Grading Policy which will be included in the New Course Proposal reviewed by the Curriculum Committee and approved by GSBS Assembly. All changes to Grading Policies for existing courses must be reviewed by the Curriculum Committee and approved by GSBS Assembly.

.Letter Grade	GPA Calculation	Explanation
A	4.0	Outstanding performance
A-	3.7	Strong performance
B+	3.3	Good performance
B	3.0	Satisfactory performance
B-	2.7	Less than satisfactory performance
C	2.0	Unsatisfactory performance (Unsatisfactory Grade)
F	0	Failure
Pass (P)	N/A	Satisfactory performance
Marginal Pass (MP)	N/A	Unsatisfactory performance (Unsatisfactory Grade)

Fail (F)	N/A	Failure
I	N/A	See information below regarding incomplete grades
S	N/A	Grade assigned to courses that a student is enrolled in during their final GSBS semester.
W	N/A	See information below regarding Withdrawals

Post-Course Review

The New England Association of Schools and Colleges (NEASC) recommends that each course is subject to annual, post-completion review by faculty and students. This involves addressing strengths, weaknesses, recommending changes to the curriculum and assessing the impact of last year's recommended changes on learning outcomes.

The Course Coordinator is responsible for the coordination the post-course review and reporting its recommendations to the GSBS Associate Dean for Curriculum and Academic Affairs using the Post-Course Review template (see <http://umassmed.edu/globalassets/graduate-school-of-biomedical-sciences/forms/Course-revision-process.docx>)

Creating a new course or significantly revising an existing course

All new courses or significant revisions to existing courses (e.g. the use of altered assessment instruments, altered credit hours) must be approved by the GSBS Assembly.

The Course Coordinator completes the new course proposal form, obtains approval from the GSBS Program Director(s) of the Program(s) offering the course and submits the form to the GSBS office. Please use form:

<http://www.umassmed.edu/link/336841e348124434a2fe6f5d0d92f35c.aspx>

The GSBS office will refer the new course proposal to GSBS Curriculum Committee for review and presentation to the GSBS Assembly at its next meeting.

The Chair of the Curriculum Committee will contact the Course Coordinator if any additional information is required.

After review by GSBS Assembly, the GSBS office will notify the Course Coordinator of the outcome and will provide the new course information for approved courses to the Registrar. GSBS Assembly may require revisions of the course description, credit hours, or grading policy.

GSBS Faculty roles in Research Rotations

Purpose

Rotations serve 4 purposes:

- They allow the GSBS to assess the suitability of a student for biomedical research and advancement to year 2 of graduate study.
- They allow faculty to assess the suitability of a student for thesis research in their specific research program
- They provide students the opportunity for a strongly mentored research training experience in a leading edge area of research.
- They allow students to assess the suitability of a research program for their own thesis research interests.

Faculty responsibilities

GSBS Contributing Faculty are ineligible to serve as research rotation mentors. Faculty must indicate to the student whether or not a successful rotation could result in a commitment to join their research program in thesis research.

Faculty must commit to providing the student a strongly mentored research experience in which the technical, critical thinking and communications skills of the trainee are actively developed.

Faculty must recognize that students are also engaged in an intense curriculum that provides the foundation for their future doctoral research. Faculty must not require students to miss class for purposes of completing lab work or making research presentations.

Assessment of student performance

Faculty must provide an assessment of each rotation undertaken by a student in their research program. A simple web-based form is provided to assist with this. This information is not only formative for the student providing descriptions of areas of excellence and areas with potential for future growth, it also greatly assists the GSBS faculty in determining whether or not a student should advance to year 2 of graduate study.

GSBS faculty role as Thesis Advisor

Faculty Responsibilities

The Thesis Advisor provides the resources and manages the training environment in which the graduate student will undertake doctoral research. Thesis Advisors must be GSBS faculty members holding Faculty status, the necessary resources to support their student in doctoral research and the commitment of their departmental chair to continue support to the student during times of resource exigency. The Thesis advisor assumes responsibility for supporting the student at the beginning of year 2 of PhD study (PhD students) or at the beginning of year 3 of PhD study (MD/PhD students transitioning from Medical School to full time PhD study).

GSBS Contributing Faculty are ineligible to serve as Thesis Advisors. Affiliate Faculty may serve only as Thesis Co-advisors.

The Thesis Advisor must provide a training environment which upholds and reinforces the GSBS Learning Objectives.

The Thesis Advisor must provide a training environment which is consistent with Institutional Policies and Student Rights & Responsibilities. These are summarized in the Institutional Policies handbook.

Assessment of student research performance

Faculty Expectations of student

- Faculty expectations should be developmental stage appropriate
- Areas for evaluation are outlined in the GSBS Qualifying Examination Outcome and Thesis Research Advisory Committee Report Forms (see <http://www.umassmed.edu/gpbs/resources/student-forms/bbs-forms/>)
- Expectations for independent experimental design, execution and analysis will increase with each year of study
- Expectations regarding work ethic should be consistently high
- The student should work well with others by:
 - Showing respect for all colleagues as outlined in Institutional Policies and Student Rights & Responsibilities
 - Seeking guidance when appropriate
 - Acting on received advice, guidance or formative criticism from their Thesis Advisor
 - Using available resources in a responsible manner
 - Communicating their research goals, methodologies, outcomes and strategic thinking with their research program colleagues on a regular basis
 - Upholding the standards of the GSBS Honor Code

Schedule of assessments

Year 2 (pre-qualifying)

Thesis Advisors will evaluate their pre-qualifying students each semester. The rationale is 2-fold:

- This provides important formative feedback to the student regarding their progress
- This provides additional information to the Qualifying Examination Committee and the GSBS Dean, which when combined with the student's academic record, informs all areas pertaining to student development.

Year 3 to completion

Each student who has passed their Qualifying Examination and has thereby progressed to candidacy will be evaluated at least twice annually

- The student's Thesis Research Advisory Committee (TRAC) shall review the student's progress in fall of each year.
- The student's Thesis Advisor will review the student's progress each spring/summer.

Assessment Outcomes

The student's performance will be judged to meet one of the following:

- Meets Expectations - the student is performing well or exceptionally well in most or all critical areas of their research and professional skills development
- Marginal Pass - the student is performing well in some but not all critical areas of their research and professional skills development. Areas where improvement is necessary will be highlighted, a schedule/strategy for improvement will be formulated and communicated to the student and to the GSBS. The student will be subsequently assessed on their success in achieving remediation.
- Fail - the student will be academically dismissed or, if sufficient research data is judged to be available, may be permitted to petition for withdrawal with a Master's degree.

The Qualifying Examination

Purpose

Students are required to pass a Qualifying Examination before admission to candidacy (doctoral research). PhD students normally complete this before the beginning of year 3. MD/PhD students on the BBS track must complete this requirement in the first year of research following transition from Medical School to Graduate School. MD/PhD students on the CPHR track must complete this requirement in the second year of research following transition from Medical School to Graduate School. Specific details of timing are elaborated below. Students must be in Good Academic Standing (GPA \geq 3.0) in order to be eligible for candidacy.

The Qualifying Examination (QE) assesses the student's preparedness for doctoral research in their chosen area of specialization and identifies student attributes (e.g. background knowledge, critical thinking skills, experimental design, communication skills) that may require further development during the course of doctoral study.

Timing

The year in which the student's QE is first scheduled is called the QE Year and is Year 2 of study for PhD students admitted to the Umbrella Admissions and CPHR programs. MD/PhD students on the BBS track must take their QE in Year 1 of full-time PhD study. Most fulfill their QE requirements during the spring semester of their QE Year but may do so during the earlier, fall semester. MD/PhD students on the CPHR track must take their QE in Year 2 of full-time PhD study. Most fulfill their QE requirements during the spring semester of their QE Year but may do so during the earlier, fall semester. Students who do not complete their QE requirements by the end of the QE Year, are placed on "academic probation."

No later than 2 weeks into the fall semester of the post QE Year, these students must provide the GSBS Associate Dean for Curriculum & Academic Affairs with the following:

1. A justification for the delayed QE
2. A description of steps (recommended by the QEC and approved by the Thesis Advisor and Program Directors) to remediate any academic deficiencies justifying the delay
3. A proposed schedule for QE completion
4. A statement from their thesis advisor signifying continued support throughout the remediation period

These students shall have until the approved re-scheduled QE completion date to hold and pass their Qualifying Examination. Upon completion of these requirements their status will be restored to "making satisfactory academic progress." Should any student not accomplish these requirements they will be academically dismissed from the GSBS.

Faculty Expectations of student

The student shall prepare a written research proposal and make an oral presentation of the proposal in which they:

- Define and justify an area of study through critical review of the literature
- Articulate the hypothesis or goals to be tested, the rationale for undertaking the studies, alternative hypotheses or approaches to discovery and how the specific aims presented relate to the hypotheses or discovery goals.
- Describe a specific study design that unambiguously addresses each hypothesis or discovery goal. The student should understand and be able to describe the strengths and weaknesses of their approach, the methodologies used and the analytical tools used to interpret raw data. The student must be able to describe expected results and to propose alternative approaches. If the results are not as predicted, the student must be able to describe alternative hypotheses that might explain the outcomes and then create study designs to test alternative hypotheses.
- Communicate using clear, well-organized, written and spoken English and high quality visual aids.

Roles of the Thesis Advisor, the Program Director(s) and the GSBS Associate Dean for Curriculum and Academic Affairs

- The Thesis Advisor and the student must identify the broad area of proposed thesis research prior to the fall semester of year 2 in order to select an advanced curriculum that provides the student with the necessary/optimal foundational knowledge for their thesis research.

Process

Qualifying Examination Committees

The GSBS Associate Dean for Curriculum and Academic Affairs and the student's Graduate Program Director select the Qualifying Exam Committee (QEC). All members must hold faculty

status in the Graduate School and should represent a broad range of research experience. The committee may contain as few as three committee members but no more than five. Programs may adopt more specific requirements within this range. The Thesis Advisor is an *ex officio* member of the committee and may be present during the Specific Aims defense but may NOT be present during the Qualifying Exam proposal defense. Faculty who actively collaborate with the Thesis Advisor are ineligible to serve on the QEC.

The student must file the completed and signed QEC selection form with the GSBS prior to proceeding to their Specific Aims Defense meeting.

QEC Chair

The QEC Chair is responsible for informing the student of exam procedure, communicating relevant details of the student's academic record to the committee as a whole, ensuring fair treatment of the student during the exam, leading the committee's deliberation to determine exam outcome, and communicating the outcome to the student and the GSBS Office. The GSBS Office will assist the QEC chair to compile the student's academic profile.

The QEC chair must be a member of the student's affiliated program and must be a tenured faculty member. The appointment of the QEC and its chair requires assent of the GSBS Program Director and the GSBS Associate Dean for Academic Affairs who will recommend approval to the GSBS Dean.

QE General Examiners

Each year, the Dean recruits and appoints several senior faculty members to fulfill the role of General Examiners (GE). The most important qualification for GE is experience in graduate student training. The number of GEs is determined by the number QEs to be administered in any given year, with the intention that each GE will sit on 2-3 QE's per year.

The GE has equal standing to other members of the QE, but is not the QE Chair.

The GE lends his/her experience to the committee as a whole, with special emphasis on "big picture" aspects. The primary responsibilities of the GE are to ensure that student assessment is based on the defined learning objectives and that final determination of pass/fail be consistent with other QEs. Accordingly, the GE need not be an expert on the subject of the Qualifying Exam proposal.

The roster of GEs is assigned to each QE Committee by the Dean. Selection and assignments are made early in the academic year, during the Fall semester, to facilitate committee selection and scheduling.

The GEs participate in an annual orientation during which the responsibilities of the role and the standards for the QE are discussed. The orientation session includes an evaluation by returning GEs of the strengths and weakness of the mechanism for ensuring the goals, namely that student assessment is based on defined standards that extend across all graduate programs.

Specific Aims

- The student develops a proposal Specific Aims page whose form resembles the Specific Aims page of an NIH grant proposal.
- The student must present their Specific Aims orally before the QEC.
 - The Thesis Advisor may attend this defense but as an observer only.
 - The Specific Aims presentation and feedback from the QEC should offer the student a preview of the nature of the QE.
 - The QEC will advise the student on recommended modifications to the Specific Aims.
 - The GE should attend the Specific Aims meeting
 - The QEC chair will summarize the Specific Aims outcome and expectations in writing to the student and QEC.

- No later than one week following the Specific Aims meeting, the student revises their Specific Aims section to address the recommendations made by the QEC and receives final approval of the Specific Aims document. While this process may necessitate additional iterations of the document, final approval of the Specific Aims document must be obtained no later than one week following the Specific Aims meeting.
- The student submits the written proposal within five weeks of Specific Aims approval.
- Two weeks later, the student defends the proposal orally before the QEC.

The Qualifying Examination Proposal

- The Thesis Advisor cannot contribute to the development of the written proposal.
- The proposal may contain data obtained by the student during pre-qualifying research. However, preliminary data by the student is NOT a prerequisite for the qualifying examination proposal. This examination tests the student's ability to think analytically and critically.
- Each GSBS program may provide specific instructions on the length of the written proposal. The GSBS recommends the formats for an NIH NRSA F31 Fellowship application or an NIH F30-individual Ruth L. Kirschstein National Research Service award (1 page single-spaced Specific Aims; 6 pages single-spaced Research Strategy).

The Qualifying Examination Defense

- The Thesis Advisor cannot attend the oral defense but must provide the QEC Chair with a written or oral assessment of the student and extent of their commitment to support the student in thesis research.
- The GSBS will furnish the QE Chair with a copy of the student's GSBS transcript indicating the student's course selections and GPA.
- The student presents their proposal.
- The QEC may ask any questions pertaining to the proposed research, the student's curriculum or beyond.
- These questions must challenge the proposed hypotheses/goals and the rationale, strategy and technical details of the proposed experiments.
- The student must demonstrate a thorough understanding of the proposed data collection and analysis procedures and must be aware of alternative approaches that might be used to answer the problem.
- The student must be able to interpret expected and unexpected findings within the context of the method of data collection, any tested hypothesis and the broader field.

Qualifying Examination Outcomes

Pass

The student passes outright and is not required to undertake specific remedial actions. This does not mean that specific areas for further student development were not identified by the QEC. Rather, the student performed at a developmentally appropriate level.

Retake

The student does not pass but achieves a level of performance that suggests to the QEC and the GE that the student could succeed in doctoral research. The QEC will recommend 1 of two possible courses of action:

Short-term rewrite and defense

If a specific flaw in the proposal is identified that can be addressed without requiring the student to undertake additional coursework, the student will rewrite the proposal to address the specific shortcomings and present and/or defend their modified proposal before the QEC.

This will occur within 4 weeks of the original defense.

Long-term rewrite and defense

The QEC chair consults with the QEC and GE to identify areas:

- In which the student did not meet expectations,
- Which are germane to the proposal (e.g. background knowledge, analytical procedures)
- Which are absent from the student's academic record.

The QEC then consults with the GSBS Associate Dean for Curriculum & Academic Affairs to identify one or more additional, selected courses, workshops or assignments which the student must take to remediate the identified area(s) of weakness. These academic exercises must be relevant to the proposal but not previously taken by the student.

The student will not enter into candidacy until he/she has:

- Taken and passed the selected remediations with a grade of B or higher and
- Rewritten their proposal to address its weaknesses and defended the proposal in a second QE.

Long-term remediation must be completed within 1 year of the original QE defense.

Fail

The student does not achieve a level of performance (either first time or upon a retake - see below) that convinces the QEC that the student can succeed in doctoral research.

Qualifying Examination Outcome report

The purpose of the QE outcome report is to provide the student, the student's Thesis Advisor and the student's TRAC with a summary of student strengths and weaknesses. This will form the basis for ongoing student development during doctoral research.

The QEC chair will complete the QE outcome report by soliciting input from the QEC and GE at the QE during the post presentation period when the student is absent from the room.

The QEC will then discuss their outcome report with the student and describe any recommendations they may have for remediation or future student development. The chair and the student will sign the report and the student will file the report with the GSBS office.

The Thesis Research Advisory Committee

Purpose

This committee is formed shortly after the student passes their Qualifying Examination. It shall advise the student from the time the student has passed the Qualifying Exam and has entered Thesis Research until the TRAC determines that the body of work represents a significant advancement to the field and has resulted in and/or justifies publication in an appropriate scientific journal as one or more research articles. At this time, a Terminal TRAC meeting is convened to review any new data and a detailed outline of the student's proposed thesis. If the TRAC is satisfied that the data and dissertation outline meet the standards for Dissertation Defense, the TRAC authorizes the student to prepare and defend their thesis and the TRAC is disbanded.

All GSBS doctoral students must complete the requirements of the TRAC meeting annually.

Faculty Expectations of student

Students holding their first TRAC meeting

The student shall prepare and pre-circulate a 2-page written report indicating:

- Specific Goals for the next 6-12 months of research

- The rationale for these goals
- Progress (if any) towards meeting those goals
- Anticipated challenges to and alternative strategies for meeting the goals

More Advanced Students

The student shall prepare and pre-circulate a 2-page written report indicating:

- Specific Goals for the preceding 6-12 months of research identified at the conclusion of the last TRAC meeting
- Progress (if any) towards meeting those goals
- Publications since last TRAC meeting
- Challenges experienced in meeting the goals and alternative strategies developed
- Mid-term course-corrections advised by thesis mentor
- Goals for the next 6-12 months of research
- If the student is in year 5 or beyond, the student must include a rational time-table for completion

Student preparation for the TRAC meeting

The student should register for the TRAC course (BBS/CTS 865) in the preceding summer semester. The student will complete all assignments associated with the TRAC course. These include:

- Selection of a TRAC and receiving approval from the GSBS
- Scheduling a TRAC meeting in the fall semester
- Completing the 2-page pre-circulated report.
- Completing an Individual Development Plan (IDP).
- Preparing slides for and delivering their presentation
- Preparing, if the student is in year 5 or beyond, a time-table for completion.
- Filing the completed TRAC Outcome Report (TRACOR) within 1 week following the TRAC meeting

TRAC composition

The TRAC comprises four to six GSBS faculty holding Faculty Status. The TRAC may contain only one member who holds Contributing or Affiliate Faculty status. The TRAC chair must be tenured and hold GSBS Faculty Status. The student's Thesis Advisor is a member of the TRAC. The Thesis Research Advisory Committee shall be appointed by and will report to the Dean, upon the recommendation of the Thesis Advisor, the Program Director and the GSBS Associate Dean for Curriculum and Academic Affairs. The TRAC must be approved by the GSBS Dean prior to its first meeting. The TRAC chair cannot be the Thesis Advisor. Not all TRAC members are required to be present at each meeting.

Thesis Advisor role at the TRAC meeting

TRAC meeting attendance by the Thesis Advisor is not mandatory but the Thesis Advisor must provide an evaluation of the student's research progress and professional skills development for review by TRAC members who are present at each TRAC meeting.

Schedule of meetings

TRACs meet in the fall semester of each year. The Thesis Advisor, the doctoral student, the TRAC chair or the GSBS Dean may convene TRAC meetings for a specific student more frequently if necessary. MD/PhD TRAC meetings are scheduled every 6 months.

The TRAC meeting

Procedure

- The TRAC discusses the Thesis Advisor's perception of the student's progress in the absence of the student
- The student delivers his/her presentation describing prior goals, progress, data interpretation and future experiments.
- The TRAC and student discuss the student's progress and the TRAC and student establish a set of scientific research and professional skills development goals for the next 6-12 months
- If the student is in year 5 or beyond, the TRAC and student will discuss the feasibility of the proposed completion schedule
- If the Thesis Advisor is present at the TRAC meeting, the TRAC and the student discuss the student's progress in the absence of the Thesis Advisor.

Outcomes

The TRAC Chair is responsible for communicating all TRAC meeting outcomes to the student.

Pass, continue in doctoral research

- Progress is satisfactory, the student has not yet met the standards expected for doctoral research completion and must continue in doctoral research.

Marginal Pass, continue in doctoral research

- Progress is less than satisfactory, the student has not yet met the standards expected for doctoral research completion and must not only continue in doctoral research but must also address a specific course and schedule of remediation outlined by the TRAC and approved by the Dean.

Recommendation to exit the program with a Masters degree

- If the student has collected a significant body of data, but is judged unlikely to complete the requirements for a doctoral degree in the usual time frame, the TRAC may recommend that the student form a Master's Dissertation Committee, write a Master's Thesis on their research, and submit the thesis for review. Successful review will result in the award of a Master's Degree in Biomedical Sciences.

Fail

- Progress is not satisfactory, the student has received more than one unsatisfactory TRAC report and has failed to remediate their performance as required by the TRAC and Dean. Moreover, the student has not collected a body of data sufficient to justify a Master's Dissertation. The student must withdraw from the GSBS or will be administratively withdrawn.

TRAC Meeting Report

The TRAC Outcome Report is completed, signed by the TRAC chair, the student, and the Thesis Advisor. The form must be hand delivered to the GSBS, or uploaded in the appropriate student portal (preferred).

The completed TRAC form must be submitted within 1 week of completing the TRAC meeting.

Individual Development Plan

Following discussions with mentors (including the TRAC), the student must refine his/her set of goals for the coming year in the areas of research, professional skills development, and career advancement. Each goal or targeted research milestone must have a timeframe associated

with it. The IDP must be completed and submitted according to the assignment instructions for BBS865.

The advanced graduate student

If the student is in year 5 or beyond, the student's TRAC Outcome Report must include a timetable for completion which is approved by the TRAC Chair and Thesis Advisor.

The Dissertation Defense

Purpose

The dissertation defense is a 5-step process that examines whether the GSBS Mission and Learning Objectives are realized through the scholarly work developed, presented and defended by the doctoral candidate.

Defense elements

The dissertation defense comprises 5 parts:

1. The Terminal TRAC meeting
2. Scheduling the Dissertation Presentation
3. The Dissertation Presentation
4. The Closed Door Defense
5. Dissertation Edits and Approval

1. The Terminal TRAC meeting

Purpose

To provide a standardized procedure for the Authorization to Write the Dissertation, also known as the Terminal TRAC meeting, that:

- guides both the student and TRAC to prepare and execute a thorough assessment of the degree of completion of research and student development,
- clarifies timeline and expectations for writing the dissertation,
- reinforces high standards for dissertation preparation.

It is expected that:

- No student enters the Dissertation Exam unprepared to present and successfully defend the thesis research;
- All students are held to an appropriately high standard for doctoral research;
- DEC members hold and effectively communicate a common set of expectations by which performance is assessed;
- Thesis revisions and completion of degree requirements will proceed with a predictable timeline.

Preparation for The Terminal TRAC meeting

- The student shall formally petition the TRAC for authorization to cease experimental work and begin preparation of the dissertation by:
 - Informing the TRAC of his or her intention to seek authorization
 - Scheduling a Terminal TRAC Meeting (this may coincide with a regularly scheduled TRAC meeting)
 - Informing the GSBS Associate Dean for Academic Affairs that the meeting has been scheduled

- The student shall prepare and present at or before the meeting:
 - A written copy of the Thesis Abstract, presented to the TRAC in advance of the meeting. The abstract should be as complete as possible from the student's perspective, and should not rely on uninitiated or incomplete experimental data.
 - A detailed Outline of the thesis itself, presented in advance of the meeting, with a focus on the Introduction and Discussion sections.
 - A list of publications, including submitted manuscripts, and a plan for how they will be incorporated into the dissertation
 - Presentation of unpublished data, acquired since the last TRAC meeting, that will be included in the thesis. It is assumed that this will include little to no raw, unanalyzed data and that the construction of publication-ready figures is well underway
 - Figures and/or slides should be of sufficient quality that the TRAC can evaluate the completeness, significance, and analysis.
 - The student and Thesis Advisor shall prepare a list of potential Dissertation Examination Committee members (internal and external) for consideration by the TRAC.
- The TRAC chair will use a checklist, designed specifically for the Terminal TRAC meeting, to certify unanimous agreement that:
 - The data, published and unpublished, are sound, complete, and adequate for a dissertation.
 - The committee is satisfied that the student's publication record (including submitted manuscripts) is adequate for completion of the PhD degree.
 - The committee is satisfied that the student's development as a scientist is adequate for completion of the PhD degree.
 - The student may cease experimental work and focus on preparing the dissertation.
 - The committee provided written feedback regarding modifications to the abstract and outline.
 - The committee provided written feedback regarding modifications to the unpublished data.

Outcomes

The TRAC Chair is responsible for communicating all TRAC meeting outcomes to the student.

Pass, continue in doctoral research

Progress is satisfactory, but the student has not yet met the standards expected for doctoral research completion

Pass, halt all research and write doctoral dissertation

- Progress is satisfactory, the student has satisfied the standards expected for doctoral research completion and may now halt research and begin writing their doctoral thesis.
- The student has 4 months to complete this task (an extension may be sought by the Thesis Advisor and the student but requires approval of the Dean).
- No further bench research or data collection is necessary for the completion of the doctoral dissertation during this phase of doctoral study.

The TRAC may delay approval until specific benchmarks are met, such as limited and specified experiments or analysis, submission or acceptance of manuscripts. The TRAC may authorize the TRAC chair to give final approval, or determine that an additional meeting is required.

What does “Authorization to write” actually mean?

“Authorization to write” means that that additional bench work, data collection and significantly new and extensive data analyses are not required for completion of the doctoral thesis or successful execution of the dissertation defense. The TRAC has agreed that sufficient data and analysis exist for the student to write a field-competitive doctoral dissertation and research articles that will positively impact the field of research.

Requests to return to the bench or to extend or open new lines of research during preparation for thesis defense can only be approved by the GSBS Dean upon recommendation by the full TRAC.

2. Scheduling

- The student typically has 4 calendar months of stipend support following Terminal TRAC approval of “permission to write” or 3 to 6 weeks post-defense – whichever comes first. Extensions to this time must be approved by the Dean and must be academically justified.
- The Dissertation Examination Committee (DEC) must be formed 30 days before the scheduled thesis defense.
- The DEC must receive three items at least 21 days before the scheduled defense:
 - **The dissertation** (some DEC members may prefer a printed copy of the dissertation so the student must make the necessary prior arrangements).
 - **TRAC approved thesis outline** developed at the Terminal TRAC meeting.
 - **Certification by the thesis mentor** (via verbal or email communication to the DEC chair) that the student independently wrote the Introduction and Discussion chapters.
- The DEC then undertakes the following within 7 days of receipt of the thesis (DEC members are not required to meet, though they retain the option to do so):
 - **Thesis review** - To affirm that the thesis is free of defects that would prevent the defense from going forward. Such defects include unsound or inadequate data, unacceptable or absent analysis, improper citations, over reliance on secondary sources in the Introduction and Discussion chapters, plagiarism, and language or formatting deficiencies that preclude evaluation of the body of work.
 - **Comparison with the TRAC approved thesis outline** – To determine whether the written thesis is consistent with the TRAC-approved thesis outline and, if not, whether deviations from the outline are acceptable.
 - **Decision to proceed or delay the thesis defense** - The DEC shall inform the student of the approval, or lack thereof, to proceed with the Dissertation Defense and Examination. Should the Committee determine that the defense cannot go forward, the chair will provide to the student a checklist identifying the problem(s).
- The DEC chair and student shall inform the GSBS Associate Dean for Curriculum and Academic Affairs of the outcome of this preliminary review at least two weeks prior to the scheduled defense. Failure to do so will result in cancellation of the defense. The student is responsible for informing the Thesis Advisor and Department or Program staff of any schedule changes.
- The Dissertation Seminar notification must be posted by the GSBS 10 days prior to the defense.
- The student presents the public seminar and then undergoes the closed-door defense of the oral and written thesis dissertation before the DEC.

- If the student passes the examination but is required to make thesis edits (minor or major), the stipend will continue for one of the following durations (whichever is longer):
 - That time remaining of the original 4 months following receiving “Permission to write”. Note that the Thesis Advisor may request an extension to the 4-months period but the extension must be academically justified.
 - If the 4-month period has expired, twenty-one (21) days from the date of the Dissertation Defense. This requires the approval of both the Thesis Advisor and the Dean.
- At the end of the 4-month period, or of the additional 21 days, the student's stipend will be terminated.
- The student is placed on leave of absence if the thesis edits have not been successfully completed and submitted within 3 months of the thesis defense. The student may seek a further extension of 3 months.
- If an approved thesis is not submitted following a granted extension of 3 months, the Dissertation Examination outcome will be recorded as Fail.

MD/PhD students

- A student will be unable to create their CCE schedule without completing the terminal TRAC meeting.
- Upon completing the Terminal TRAC meeting and receiving “permission to write:”
 - The student's name is forwarded to the ADSA in School of Medicine. The ADSA will arrange to meet with the student to define a clerkship schedule and to grant permission to register in EVOS.
 - The student will meet with the GSBS Associate Dean for Curriculum and Academic Affairs to finalize their timeline to return to medical school
 - Three weeks post-defense will be included in the timeline prior to the return to CCE/medical school for editing/submitting final dissertation and GSBS paperwork
- MD/PhD students returning to medical school must submit their final thesis to the GSBS before they re-enter clerkships **WITHOUT EXCEPTION**
- MD/PhD students who do not submit their thesis within the agreed upon timeline must meet with the Dean of GSBS and the MD/PhD Program Director within 5 days of the missed deadline to arrange plans for immediate remediation or face dismissal from the program.

Role of the Thesis Advisor

The doctoral dissertation should represent the student's work and should be written by the student. The Data chapters may represent submitted or published manuscripts to which co-authors, including the Thesis Advisor, have contributed, and such contributions should be clearly identified (see Attribution, below).

Dissertation Examination Committee

The Dissertation Examination Committee (DEC) is created to evaluate the student's suitability for the award of PhD in Biomedical Sciences. The student and thesis advisor should recognize that the DEC serves a very different purpose from the TRAC. The charge of the DEC is to determine whether the student has attained a standard of scholarly accomplishment commensurate with the award of a doctoral degree in biomedical sciences at UMMS. Although the TRAC may become the DEC, it may also contain GSBS faculty who were not on the TRAC.

The DEC shall be appointed by and will report to the Dean, upon the recommendation of the Terminal TRAC, the Program Director and the GSBS Associate Dean for Curriculum and Academic Affairs. The DEC shall comprise four GSBS faculty members (including the Chair) and one external member from a doctoral degree-conferring research institution. The Thesis

Advisor and co-Advisors shall not be committee members. All UMMS DEC members must hold GSBS Faculty Status. Contributing and Affiliate GSBS Faculty are ineligible to serve on DEC's.

In order to avoid the appearance or the actual occurrence of a conflict of interest, a maximum of two GSBS faculty members who have or who will co-publish with the student on the thesis project may be members of the DEC. Neither the DEC Chair nor the external DEC member may be co-authors with the student on the thesis project.

The Written Dissertation

Formatting

Standards for length, content and formatting of the doctoral thesis are available at:

http://www.umassmed.edu/globalassets/graduate-school-of-biomedical-sciences/forms/gsbs_12_doctoral_diss_prep_guide.pdf

Attribution

The face-page of each data chapter should include full attribution to each individual who contributed to the data collection, analysis or presentation of the chapter. This should also briefly state the role of the individual in the experimental design, data collection and analysis.

Plagiarism

If a student is found to have engaged in plagiarism, this demonstrates an effort on the student's part to circumvent the educational process and will result in dismissal for unprofessional behavior.

Publication

The completed dissertation will be published on-line as a downloadable, fully text-searchable pdf document. GSBS Theses and publications may be viewed at

<http://escholarship.umassmed.edu/gsbs/>

The publication approval form requires signatures from the student and the Thesis Advisor and allows for immediate doctoral thesis publication on the web or delayed publication (up to 1 year). This form is available at http://www.umassmed.edu/globalassets/graduate-school-of-biomedical-sciences/forms/gsbs_19_escholarship_permission.doc

Defense Time Lines

International students

Optional Practical Training (OPT)

When an international student holding an F-1 visa completes their doctoral study, their visa is terminated and they must leave the US. Students wishing to remain in the US to undertake postdoctoral training may need to extend their visa and may do so by applying for OPT. An F-1 student may be authorized up to a total of 12 months of full-time practical training at each educational level (e.g., undergraduate, graduate and post-graduate).

To be eligible for OPT, the student must:

- Have been a full-time F-1 student in good standing for at least 1 full academic year
- Be currently maintaining F-1 status
- Propose to work in an area directly related to their major area of study.

It can take up to 90 days for OPT to be granted thus a student should plan to apply for OPT 90 days prior to the anticipated graduation date (GSBS Graduation dates are March 31, the first Sunday following Memorial day (typically early June), August 31 and December 31.

Students should contact the UMMS Immigration Services Office (ISO) in Human Resources to initiate this process. For more information please see

http://www.umassmed.edu/hr/immigration_services/

All students

Post-Completion termination of support

Students who have defended and have only dissertation edits remaining must complete their edits in a timely manner. ISO advises that a period of more than 3 weeks for post-defense thesis edits may trigger external review by the USCIS unless academically justified. Any extension sought to this period for edits must be based on academic reasons and approved by the Dean.

Once this time has expired, the student's stipend is terminated.

International students who have not yet received or who have not applied for authorization for OPT at the time of completion or termination of stipend support lose their visa status and are required to leave the US within 48 hours.

Understanding Critical Milestones for participation in Commencement

Commencement involves several critical milestones and published materials, which introduce specific deadlines. If a student wishes to participate in Commencement (the first Sunday following Memorial Day) each of the following requirements must be satisfied without exception:

- The student must submit their Dissertation Examination Committee selection form to the GSBS office no later than March 1
- The student must submit their Thesis Defense Notification form to the GSBS office no later than March 10
- The student must submit their Thesis Dissertation to their DEC no later than March 15
- The student must successfully defend their Thesis no later than April 1
- The student must complete their Thesis Dissertation edits, have them approved by the DEC Chair and deliver the signed signature pages indicating this approval to the GSBS office no later than May 1

3. The Dissertation Presentation

- Submission of a written dissertation and preliminary approval by the DEC.
- A one-hour public seminar on the results of the completed dissertation project. This is a formal presentation of the dissertation as a Dissertation Seminar.

Purpose

The dissertation seminar is considered an integral part of the Dissertation Defense, and should be approached with appropriate seriousness. The seminar provides a vehicle by which the student can showcase their:

- Scientific Knowledge and Critical Thinking
- Research Skills and Problem Solving Ability
- Specific Expertise
- Communication Skills
- Professional Ethics and Advocacy

The candidate presents the rationale for their project, their scientific observations, their conclusions and the wider impact of their work. The candidate fields questions from the audience.

The DEC should determine whether:

- The student presented in clear spoken English.
- The student described the scientific question, research goals, hypothesis, or model to be tested, which underlie the thesis project.
- The data presented were of high quality.

- The data presented supported the argument put forth by the student.
- The visual aids clarify central argument, significance and conclusions of the thesis work.
- The student explained the significance of the work to a broad audience.

4. The closed door defense

Only the student and the DEC are present at the closed door defense. The Thesis Advisor cannot be present during the closed door defense. The DEC must determine whether:

- The student placed their research in the larger context of the field.
- The student could explain their original contribution to the research program of their thesis lab.
- The student demonstrated authoritative knowledge of primary literature cited
- The student clearly explained the significance of all experimental work in the thesis.
- The student was able to answer questions tangential to their thesis argument.

To accomplish this, the DEC will assess the candidate's mastery of 6 specific areas and will review the written thesis:

General knowledge

- Does the candidate demonstrate substantial and up to date core knowledge of broad areas in basic biomedical, translational, or clinical research applicable to their area of study?
- Does the candidate demonstrate the ability to accurately and critically evaluate their own scientific work and the work of others?

Research Skills and Problem Solving Ability

- Does the candidate demonstrate advanced understanding of a range of technical and conceptual approaches used in biomedical research?
- Can the candidate design, carry out, and interpret research projects that generate new knowledge that advances the biomedical sciences and human health?

Specific Expertise

- Can the candidate articulate the significance of their own work to their chosen research area in both historical and forward-looking contexts?
- Does the candidate demonstrate mastery of a range of technical and conceptual approaches used in their selected research area?

In the course of this questioning, the DEC will also develop a deeper understanding of the candidate's abilities in 4 additional areas:

Communication

- Does the candidate demonstrate the oral, written and media communication skills required to be an effective communicator, teacher and mentor of peers, future scientists and scientifically literate citizens?

Professional Ethics and Advocacy

- Has the candidate been an effective steward of their research (data management, research subjects, research funds)?
- Has the candidate interacted appropriately with colleagues and the public?
- Does the candidate advocate for the role of science in medicine and society?

Career Development

- Is the candidate competitive in a range of career options?
- Can the candidate knowledgeably articulate an appropriate set of desired career paths?

Document Review

- The thesis must be presented as a unified whole with respect to font size, line spacing and margin sizes.
- The Thesis must contain all elements required by the GSBS Doctoral Dissertation Preparation Guide.
- All components must be integrated into a cohesive unit with a logical progression from one chapter to the next, providing a cohesive, unitary focus, documenting a single program of research. If submitted manuscripts are included as chapters, connecting text must be provided so that the completed thesis functions as an integrated whole.
- Data or figures generated by others must be appropriately attributed

Outcomes

The outcome of the Dissertation Defense shall be recorded on the appropriate Dissertation Defense Outcome form (<http://www.umassmed.edu/gsbbs/resources/student-forms/bbs-forms/>) which shall be signed by all required signatories and returned to the GSBS no later than 24 hr post-defense.

Pass

- The student passes the examination only when the oral and written dissertation are acceptable as presented
- The student successfully passes the exam only upon a unanimous decision of the DEC.

In Progress - Minor Revisions

The student has passed the oral exam, all data are acceptable as presented, no further experimentation is necessary, and only minor revisions are required. The student must complete revisions in two weeks. These edits may include:

- Typographical errors
- Missing references
- Inclusion of omitted earlier work of relevance to the dissertation but whose omission does not materially affect the conclusions of the thesis.

In Progress - Major Revisions

The student has passed the oral exam, all data are acceptable as presented, no further experimentation is required, but substantial revisions to the text are required. The student must complete revisions in four weeks. These edits may include:

- Inclusion of omitted earlier work of relevance to the dissertation and whose omission may materially affect the conclusions of the thesis.
- Discussion of additional interpretations of the findings

In Progress - Retest

The student must improve existing data with additional experimentation or analysis, or provide additional data. The revised document must be submitted, and the oral exam re-administered in a specific amount of time to be decided by the DEC.

Fail

- Oral and/or written dissertations are unacceptable and are unlikely to be improved
- The student fails the exam only upon a unanimous decision of the DEC.

5. Completion of dissertation

Edits

- When edits (minor or major) to the thesis are required, all DEC members except the DEC Chair shall sign the signature pages of the thesis.
- The student will be provided clear, written instructions on the edits to be made
- The DEC chair shall sign the signatures pages of the dissertation when the required edits have been verifiably completed.
- The printed thesis (at least 5 copies), signature pages, a CD containing a pdf file of the thesis and a newly completed and signed Dissertation Defense Outcome form shall be delivered by hand to the GSBS Office.

Additional Research

- The DEC shall indicate *only in general terms* the additional research/analysis that is required to complete the thesis project.
- The candidate must then develop an appropriate research/analysis strategy to satisfy the requirements of the DEC.
- The DEC chair and Thesis Advisor will review the strategy and approve a realistic schedule for completion of the research/analysis.
- The candidate will then undertake the research/analysis, incorporate the additional material into the thesis dissertation and schedule a new oral defense.
- The candidate may be permitted only 1 extension to the retest schedule upon recommendation of the DEC chair for approval by the Dean.

Post-Completion termination of support

Students who have defended and have only dissertation edits remaining must complete their edits in a timely manner. ISO advises that a period of more than 2 weeks for post-defense thesis edits may trigger external review by the USCIS unless academically justified. Any extension sought to this period for edits must be based on academic reasons and approved by the Dean.

Once this time has expired, the student's stipend is terminated.

International students who have not yet received or who have not applied for authorization for OPT at the time of completion or termination of stipend support lose their visa status and are required to leave the US within 48 hours.

Understanding Critical Milestones for participation in Commencement

Commencement involves several critical milestones and published materials, which introduce specific deadlines. If a student wishes to participate in Commencement (the first Sunday following Memorial Day) each of the following requirements must be satisfied without exception:

- The student must submit their Dissertation Examination Committee selection form to the GSBS office no later than March 1
- The student must submit their Thesis Defense Notification form to the GSBS office no later than March 10
- The student must submit their Thesis Dissertation to their DEC no later than March 15
- The student must successfully defend their Thesis no later than March 31
- If the student wishes to receive a diploma at Commencement, they must complete their Thesis Dissertation edits, have them approved by the DEC Chair and deliver the signed signature pages indicating this approval to the GSBS office no later than May 1

Academic Standards, Academic Standing and Academic Advancement

Student advancement from year 1 to year 2, from year 2 to candidacy and from candidacy to completion requires satisfactory academic performance. Student eligibility for financial aid requires that the student is in good academic standing. The following section defines Good Academic Standing and Satisfactory Academic Performance.

Good Academic Standing (GAS)

Good Academic Standing requires that GPA \geq 3.0 and all C or MP grades are remediated.

Satisfactory Academic Progress (SAP)

SAP status is determined at the start of each semester as described below.

Year 1	<ul style="list-style-type: none"> Satisfactory Academic Progress status is given to all first year students unless a grade of F is earned in any course or research rotation or a grade of C or MP is earned in more than 1 course.
Year 2	
Fall	<ul style="list-style-type: none"> Student has secured a Commitment of Thesis Research Support (CTRS) Student has received Passing grades for all research courses For students admitted in fall of 2016 and beyond <ul style="list-style-type: none"> Student has completed Core and 2 Elective courses with passing grades, or is actively remediating C grades. For students admitted in fall of 2015 or earlier <ul style="list-style-type: none"> Student has completed Core and 1 Elective course with passing grades, or is actively remediating C grades.
Spring	<ul style="list-style-type: none"> For students admitted in fall of 2016 and beyond <ul style="list-style-type: none"> Student has completed a third Elective course with passing grades, or is actively remediating C grades. For students admitted in fall of 2015 or earlier <ul style="list-style-type: none"> Student has completed a second Elective course with passing grades, or is actively remediating C grades. Student may be actively remediating C grades. Student has received Passing grades for fall research courses
Summer	<ul style="list-style-type: none"> Student has completed all registered Electives with passing grades Student has remediated all remaining C grades Student has received a Passing grade for research Student has held or has scheduled their Qualifying Examination
Year 3	
Fall	<ul style="list-style-type: none"> Student has passed Qualifying Exam and is enrolled in Thesis Research Student has formed TRAC committee.
Spring	<ul style="list-style-type: none"> Student has conducted TRAC meeting with an outcome of Pass.
Year 4	
Fall	<ul style="list-style-type: none"> Student has completed all <i>assignments</i> from Year 3 TRAC meeting
Spring	<ul style="list-style-type: none"> Student has conducted TRAC meeting with an outcome of Pass

Year 5	
Fall	<ul style="list-style-type: none"> • Student has completed all <i>assignments</i> from Year 4 TRAC meeting
Spring	<ul style="list-style-type: none"> • Student has conducted TRAC meeting with an outcome of Pass

Year 6	
Fall	<ul style="list-style-type: none"> • Student has completed all <i>assignments</i> from Year 5 TRAC meeting
Spring	<ul style="list-style-type: none"> • Student has conducted a terminal TRAC meeting with an outcome of Pass with permission to write
Year 7 and beyond	<ul style="list-style-type: none"> • No student in this category is making Satisfactory Academic Progress unless so indicated by the TRAC.

Administrative Probation

A student may be placed on administrative probation by the Dean for actions considered and found to be in violation of the GSBS Honor Code.

Academic Probation

Any student holding a GPA ≤ 3.0 or a C or MP grade is placed on Academic Probation. This status indicates that the student has not achieved the level of academic performance that the GSBS faculty consider necessary for success in doctoral study.

GSBS Course Directors, Research Rotation Mentors, Thesis Advisors or QEC Chairs whose assessment of the student's performance resulted in the unsatisfactory grade will work with the GSBS Associate Dean for Academic Affairs and the student's Program Director to define a realistic and timely process for remediation of Academic Probation.

Any student who is on academic probation and who receives an additional unsatisfactory evaluation will be reviewed by their TRAC (if their thesis research performance is unsatisfactory) or by the Academic Advancement Committee (if their rotation or curricular performance is unsatisfactory) and may be subject to academic dismissal.

Any student who is on academic probation and who is placed on administrative probation for unrelated reasons is subject to dismissal upon review by the GSBS Dean.

Any student who is on administrative probation and who receives an additional unsatisfactory evaluation (research or curricular) that is upheld upon appeal is subject to dismissal by the GSBS Dean.

Academic Advancement

PhD Students

First Year students

- All first year students who are in good academic standing and who obtain a Commitment of Thesis Research Support (CTRS) are eligible for academic advancement to year 2.
- First year students who obtain a CTRS, but have received a grade of C in any first year course must remediate that C to attain Good Academic Standing.
- First year students who are not in good academic standing but who obtain a CTRS may be allowed to advance to year 2 upon review by the GSBS Academic Advancement

Committee. The student will be required to remediate their academic standing in year 2 (achieve a GPA > 3.0) in a manner recommended by the Academic Advancement Committee.

- First year students who are not in good academic standing and who do not obtain a CTRS will be reviewed by the Academic Advancement Committee for likely dismissal.
- First year students in good academic standing but who do not hold a CTRS will be subject to review by the GSBS Academic Advancement Committee. The student will be allowed to take up to 2 additional, consecutive 4-week rotations in order to secure a CTRS subject to GSBS funds availability.
- MD/PhD students must adhere to the following prior to any research work in GSBS:
 - No outstanding remediation from FOM1, FOM2 or Step One Exams prior to full-time research in GSBS (both rotation and thesis lab)
 - Early Clerkship remediation will be reviewed on a case-by-case basis with no guarantee of transition into GSBS.
 - Step One Exam must be taken prior to clerkships, unless given special permission by the MD/PhD Program Director.
 - Step One Exam must be taken prior to full-time research in GSBS (both rotation and thesis lab).
 - Should the student find it necessary to retake the Step One exam prior to entry into the PQR year for PhD study, the student will register for PhD study but will have 4 weeks unencumbered by research in which to complete their step One exam. The GSBS will pay the student's stipend during those 4 weeks of study.
 - Thereafter the student will engage in full-time research and Preparation for Qualifying Exam.
 - If the student subsequently learns that they have failed their second attempt at the Step One Exam, the student will be placed on LoA and cannot return until receiving notification that they have passed Step One Exam. Return from LoA is only permitted at the beginning of a semester.

Second year students

- A second year student in good academic standing is eligible to take their Qualifying Examination (QE). Students who are not in good academic standing but who are making satisfactory progress must petition the GSBS through their Program Director for permission to take the QE. The GSBS Associate Dean for Curriculum and Academic Affairs will convene a committee of QE General Examiners to review the student's petition.
- Any student who is judged by their QE Committee to be inadequately prepared for their QE owing to an academic deficiency will be required (on condition of continued CTRS from their mentor) to petition the GSBS for permission to delay the QE, present a justification for the delay and a plan for remediation of the academic deficiency. This must be approved by the Program Director and the GSBS Dean.

Third year students and beyond

- Continuation in doctoral candidacy requires satisfactory:
 - Annual TRAC meeting outcomes
 - Annual Thesis Advisor reports
- Students who receive an unsatisfactory outcome in either will be subject to review by their TRAC with recommendations for:

- Remediation
- Petition to complete the program with a Master's Degree, or
- Dismissal

Completion requires that the student has satisfied each of the GSBS Learning Objectives.

MD/PhD students

Progression from the School of Medicine into the GSBS requires satisfactory academic performance in all aspects of the SoM curriculum and practicum. The MD/PhD student must also have passed USMLE Step 1.

First year of doctoral study

Progression in year 1 of PhD study to candidacy (doctoral thesis research) requires:

- Satisfactory academic performance in the classroom (if additional curriculum is required by the Thesis Research Advisor)
- Satisfactory academic performance in the research setting
- Selection of a Thesis Research Advisor who provides a departmental chair-approved Commitment of Thesis Research Support (CTRS).
- Successful completion of the Qualifying Examination (QE). Any student who is judged (either at the Specific Aims meeting or following their first QE) by their QE Committee to be inadequately prepared for their QE, will be asked (with continued CTRS from their mentor) to:
 - Self-learn the appropriate foundational material then retest or,
 - Learn the appropriate foundational material by taking the next available relevant GSBS course and achieving a grade of B or higher then retest.

Second year of doctoral study and beyond

- Continuation in doctoral candidacy requires satisfactory:
 - Semi-annual TRAC meeting outcomes
 - Annual Thesis Advisor reports
- Students who receive an unsatisfactory outcome in either will be subject to review by their TRAC with recommendations for:
 - Remediation
 - Withdrawal with a Master's Degree, or
 - Dismissal

Completion requires that the student has satisfied each of the GSBS learning objectives.

PGSP Students

Successful completion of the Pathway to Graduate Study Program (PGSP) requires satisfactory academic performance in the classroom and the research setting. Consideration for admission to the GSBS doctoral program and will be subject to review by the PGSP Director, the appropriate GSBS Admissions Committee and approval by the GSBS Dean.

GSBS Technical Standards

Technical standards refer to non-academic proficiencies that are essential for meeting the academic requirements of our graduate programs in the biomedical sciences. Within any area of specialization, students must demonstrate competence in those intellectual and physical

tasks that together represent the fundamentals of biomedical research in their chosen discipline.

A candidate for PhD degree in the biomedical sciences must possess abilities and skills that allow for observation, intellectual and conceptual reasoning, motor coordination, and communication. For those programs where laboratory-based research is not a primary requirement, a candidate for PhD degree in the biomedical sciences must possess abilities and skills that allow for observation, intellectual and conceptual reasoning, and communication.

All applicants and graduates must meet the prescribed technical standards, with or without reasonable accommodations. Use of a trained intermediary is not acceptable in many situations in that a candidate's judgment will be based on another's power of selection and observation.

Observation

The candidate must be able to acquire and assimilate knowledge by direct observation (visual, auditory, and tactile) of experiences within the research and instructional settings.

Intellectual/Conceptual Abilities

The candidate must be able to measure, calculate, analyze, reason, integrate and synthesize information to solve problems.

Motor Skills

The candidate must possess sufficient postural, neuromuscular, and eye-to-hand control necessary to independently use standard laboratory equipment and to execute standard procedures in their field of specialization.

Communication

Candidates must be able to present and discuss their experimental hypotheses and results with research advisors, and publicly before a variety of audiences within the scientific community, at scientific meetings, seminars, Qualifying Examinations, Thesis Research Advisory Committee meetings, Thesis Dissertation defenses, or in the laboratory to the research team.

Behavioral and Social Attributes

The candidate must possess the emotional and mental health required for full utilization of his or her intellectual abilities, the exercise of good judgment, the socio-cultural interactions required for collaborative teamwork, the prompt completion of responsibilities inherent in managing a scientific laboratory, the ability to function under the stress inherent in biomedical research, and the ability to understand and comply with ethical standards for the conduct of research.

Accommodations for Disabilities

In accordance with Section 504 of the Rehabilitation Act, the Americans with Disabilities Act (ADA), the ADA Amendments Act, and UMass Medical School policy, no qualified individual with a disability shall, on the basis of that disability, be excluded from participation in UMMS programs or activities. UMMS will provide reasonable accommodation to a qualified individual with a disability.

Accepted students who have a disability and feel they may need accommodations in order to successfully fulfill program requirements must initiate discussions with the Office of School Services as soon as the offer of admission is received and accepted. If a matriculated student develops a disability or the impact of their disability changes during their studies and accommodations may be needed to successfully fulfill program requirements, immediate contact with the Office of School Services is required. The Office of School Services is not able to issue retroactive accommodations.

If a student would like to request academic accommodations based on a disability, they must make an in-take appointment with Dr. Hines by calling 508-856-2444 or by email at Deborah-harmon.hines@umassmed.edu.

Faculty Roles in Student transitions

Important Financial Considerations

Completion occurs between September and December

When a student is scheduled to complete during the fall semester but on or before December 31, the Thesis Advisor has 2 options regarding student medical insurance:

- Select to provide insurance coverage through December 31
- Select to provide insurance coverage for the full academic year

The cost of fall semester coverage is approximately 50% of the full year's coverage but this may leave the graduate at a disadvantage if postdoctoral medical coverage is delayed or absent.

Student Transfers

PhD students enrolled elsewhere who wish to become matriculated at UMMS

The GSBS at UMMS does not accept transfer students. Students wishing to become matriculated at UMMS must apply for admission, and must receive favorable review from the Admissions Committee. This process could be expedited if needed, such that review, admission and matriculation could occur off-cycle. Students admitted to the program would have to meet all requirements, though some flexibility can be granted on a case-by-case basis regarding waivers for specific course work or for laboratory rotations. Transfer credits will not be given. Matriculated students must pass the UMMS GSBS qualifying exam; this is not negotiable.

Visiting Students

Students who are enrolled in other institutions but are conducting thesis research in the laboratory of UMMS faculty members may seek a Visiting Non-Degree Student Appointment for the purpose of gaining access to UMMS Student Services and Student Health Insurance (purchased by the student, the advisor or another non-GSBS entity).

Visiting Non-Degree Students are appointed annually, and are not subject to GSBS academic requirements. The conditions for Appointment and renewal are:

1. The appointment must commence at the start of an academic term, and continue through at least two consecutive terms
2. The student must enroll in BBS990 each term (Graduate Research)
3. Total annual stipend level, from all sources, must meet or exceed the GSBS stipend
4. Student Service Fees must be paid by the research advisor or host department
5. The GSBS Program Fee (\$90) must be paid to offset GSBS administration costs
6. The GSBS must receive annual confirmation from the home institution that the student is enrolled in a PhD program and is meeting all academic requirements of the degree program at the home institution.

Complete the program with a Masters

Purpose

The Master's degree provides a positive exit strategy for PhD students with adequate research accomplishments, who have decided, on their own or in consultation with the TRAC and thesis advisor, that continued doctoral research is no longer in their best interests.

Upon approval by the Dean, the student enters into Master's Degree study for a maximum of sixty days to complete degree requirements, after which the student's stipend is terminated.

Who can withdraw with a Master's degree?

The Master's degree is a research-based degree requiring a scholarly analysis of research undertaken by the GSBS student at UMMS.

Candidates for a Master degree are, therefore, GSBS PhD students registered in full-time Thesis or Graduate Research, who have passed their Qualifying Examination and who have, upon review by their TRAC, accumulated sufficient research data and/or analysis to justify the development of a Master's dissertation.

Role of the TRAC

The TRAC (which includes the Thesis Advisor) must determine that the body of work produced by the student will allow the composition of a Master's thesis of sufficient scholarly merit to justify the award of a Master's Degree.

The TRAC may conclude that a student may withdraw and seek a Master's degree under any of several circumstances:

- The student directly petitions for withdrawal with a Master's
- The Thesis Advisor requests that the student withdraw with a Master's
- The TRAC, in its ongoing evaluation of the student's progress, may recommend discontinuation of doctoral study and transition to Master's study

Master's Thesis Committee

If the TRAC supports withdrawal with a Master's degree, the student's Program Director will make a recommendation (including the composition of the Master's Thesis Committee) to the GSBS Dean who will approve or disapprove the request.

The Master's Thesis Committee shall comprise three members as follows: the GSBS Dean, Associate Dean, or GSBS Program Director not of the student's program; a member of the student's TRAC; and, one other GSBS faculty member. The Master's Thesis Committee will meet within fourteen calendar days of receipt of the Master's Thesis to evaluate the adequacy of the thesis.

Master's Dissertation

The Master's Thesis must be submitted to the Master's Thesis Committee within 40 days of the student's entering Master's Degree study or the outcome will be "Fail" (see below). The Master's thesis must be a research report based upon research undertaken by the student. The specific format of this report will be determined by the student's Program; however, the research report must include the following sections: Title, Signature Page, Abstract, Introduction, Materials and Methods, Results, Discussion and References. The report must also include relevant data in Tabular or Figure format.

For specific formatting details see http://www.umassmed.edu/globalassets/graduate-school-of-biomedical-sciences/forms/gpbs_24_masters_thesis_prep_guide.pdf The Master's Thesis should embody original work on the part of the student that has been conducted under the supervision of a member(s) of the faculty of the Graduate School of Biomedical Sciences. It should include a review of literature pertinent to the Thesis problem, properly cited using the documentation style followed by the major journals in the field of specialization.

Outcomes

The outcome shall be decided by a unanimous vote of the Committee.

Three outcomes are possible

- Pass
- Fail – this grade is unconditional and is not subject to appeal by the student.

- Revise - indicates that edits are necessary.

All edits must be completed within twenty calendar days of notification that revisions are required.

Within fourteen calendar days from receipt of the revised thesis, the Master's Thesis Committee shall meet to determine if the revisions were sufficient to change the original outcome to "Pass". If not, the outcome is changed to "Fail" and no appeal is possible.

Students are permitted only one Revision cycle.

The completed Master's Thesis will be signed by all members of the Thesis Committee and by the Dean of the Graduate School.

Student seeks to change labs

In some instances, a student in good academic standing is unable to continue thesis research under the direction of their existing Thesis Advisor. This policy describes the steps that the student and the Graduate School undertake to address this situation. This policy does not address circumstances resulting from the lack of funding support for a student. That situation must be addressed by, and is the responsibility of the thesis research advisor and the chair of the department in which the thesis advisor's laboratory is situated.

Process

If a student in good academic standing finds it impossible to continue their thesis research in their existing laboratory or, if the thesis advisor finds it impossible to continue mentoring the student, the student may request a change of thesis advisor.

A TRAC meeting must be convened to determine whether the student should continue in research, withdraw with a Masters or withdraw from the GSBS.

If continuation in research is recommended by the TRAC and approved by the Dean, and the student has not yet secured a new thesis advisor, the student will be supported for up to 8 weeks during their search for a new thesis advisor. The source of that support shall be one of the following as recommended by the TRAC and approved by the Dean upon review of the Thesis Advisor's research evaluations of the student.

- the original thesis advisor and/or their department plus the GSBS
- the GSBS

Within 2 weeks of their TRAC meeting and with the help of the GSBS and their Program Director, the student must identify two potential thesis research advisors and register for a 4-week research rotation in each of their research programs.

At the end of the first rotation (or earlier where possible), if the first potential advisor does not accept the student as a thesis research student, the student begins the second rotation.

If the student has not secured the commitment of a thesis research advisor upon completion of the two rotations, the student will be dismissed from the GSBS.

Original Thesis Advisor Responsibilities

The thesis advisor will be contacted by the GSBS Associate Dean for Curriculum and Academic Affairs and must provide a frank assessment of the circumstances surrounding the student's request to seek a new advisor.

Systematic, frank, periodic research evaluations of the student by the Thesis Advisor will form a key element in the Dean's decision whether or not the Thesis Advisor or the GSBS will support the student during their search for a new thesis advisor.

Student Responsibilities

All students who are seeking a new Thesis Advisor must:

- Register for two 4-week research rotations with a GSBS faculty member. A research rotation agreement form must be completed for each rotation.
 - These rotations may not be undertaken with faculty who have previously indicated that they are unable to support the student in thesis research.
 - Prior to registration, the faculty must indicate via an e-mail to the Associate Dean for Curriculum and Academic Affairs their willingness and ability to support this student as their Thesis Advisor, assuming all parties are in agreement to that outcome at the end of the rotation.
- Maintain good academic standing (grades of Pass in the research rotations and curriculum).
- Prior to the last week of the rotation period, meet with the rotation faculty to determine whether there is a mutual agreement for the student to remain in that faculty's lab and that the faculty agrees to become the student's Thesis Advisor.
- If the student determines before the end of the 4-week period that they are unable to commit to the first laboratory for thesis research, the student may begin the second rotation but only if the first rotation advisor evaluates their work as satisfactory.

GSBS Faculty Responsibilities

All faculty who serve as rotation faculty for students who are seeking a new thesis research advisor must:

- Be in a position to support the student in thesis research (student stipend, fees and research expenses)
- Inform the student (prior to the rotation) that they are able and willing (subject to satisfactory progress by the student) to financially support the student in thesis research.
- Undertake an oral review (with the student) of the student's progress at the mid-point and one week prior to the end of the rotation. This review will indicate whether the student meets GSBS and laboratory-specific standards for selection for thesis research support.
- Complete a written evaluation of the student's progress using the Lab Rotation Evaluation instrument.
- Inform the student at least one week prior to the end of the rotation whether they have met the faculty's requirements for selection for thesis research support. If, at any time during and no later than the end of the rotation, the faculty member is unable to support the student in thesis research, the faculty member must release the student.

Thesis Advisor asks student to change labs

Process

This process is identical to the process described for students seeking to change their Thesis Advisor with one exception:

Financial support for the student during the 8 weeks of rotation research will be provided by the original Thesis Advisor and/or their department.

Deferred Thesis Advisor Selection

GSBS students are required to select a Thesis Advisor by the end of the summer semester of year one. In some instances, a student in good academic standing is unable to make such a selection. This policy describes the steps that the student and the GSBS undertake to address this situation.

Process

The GSBS is committed to assisting all students in good academic standing to secure a laboratory for thesis research. If, upon review by the GSBS, a student is found to be in good academic standing (research *and* curriculum) but is unable to secure a Thesis Advisor by the end of the summer semester of year one, the GSBS will (contingent on available funds) assume responsibility for the student's stipend and fees for a period of 8 weeks.

Student Commitment

The student must identify (with assistance from the GSBS) two research programs that he/she will rotate in - each for 4-weeks. If the student does not accomplish this charge, they will be dismissed from the GSBS. Use form GSBS02 for further details & requirements

The student will begin the fall semester by undertaking a 4-week rotation in one of the selected research labs.

Prior to week four of the 1st fall semester lab rotation, the student will meet with the Laboratory Rotation faculty to determine whether there is a mutual agreement for the student to remain in that faculty's laboratory and the faculty agrees to become the student's Thesis Advisor.

If this rotation results in the selection of a Thesis Advisor, that faculty will assume responsibility for the student's stipend and fees at the end of the rotation. With the assistance of the Graduate School, the student will process a fall registration change form.

If this first rotation does not result in the selection of a Thesis Advisor, the student will complete the second rotation in the other selected research laboratory. In order to do so, however, the student must receive a satisfactory evaluation of their research effort in the first laboratory.

The student must secure the commitment of a Thesis Advisor before the end of the second rotation and that faculty will assume responsibility for the student's stipend and fees upon commitment.

The student must remain in Good Academic Standing.

Failing this, the student will be dismissed from the GSBS at the end of the second rotation.

GSBS Faculty Commitment

All faculty who serve as rotation advisors for students who are financially supported by the GSBS during the fall semester of year two must meet the following requirements:

- Be in a position to support the student in thesis research (student stipend, fees, health insurance and research expenses).
- Inform the student (prior to the rotation) that they are able and willing to financially support the student in thesis research (subject to satisfactory progress by the student).
- Undertake a review (with the student) of the student's progress at week four and week seven of the laboratory rotation during the fall semester in order to indicate whether the student meets GSBS and laboratory-specific standards for selection for thesis research support. If the student does not meet standards at the time of the first review, the faculty must indicate (using the Laboratory Rotation Evaluation Instrument) those specific areas that require improvement.
- Inform the student at seven weeks of research whether the student has met the faculty's requirements for selection for thesis research support. If, at eight weeks, the faculty is unable to support the student in thesis research, the faculty must release the student for selection of an alternative thesis research sponsor.

Leave of Absence and Return from Leave of Absence

Students in good standing may request a leave of absence (LOA) for a period not exceeding one year. All leaves of absence or returns from leaves of absence require a meeting with the Dean or Associate Dean for Curriculum & Academic Affairs. Students on probation (academic or administrative) and granted a leave of absence may have conditions of reinstatement set by the Dean, the Thesis Advisor or TRAC.

If the student does not return to school at the end of the LOA period, the student will be withdrawn by the Graduate School.

A student may only return from a LOA on the first day of a semester. For students taking a full year LOA, the return would be in the first semester following the one year LOA period.

Process to request LOA

- Student completes and submits a Request for Leave of Absence Form to the Graduate School for the Dean's approval.
- Student requests a meeting with Dean to review the request.
- If a LOA is requested in the middle of a semester, the student will receive a grade of either Incomplete (I) or Withdraw (W) for all registered courses for that semester. If an Incomplete grade is received, the student must complete that course upon return from the Leave of Absence.
- All assignments that are due during the period of LOA are suspended. LOA students may still submit their assignments during the period of LOA with the understanding that to do so represents their official assignment submission.
- International students must coordinate this leave with Immigration Services. A Leave of Absence may result in the termination of the student visa, necessitating a new visa application for return.

Process to request a return from LOA

- Student completes and submits a Request for Return from Leave of Absence to the Graduate School for the Dean's approval no later than 30 days prior to the anticipated date of Return from Leave of Absence.
- The student must declare their intent to return 30 calendar days before the start of the term of return. The statement of intent must include a research plan, and evidence of support for that plan from their research advisor.
 - Students who have not yet selected a thesis lab and thesis mentor, must identify labs for rotation prior to return. The rotation mentors must indicate they agree to mentor the student and have the resources to support the student in potential Thesis Research.
 - Students who have identified a thesis mentor, or have progressed into thesis research, must include a letter of support from their existing or newly identified thesis advisor indicating that they agree to support the student in their research.
 - Students who have taken LOA while the QE is in progress must successfully complete the QE by the end of the semester of return.
- All requests for return from LOA will be reviewed by the Dean and by the students TRAC (third year and beyond) or by the Academic Advancement Committee for students who have not yet formed a TRAC.
- Student will request a meeting with Dean to review any academic requirements that must be met upon return from the LOA.
- Suspended assignments are immediately due upon return from LOA.

Student Honor Code

Purpose

The student honor code describes the code of professional ethics GSBS faculty and students expect all GSBS students to abide by. The honor code describes:

- Those standards of professional behavior that are central to an individual's success as a scientist
- The action(s) that should be taken if a student appears to violate the honor code
- How an honor code violation should be reported and investigated
- The process of an honor board hearing
- Possible outcomes of an honor board hearing
- The rights of the accused student

Role of GSBS faculty in honor board hearings

Student honor boards are populated by students and staffed by a GSBS Associate Dean who is determined by the Dean to hold no conflict in the case.

The wider GSBS faculty are not involved unless they are in possession of facts that are material to the allegations.

Upon receipt of an Honor Board finding (which may include a recommended action), the Dean shall consider all appropriate actions, determine a course of action then shall seek advisory input to specifically address whether or not the proposed action is commensurate with the finding. The advisory input shall be sought from the Academic Advancement Committee.

Details of the student Honor Code and Honor Board Hearings

The student honor code and honor board process are available on the GSBS web site under Student Handbook and Forms.

Faculty service in the GSBS

In addition to teaching and research advising, the GSBS faculty may meet their service requirement for promotion by serving the GSBS in any of several additional ways upon request of the GSBS Dean, GSBS Program Directors or GSBS faculty. These include:

GSBS Assembly

- GSBS Assembly is the official governing body of the GSBS, is representative of the GSBS faculty and student body and is advisory to the GSBS Dean.
- Voting members of GSBS Assembly comprise one faculty representative from each GSBS Program and two student representatives from the Graduate Student Body Committee (a GSBS student leadership team elected annually by the GSBS student body).
- Non-voting members include the GSBS Dean, GSBS Associate and Assistant Deans and GSBS staff.
- GSBS Assembly convenes on the first Friday of each month at 9 a.m.
- GSBS Governance and the Bylaws of its various sub-committees are available at: http://www.umassmed.edu/globalassets/office-of-faculty-affairs/documents/governance/bylaws_gsbs.pdf

GSBS Program Directors

Each GSBS Program is led by a Program Director. The Program Director serves their students and faculty by coordinating program curriculum and activities and by advising students on course selection, research rotation opportunities, the selection of thesis research mentors and the faculty composition of QEC, TRAC and DEC. The Program Director works closely with the GSBS Dean and the GSBS Associate Dean for Curriculum and Academic Affairs to insure that the best interests of the graduate student are served in all matters. The Program Director serves as advocate for their program faculty and students.

The GSBS Dean appoints the Director of each Graduate Program annually. The Dean considers the recommendation of the faculty members of the particular Graduate Program and the GSBS Assembly, consistent with the Graduate Program's operating guidelines.

In the event of a vacancy and notwithstanding any provision to the contrary, the Dean, after consultation with faculty members of the Graduate Program and the GSBS Assembly, shall appoint an individual as *interim* Director until such time as the vacancy is filled. Further, the Dean may appoint an individual as *acting* Director in the event of a leave of absence or sabbatical.

To see a listing of the current Program Directors, please visit:

- <http://www.umassmed.edu/gpbs/about/gpbs-community/directors/>

GSBS Admissions

GSBS faculty play a central role in student recruitment each year. All GSBS admissions are coordinated by the GSBS Associate Dean for Admissions who serves to recommend:

- the appointment of qualified faculty to each admissions committee
- a slate of candidate applicants for review by each admissions committee
- outreach efforts to each admissions committee to broaden the pool of applicants and to deepen the quality of the applicant pool.
- the agenda for each GSBS recruitment event hosted at UMMS.

Committees

Faculty may assist the GSBS admissions process by serving on one or more of the following committees

- Umbrella Programs Admissions Committee
- MD/PhD Admissions Committee
- Clinical & Population Health Research Admissions Committee
- Millennium PhD Admissions Committee
- Masters in Clinical Investigation Admissions Committee
- Pathway to Graduate Study Program Admissions Committee
- Health Sciences Preparatory Program Admissions Committee

Applicant Interviews

Faculty may be invited by the GSBS Associate Dean for Admissions to participate in applicant interviews. This is one of the most important services a GSBS faculty member can provide to the GSBS because it materially impacts our ability to:

- identify the most able applicants
- recruit the most qualified applicants to the GSBS

Post-Offer Follow-up

The GSBS Associate Dean for Admissions may request that you specifically contact an applicant of high interest to the GSBS in order to further engage them in a discussion of research opportunities at UMMS. This too is an important component of student recruitment to the GSBS because:

- It is likely that the research program of the faculty member contacted by the GSBS is of specific interest to the applicant
- It provides an opportunity that may not have been available on the day of applicant interviews to describe the depth of research opportunities available in the GSBS
- It very clearly communicates our interest in the student's matriculation.

GSBS Curriculum

GSBS faculty play a central role in our students' training by designing and teaching a multi-disciplinary, research-oriented, advanced curriculum. The GSBS Associate Dean for Curriculum and Academic Affairs coordinates the GSBS curriculum and engages the GSBS faculty through the GSBS Curriculum Committee.

Curriculum Committee

- Develops, reviews, and makes recommendations regarding general education policy.
- Reviews and considers approval of courses proposed for all GSBS Programs.
- Makes recommendations for modification or termination of existing courses as needed.
- Reviews and oversees curricular matters in all Graduate Programs.
- The members are responsible for organizing specialized subcommittees, in consultation with the Dean, as needed and as defined in the Committee's bylaws.

GSBS Assembly Advisory Committees

A number of faculty-led committees assist the GSBS faculty each year by advising GSBS Assembly in several areas.

Research Sustainability

This committee is co-coordinated by GSBS Associate Dean for Admissions and the GSBS Associate Dean for Curriculum and Academic Affairs and advises GSBS Assembly by:

- Annually reviewing graduate student stipends and fees in the GSBS and external competing graduate programs.
- Annually reviewing faculty survey data on the number of available thesis research opportunities.
- Annually consulting with the Department Chairs on admissions targets, student stipends and fees.
- Annually reporting their recommendations on student stipend and fee adjustments to GSBS Assembly. GSBS Assembly shall review proposed adjustments to stipends and fees and shall forward a final recommendation to the Dean for review and approval.
- Annually consulting with and advising GSBS Assembly and the appropriate Admissions Committee(s) on admissions targets. GSBS Assembly shall review admissions targets proposed by the Research Sustainability Committee and each Admissions Committee and shall forward a final recommendation to the Dean for review and approval.

Faculty Review

This committee focuses on the quality of the graduate student experience by maintaining the highest standards for faculty membership in the GSBS. The committee:

- Reviews individual faculty at least every five (5) years or upon request by the Dean for continued contributions to teaching, research and scholarship activities consistent with the mission of the GSBS.
- Makes recommendations for each faculty in one of four categories:
 - Continuation of membership at current status (Faculty or Contributing Faculty) for up to 5 years.
 - Continuation of membership with changed status (Faculty or Contributing Faculty) for up to 5 years.
 - Conditional continuation of membership for one-year with renewal of membership thereafter subject to performance improvement in delineated areas.
 - Discontinue membership.
- Provides recommendations to the GSBS Assembly and forwards final recommendations to the Dean for review and approval.

Academic Standards

This committee focuses on the quality of the graduate student experience by reviewing and establishing standards for student accomplishment at the doctoral level. The GSBS Associate Dean for Curriculum and Academic Affairs coordinates committee's activities and the committee serves to:

- Develop, review, and make recommendations regarding issues relevant to the admissions, progression, retention, and graduation standards and policies of the GSBS.
- Define good academic standing
- Update the GSBS Student Handbook annually and communicate approved changes in academic policies and standards to matriculated students and GSBS Faculty as they occur.
- Provide an annual outcomes report on student performance in core curricula, qualifying examinations and thesis defenses and their correlations, if any, to admissions credentials.

Dean's Advisory Committees

Academic Advancement

The activities of this committee are coordinated by the GSBS Associate Dean for Curriculum and Academic Affairs who is charged by the GSBS Dean to review the potential of graduate students to succeed in doctoral research. This committee is asked to annually review 3 groups of students. The general rules guiding advancement are described in the Handbook section Academic Advancement (page 38).

Curriculum Review

Each course is subject to annual review by its course coordinators in coordination with the GSBS Associate Dean for Curriculum and Academic Affairs.

Following annual curricular review, the GSBS Faculty, the GSBS Associate Dean for Curriculum and Academic Affairs or the GSBS Curriculum Committee may recommend to the GSBS Dean that a specific course requires significant restructuring in order to meet the evolving needs of the student body.

Core Courses

If the course is a GSBS Core Course, the GSBS Dean shall:

Ask the GSBS Associate Dean for Curriculum and Academic Affairs to:

- Seek representative faculty and student input on the course and the nature of the changes that may be necessary to improve the learning experience
- Recommend a committee of faculty and students to review the course content, pedagogy and objectives, how these relate to GSBS learning objectives and to consider how these could be more effectively aligned in a restructured course
- Charge the committee to redesign the course in such a way as to align course objectives and pedagogy with GSBS learning objectives and to insure broad faculty input in the redesign of the curriculum
- Review their recommendations and, working through the GSBS Associate Dean for Curriculum and Academic Affairs, select a group of GSBS educators to coordinate and implement the recommended changes.
- Charge the GSBS Associate Dean for Curriculum and Academic Affairs and the course directors to evaluate the modified course on an ongoing basis to insure that its objectives and outcomes are aligned.

Program-specific Advanced Topics

If the course is a program-specific course, the GSBS Dean shall:

Ask the GSBS Associate Dean for Curriculum and Academic Affairs and the Curriculum Committee to:

- Seek program faculty and student input on the course and the nature of the changes that may necessary to improve the learning experience
- Strongly recommend to the Program Director and course coordinators that they design a restructured course that clearly articulates the course learning objectives and which aligns course content and pedagogy with these objectives.
- Working with the course directors, review the restructured course for subsequent approval by GSBS Assembly
- Evaluate the modified course on an ongoing basis to insure that its objectives and outcomes are aligned.

Awards and Recognition Committee

This committee reviews, and makes recommendations regarding the granting of awards of achievement to nominated students, postdoctoral fellows and faculty. The committee also reviews applications for GSBS-Riccio Student Travel grants and the selection of candidates for extramural Fellowship completions.

The Awards and Recognition Committee advises and consult with the GSBS Dean and GSBS Assembly.

Voting membership of the Awards and Recognition Committee consists of nine GSBS faculty members broadly representative of the research-focused GSBS faculty. Members should have supervised at least 3 students through completion of degree.

The Associate Dean for Curriculum and Academic Affairs (student awards) and the Associate Dean for GSBS Admissions (faculty awards) serve *ex officio*.

Terms for voting members shall be for three academic years. Initial appointments shall be staggered. Faculty may be reappointed to successive terms.