GSBS Academic Requirements for MD/PhD students

A. General GSBS Requirements:

1.   Tutorial Lab Rotations

All GSBS students are required to complete tutorial research rotations with three different <u>Regular Members of the GSBS faculty</u> prior to selecting a dissertation advisor. The normal rotation period is approximately 10 weeks. With permission from the GSBS Office of Academic Affair and the tutorial instructor, shorter rotation periods are permitted with a minimum of 5 weeks.

Students must register for *<u>GS00 1514 Tutorial Research Experience</u>* under the GSBS tutorial instructor's name in order to receive credit for each rotation. If additional research credits are needed to attain full time enrollment, the student may also register with the same instructor for *<u>GS00 1520 Research in Biomedical Sciences.</u>*

Students must meet with the GSBS Associate Dean of Academic Affairs and their MD/PhD program advisor prior to the selection of each tutorial instructor.

Tutorial rotations should be carried out during the periods listed below:

<u>Pre-MS1 -</u> Students may register at GSBS for a tutorial during summer semester preceding MS1 provided that they complete the onboarding, administrative pre-enrollment process and registration prior to the first day of summer classes.

<u>Summer after MS1-</u> Students may register at GSBS during this period between MS1 and MS2 which will typically allow enough time for one 10 week rotation or two 5 week rotations.

<u>Second Summer Session following MS3</u> – Upon completion of MS3 students who have not yet identified a dissertation advisor and completed all required tutorials may carry out an additional tutorial. The GSBS Second Summer Session begins in the first week of July and extends to mid-August.

<u>Rotation Waivers</u>
Students who have previously completed substantial graduate level research projects or have a published research paper prior to enrollment in the program may request a waiver for a maximum of one required tutorial by contacting the GSBS Associate Dean of Academic Affairs.

<u>Non-GSBS Tutorial Advisors</u>
In cases where a GSBS faculty member is not available who matches their research interests, students may carry out tutorial rotations with non-GSBS faculty members at other institutions within the TMC provided that the following conditions are met.

1. The tutorial is pre-approved by both the Director of the MSTP Program and the GSBS Associate Dean of Academic Affairs. This approval <u>must</u> be obtained prior to the beginning of the tutorial.

2. A Regular member of the GSBS faculty is identified to serve as the "on-site sponsor" for the rotation and will communicate with the non-GSBS mentor to monitor the student's progress in the rotation. The student should register with the GSBS faculty member for Tutorial Research Experience. The GSBS Deans reserve the right to specify the faculty member who will serve as the on-site sponsor.

3. The non-GSBS faculty member has an established track record of training MD/PhD or PhD students.

4. The student is approved by the host institution/department to complete the tutorial on their campus.

2. Selection of a Dissertation Advisor and Transition to GSBS

Prior to the transition to full-time enrollment at GSBS at the end of MS3 students must complete the STEP2 exams. Students should select a GSBS Dissertation Advisor before the end of summer semester following MS3. The advisor must be a Regular Member of the GSBS faculty. The selection of an advisor, should be done in consultation with both the GSBS Associate Dean of Academic Affairs and the Director of the MSTP program. Although the MSTP program will financially support all required tutorial rotations, the advisor must assume support of the student's GRA and research project upon affiliation and transition to GSBS. The

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advisor is responsible for providing continuous support throughout the student's dissertation research at GSBS. To formally identify the advisor, the student must provide GSBS with fully completed copies of the Accountable Mentorship Agreement and the GSBS Core Tenets Agreement. Both documents and instructions can be obtained from the GSBS Office of Academic Affairs.

Selecting a non-GSBS dissertation advisor
Students are encouraged to make every effort to identify a GSBS faculty member who matches their interests and can serve as their primary dissertation advisor. However, in cases where a GSBS advisor for dissertation cannot be found who matches the student's interests then a non-GSBS advisor from another TMC institution may be selected in whose laboratory the dissertation research will be carried out. All the conditions for a non-GSBS tutorial listed above must be met. An on-site GSBS advisor must also be identified and both advisors must be approved by the GSBS Deans. It is expected that the on-site GSBS advisor will chair the students committee and will actively interact with the non-GSBS advisor. Prior to starting work in the lab, both the advisors must sign the Accountable Mentorship Agreement. The non-GSBS dissertation advisor is expected to support the student's GRA, however if there is a lapse in funding, the on-site GSBS advisor will be responsible for identifying financial support.

Because GRA support from institutions other than UTHealth and MD Anderson requires the establishment of an interinstitutional salary reimbursement agreement, the GSBS must be notified, and Accountable Mentorship Agreement submitted, at least two months in advance of student's start date in the lab. Failure to do so may result in a lapse in funding.

3. General GSBS Course Requirements

GS21 1051 Ethical Dimensions of Biomedical Sciences (1 SCH) + two online ethics modules

GS21 1611 Topics in Molecular Medicine (1 SCH) each semester during the GSBS training period

GS21 1152 Scientific Writing or another course approved to meet the GSBS Scientific Writing Requirement (see course description on GSBS website to confirm).

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Alternatives include:
> *GS04 1811 G&E Scientific Writing*
> *GS07 1092 Topics in Microbiology and Infectious Diseases*
> *GS03 1111 Scientific Writing for Grant Proposals*

One GSBS quantitative course from the list below:
> *GS01 1143 Introduction to Bioinformatics*
> *GS14 1612 Biostatistics for Life Scientists*
> *GS03 1023 Current Methods in Biochemistry and Cell Biology*
> *GS11 1013 Genetics and Human Disease*
> Other GSBS Courses with the pre-approval of GSBS Academic Affairs

Research Courses: To represent laboratory research effort and account for full time participation in graduate studies all students should register for one of the following classes each semester after selecting an advisor.

Before PhD Candidacy: *GS00 1520 Research in Biomedical Sciences.*
After PhD Candidacy*: GS00 1920 Dissertation for Doctor of Philosophy*

Note:
The GSBS "Core course" *GS21 1017 Foundations of Biomedical Research* is <u>waived</u> for all MD/PhD students. Waivers of other general GSBS course requirements based on previous coursework may be requested by contacting the GSBS Office of Academic Affairs.

4. Course Requirements of Specialized GSBS PhD Programs
All MD/PhD students must select an area of research concentration by joining one of 9 available GSBS PhD programs. These programs have specific course requirements in addition to the general GSBS requirements listed above. Before joining a program, students should talk to the PhD Program Director regarding:

1. Modified requirements that the program may have established for MD/PhD students to eliminate overlap with Medical School courses. Many programs have specific requirements for MD/PhD students posted on their GSBS website.

2. Possible waivers of program requirements based on the student's previous coursework. The program director is responsible for approving such waivers. If a waiver is obtained, the student must notify GSBS

Academic Affairs by forwarding an email from the director confirming that the waiver was granted. The waiver will be added to the student's record.

5. Advisory Committee and PhD Candidacy

The student must form an advisory committee of five or more faculty and submit it to the GSBS Academic Standards Committee for approval prior to the end of the first semester of GS1. All MSTP students must include one MSTP program codirector or an experienced member of the MSTP committee.   Instructions and forms for committee approval can be found in the Academics section of the GSBS website.

Advisory Committee Meetings
The first committee meeting must be held during the second semester of GS1 and repeated at least once every six months thereafter. Students must submit both a pre-meeting report and a signed post meeting report to the gsbs.reports@uth.tmc.edu within two weeks of the meeting.

PhD Candidacy Exam
All MSTP students are expected to petition for PhD candidacy by the end of the fall semester of GS2 and complete the exam by the spring semester of GS2.   All course requirements are to be completed prior to taking the exam. The candidacy petition must be signed by all members of the student's Advisory Committee at a committee meeting (usually the second meeting).   Extensions of the above deadline for PhD candidacy petition may be obtained in advance upon written recommendation from the student's advisory committee to the GSBS

Candidacy Exam Committee
The composition of this committee is submitted as part of the petition for PhD Candidacy. The committee should conform to the policies of the student's PhD Program and the GSBS. In addition, one member of the exam committee should be a director from the MD/PhD program or an experienced member of the MD/PhD Committee.

Forms and guidelines
Forms and guidelines for forming an Advisory Committee, reporting results of a committee meeting and petitioning for PhD candidacy may be found on the Forms Page of the GSBS website under "Academics".

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Degree Completion Requirements

Credit Hours
All students must complete 72 Semester Credit Hours (SCH) to earn the PhD degree. Students must be registered for full-time throughout their GSBS training and they must register for *GS00 1920 Dissertation for Doctor of Philosophy* in the semester of degree completion.

Publication Requirement
All students are required to submit a first author (or "co-first author") research paper to a peer reviewed journal prior to defense. Students who entered the program in 2014 or after must also have such a paper accepted for publication prior to graduation.

Deadlines and Degree Timeline
All other major PhD degree requirements (milestones) for MD/PhD students are outlined on the MD/PhD Milestones page of the GSBS website and in the Annual Milestones Agreement that should be reviewed and signed by the student and advisor each year.

GSBS Approval for Returning to Medical School
Students are expected to complete all requirements of the PhD degree prior to their return to Medical School.   Return to medical school requires approval by the student's advisory committee, GSBS Associate Dean of Academic Affairs, and the MSTP Program Director.

Required forms:
MSTP Proposed Plan for Completing PhD Degree Form
Attestation for Returning MD/PhD Students Form
Approval to Return to Medical School Form

It is recommended that students plan carefully and make every attempt to complete all PhD degree requirements before returning to Medical School. In the event that all experiments and data analysis have been completed but the defense will not be held until after the beginning of the Medical School semester, the student may apply for an exception to the above requirement upon recommendation of the student's advisory committee. The request will be

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reviewed by the GSBS Associate Dean of Academic Affairs who may individually poll advisory committee members. Students should regularly discuss their timeline for MS return with their Advisory Committee members throughout their GSBS training.

Combined Degree Completion

The receipt of the combined MD/PhD degrees requires completion of both components. The MD degree will not be conferred upon MSTP students who have not completed all PhD degree requirements. Timely completion of the PhD is thus required for the on-time entry into a residency program.