



# Translational Bioscience Graduate Program

School of Medicine  
University of Missouri

## PhD Graduate Program Student Handbook

University of Missouri-Columbia  
June 2024

# Table of Contents

CONTACTS.....	4
<i>Program Co-Directors</i> .....	4
<i>Emphasis Area Leaders</i> .....	5
Biochemistry & Biophysics.....	5
Cancer Biology .....	5
Infection & Immunity .....	5
Integrative Physiology .....	6
Nutrition & Exercise Physiology .....	6
Population & Precision Health.....	6
Tom and Anne Smith MD/PhD.....	6
<i>Program Staff</i> .....	7
Program Coordinator .....	7
Program Recruiter.....	7
PROGRAM OVERVIEW .....	8
ADMISSION INTO THE PROGRAM.....	9
<i>General Academic Requirements</i> .....	9
<i>Language Requirement</i> .....	9
<i>Application Submission and Review</i> .....	9
GRADUATE STUDENTS, APPOINTMENTS AND TUITION .....	10
<i>Graduate Research Assistant (GRA) Appointments</i> .....	10
COURSEWORK REQUIREMENTS.....	11
<i>Registration</i> .....	11
<i>Full-time Enrollment</i> .....	11
<i>Adding/Dropping Courses</i> .....	11
<i>Transfer of Credit</i> .....	12
<i>Academic Performance and Probation</i> .....	12
<i>Course of Study for the PhD Degree</i> .....	12
<i>Coursework Requirements</i> .....	14
Year-by-Year Distribution of Coursework.....	15
Year 1 Coursework (23 credit hours) .....	15

Year 2 Coursework (23 credit hours) .....	16
Year 3 Coursework (16 credit hours) .....	17
Years 4-5 Coursework (5 credit hours per year) .....	17
<i>Teaching Experience</i> .....	18
Biochemistry and Biophysics Emphasis Area.....	18
Infection and Immunity Emphasis Area .....	19
Integrative Physiology Emphasis Area .....	19
Requirements for Teaching Assistants .....	19
<i>Course of Study for the Dual MD/PhD Degree</i> .....	19
<i>Selection of an Emphasis Area</i> .....	22
<i>Participating Faculty in Each Emphasis Area</i> .....	22
SELECTION OF RESEARCH ADVISOR.....	23
<i>Research Rotations</i> .....	23
Timeline for Research Rotations.....	23
<i>Grading of Research Rotations</i> .....	23
<i>Selection of a Research Advisor</i> .....	24
Responsibilities of the Research Advisor .....	25
Responsibilities of the PhD Student.....	26
<i>Loss of Funding by Research Advisor</i> .....	26
<i>Changing Research Advisors</i> .....	26
SELECTION OF A DOCTORAL PROGRAM COMMITTEE .....	27
<i>Timing</i> .....	27
<i>Composition of a Doctoral Program Committee</i> .....	27
<i>Responsibilities of the Doctoral Program Committee</i> .....	27
EXAMINATIONS AND DOCTORAL FORMS .....	28
<i>Graduate School Doctoral Forms</i> .....	28
<i>Qualifying Exam</i> .....	28
<i>Plan of Study</i> .....	29
<i>Comprehensive Exam</i> .....	29
<i>Submission of a Fellowship</i> .....	30
External funding agencies.....	31
<i>Dissertation</i> .....	31
EVALUATION OF SATISFACTORY PROGRESS .....	32

<i>Annual Progress Report</i> .....	32
<i>Satisfactory Progress in Academic Coursework</i> .....	32
<i>Satisfactory Progress in Research</i> .....	33
<i>Dismissal and Appeal Process</i> .....	34
GRADUATE STUDENT ASSOCIATION .....	34
STUDENT CONDUCT AND CONFLICT RESOLUTION.....	34
<i>Expectations for Graduate Students' Professional and Acceptable Behavior</i> .....	35
<i>Conflicts with Faculty</i> .....	35
ASSISTANTSHIP AND FELLOWSHIP POLICIES .....	35
<i>Graduate Research Assistantships</i> .....	35
<i>Travel Funds</i> .....	36
MISCELLANEOUS POLICIES AND USE OF AI TOOLS .....	37
<i>Health Insurance</i> .....	37
<i>Leave of Absence</i> .....	37
<i>Graduate Student Leave and Vacation Policy</i> .....	38
<i>Use of AI-Tools in Research and Courses</i> .....	38
UNIVERSITY RESOURCES FOR GRADUATE STUDENT .....	39
<i>Contacts</i> .....	39
<i>Important Links and Forms</i> .....	40

# CONTACTS

---

Translational Biosciences PhD Program  
University of Missouri School of Medicine  
Columbia, MO

<http://medicine.missouri.edu/translational-biosciences/>

## *Program Co-Directors*

### **Gillian Bartlett-Esquillant, PhD**

Associate Dean for Graduate Research Education  
Professor of Biomedical Informatics, Biostatistics and Medical Epidemiology  
School of Medicine  
University of Missouri - Columbia

Math Sciences Building, 810 Rollins Street  
Columbia MO 65211

Tel: (573) 239-2921

Email: [gillian.bartlett@health.missouri.edu](mailto:gillian.bartlett@health.missouri.edu)

### **Lee-Ann H. Allen, PhD**

Professor and Chair of Molecular Microbiology & Immunology  
George Trimble Endowed Chair for Excellence in Medicine  
School of Medicine  
University of Missouri – Columbia

M616 Medical Sciences Bldg.  
Temporary Location during renovation – MA101B  
Columbia MO 65212

Tel: (573) 882-8989

Email: [lee-ann.allen@health.missouri.edu](mailto:lee-ann.allen@health.missouri.edu)

## *Emphasis Area Leaders*

### Biochemistry & Biophysics



**Charlotte Phillips, PhD**  
Professor of Biochemistry  
Tel: (573) 882-5122  
Email: [phillipscl@missouri.edu](mailto:phillipscl@missouri.edu)



**Peter Cornish, PhD**  
Associate Prof of Biochemistry  
Tel: (573) 882-0443  
Email: [cornishp@missouri.edu](mailto:cornishp@missouri.edu)

### Cancer Biology



**James Amos-Landgraf, PhD**  
Associate Professor of Veterinary Pathobiology  
Tel: (573) 882-1514  
Email: [amoslandgrafj@missouri.edu](mailto:amoslandgrafj@missouri.edu)

### Infection & Immunity



**Adam Schrum, PhD**  
Associate Professor of MMI, Surgery, Bioengineering  
Tel: (573) 771-7411  
Email: [schruma@health.missouri.edu](mailto:schruma@health.missouri.edu)

## Integrative Physiology



### **Erika Boerman, PhD**

Assistant Professor of Medical Pharmacology and Physiology

Tel: (573) 882-6570

Email: [boermane@health.missouri.edu](mailto:boermane@health.missouri.edu)

## Nutrition & Exercise Physiology



### **Christopher Hardin, PhD**

Professor of Food, Nutrition and Exercise Sciences

Tel: (573) 882-4288

Email: [hardinc@missouri.edu](mailto:hardinc@missouri.edu)

## Population & Precision Health



### **Randi Foraker, PhD**

Chair and Professor of Biomedical Informatics,  
Biostatistics and Medical Epidemiology

Tel: (573) 884-6179

Email: [randi.foraker@health.missouri.edu](mailto:randi.foraker@health.missouri.edu)

## Tom and Anne Smith MD/PhD



### **Charlotte Phillips, PhD**

Professor of Biochemistry

Tel: (573) 882-5122

Email: [phillipscl@missouri.edu](mailto:phillipscl@missouri.edu)



### **W. David Arnold, MD**

Professor, Physical Medicine  
& Rehabilitation; Medical  
Pharmacology & Physiology;  
Neurology

Email: [w davidarnold@health.missouri.edu](mailto:w davidarnold@health.missouri.edu)

## *Program Staff*



Program Coordinator

**Christa Smith**

Sr. Program Coordinator  
108 Math Sciences Bldg  
810 Rollins Street  
Columbia MO 65211

Tel: (573) 882-0172

Email: [smithchrista@missouri.edu](mailto:smithchrista@missouri.edu)



Program Recruiter

**Chelsea Stone**

Sr. Recruitment Coordinator  
108 Math Sciences Bldg  
810 Rollins Street  
Columbia MO 65211

Tel: (573) 882-0955

Email: [c.stone@health.missouri.edu](mailto:c.stone@health.missouri.edu)



## PROGRAM OVERVIEW

---

The Doctor of Philosophy (PhD) degree is the highest degree offered by the University of Missouri-Columbia. It is conferred only for a work of distinction in which the student has produced original scholarship that represents a significant contribution to our collective knowledge. The Translational Biosciences PhD program provides an outstanding environment for the student to learn how to develop new experimental approaches and methodologies, apply these methods to address significant problems in the biomedical sciences and communicate the outcome to the scientific community and the public. After earning a Translational Biosciences PhD, students will be equipped with unique skill sets that enable success in their chosen career.

The Translational Biosciences PhD program spans the entire breadth of the biomedical research spectrum, from basic science discoveries to improved clinical outcomes. The Translational Biosciences PhD program is organized around six Research Emphasis Areas that provide disciplinary focus while eliminating institutional barriers that discourage collaborative and interdisciplinary research. Each Emphasis Area contains research-active faculty who come from diverse disciplinary backgrounds but share common research interests and a commitment to providing PhD students with a high-quality training environment. These Emphasis Areas include:

- Biochemistry and Biophysics
- Cancer Biology
- Infection and Immunity
- Integrative Physiology
- Nutrition and Exercise Physiology
- Population and Precision Health

A PhD degree in the Translational Biosciences PhD program is a highly individualized degree, in which a unique course of study is developed for each student. Every PhD student in the Program will develop proficiency in technical, operational, and professional scientific skill sets. Our PhD graduates will excel in the discovery and communication of new knowledge in the biomedical sciences and become leaders in their chosen career.

# ADMISSION INTO THE PROGRAM

---

## *General Academic Requirements*

The Graduate School of the University of Missouri-Columbia requires that all applicants for a graduate degree should have earned a bachelor's degree (or equivalent) from an accredited institution. See <https://gradschool.missouri.edu/admissions/eligibility-process/> for information regarding accreditation. All applicants for a graduate degree program at the University of Missouri-Columbia must have a grade point average (GPA) of 3.0 (A=4.0) or higher in the last 60 hours of undergraduate coursework.

## *Language Requirement*

International applicants and non-native English-speaking applicants must show evidence of English-language ability. Test scores on approved English language exams must be included as part of the application to the Translational Biosciences PhD program. Approved English language exams include: (1) Test of English as a Foreign Language (TOEFL); (2) International English Language Testing System (IELTS); (3) Pearson Test of English Academic (PTE); (4) Cambridge English Tests (B2 first, C1 Advanced and C2 Proficiency); (5) Duolingo English Test. The MU Graduate School has minimum standards for English proficiency for non-native English-speaking applicants, as described at:

<https://gradschool.missouri.edu/admissions/eligibility-process/international-applicants/>.

International applicants from certain countries where English is considered the native language are exempt from English proficiency requirements. International applicants from non-native English-speaking countries may request a waiver from the English proficiency requirement if certain conditions, such as completing, within the last two years, one year of full-time college-level study in a country where English is the native language. An additional English proficiency test is required for graduate students who have any teaching role in a classroom or laboratory setting. We recommend that international students who need to improve their English language skills enroll in class(es) offered by the Center for English Language Learning, at <https://international.missouri.edu/cell/>.

## *Application Submission and Review*

Applications for the Translational Biosciences PhD Program are available at <https://applygrad.missouri.edu/apply/>. Application components include: transcripts from all prior undergraduate institutions attended; a curriculum vitae (CV) that summarizes prior academic and research experiences as well as other relevant experiences; an essay describing the applicant's prior research experiences; an essay describing the applicant's commitment to obtaining a doctoral degree; and three letters of recommendation from individuals who have knowledge regarding the academic and research abilities of the applicant.

The deadline for applications to the Translational Biosciences PhD Program is December 1 of the year prior to anticipated matriculation into the Program. Completed applications will be

reviewed by a faculty committee consisting of representatives from all Emphasis Areas of the Translational Biosciences PhD Program. Applicants will be notified of their status following the committee review of applications. In January, selected applicants will be invited to visit the University of Missouri-Columbia campus and meet with faculty, students and staff. Students who are accepted into the Program must indicate their commitment to matriculate into the Program by April 15. A required orientation for all first-year students will begin in early August, with the academic year typically beginning the first Monday of the third full week of August.

## **GRADUATE STUDENTS, APPOINTMENTS AND TUITION**

---

### ***Graduate Research Assistant (GRA) Appointments***

It is the expectation of the Translational Biosciences PhD Program that students who matriculate into the program will devote 100% of their time and effort to completing their degree. As students who are pursuing a doctorate degree, predoctoral graduate students spend a significant portion of their time in coursework and learning how to undertake independent research. To provide predoctoral graduate students with a living stipend, tuition support and university-subsidized health insurance, all predoctoral students in the Translational Biosciences PhD Program will be appointed to a Graduate Research Assistant (GRA) position at 0.5 of Full Time Effort (FTE). Students who are unable to devote 100% of their time and effort to their predoctoral studies will not be appointed to a GRA position and will not receive a stipend, tuition support or university-subsidized health insurance.

The main responsibility of a GRA position is to assist faculty with their research projects. A general expectation is that PhD students will spend approximately half of their time assisting faculty with research projects and approximately half of their time on other educational activities. Taken together, the time that predoctoral students spend on educational activities as well as their research assistant activities are equivalent to a full-time position. PhD students in the Translational Biosciences PhD Program must request permission from the Translational Biosciences PhD Program for any compensated employment that is outside the scope of their GRA appointment. As the GRA appointments are renewed on an annual basis, any compensated employment outside of a student's GRA appointment must be reported on an annual basis.

The base stipend for graduate students in the Translational Biosciences PhD Program is \$33,000 per year, paid in 12 monthly installments. All students with GRA positions in the Translational Biosciences PhD Program will receive a tuition support sufficient to cover the full cost of tuition. Student fees and parking are the responsibility of the student.

The Translational Biosciences PhD Program is committed to the success of the students in the Program. Students will receive continuous financial support, in the form of the GRA stipend, tuition support and university-subsidized health insurance for five years (60 months) following matriculation into the Program. This financial support represents a substantive commitment by the University, the Program and the individual faculty mentors to the students who are selected for this PhD program. This commitment is contingent upon the student making satisfactory progress towards completion of their degree. The requirements for the degree and the definition

of satisfactory progress are outlined in this handbook. Predoctoral students who are making satisfactory progress towards their degree but need additional time beyond five years to complete their degree may continue to receive financial support but must have a clearly defined plan for completion of their PhD degree.

PhD students are encouraged to apply for fellowships and other awards from international, national and university sources. As part of their training, all PhD students will develop their grant and fellowship writing skills and, if appropriate, submit a predoctoral fellowship, such as an F31 proposal to NIH, during their third year. PhD students who receive predoctoral fellowships or other awards from university-funded or external-funded programs which provide a substantial portion of the student's stipend and tuition will receive a \$2,000 increase in their stipend, for a total of \$35,000 per year.

## **COURSEWORK REQUIREMENTS**

---

### ***Registration***

Registration for courses each term is the responsibility of the student. Course registration should conform to the student's plan of study, as determined by Program requirements, Emphasis Area requirements and the student's Doctoral Program Committee. Course information is available through myZou: <https://myzou.missouri.edu>

Course consent cards may be required for some courses. These are obtained from Christa Smith, Program Coordinator.

### ***Full-time Enrollment***

Graduate students in the Translational Biosciences PhD Program must register as full-time graduate students at the University of Missouri-Columbia. The Graduate School of the University defines full time enrollment for predoctoral students who have not passed their Comprehensive Exam as 9 credit hours each for Fall and Spring Semesters and 5 credit hours for Summer Semester.

Graduate students who have passed their Comprehensive Exam may, in the subsequent semesters, reduce the number of course credits to 2 credit hours each for Fall and Spring Semesters and 1 credit hour for Summer Semester. After completing the Comprehensive Exam, predoctoral students must maintain continuous enrollment in TR\_BIOSC 9090 Dissertation Research for 1 credit hour minimum for each of Fall, Spring and Summer semesters until they successfully defend their dissertation. The maximum number of credit hours in one semester must not exceed 16 credit hours.

### ***Adding/Dropping Courses***

University guidelines must be followed for adding or dropping courses. Additional fees may be incurred for late registration and are typically the responsibility of the student. If a student drops

a course during the semester, the student may need to sign up for additional credit hours of TR\_BIOSC 9090 Dissertation Research to maintain full-time enrollment status.

### *Transfer of Credit*

Up to 30 credit hours of graduate coursework from a regionally accredited university may be counted towards the 72 credit hours required for the PhD degree. These transfer credit hours will be considered as general electives and will not count towards the 15 credit hours of 8000/9000 level coursework. The student's doctoral program committee must approve the specific courses to be transferred and request approval from the Graduate School. Requests for more than 30 credit hours must be approved by the Dean of the Graduate School.

### *Academic Performance and Probation*

To remain in good standing, all PhD students must maintain a 3.0 grade point average (GPA) using the scale of A = 4.0, B = 3.0, C = 2.0, etc. This GPA requirement is inclusive to all graduate coursework for which a letter grade (A to F) is received. Neither courses graded Satisfactory/Unsatisfactory nor undergraduate courses (i.e., courses with course numbers below 7000) are included in the GPA calculation.

Failure to maintain a cumulative 3.0 GPA will result in the student being put on academic probation. If a student is placed on academic probation due to a cumulative GPA below 3.0 and is able to raise their cumulative GPA to 3.0 or higher by the end of the next semester, the academic probation will be lifted. Note that when a student retakes a graduate course at MU, both the original grade and the grade for the retaken course are included in the cumulative GPA calculation. If the student's cumulative GPA is not 3.0 or higher at the end of the next semester, the student may request one additional probationary semester to raise their cumulative GPA. A student who fails to raise their cumulative GPA to 3.0 after two probationary semesters will be dismissed from the Translational Biosciences Program.

Individual courses that are required by either the Translational Biosciences Program or by the individual Emphasis Areas must be passed with a B- (2.7) grade or better. Students who fail to achieve a grade of B- (2.7) grade in any of the required courses will be placed on academic probation and will need to retake the course at the next available opportunity within one year. If, for any reason, the specific course is not offered over the next year, a different course with similar or related content will be substituted, such that the student is able to complete the terms of the probation within one year. Retaking the course (or an appropriate substitute) with a grade of B- (2.7) or better will lift the probation. For this individual course grade requirement, only the grade for the retaken course is considered. If the student fails to achieve a grade of B- (2.7) or better after retaking a required course, the student will be dismissed from the Translational Biosciences Program.

### *Course of Study for the PhD Degree*

To earn a PhD degree, a student must produce original scholarship that represents a significant contribution to our collective knowledge. Thus, the PhD degree is a highly individualized degree

that necessitates the development of a unique course of study for each student. The goal of a course of study is to help the student develop the technical, operational, and professional skills needed to conduct an original research project and communicate their findings. The skills developed during completion of a PhD degree will also allow the student to develop a professional career in the biomedical sciences. In the Translational Biosciences PhD program, the responsibility for developing these different skill sets is shared between the Program, the Emphasis Areas, the student's Research Advisor and Doctoral Program committee, as well as the student.

The major responsibility of the Program is to provide oversight of the overall training program. This oversight is carried out by an Executive Committee, consisting of the two Program Co-Directors and the leaders of each Emphasis Area. The Program requires that every student have core level of knowledge in the biomedical sciences as well as core operational and professional competencies that are acquired through courses, seminars and journal clubs that emphasize both written and oral communication. Training in the responsible conduct of research is also a responsibility of the Program.

The Emphasis Areas represent groups of faculty members who share common research interests in major biomedical research areas. Individual faculty members can be members of multiple Emphasis Areas, consistent with the disciplinary and interdisciplinary interests of any given faculty member. Each Emphasis Area has a single faculty member who is the leader of the Emphasis Area, as well as faculty committees that oversee recruitment/admissions and graduate training. The major responsibility of each Emphasis Area is to provide an intellectual home for the PhD students, which includes providing coursework that allows students to gain the detailed disciplinary knowledge needed for a PhD. In the Translational Biosciences PhD program, first-year students are asked to provisionally identify an Emphasis Area when accepted into the PhD program and the leader of that Emphasis Area will be their Advisor during their first year in the program (i.e., First Year Advisor). Students will make a final choice of their Emphasis Area by the end of Spring Semester of their first year.

Research Advisors are faculty members who serve as research mentors for the dissertation research of the PhD student. In the Translational Biosciences PhD program, a first-year PhD student will, by mutual consent, select a Research Advisor after completing research rotations with three different faculty members. These research rotations will be completed during the Spring Semester of the student's first year. After selecting a Research Advisor, the student will put together a Doctoral Program Committee, consisting of the Research Advisor and at least three other faculty members with appropriate expertise. The Doctoral Program Committee will administer the comprehensive exam, guide the dissertation research of the student and determine if the student's PhD dissertation is of sufficient quality to earn a PhD degree.

The PhD student is ultimately responsible for earning the PhD degree. The course of study for a PhD degree is unique to every student and, in that way, is fundamentally different than other types of educational degrees (i.e., undergraduate, master's or clinical degrees). Thus, we recommend that every student put together an Individual Development Plan (IDP) during their first semester. The Graduate School at the University of Missouri has developed excellent resources for developing an IDP (<https://gradschool.missouri.edu/grad-essentials/individual->

development-plan-idp/). Other IDP resources include AAAS (<https://myidp.sciencecareers.org/>) and the National Institute for General Medical Sciences (<https://www.nigms.nih.gov/training/strategicplanimplementationblueprint/Pages/IndividualDevelopmentPlans.aspx>). The purpose of an IDP is to help the student develop a plan to accomplish their short- and long-term career objectives. An IDP serves as a tool to facilitate communication between the student, their Research Advisor, and the other members of the Doctoral Program Committee. IDPs are most effective when used as dynamic and changeable documents that are periodically reviewed and updated throughout the student’s PhD training.

## ***Coursework Requirements***

The Graduate School of the University of Missouri requires the completion of 72 credit hours of graduate coursework for a PhD degree. At least 15 credit hours must be didactic or seminar courses that are taught at the 8000/9000 level. No more than 4 credit hours of seminar courses can count towards this 15-credit hour requirement.

In the Translational Biosciences PhD program, a PhD student’s coursework is divided into five categories:

- 1: Didactic coursework required of all students, including at least one elective course outside of a student’s Emphasis Area
- 2: Didactic coursework specific to each Emphasis Area
- 3: Seminars and Journal Clubs
- 4: Rotation Research
- 5: Dissertation Research

As the amount of didactic coursework varies across the individual Emphasis Areas, the number of credit hours in each of the above categories will vary for different students. Table 1, below, shows the distribution of credit hours between these different categories for an “average” student who takes 5 years to complete the PhD. To ensure that PhD students maintain full-time graduate status and complete the 72 credit hours that are required for a PhD degree, the number of credit hours for TR\_BIOSC 9090 Dissertation Research can vary each semester.

**Table 1**

<b>Type of course</b>	<b>Average credit hours required over 5 years</b>
Program-specific Didactic Coursework	11
Emphasis Area-specific Didactic Coursework	6 - 15
Seminars and Journal Clubs	14
Rotation Research	2
Dissertation Research	30 - 40
<b>Total credit hours</b>	<b>72</b>



## Year-by-Year Distribution of Coursework

Tables 2 through 5 provide sample coursework schedules for Years 1 through 5 of a sample PhD program.

### Year 1 Coursework (23 credit hours)

All Translational Biosciences PhD students will take two didactic lecture-driven courses during the Fall Semester. These required courses are: (1) a 3-credit hour course that emphasizes macromolecular structure and function (TR\_BIOS 8500); and (2) either a 4-credit hour course that emphasizes fundamental topics in physiology (MPP 7422) or pair of 2 credit hour graduate courses that emphasizes fundamental topics in virology and microbiology (MICROB 8303/MICROB 8404). Two didactic courses will also be taken during the Spring Semester, including a 3-credit hour course that emphasizes data analysis (TR\_BIOSC 8560) and one 3 credit hour course that is specific to their Emphasis Area.

In addition to these didactic lecture-driven courses, students will take a 1 credit hour professional skills course each semester, a 1 credit hour seminar course each semester and a 1 credit hour research rotation course each semester. The professional skills courses (TR\_BIOSC 8550 and TR\_BIOSC 8555) include case-based discussions on ethical issues in biomedical research, including data management, authorship and citation, animal and human experimentation, and patent issues such as ownership and confidentiality with respect to the products of research. The seminar course (TR\_BIOSC 9087) allows first-year PhD students to take advantage of the diversity of departmental seminars by attending 1 seminar of their choice each week. The research rotation course (TR\_BIOSC 9085) provides first-year PhD students with exposure to the research project(s) and lab/mentoring environment of faculty members with whom they are interested in working to develop and carry out their dissertation research.

All first-year PhD students are required to complete research rotations with at least three different research laboratories during their first year. Research rotations will typically be 8 weeks, although the rotation period may vary to accommodate different research formats. For example, rotations with faculty who have clinical-oriented research programs may have specific time considerations. After completing research rotations with three different faculty mentors, students will select their primary faculty research mentor and initiate their dissertation research. Students who have been unable to identify their primary faculty research mentor after three rotations may do a fourth rotation. Selection of a primary research advisor must occur no later than the end of the Spring Semester.

No didactic courses should be taken during the Summer Semester. Instead, the first-year PhD students will register for 5 credit hours of Dissertation Research (TR\_BIOSC 9090) and focus on their dissertation research project.



**Table 2: Year 1 Coursework**

Fall Semester Year 1	CH	Spring Semester Year 1	CH	Summer Semester Year 1	CH
TR_BIOSC 8500 Translational BioSciences I	3	Emphasis Area Course	3	TR_BIOSC 9090 Dissertation Research	5
MPP 7422 or MICROB 8303/8404	4	TR_BIOSC 8560 Data Design/Analysis I	3		
TR_BIOSC 8550 Skills in Trans Biosciences I	1	TR_BIOSC 8555 Skills in Trans Biosciences II	1		
TR_BIOSC 9087 Research Seminar	1	TR_BIOSC 9087 Research Seminar	1		
TR_BIOSC 9085 Research Rotation	1	TR_BIOSC 9085 Research Rotation	1		
<b>TOTAL CREDIT HOURS</b>	<b>10</b>		<b>9</b>		<b>5</b>

## Year 2 Coursework (23 credit hours)

During Year 2, all PhD students will take a 1-credit hour cohort-based journal club (TR\_BIOSC 9422) and the 1-credit hour Research Seminar (TR\_BIOSC 9087 or an Emphasis Area equivalent) during both Fall and Spring Semesters. During the Spring Semester of their second year, PhD students will take a 3-credit hour grant-writing course (TR\_BIOSC 9476). In this course, the students will learn how to craft a compelling grant proposal. During Year 2, PhD students will continue with their Emphasis-Area specific coursework. Most PhD students will be able to complete the didactic coursework required by their Emphasis Area by the end of Year 2. One 3-credit Elective course, which can be selected from other Emphasis Areas or from 8000/9000-level graduate courses offered by other PhD programs, is required as part of the course of study. The table below shows the Elective course being taken in Fall semester of Year 2, but the Elective course can be taken anytime during Year 2 or Year 3. During the summer of their second year, PhD students will register for 5 credit hours of Dissertation Research (TR\_BIOSC 9090). PhD students should plan to take their comprehensive exam during the Summer Semester of Year 2 or the Fall Semester of Year 3.

**Table 3: Year 2 Coursework**

Fall Semester Year 2	CH	Spring Semester Year 2	CH	Summer Semester Year 2	CH
Emphasis Area Course	3	Emphasis Area Course	3	TR_BIOSC 9090 Dissertation Research	5
Elective Course	3	TR_BIOSC 9476 Fellowship and Grant Proposal writing for Biomedical Scientists	3		
TR_BIOSC 9422 Journal Club	1	TR_BIOSC 9422 Journal Club	1		
TR_BIOSC 9087 Research Seminar OR	1	TR_BIOSC 9087 Research Seminar OR	1		

Fall Semester Year 2	CH	Spring Semester Year 2	CH	Summer Semester Year 2	CH
Departmental/Emphasis Area Seminar		Departmental/Emphasis Area Seminar			
TR_BIOSC 9090 Dissertation Research	1	TR_BIOSC 9090 Dissertation Research	1		
<b>TOTAL CREDIT HOURS</b>	<b>9</b>		<b>9</b>		<b>5</b>

### Year 3 Coursework (16 credit hours)

PhD students will continue to take the Translational Biosciences Journal Club (TR\_BIOSC 9422) and Research Seminar (TR\_BIOSC 9087) in both semesters of Year 3. During Year 3, PhD students will complete any remaining Emphasis Area coursework requirements. It is expected that PhD students will complete their comprehensive exam no later than the end of the Fall Semester of Year 3. Upon successful completion of the comprehensive exam, the PhD student will be advanced to Candidacy. Once a PhD student has advanced to candidacy, the minimum number of credit hours required for full-time enrollment decreases to 2 credit hours per Fall or Spring Semesters and 1 credit hour during the summer. PhD students who have passed their comprehensive exam are required to maintain continuous full-time enrollment throughout their course of study for the PhD degree, as required by the MU Graduate School.

**Table 4: Year 3 Coursework**

Fall Semester Year 3	CH	Spring Semester Year 3	CH	Summer Semester Year 3	CH
Emphasis Area Course (if needed)	3	Emphasis Area Course (if needed)	3	TR_BIOSC 9090 Dissertation Research	1
Emphasis Area Course (if needed)	3				
TR_BIOSC 9422 Journal Club	1	TR_BIOSC 9422 Journal Club	1		
TR_BIOSC 9087 Research Seminar OR Departmental/Emphasis Area Seminar	1	TR_BIOSC 9087 Research Seminar OR Departmental/Emphasis Area Seminar	1		
TR_BIOSC 9090 Dissertation Research	1	TR_BIOSC 9090 Dissertation Research	1		
<b>TOTAL CREDIT HOURS</b>	<b>9</b>		<b>6</b>		<b>1</b>

### Years 4-5 Coursework (5 credit hours per year)

During Years 4-5, the PhD students will focus on their dissertation research, with most PhD students taking no formal coursework. PhD students will continue to register for Dissertation Research (TR\_BIOSC 9090) and the Research Seminar course (TR\_BIOSC 9087). Students in their sixth year (or later) of the PhD program will continue to register for Dissertation Research and Research Seminar until they successfully defend their dissertation.

**Table 5: Year 4 and Year 5 Coursework**

Fall Semester Years 4 & 5	CH	Spring Semester Years 4 & 5	CH	Summer Semester Years 4 & 5	CH
TR_BIOSC 9087 Research Seminar OR Departmental/Emphasis Area Seminar	1	TR_BIOSC 9087 Research Seminar OR Departmental/Emphasis Area Seminar	1	TR_BIOSC 9090 Dissertation Research	1
TR_BIOSC 9090 Dissertation Research	1	TR_BIOSC 9090 Dissertation Research	1		
<b>TOTAL CREDIT HOURS</b>	<b>2</b>		<b>2</b>		<b>1</b>

### *Teaching Experience*

The Translational Biosciences PhD program recognizes that learning to communicate effectively as a teacher is an important skill that benefits a student during their PhD training period as well as throughout their career. A traditional route whereby PhD students develop teaching skills is through service as a teaching assistant (TA) for undergraduate or medical students, typically in courses that are associated with the disciplinary interests of the PhD student. Although the Translational Biosciences PhD program does not have teaching responsibility for undergraduate or medical courses, some of the Emphasis Areas are affiliated with departments that offer courses to undergraduate or medical students and which utilize graduate students as teaching assistantships. In the teaching assistant role, the graduate students are reinforcing their disciplinary knowledge base as well as developing their communication skills. Therefore, teaching assistant roles are considered part of the PhD training of the students. Additional compensation is not provided for the teaching assistant roles. All Teaching Assistants (TAs) who have not taught at the University of Missouri previously must attend Graduate Teaching Orientation which is held twice a year – more information and links to register are found on the website ([https://gradschool.missouri.edu/professional\\_development/graduate-assistant-teaching-orientation-gato/](https://gradschool.missouri.edu/professional_development/graduate-assistant-teaching-orientation-gato/)). International students will need to comply with the MU Graduate School requirements for fluency in the English language before serving as a teaching assistant. These requirements are not the same as those that were required for admission to the program, since a greater degree of fluency serves for best teaching efficacy. These requirements can be found at: <https://gradschool.missouri.edu/itap-program/>.

Students who join the Biochemistry and Biophysics Emphasis Area, the Infection and Immunity Emphasis Area, or the Integrative Physiology Emphasis Area are required to serve as a teaching assistant for undergraduate courses, for one or two semesters. The teaching assignments for students in these Emphasis Areas will be determined by the respective Emphasis Area leader and the faculty involved in teaching the courses.

Biochemistry and Biophysics Emphasis Area

Generally, during their second year, PhD students in the Biochemistry and Biophysics Emphasis Area will serve as a TA for one of several undergraduate Biochemistry courses, including BIOCHM 4270, BIOCHM 4272 or BIOCHM 4974. To receive course credit for their teaching experience, PhD students will register for 3 credit hours of BIOCHEM 9001 (section 3) during the semester that they are a TA.

### Infection and Immunity Emphasis Area

Infection and Immunity PhD students will serve as a TA for either MICROB 2800 or MICROB 3200. Students are encouraged to do this during Spring Semester of their first year and during Fall Semester of their second year, although if needed this may be done in other semesters that best fit their curriculum schedule.

### Integrative Physiology Emphasis Area

During their second year, Integrative Physiology PhD students will serve as a TA for MPP 3202 for both Fall and Spring semesters. To receive course credit for their teaching experience, PhD students will register for 2 credit hours of MPP 9001.

### Requirements for Teaching Assistants

PhD students in the other Emphasis Areas of the Translational Biosciences PhD program are not required to serve as teaching assistants. However, PhD students interested in developing their teaching skills should contact their Emphasis Area leader as well as the co-Directors of the TBS program to identify appropriate teaching opportunities in the TBS program or in other departments on campus.

Additional teaching training, resources, and opportunities are available via the Graduate School Minor in College Teaching (GMCT) program. Participation in the GMCT program requires approval by the TBS program and the student's Research Advisor. Typically, participation in the GMCT program would begin after PhD student has completed their required PhD coursework and has passed the comprehensive exam. The GMCT program requires 9 credit hours of additional coursework, including a teaching practicum. Required teaching assistantships do not count towards this additional work. GMCT-required coursework hours may substitute for TR\_BIOSC 9090 Dissertation Research and will be covered by tuition support or mentor support. For more information on this option, please see:

[https://gradstudies.missouri.edu/professional\\_development/minor-in-college-teaching-program/](https://gradstudies.missouri.edu/professional_development/minor-in-college-teaching-program/)

### *Course of Study for the Dual MD/PhD Degree*

The Tom and Anne Smith MD/PhD program, supported by the School of Medicine, allows students to participate in a combined course of study to complete both an MD and a PhD degree. Admissions into the Tom and Anne Smith MD/PhD program is controlled by the School of

Medicine Admissions committee and by the leaders of the Tom and Anne Smith MD/PhD program.

The Translational Biosciences PhD program is the academic home of MD/PhD students in the Tom and Anne Smith MD/PhD dual-degree program during their PhD training. MD/PhD students will typically spend their first two years completing the required coursework of the M1 and M2 years of medical school at MU. Following completion of the M2 year and successful passing of Step 1 of the Medical Boards, the MD/PhD students enter the Translational Biosciences PhD program to earn their PhD. After the MD/PhD students satisfy the coursework and research requirements of the Translational Biosciences PhD program, typically over 3 years, they re-enter the Medical School curriculum as M3 medical students.

The required coursework of the M1 and M2 years includes Problem-Based Learning (PBL), which covers the basic sciences, and Introduction to Patient Care (IPC), which introduces medical students to patient-centered medical practices.

The PBL curriculum is composed of 8 Blocks, each 8 weeks in length. Each Block is considered equivalent to a 6-credit hour course, except for Block 8, which is the equivalent of a 3-credit hour course. Each of the Blocks integrates basic science and clinical science subjects during the consideration of medical cases (1 case/week). The correspondence between the PBL courses and the relevant basic sciences disciplines, including credit hour equivalences, is described in Table 6, below. There is not a one-to-one alignment between a specific Block and a specific basic science discipline. Rather, the basic sciences topics shown in Table 6 are integrated throughout all 8 Blocks, with the approximate number of credit hours devoted to basic science discipline through all 8 Blocks shown in Table 6.

The MD/PhD students also take a no-credit Medical Research course during the summer between their M1 and M2 years, which introduces the MD/PhD students to research. This 10-week immersive research experience is equivalent to the Rotation Research requirements in the Translational Biosciences PhD program.

**Table 6: Basic Science topics in the PBL curriculum**

<b>MyZou Listing of PBL courses</b>	<b>CH in Myzou</b>	<b>Basic Science Topics</b>	<b>CH equivalents</b>
Block 1: MED_ID 5041 Structure & Function I	6	Biochemistry	6
Block 2: MED_ID 5043 Structure & Function II	6	Microbiology	4
Block 3: MED_ID 5045 Structure & Function III	6	Immunology	3
Block 4: MED_ID 5045 Structure & Function IV	6	Pharmacology	4
Block 4: MED_ID 5551 Pathophysiology I	6	Physiology	4
Block 6: MED_ID 5553 Pathophysiology I	6	Pathology	6
Block 7: MED_ID 5555 Pathophysiology III	6	Neurosciences	3
Block 8: MED_ID 5048 Clinical Epidemiology	3	Statistics	3
MED_ID 5215 Medical Research	0	Rotation Research	2

As demonstrated in Table 6, the MD/PhD students receive extensive instruction in the basic sciences. Thus, the MU Graduate School and the Translational Biosciences PhD program have agreed to give 30 credit hours of course credit for MD/PhD students who have completed their M1 and M2 years. This 30 credit hours of course credit for the M1 and M2 years is largely equivalent to the didactic science-based coursework that PhD students take during their first two years. However, the MD/PhD students will be required to take the professional skills courses (TR\_BIOSC 8550 and TR\_BIOSC 8555) and the grant-writing course (TR\_BIOSC 9476). In addition, MD/PhD students will, as determined by their Doctoral Program Committee, take a small number of advanced science-based courses in their Emphasis Area. There is no teaching assistant requirement for the MD/PhD students. A sample course of study for a MD/PhD student is shown in Table 7, below. Typically, an MD/PhD student should take their comprehensive exam during the Fall of their second year of their PhD program.

**Table 7: Sample MD/PhD course of study**

Term	Course Number	Course Name	Credits
Year 1 Summer	TR_BIOSC 9090	Research	5
Year 1 Fall	TR_BIOSC 8550	Skills in Translational Biosciences I	1
	TR_BIOSC 9087 or Emphasis Area Seminar	Seminar	1
	Emphasis Area Elective #1	TBD	3
	TR_BIOSC 9090	Research	3
	TR_BIOSC 9422	Journal Club	1
Year 1 Spring	TR_BIOSC 8555	Skills in Translational Biosciences II	1
	TR_BIOSC 9476	Grant Writing	3
	TR_BIOSC 9087 or Emphasis Area Seminar	Seminar	1
	Emphasis Elective	TBD	3
	TR_BIOSC 9090	Research	1
	TR_BIOSC 9422	Journal Club	1
Year 2 Summer	TR_BIOSC 9090	Research	5
Year 2 Fall *	TR_BIOSC 9087 or Emphasis Area Seminar	Seminar	1
	TR_BIOSC 9422 or other	Journal Club	1
	TR_BIOSC 9090	Research	7
Year 2 Spring	TR_BIOSC 9087 or Emphasis Area Seminar	Seminar	1
	TR_BIOSC 9422 or other	Journal Club	1
Year 3 Summer	TR_BIOSC 9090	Research	1
Year 3 Fall	TR_BIOSC 9087 or Emphasis Area Seminar	Seminar	1
	TR_BIOSC 9422 or other	Journal Club	1

Term	Course Number	Course Name	Credits
Year 3 Spring	TR_BIOSC 9087 or Emphasis Area Seminar	Seminar	1
	TR_BIOSC 9422 or other	Journal Club	1

\*Anticipated timing of the comprehensive exam.

## **FIRST YEAR ADVISOR**

When accepted into the PhD program, students will be asked to identify one of the Emphasis Areas that aligns best with their current research interests. During orientation, that Emphasis Area Director will be assigned as advisor to the new first-year graduate students. Initial selection of an Emphasis Area by the student is provisional, for the purpose of identifying a First Year Advisor who can guide the student through the first two semesters of the Translational Biosciences Program. This initial selection does not create any obligation for the student to identify a Research Advisor from a given Emphasis Area.

During Orientation Week, the First Year Advisors will provide guidance to the first-year students regarding first-year coursework, research rotations and other programmatic or university requirements. In general, the first-year coursework will be as described in Table 2. During the student's first year, the First Year Advisors will monitor the student's performance in courses and in research rotations. First year graduate students are encouraged to contact their First Year Advisor with any questions or concerns that arise during their first year.

### ***Selection of an Emphasis Area***

During their first year in the PhD program, graduate students will make a final decision regarding their Emphasis Area, based on the fit between their developing research interests and the research within a given Emphasis Area. This decision must be made by the end of Spring Semester. Students must notify both the Emphasis Area leader and the program coordinator of the PhD program (Christa Smith) of their decision to join an Emphasis Area.

The selected Emphasis Area will be identified on the student's diploma after completion of the PhD degree. As the Emphasis Areas are responsible for discipline-specific coursework unique to each Emphasis Area, we recommend that students remain in that Emphasis Area for the duration of their PhD training. Additional coursework offered by other Emphasis Areas or other PhD programs to broaden the knowledge base of a student can be incorporated into the student's Program of Study, as described on the D2 form required by the Graduate School.

### ***Participating Faculty in Each Emphasis Area***

The Emphasis Areas are composed of MU faculty members who have active biomedical research programs and share common research interests as well as commitment to training PhD students. An individual faculty member can be part of more than one Emphasis Area, based on common research interests. Each Emphasis Area will maintain a list of MU faculty members who are eligible to serve as chair or co-chair of a PhD student's Doctoral Program Committee.



# SELECTION OF RESEARCH ADVISOR

---

## *Research Rotations*

First year graduate students must participate in three research rotations before selecting a Research Advisor. Faculty who are interested in taking first-year PhD students into their research group will have the opportunity to present their research to first year graduate students during Orientation Week. During Orientation Week, each first-year graduate student will compile a list of possible lab rotations and discuss this list with their First Year Advisor. After discussing their rotation preferences with their First Year Advisor, the graduate student must contact individual faculty members to arrange their research rotations. The first research rotation should be arranged during Orientation Week, with the first rotation to begin no later than the first day of the semester. Subsequent rotations must be arranged before the start of next rotation period.

### Timeline for Research Rotations

In general, each research rotation will last eight (8) weeks and adhere to the schedule below. Exceptions on timing and length can be made for research rotation projects that have unique circumstances. Such exceptions must be approved by the student's First Year Advisor.

First full week of August: Orientation and Faculty Research Talks

Research Rotation 1: The first rotation shall start no later than the Monday of the first week of the Fall semester. An earlier start date may be arranged between the student and the faculty member. The first rotation will be eight weeks in length, ending on Friday of the 8<sup>th</sup> week of the semester.

Research Rotation 2: The second rotation shall start no later than the Monday of the ninth week of the Fall semester. The second rotation will be eight weeks in length, not including the week off over Thanksgiving Break, ending on the Friday of Exam week. A later end may be arranged between the student and the faculty member.

Research Rotation 3: The third rotation shall start no later than the first day of the Spring Semester, which is the Tuesday after Martin Luther King holiday. An earlier start may be arranged between the student and the faculty member. The third rotation will be eight weeks in length, ending on the Friday of the first full week in March.

## *Grading of Research Rotations*

The course for the research rotations is TR\_BIOSC 9085 Research Rotation and will be graded on a Pass/Fail basis. Students should register in the section lead by their First Year Advisor. Each first-year student will register in this course for one credit hour for both Fall and Spring Semesters. At the beginning of each rotation, a form must be completed by the student and faculty member outlining details and expectations for the rotation and uploaded to the Canvas course platform. At the end of each research rotation, the student and the



faculty member must meet to review and discuss the student's performance during the rotation and complete an evaluation form and upload into the course. The written evaluations will also be communicated to the program coordinator of the PhD program (Christa Smith) by the First Year Advisor who will assign a Pass/Fail grade for the semester.

### *Selection of a Research Advisor*

After completing three rotation periods, the student should communicate with those faculty member(s) with whom the student is interested in completing a dissertation research project. In selecting a Research Advisor, the student should carefully consider multiple factors, including commonality of specific research interests and the compatibility of mentor/mentee styles between the student and the Research Advisor.

The Research Advisor must be a member of the MU Doctoral Faculty and have appropriate expertise in the student's Emphasis Area, as determined by the leader of the Emphasis Area. Each Emphasis Area will maintain a list of faculty members with expertise appropriate to serve as chair of a student's Doctoral Program Committee. While the Research Advisor typically serves as chair of the Doctoral Program Committee, MU faculty who have Graduate Faculty Status A but are not members of the MU Doctoral Faculty or do not have appropriate expertise in the student's Emphasis Area can serve as co-chairs of a student's Doctoral Program Committee. In this case, the other co-chair must be a member of the MU Doctoral Faculty and have appropriate expertise in the student's Emphasis Area. The purpose of the co-chair arrangement is to provide an opportunity for a faculty member who does not have MU Doctoral Faculty status or does not have appropriate expertise in the student's Emphasis Area to gain experience in advising PhD students, under the mentorship of the other co-chair.

Selection of a Research Advisor is a mutual decision between the graduate student and the faculty member. Both the student and the faculty member should discuss their mutual expectations of the advisor/advisee relationship. A list of responsibilities for both the Advisor and the Advisee are below. The mutual decision must be communicated to the First Year Advisor and to the program coordinator of the PhD program (Christa Smith) within two weeks of the student completing the required rotations. A supervisor compact must be completed by the student and Research Advisor and submitted to the Graduate Program Coordinator.

The Department Chair of the Research Advisor's home department, which is typically the campus unit through which the Research Advisor's grants are administered, must approve the Research Advisor's ability to take on the financial responsibility of a new PhD student by formally completing a signed memorandum of understanding. It is the Research Advisor's responsibility to discuss the financial responsibilities of taking on a new PhD student with his/her Department Chair and to obtain the Chair's approval. Approval by the Department Chair is necessary because (1) the benefits of the PhD student's research support the ability of the Research Advisor to maintain grant funding and (2) the Department is financially responsible for the PhD student should the Research Advisor lose grant funding during the student's training period.

Failure to identify a Research Advisor following the completion of three Research Rotations is sufficient cause for the student to be placed on probation. The student's First Year Advisor will review the faculty evaluation reports from the three rotations and make a recommendation to the Executive Committee regarding probation. The Executive Committee will determine if the student should be placed on probation and inform the student of that outcome.

Students who do not identify a Research Advisor after three rotations can request an opportunity to do a fourth Research Rotation. This request must be approved by the student's First Year Advisor. This fourth rotation can start immediately after the third rotation and will end at the end of Spring Semester. If the student fails to find a Research Advisor after a fourth Research Rotation, the Executive Committee may either allow the student to withdraw from the program or dismiss the student from the program following the procedures in the Graduate Student catalog. <https://gradstudies.missouri.edu/policy/probation-termination-policies-for-graduate-students/>.

### Responsibilities of the Research Advisor

- Provide a supportive intellectual and instructional environment in which the student develops and implements a program of rigorous and reproducible research designed to uncover original findings suitable for publication in appropriate scientific journals.
- Impartially and constructively evaluate student performance, including a written annual report of the student's progress, to be provided to the Emphasis Area leader and the Translational Biosciences PhD program.
- Acknowledge any student contributions to research and/or creative activity, as appropriate, when the results of such activities are presented at conferences, in professional publications, or in applications for copyrights and patents.
- Have a clear understanding with graduate students about their specific responsibilities regarding academic, creative activity, and/or research activities responsibilities, including timelines for completion of comprehensive examinations, research, and the thesis or dissertation, as applicable.
- Discuss the laboratory's authorship policy with graduate students in advance of initiating any collaborative projects.
- Provide financial support for the student and the research project, including graduate student stipend, tuition, research supplies and other necessary expenses. It is expected that a faculty member will have external grant support, or other committed funds, to support a student and related research expenses for a minimum of two years after the student joins the research group. The faculty member must have a clearly defined plan for subsequent grant submissions that, if funded, will allow the student to be supported through the student's fifth year in the PhD program.
- Perform all of the responsibilities above without regard to religion, race, gender, sexual orientation, nationality, or other criteria that are not germane to the execution of those responsibilities.

(Guidelines for Good Practice in Graduate Education, <https://gradstudies.missouri.edu/current-students/scholarly-integrity-ethics/guidelines-for-good-practice-in-graduate-education/> )

## Responsibilities of the PhD Student

- Recognize that the faculty adviser provides the intellectual and instructional environment in which the student plans a program of study, is involved with the research, and that he or she, through access to teaching and research funds, provides the student with financial support for the research project.
- Expect that his or her research results, with appropriate recognition, may be incorporated into progress reports, summary documents, applications for continuation of funding, and similar documents authored by the faculty adviser, to the extent that the student's research is related to the faculty adviser's research program and the grants which support that research.
- Recognize that the faculty adviser is responsible for monitoring the accuracy, creativity, validity, integrity, and effective dissemination of the student's research. Careful, well-conceived research reflects favorably on the student, the faculty adviser, the degree program, and MU.
- Exercise the highest integrity in taking examinations, completing master's and doctoral projects, and/or collecting, analyzing and presenting research data in theses, dissertations, and presentations.
- Acknowledge the contributions of collaborators and colleagues to research results that are presented in seminars, on posters, in committee meetings, and in other formats, in accordance with appropriate professional ethics.

(Guidelines for Good Practice in Graduate Education, <https://gradstudies.missouri.edu/current-students/scholarly-integrity-ethics/guidelines-for-good-practice-in-graduate-education/> )

## *Loss of Funding by Research Advisor*

It is expected that the Research Advisor will have external grant support, or other committed funds, to support a student and related research expenses for a minimum of two years after the student joins the research group. The Research Advisor must have a clearly defined plan for subsequent grant submissions that, if funded, will allow the student to be supported through the student's fifth year in the PhD program. If the Research Advisor experiences a gap in funding, it is the responsibility of the Research Advisor's home department to provide the stipend and tuition funding for the PhD student.

## *Changing Research Advisors*

If either the student or the Research Advisor determine, in good faith, that they are not capable of working together, either may contact the Executive Committee of the Translational Biosciences Program and request that the Advisor-Advisee relationship be dissolved. The Executive Committee will separately meet with the student and Research Advisor as well as with the other

members of the student's Doctoral Program Committee to obtain insight into the underlying issue(s). If the student is making satisfactory progress, the Executive Committee will assist the student in finding a new Research Advisor capable of providing financial support for the duration of the student's training. If new Research Advisor is not identified, the student can be allowed to withdraw or be dismissed from the program. If the student is not making satisfactory progress, the student can be allowed to withdraw or be dismissed from the program, following the MU Graduate School guidelines for Probation and Dismissal (<https://gradschool.missouri.edu/policy/probation-termination-and-appeals/>)

## **SELECTION OF A DOCTORAL PROGRAM COMMITTEE**

### *Timing*

After selecting a Research Advisor, a PhD student must identify a Doctoral Program Committee. In selecting the faculty members of the Doctoral Program Committee, the Research Advisor and the PhD student should work together to identify faculty with complementary research expertise relevant to the likely project(s) that will form the student's doctoral dissertation. The faculty membership of a student's Doctoral Program Committee should be identified by the end of the Spring Semester during the PhD student's first year, with the first meeting to be held prior to the beginning of the Fall Semester of the student's second year.

### *Composition of a Doctoral Program Committee*

Every Doctoral Program Committee shall have at least four MU faculty members. Three faculty must be from the student's Emphasis Area in the Translational Biosciences program. To add disciplinary and programmatic diversity to the Doctoral Program committee, the fourth member of the Doctoral Program Committee must be from a different Emphasis Area in the Translational Biosciences program **or** have a primary appointment in an academic department that is different than the primary departmental appointment of the student's Research Advisor. The Research Advisor serves as chair of the Doctoral Program Committee. At least two members of the Doctoral Program Committee must be members of the MU Doctoral Faculty. A fifth member of the Doctoral Program Committee can be a non-MU faculty with Graduate Faculty Status C. All members have equal voting privileges on the Doctoral Program Committee. Any changes to the student's Doctoral Program Committee must be approved by the Emphasis Area leader and the Director of the Program. A Change of Committee form (<https://gradschool.missouri.edu/wp-content/uploads/2020/05/cocformdigitalsignature520.pdf>) must be submitted to the MU Graduate School for approval.

### *Responsibilities of the Doctoral Program Committee*

The purpose of a Doctoral Program Committee is to assist the Research Advisor and the PhD student to develop a course of study, define a research project, carry out the research and describe the findings. The Doctoral Program Committee will also administer the comprehensive exam, evaluate the student's performance on the comprehensive exam, provide critical review of the student's progress and evaluate the student's doctoral dissertation. The student should

schedule regular meetings of the Doctoral Program Committee, with at least one committee meeting per year. The Doctoral Program Committee may provide an annual written report of the student’s progress to both the Emphasis Area leader and the Translational Biosciences PhD program. If provided, this annual report would be separate from, and independent of, the written annual evaluation by the Research Advisor that is entered into MyVita.

## **EXAMINATIONS AND DOCTORAL FORMS**

---

### *Graduate School Doctoral Forms*

The MU Graduate School has four Doctoral Forms that record specific landmarks of the PhD student’s progress toward the PhD degree. These forms are described below, in Table 8 and links to the form can be found at the end of this document. The PhD student is responsible for bringing the appropriate forms to the committee meetings and returning the signed forms to Ms. Christa Smith, program coordinator, who will send each completed form to the Graduate School while retaining a copy.

**Table 8: Doctoral Forms and their Deadlines**

<b>Form</b>	<b>Form Title</b>	<b>Deadline</b>
D1	Qualifying Examination Results and Doctoral Program Committee Approval	Prior to the beginning of the Fall Semester of the student’s second year
D2	Plan of Study for the Doctoral Degree	Prior to the beginning of the Fall Semester of the student’s second year
D3	Doctoral Comprehensive Examination results	Prior to the end of Fall Semester of the student’s third year
D4	Report of the Dissertation Defense	When ready

### *Qualifying Exam*

The purpose of the Qualifying Exam is to determine if the PhD student is qualified to initiate their dissertation research. In the Translational Biosciences PhD program, a student is considered to have passed their Qualifying Exam if each of the required first-year courses have been completed with a grade of B- (2.7) or better while maintaining a GPA of 3.0 or better in all graduate coursework. Students who do not meet this level of academic achievement during either semester of their first year in the program will immediately be placed on probation and given no more than 2 academic-year semesters (i.e., Fall and Spring) to remediate their deficiency. Other probationary expectations may also be imposed by the Executive Committee. Students who do not meet the probationary terms will be dismissed from the program.

This determination is typically made during the PhD student’s first meeting with their Doctoral Program Committee, which typically occurs during either Spring or Summer Semesters of the student’s first year and no later than the beginning of the Fall Semester of the student’s second

year. Typically, at the student's first committee meeting, both the D1 and the D2 forms will be completed.

### *Plan of Study*

The PhD student, in consultation with the Doctoral Program Committee, will prepare a list of completed and planned coursework from matriculation into the Program through completion of the PhD. This plan of study should reflect all coursework requirements from the Emphasis Area, from the Translational Biosciences PhD program and the MU Graduate School. Students who have completed prior graduate level coursework at a regionally credited graduate institution may request up to 30 credit hours be counted towards their PhD degree. Transfer of graduate course credit does not eliminate the MU Graduate School requirement for 15 credit hours of didactic coursework at the 8000/9000 level, although exceptions may be requested from the Dean of the Graduate School. The Plan of Study can be changed by submitting a Plan of Study Course Substitution form to the Graduate School: <https://gradschool.missouri.edu/wp-content/uploads/2020/05/subformdigitalsignatures520.pdf>. The coursework outlined in the Plan of Study must be substantially completed before taking the Comprehensive Exam.

### *Comprehensive Exam*

The purpose of the Comprehensive Exam is to determine if the student has acquired a broad knowledge across the different biomedical disciplines as well as a depth of knowledge in their discipline of interest. PhD students in the Translational Biosciences PhD program should be prepared to take the Comprehensive Exam after completing the Spring Semester of their second year.

In accordance with the MU Graduate School requirement that a Comprehensive Exam have both written and oral components, all Emphasis Areas will require a student to write a research proposal and defend that research proposal to a Comprehensive Examination Committee. Typically, the Comprehensive Examination Committee is composed of the PhD student's Doctoral Program Committee, although additional faculty may participate in the Comprehensive Exam, as specified in the Exam guidelines developed by each Emphasis Area. Each Emphasis Area will develop their own guidelines for the format of the research proposal and for the evaluation of both the written proposal and the oral defense of the written proposal.

Both the written and oral components of the Comprehensive Exam should be completed within one month of each other, and no later than the end of the Fall Semester of the PhD student's third year in the program. The MU Graduate School requires that examination dates for either component must occur when MU is officially in session for Fall, Spring or Summer semesters.

The written and oral components are evaluated separately. Each member of the Comprehensive Examination Committee voting to Pass or Fail on each component, with two or more votes to Fail on either component resulting in a Fail for that component. For the student to receive a Pass on the Comprehensive Exam, both components must receive an overall vote of Pass, with no more than one vote to Fail for each component.



PhD students that pass the Comprehensive Exam will be advanced to candidacy following submission of the signed D3 form to the Graduate School. The PhD student is responsible for obtaining the signatures from the members of the Comprehensive Exam Committee and submitting the D3 form to Ms. Christa Smith, program coordinator, who will submit the completed form to the Graduate School while retaining a copy.

A PhD student that does not pass the Comprehensive Exam will receive a written explanation of the deficiencies that results in the Fail. The Research Advisor and the Doctoral Program Committee will work with the PhD student to identify steps that the student can take to improve their performance on the Exam. The PhD student will be given one opportunity to retake the Comprehensive Exam, which should occur no sooner than 12 weeks but no more than 16 weeks after the date of the first Comprehensive Exam. The retake of the Comprehensive Exam will follow the same format as the first attempt. If the student does not receive a Pass on both components for the second attempt, the student will be dismissed from the program.

The Comprehensive Exam process, as described above, is fully consistent with the guidelines developed by the MU Graduate School. (<https://gradschool.missouri.edu/current-students/doctoral/#credits-nav>). Any requests for exceptions to the timelines described above must be made in writing well in advance of the deadlines described above. Such requests must be made to the student's Emphasis Area leader, who will discuss any unique circumstances with the Executive Committee. Approval of a majority of the Executive Committee is needed for any exceptions to the above requirements.

Any requests for changes in the Emphasis Area-specific guidelines on format, composition of the Exam Committee and evaluation of the written and oral components must be made to the respective Emphasis Area leader. Each Emphasis Area leader will have the authority to make changes to Emphasis Area-specific guidelines, provided that such changes are consistent with the timeline described above and the guidelines developed by the MU Graduate School.

A PhD student is advanced to candidacy after passing the Comprehensive Exam. To maintain candidacy for the PhD degree, all post-comp PhD students must maintain continuous full-time enrollment at MU, continuing through the term in which the PhD student successfully defends their dissertation.

### ***Submission of a Fellowship***

All PhD students in the Translational Biosciences PhD program are encouraged to write and submit a Fellowship to an external funding agency no later than the end of their third year in the program. To help PhD students develop their grant-writing skills, all students are required to take TR\_BIOSC 9476 Fellowship and Grant Proposal writing for Biomedical Scientists during the Spring Semester of their second year. Further development of the student's ability to write a fellowship proposal occurs during the Comprehensive Exam, during which the student receives valuable feedback on proposal writing from the members of the Exam Committee. Following successful completion of the Comprehensive Exam, the PhD student will be well-prepared to write and submit a competitive Fellowship proposal to an appropriate funding agency. An important part of any Fellowship proposal is the Training Plan, which is developed by the

student in collaboration with their Research Advisor. All Research Advisors must, prior to accepting PhD students into their laboratory, commit to working with each of their PhD students on the submission of a graduate Fellowship to an external funding agency, if they are eligible.

## External funding agencies

The National Institutes of Health has a F31 funding mechanism that is open to all US citizens or permanent residents. All eligible graduate students in the Translational Biosciences PhD are encouraged to submit an F31 proposal to the appropriate NIH institute or center, no later than the end of their third year in the program or to an equivalent funding mechanism. There are three NIH deadlines for F31 proposal submission every year, typically during the first week of April, August and December.

In addition to NIH, there are other agencies and foundations that offer fellowships to graduate students. Examples include the American Heart Association (AHA), the Ford Foundation, the American Association of University Women and the Howard Hughes Medical Institute. Some of these fellowships, including the Ford Foundation and the American Association of University Women fellowships, are open to international students.

## *Dissertation*

The final steps of earning a PhD degree are the writing and oral defense of a dissertation that describes original research findings resulting from research investigation(s) carried out by the PhD student.

The student's Doctoral Program Committee will determine when the PhD student is ready to prepare for their dissertation defense. A reasonable expectation is that a PhD student is ready to start planning for their dissertation defense when the PhD student has made significant contributions to one or more published or submitted peer-reviewed primary research manuscripts over the course of their dissertation research. Typically, a PhD student will request a meeting of their Doctoral Program Committee and provide the committee members with detailed information on the proposed composition and format of the dissertation. Upon receiving permission from the Committee, the PhD student may prepare the written dissertation and schedule their oral dissertation defense.

The first step in preparing for the dissertation defense is the preparation of the written dissertation. The written dissertation must follow the guidelines of the MU Graduate School (<https://gradschool.missouri.edu/current-students/thesis-dissertation/thesis-dissertation-guidelines/>). Content from published manuscripts that the PhD student has authored or co-authored can be included in the dissertation, provided that the PhD student receives permission from the copyright holder. If content from co-authored manuscripts (either published or submitted) is included in the dissertation, the contributions of the PhD student must be clearly described in the dissertation. Contributions from manuscript co-authors, or from other individuals, may be included in the dissertation if permission from these individuals is obtained and their contributions clearly described. Individual Emphasis Areas may establish more specific guidelines for the content and format of a dissertation. The written dissertation must be



submitted to the student's Doctoral Program Committee at least two weeks prior to the scheduled oral defense.

The oral defense must occur when MU is in session. The first part of the oral dissertation defense will be a public seminar, in which the PhD student will present the important findings of their research. All faculty, students and staff are invited to attend this portion of the dissertation defense. The second part of the oral dissertation defense is a closed session in which the student will be examined by the members of the Doctoral Program Committee. At the end of this closed session, each member of the Doctoral Program Committee will vote to Pass or Fail. The votes of the committee members will be recorded on the D4 form. A dissertation defense will be deemed successful if there is no more than one vote to Fail. The members of the Doctoral Program Committee must also approve the written dissertation by signing the approval page of the dissertation. The Doctoral Program Committee may request alterations or clarifications to the written dissertation. The necessary revisions must be completed prior to submission of the written dissertation, along with the signed D4 form, to the MU Graduate School. A copy of the completed dissertation must also be provided to Christa Smith, program coordinator.

## **EVALUATION OF SATISFACTORY PROGRESS**

---

### *Annual Progress Report*

PhD students must make satisfactory progress towards their degree to remain in the PhD program. As the course of study for a PhD degree includes both the completion of academic courses and the generation of original research findings, both elements are considered in evaluation of a student's satisfactory progress. Satisfactory progress is evaluated annually, although more frequent evaluations can occur.

The MU Graduate School requires that all PhD students submit an annual report of their progress towards completing their PhD degree, using MyVita (<https://gradschool.missouri.edu/annual-review-of-graduate-student-progress/>). Each PhD student will submit a self-report of progress by late March, with the student's Research Advisor (or the student's First Year Advisor if a Research Advisor has not been selected yet) completing their evaluation by early May. The reports by both the PhD student and the advisor will be reviewed by the appropriate Evaluation Leader (or the Program Co-Directors) by the end of May. The self-report by the PhD student should include a summary of courses taken, research completed and plans for the next year. The evaluation by the Research Advisor should evaluate both research progress and academic performance, if appropriate. The Research Advisor's evaluation should include accomplishments as well as areas in which improvement is needed.

### *Satisfactory Progress in Academic Coursework*

Prior to the selection of a Research Advisor and formation of a student's Doctoral Program Committee, the student's First Year Advisor will be responsible for evaluating the academic progress of the student. All PhD students in the Translational Biosciences program must maintain a 3.0 grade point average, inclusive to all courses taken following matriculation into the

PhD program. All individual courses must be passed with a B- (2.7) grade or better. Failure to meet these academic standards will result in the student being placed on probation for the subsequent semester. The student must resolve the academic issue(s), either by retaking an individual course (or an appropriate alternate course with similar or related content, as approved by the Executive Committee) or by bringing up their grade point average. If a student is not able to meet these academic standards during the probationary semester, the student may be dismissed from the program. If additional time is needed to meet these academic standards, the student may request that probationary status continue for a second semester. If a student is not able to meet these academic standards during the second probationary semester, the student will be dismissed from the program, following review of the student's performance by the First Year Advisor and the Executive Committee.

After the student has identified a Research Advisor and formed a Doctoral Program Committee, the Research Advisor, in consultation with the Doctoral Program Committee, will evaluate the academic progress of the student.

### *Satisfactory Progress in Research*

During the PhD student's first year, the student's participation in research rotations will be evaluated by the faculty members with whom the student does rotations. These faculty evaluations will be provided to the student's First Year Advisor, who will assign a rotation research grade for each semester. During the student's first year, satisfactory progress in research is defined by completing each rotation with a Passing grade and by selecting, by mutual consent, a faculty member as their Research Advisor.

Failure to identify a Research Advisor following the completion of three Research Rotations is sufficient cause for the student to be placed on probation. The student's First Year Advisor will review the faculty evaluation reports from the three rotations and make a recommendation to the Executive Committee regarding probation. The Executive Committee will determine if the student should be placed on probation and inform the student of that outcome.

Students who do not identify a Research Advisor after three rotations can request an opportunity to do a fourth Research Rotation. This request must be approved by the student's First Year Advisor. This fourth rotation can start immediately after the third rotation to be completed by the end of Spring Semester. If the student fails to find a Research Advisor after a fourth Research Rotation, the Executive Committee may either allow the student to withdraw from the program or dismiss the student from the program following the procedures in the Graduate Student catalog. <https://gradstudies.missouri.edu/policy/probation-termination-policies-for-graduate-students/>.

After the student has identified a Research Advisor and formed a Doctoral Program Committee, the Research Advisor, in consultation with the Doctoral Program Committee, will evaluate the research progress of the student. PhD students are required to organize a meeting with their Doctoral Program Committee at least once per year. At each of these annual meetings, the student will present their research progress to the committee members, describing major accomplishments as well as any difficulties that have been encountered. The student and the

Doctoral Program Committee will formulate a set of goals and objectives for the next year. If needed, the student and the Doctoral Program Committee can meet more than once per year, to help the student stay on track with respect to research progress. The Research Advisor and the Doctoral Program Committee will provide separate evaluations of the student's research progress to the student's Emphasis Area leader. A student can be placed on probation by the Emphasis Area leader following an unsatisfactory review of research progress by the Doctoral Program Committee. In such situations, the Emphasis Area leader will discuss the student's progress with the Research Advisor and the other members of the student's Doctoral Program Committee and, separately, meet with the student to discuss issues that are impeding research progress. The Doctoral Program Committee will work with the student to formulate a plan to regain appropriate progress in their research project. Failure to accomplish the goals of the formulated remediation plan or following two consecutive annual reports indicating unsatisfactory progress, the student may be dismissed from the program following review by the Executive Committee.

### *Dismissal and Appeal Process*

The Executive Committee will review any recommendations for dismissal from the Program. This review will include any documentation of the student's academic and research progress. The student may request to meet with the Executive Committee and provide additional information. A majority vote of the Executive Committee is required for dismissal. A decision to dismiss can be appealed to the MU Graduate Faculty Senate (<https://gradschool.missouri.edu/policy/probation-termination-and-appeals/>).

## **GRADUATE STUDENT ASSOCIATION**

---

The graduate students in the Translational Biosciences PhD program have joined with graduate students in other graduate programs in the MU School of Medicine to form a Graduate Student Association. The purpose of this Graduate Student Association is to provide both social and academic support to all graduate students in the School of Medicine. The Graduate Student Association holds annual elections to identify leaders who will speak on behalf of the graduate students to the faculty and administrators in the School of Medicine. A representative of the Graduate Student Association will attend every Executive Committee meeting of the Translational Biosciences PhD program, except when the Executive Committee is discussing confidential matters including, but not limited to, discussions regarding individual graduate students, faculty members or staff.

## **STUDENT CONDUCT AND CONFLICT RESOLUTION**

---

Mizzou provides policies, training programs and other resources designed to guide graduate students in research, intellectual property, academic honesty and professional conduct. <https://gradstudies.missouri.edu/policycategory/academic-integrity-ethics>

## *Expectations for Graduate Students' Professional and Acceptable Behavior*

- Devote an appropriate amount of time and energy toward achieving academic excellence and earning the advanced degree.
- Be aware of time constraints and other demands imposed on faculty members and program staff.
- Take the initiative to ask questions that promote understanding of the academic subjects and advances in the field.
- Communicate regularly with faculty advisors, especially in matters related to research and progress within the graduate program and with any teaching responsibilities.

## *Conflicts with Faculty*

Graduate students are encouraged to work out any conflicts with their Research Advisor. If they cannot come to a mutual agreement, the student should seek assistance from members of their Doctoral Program Committee or the leader of their Emphasis Area. The Emphasis Area leader, along with the help of other members of the Executive Committee, will work with the student and mentor until a mutual agreement is established.

## **ASSISTANTSHIP AND FELLOWSHIP POLICIES**

---

### *Graduate Research Assistantships*

In recognition of the contributions that graduate teaching and research activities make to the overall mission of the University of Missouri, the University has established graduate assistantships. A graduate assistantship provides multiple benefits to PhD students including but not limited to: (1) provide PhD students with a professional development opportunity consistent with a student's educational objectives; (2) provide PhD students with financial support within the context of program-related or grant-related tasks that the student will perform for a defined time period; (3) allow the PhD student to pursue academic and/or professional activities towards the advanced degree. To hold a graduate assistantship, the University of Missouri requires that a graduate student must be admitted to a program or area with a specific graduate degree objective and must be enrolled and be making satisfactory progress toward degree attainment during the period of the assistantship. More information on the value of graduate assistantships can be found at: <https://gradschool.missouri.edu/funding/assistantships/>

All predoctoral students in the Translational Biosciences PhD Program who are enrolled as full-time graduate students and are making satisfactory progress towards their degree, as defined in this handbook, will be appointed to a Graduate Research Assistant (GRA) position at 0.5 of Full Time Effort (FTE). As students who are pursuing a doctorate degree, predoctoral graduate students spend a significant portion of their time in coursework and learning how to undertake independent research. Thus, a GRA position of 0.5 FTE approximates the distribution of time that a graduate student spends on their educational activities and on paid research activities. PhD students in the Translational Biosciences PhD Program must request permission from the Translational Biosciences PhD Program for any compensated employment that is outside the

scope of their GRA appointment. As the GRA appointments are renewed on an annual basis, any compensated employment outside of a student's GRA appointment must be reported on an annual basis.

It is the expectation of the Translational Biosciences PhD Program that students who matriculate into the program will devote 100% of their time and effort to completing their degree. Students who are unable to devote 100% of their time and effort to their predoctoral studies will not be appointed to a GRA position and will not receive a stipend, tuition support or university-subsidized health insurance.

The main responsibility of the 0.5 GRA position is to assist faculty with their research projects. A general expectation is that PhD students, over the course of their graduate education, will spend approximately half of their time assisting faculty with research projects and approximately half of their time on other educational activities. This time distribution will, of course, change over the course of the student's program of study as the student develops into an independent research scientist.

PhD students with a GRA position will receive continuous financial support, in the form of the GRA stipend, full tuition support for all coursework required for the PhD degree and university-subsidized health insurance for five years (60 months) following matriculation into the Program. Each student is responsible for payment of incidental fees and parking.

This financial support represents a substantive commitment by the University, the Program and the individual faculty mentors to the students who are selected for this PhD program. This commitment is contingent upon the student making satisfactory progress towards completion of their degree. The requirements for the degree and the definition of satisfactory progress are outlined in this handbook. Predoctoral students who are making satisfactory progress towards their degree but need additional time beyond five years to complete their degree may continue to receive financial support but must have a clearly defined plan for completion of their PhD degree.

The base stipend for PhD students in the Translational Biosciences PhD Program is \$33,000 per year, paid in 12 monthly installments. PhD students are encouraged to apply for fellowships and other awards from international, national and university sources. Examples include Graduate Research Fellowships (GRF) from the National Science Foundation (NSF) and F31 fellowships from the National Institutes of Health (NIH). There are also a small number of MU-funded awards, such as the MU Life Sciences Fellowship, which require prior nomination by the Translational Biosciences PhD program. PhD students who receive predoctoral fellowships or other awards from university-funded or external-funded programs which provide a substantial portion of the student's stipend will receive a \$2,000 increase in their stipend, to a total of \$35,000 per year.

### *Travel Funds*

The MU Graduate School has travel awards to help graduate students attend research conferences. These awards are typically limited to PhD students who have passed their

comprehensive exam. Further information on these awards can be found at:  
<https://gradschool.missouri.edu/graduate-awards-travel-scholarships/travel-scholarships/>.

## **MISCELLANEOUS POLICIES AND USE OF AI TOOLS**

---

### *Health Insurance*

Health benefits are available to all MU students through the Student Health Center and the Accident and Sickness Insurance program. Payment of the Student Health Center fee is mandatory for full-time students and optional for part-time students. The Student Health Center treats short-term conditions such as colds and flu and refers students to specialists or hospital care if necessary. Accident and Sickness Insurance has been available for all students for many years, on a voluntary basis for domestic students, but mandatory for international students since 1998. For detailed information about the optional insurance plans, consult <https://gradstudies.missouri.edu/funding/student-medical-insurance/>. Health insurance subsidies are waived for all qualifying full-time graduate students in the program.

A graduate student may enroll in the Accident and Sickness Insurance for Graduate Assistants while attending MU. Students can enroll when they register or classes, either in person or by phone. If the student wishes to enroll in the insurance through the cashier's office or on myZou, they must do so within 30 days of classes. For more health and medical insurance information visit <https://gradstudies.missouri.edu/funding/student-medical-insurance/>

### *Leave of Absence*

It will be the responsibility of the student to resolve all issues pertaining to their support (e.g., GRA, GTA, Fellowship or Scholarship) with their adviser or other relevant authority prior to taking an approved leave of absence. These issues include the date when support will be terminated and whether or under what conditions the student will be reinstated for support upon their return. Prior to the completion of the Leave of Absence, the student must notify the program's Director of Graduate Studies (DGS) and the Office of Graduate Studies so that the re-entry process can be initiated.

A graduate assistant unable to fulfill the duties of his or her appointment because of illness or injury shall notify the administrator of his or her major unit as soon as circumstances permit. Similarly, a graduate assistant unable to fulfill the duties of her or his appointment because of birth or adoption of a child shall notify the administrator of her or his major unit as soon as circumstances permit. The appointing unit may adjust the graduate assistant's workload duties as the assistant's physical circumstances reasonably dictate. If total absence from duties becomes necessary, the major unit shall hold the appointment, provided the graduate assistant is still enrolled, for a period of two months, or to the end of the appointment period or of the semester, whichever should occur first. The graduate assistant shall have the right to return to the assistantship, within the original terms of the appointment, at such time as he or she is able to reassume the duties of the position. <https://gradstudies.missouri.edu/policycategory/requested-leave-of-absence>



## *Graduate Student Leave and Vacation Policy*

While specific vacation days for graduate students are not part of an official policy of the Graduate School, the general policy for students with Graduate Research Assistantships includes 3 days of personal time, 2 weeks of vacation, and 2 weeks of sick time.

During an academic year, which includes the summer, enrolled graduate students may be absent from normal student responsibilities for up to (but no more than) ten workdays in succession for reasons of illness or illness-related care. Students who are receiving University of Missouri financial support will continue to receive support during that period. Graduate students should inform the relevant faculty who supervise their coursework, research, and/or teaching obligations about any absence due to illness as soon as possible; normal course and grading policies for the relevant department(s) and course instructor(s) will apply. Students who must be absent due to illness or illness-related care for more than ten workdays in succession can either [request a leave of absence](#) from the University or apply for an extension of Sick Leave from the Dean of the Graduate School.

Graduate students are allowed a total of two months maternity/paternity leave, of which up to one month may be paid leave upon the approval of the adviser and/or chair.  
<https://gradstudies.missouri.edu/policycategory/requested-leave-of-absence>

## *Use of AI-Tools in Research and Courses*

While it will be up to individual course instructors to specify their policies on use of AI-tools for course assignments, the PhD Program will in general expect students to follow these policies particularly for their thesis work. These policies were generated by Spencer Ross at UMass Lowell (edits to apply for University of Missouri are in square brackets []).

The beta release of Dall-E-Mini in July 2022 and ChatGPT in November 2022 are among many tools using artificial intelligence. There is a good possibility that using tools like these are going to become an important skill for careers in the not distant future (<https://www.theguardian.com/commentisfree/2023/jan/07/chatgpt-bot-excel-ai-chatbot-tech>). In the meantime though, it's going to take a while for society to figure out when using these tools is/isn't acceptable. There are three reasons why:

- Work created by AI tools may not be considered original work and instead, considered automated plagiarism. It is derived from previously created texts from other sources that the models were trained on, yet doesn't cite sources.
- AI models have built-in biases (ie, they are trained on limited underlying sources; they reproduce, rather than challenge, errors in the sources)
- AI tools have limitations (ie, they lack critical thinking to evaluate and reflect on criteria; they lack abductive reasoning to make judgments with incomplete information at hand)

Given these (important) ethical caveats, some scholars in computational sciences debate if the hype over AI-based tools-- especially as "automated plagiarism" tools-- should be heeded at all (<https://irisvanrooijcogsci.com/2023/01/14/stop-feeding-the-hype-and-start-resisting/>). This policy was developed from a response by ChatGPT-3 (2023) and edited on critical reflection:

Academic integrity is a core principle at [University of Missouri] and it's vital that all students uphold this principle-- whether using AI-based tools or otherwise. For [any] class, a responsible use of AI-based tools in completing coursework or assessments must be done in accordance with the following:

1. You must clearly identify the use of AI-based tools in your work. Any work that utilizes AI-based tools must be clearly marked as such, including the specific tool(s) used. For example, if you use ChatGPT-3, you must cite "ChatGPT-3. (YYYY, Month DD of query). "Text of your query." Generated using OpenAI. <https://chat.openai.com/>"
2. You must be transparent in how you used the AI-based tool, **including what work is your original contribution**. An AI detector such as GPTZero (<https://gptzero.me/>) may be used to detect AI-driven work.
3. You must ensure your use of AI-based tools does not violate any copyright or intellectual property laws.
4. You must not use AI-based tools to cheat on assessments.
5. You must not use AI-based tools to plagiarize without citation.

Violations of this policy will be dealt with in accordance with [University of Missouri's] academic integrity policy. If you are found in violation of this policy, you may face penalties such as a reduction in grade, failure of the assignment or assessment, or even failure of the course. Finally, it's your responsibility to be aware of the academic integrity policy and take the necessary steps to ensure that your use of AI-based tools is in compliance with this policy. If you have questions, please speak with [your advisor or instructor] first, as we navigate together how best to responsibly use these tools.

ChatGPT-3. (2023, January 10). "Write a syllabus policy about the academic integrity of students using ai-based tools." Generated using OpenAI. <https://chat.openai.com/>

## UNIVERSITY RESOURCES FOR GRADUATE STUDENT

---

### Contacts

Students are referred to the UM website (<http://www.missouri.edu/>) for the most up-to-date listings of phone numbers and e-mail addresses.

<b>The University of Missouri-Columbia</b> Columbia, MO 65211 URL: <a href="https://www.missouri.edu/">https://www.missouri.edu/</a>	<b>Mizzou Online</b> 212 Heinkel, 201 S. 7 <sup>th</sup> St., Columbia, MO 65211 Phone: (573)882-2491 <a href="https://online.missouri.edu/">https://online.missouri.edu/</a>
--	--



<p><b>Disability Services</b>  S5 Memorial Union  Phone: (573)882-4696  <a href="https://disabilityservices.missouri.edu/">https://disabilityservices.missouri.edu/</a></p>	<p><b>Transcripts &amp; Certifications</b>  Office of the University Registrar  125 Jesse Hall  <a href="https://registrar.missouri.edu/transcripts-certifications">https://registrar.missouri.edu/transcripts-certifications</a></p>
<p><b>Graduate Admissions</b>  Graduate School  210 Jesse Hall  Phone: (573)882-6311 or 1-800-877-6312  Fax: 1-877-632-6316  <a href="https://gradschool.missouri.edu">https://gradschool.missouri.edu</a></p>	<p><b>Registrar</b>  Office of the University Registrar  125 Jesse Hall  M-F 8:00-5:00  Phone: (573)882-7881  <a href="https://registrar.missouri.edu">https://registrar.missouri.edu</a></p>
<p><b>International Center</b>  N52 Memorial Union  Phone: (573)882-6007  <a href="https://international.missouri.edu">https://international.missouri.edu</a></p>	<p><b>Financial Assistance</b>  Student Financial Aid  230 Jesse Hall  Phone: (573)882-7786  <a href="https://admissions.missouri.edu/costs-aid/financial-aid/">https://admissions.missouri.edu/costs-aid/financial-aid/</a></p>
<p><b>Student Veterans Resources &amp; Support Center</b>  N-5 Memorial Student Union  Phone: (573)884-4383  Fax: (573) 884-4387  <a href="https://veterans.missouri.edu/">https://veterans.missouri.edu/</a></p>	<p><b>Housing</b>  Residential Life, Division of Student Affairs  0780 Defoe-Graham Hall; 901 Hitt Street,  Columbia, MO 65211-4050  Phone: (573)882-7275  <a href="https://housing.missouri.edu">https://housing.missouri.edu</a></p>

## *Important Links and Forms*

[Mizzou Academic Calendar](#)

[MyZou](#)

[Canvas](#)

[MU Alert](#)

[Annual Review Process and myVITA tutorial](#)  
[myVITA](#)

[Course substitution form](#)

[D1 Form](#)

[D2 Form](#)

[D3 Form](#)

[D4 Form](#)

[Thesis submission deadlines](#)

