COLLEGE OF MEDICINE AND LIFE SCIENCES
THE UNIVERSITY OF TOLEDO

MD/PhD DUAL DEGREE PROGRAM

Student Handbook

University of Toledo

College of Medicine & Life Sciences

2026-2027

Table of Contents

Mission Statement & History

The mission of the MD/PhD Program at the University of Toledo College of Medicine and Life Sciences (UTCOMLS) is to provide outstanding training that integrates clinical medicine, biomedical science, compassionate care and professionalism to enable students to succeed as independent physician-scientists with the skills, creativity and vision to shape the future of health care. Our goal is to provide rigorous training in a supportive environment for students who will become the next generation of leaders in academic medicine or a variety of alternative career paths.

The combined MD/PhD degree program at UTCOMLS began in the mid-1980s as a mechanism to allow simultaneous pursuit of both the MD and PhD degrees. The first student with a dual degree graduated in 1992. The program offers students outstanding integrated training as both physicians and laboratory scientists and provides a supportive atmosphere for students to pursue both medical and research training for careers as academic physician-scientists. Graduates from our MD/PhD program have progressed to highly competitive residencies and served as faculty at prestigious research institutions.

Our goal is to provide students with the skills needed to conduct independent biomedical research and a firm clinical foundation for subsequent residency, fellowship and/or post-doctoral training. It usually takes seven to eight years to complete all requirements for both degrees - the national average is currently 8 years.

Typically, two to three students per year matriculate into the MD/PhD track. Thus, there are generally a total of 14 to 18 students in the program at any given time.

Admissions

Application to the MD/PhD program is a three-step process. The first step is to apply for admission to the UTCOMLS using the American Medical College Applications Services (AMCAS) web application. When completing the application, the applicant selects MD/PhD Program. Applicants will participate in the same MD interview process and will also be interviewed by MD/PhD Program Director and the basic science admissions committee in the applicants track of research interest. Applicants that have been accepted into both MD and PhD track of interest will then have their applications sent to the MD/PhD steering committee to determine if these candidates are acceptable for the MD/PhD program and to also determine if they meet the qualifications for MD Dean's scholarship which pays for medical school tuition. All accepted MD/PhD students will have a living stipend, full tuition waiver, and health insurance for the PhD portion of their studies.

Before a student starts the PhD portion of their studies, they will be given directions to complete the College of Graduate Studies application to be formally accepted into the College of Graduate Studies. Complete information regarding the admission process can be found here.

Financial Aid and Scholarships

Two MD/PhD students per year are eligible to receive medical school tuition scholarships to cover the full cost of medical school tuition during the time these students are registered as medical students.

This scholarship will automatically renew annually while you are in MD training if you meet the following criteria:

- Enroll as a full-time student pursuing a Doctor of Medicine and PhD in Biomedical Science degree at the University of Toledo College of Medicine and Life Sciences

- Maintain continuous full-time enrollment, good academic standing and completion of the medical curriculum within four years (not counting years in PhD program)
- Earn a grade of Pass in each required course during years one and two and an average of HIGH PASS (equivalent to a GPA of 3.0) for years three and four of study to guarantee renewal for up to the full four years. Failure to maintain grades or continuous enrollment will result in the loss of the MD scholarship for the remainder of medical school.
- Maintain appropriate professional conduct.

If a student is accepted into the MD/PhD program after completing one or two years of medical school or if the scholarship is awarded after matriculation, the tuition scholarship is not retroactive to the time prior to acceptance into the combined degree program or award of the scholarship.

All MD/PhD students receive a graduate school tuition waiver, living stipend, and health insurance while enrolled as full-time graduate students during the PhD training phases of the program. Students must maintain a cumulative 3.0 or higher GPA for all graduate courses and make continuous progress towards their degree.

Students who are out-of-state residents should apply for in-state residency immediately upon becoming eligible (after one year in the program) whether or not they have been awarded a medical school tuition scholarship. This will greatly reduce medical and graduate school tuition expenses whether the student is paying on his/her own or is receiving a scholarship.
Most students, even those with medical school tuition scholarships, apply for and receive financial aid in the form of loans and grants. Information about financial aid is available through the UT Office of Student Financial Aid website and COMLS MD student financial aid.

Additional Scholarships & Grants

Whether receiving a medical school tuition scholarship or not, students should strongly consider working with their PhD advisor to apply for a Ruth L. Kirschstein National Research Service Award (NRSA) (F30 or F31 award) from the National Institutes of Health. These prestigious awards for MD/PhD, and PhD students in training for research careers include a stipend, tuition, funds to conduct dissertation research, and funds for travel to scientific meetings. For more information: F30 and F31 training grants

Additionally, grants to support MD/PhD or PhD training are available from several disease-related or specialty-related agencies. In recent years, UTCOMLS MD/PhD students have been awarded grants from the American College of Sports Medicine, American Diabetes Association, American Heart Association and the Epilepsy Foundation of America among others.

MD/PhD students are also urged to apply for the College of Graduate Studies University Fellowship the semester before starting the PhD portion of their studies. This fellowship is offered to highly qualified incoming graduate students and includes cost of tuition and student fees as well as stipend.

For those students not receiving the Medical School scholarship, many other scholarships are available to help cover the cost of medical school. More information regarding MD scholarships can be found here.

Program Structure & Overview

The standard structure of the MD/PhD program begins with approximately 18 months devoted to medical school and completion of the United States Medical Licensing Examination (USMLE) Step 1 exam. During the

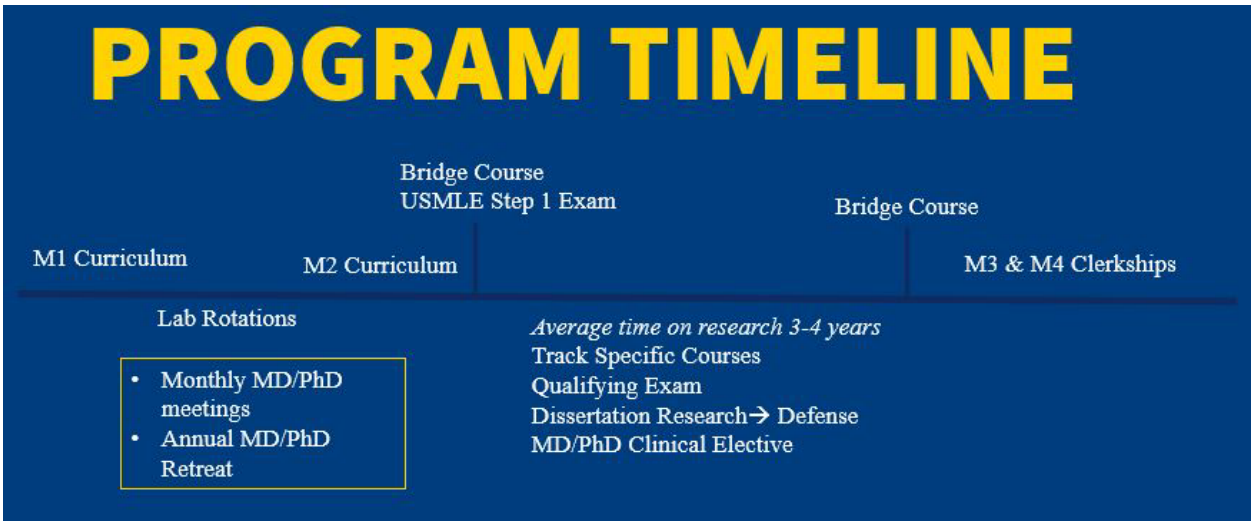
summer break between M1 and M2 students will participate in research rotations in 1 or 2 research labs to help determine their PhD mentor. Depending on length of summer break, the 2nd rotation may need to be scheduled for after M2 and USMLE Step 1 exam is finished. More information about this can be found in the *Laboratory Rotations and Identifying a PhD Mentor* section of this handbook.

Upon completion of USMLE Step 1 exam at the end of the M2 year, students officially begin graduate school. Student cannot start graduate school until they successfully take USMLE Step 1. If students do not pass USMLE Step 1, they will not be able to continue their PhD studies until they pass USMLE Step 1. Once students are in the PhD program, they will complete required coursework for the PhD in their track of interest, pass the Qualifying Exam, conduct research in their major advisors' research lab for the PhD dissertation, and write and defend the dissertation. Upon successful completion of the written dissertation, its oral defense, and all required coursework, the student will be awarded the PhD degree.

Thread 1 medical school coursework credits are applied towards the requirements for the PhD. This minimizes the number of graduate courses MD/PhD students must take and frees up time for dissertation research. Typically, MD/PhD students take 4 years to complete the PhD.

Students will take the MD/PhD Clinical Elective course (INDI 745) each semester while in graduate school to ensure continuity with their preclinical training and to help smooth the transition back to medical school for the clinical clerkships. More information about this course can be found below in the *Clinical Training during Graduate School section*.

After completing the PhD, dual degree students return to medical school as M3 students. They begin clinical rotations and completion of medical school.



Preclinical Medical School Coursework

MD/PhD students take all the same preclinical medical school courses and electives during medical school years M1 and M2 as other MD students.

The medical school curriculum and course structure is a systems-based approach to learning medicine. UTCOMLS is committed to developing physicians with a broad range of knowledge, skills, attitudes and understanding, allowing them to pursue careers in primary care or any medical or surgical specialty.

The first year of medical school includes the following:

Thread 1: Cellular Disease

- Human Blueprint
- Hematology & Oncology
- Immunity
- Infectious Disease

Thread 2: Bones- Neuro- Behavior (BNB)

- Musculoskeletal
- Neuroscience in Health and Disease
- Behavioral Science and Psychiatric Medicine

The second year of medical school includes the following:

Thread 3: ECOsystems

- Cardiovascular
- Pulmonary
- Endocrine

Thread 4: Cycles and Vices

- Gastrointestinal
- Reproductive
- Endocrine

Longitudinal Threads:

- Foundational Sciences: Physiology, Anatomy, Histology, Pathology, Radiology, Pharmacology, Biochemistry, Embryology
- Principles of Clinical Medicine (PCM), Clinical Skills & Reasoning, Patient Safety, Interprofessional Education (IPE), Population Health, Business in Medicine, Biostatistics, Ethics, Professionalism
- Leadership
- Career Exploration & Development

MD/PhD students apply thread 1 credits to the 1st year curriculum for the PhD. Therefore MD/PhD students do not need to take, BMSP 6340 Genes & Genomes, BMSP 6360 Cell Membranes, BMSP 6470 Systems Pathophysiology, and BMSP 6350 Cell Biology & Signaling.

Lab Rotations & Choosing a PhD Advisor

The graduate program in Biomedical Sciences is organized into interdisciplinary programs based on the disease processes with which they are most closely aligned. These programs are termed 'Tracks' and the basic science COMLS 'home' department of each track is in parentheses below:

Cell and Cancer Biology (Department of Cell and Cancer Biology)
Molecular Medicine (Department of Physiology & Pharmacology)
Medical Microbiology & Immunology (Department of Medical Microbiology & Immunology)
Neurosciences and Neurological Disorders (Department of Neurosciences and Psychiatry)

Bioinformatics (Department of Neurosciences and Psychiatry)

MD/PhD students will conduct their dissertation research under the guidance of faculty who are closely affiliated with one of these five Tracks; however, the major research advisor may be faculty in one of the COMLS clinical departments.

Choosing a laboratory for rotation is one of the most important and challenging steps of one's PhD education and the student should put substantial effort into making the best choice. To help students identify potential labs for rotations, a series of seminars by faculty who have open positions in their labs for PhD students are held over the first few weeks of fall semester every year; "the PI Parade". Each session typically includes 2-3 faculty presentations (20 minutes with 10 minutes for questions). The schedule of presenting faculty is developed by the lab rotation course director and made available to the MD/PhD students. Attendance by MD/PhD students is not mandatory but strongly encouraged (the fall medical school curriculum may conflict with the seminars; however sessions are recorded.)

Additional information about available openings in faculty labs can be obtained from the research Track Director.
MD/PhD students are also encouraged to attend research seminars offered throughout the year by various departments, especially the home department of their Track of interest.
MD/PhD students will complete their two 5-week lab rotations during the summer break between year 1 and year 2 of Medical School. If both rotations are not possible at this time, or if a student wants a 3rd rotation, then the final rotation will be at the beginning of PhD studies after M2 and USMLE Step 1 exam.

Students will be compensated for these two research rotations through a Federal Work Study Program (if eligible).

Process for completing lab rotations:

- Complete New Hire Paperwork through Office of Student Affairs; this is typically completed in March or April of Spring semester
- Register for INDI 745 for summer semester; e sure to select the MD/PhD section
- Determine lab placement:
    - Meet with the Track Director of your research track and with the recommended faculty whose research you are interested.
    - View recorded faculty presentations from PI parade
    - Be sure to ask if the faculty is willing to take on a MD/PhD student starting the following summer.
    - Work with each faculty to determine your rotation schedule.

Upon completion of the two rotations, the student will choose which lab s/he would prefer to join. Then the course director will query the faculty member of that lab if s/he will accept the student for PhD training. If the chosen advisor decides not to accept the student, the student may request to join the other rotation lab or may elect to complete additional rotation(s) to identify another lab of interest.

The student and major advisor typically develop a working relationship and friendship that can last through one's career. However, on rare occasions, the relationship is not successful, and the student may need to identify a new major advisor. There are several reasons this could happen. Should such a situation arise, it is the responsibility of the major advisor, Track Director, Chairman, and Senior Associate Dean of COMLS Graduate Programs to help the student identify a suitable new major advisor in a timely manner.

Transitioning to Graduate School

After completion of the first 18 months of medical school, students generally take several weeks to prepare for the USMLE Step 1 exam. This is a comprehensive examination covering all the material presented in the first two years of medical school. Students must achieve a Pass score on Step 1 to transition into graduate school. The Pass score is defined by the USMLE each year. If a failure is achieved, the student must plan to re-take the exam.

Information regarding the examination and scheduling can be found at http://www.usmle.org/apply/.

After taking Step 1, students will enter graduate school to take graduate school courses, additional laboratory rotations, if needed, and move on to undertake their dissertation research.

Before officially starting the PhD portion of the program students will need to complete new hire paperwork to receive their stipend. Students will also need to complete a pre hire medical screening. The COMLS Graduate Programs Office will help students schedule these during the spring of their M2 year. Students will also be responsible for completing all new student orientation trainings.

Graduate School Registration & Stipend

Prior to entering the graduate school for the first time the student should meet with the MD/PhD Program Director in a semi-annual meeting and begin the necessary paperwork and notifications for the transition (discussed above). The COMLS Graduate Coordinator will work with each student to complete the graduate school Research Assistant offer letter and to complete Human Resources New Hire Paperwork in the spring of their M2 year.

Students should register full time for fall, spring, and summer terms while in graduate school. This translates to 9 credits in fall and spring semesters and 6 credits for the summer semester. Registering for the full number of credits each semester is required for the graduate stipend.

Graduate School Curriculum Requirements

Students must meet all the requirements for both the MD and PhD degrees, i.e., ten semesters/terms of medical education and a minimum of 90 graduate semester credits. The official time limitation for completion of both MD and PhD degrees is 10 years and generally takes 8 years. The additional specific requirements for the PhD degree can be found in the Graduate Catalog for the year in which the student entered the MD/PhD program. Information on the specific medical school requirements for graduation can be found here.

The Biomedical Sciences PhD program has a common first-year core curriculum for PhD students however much of this curriculum is covered in medical school. MD/PhD can transfer 26 MD credits to PhD. **Therefore, MD/PhD students are allowed to apply the 20 credits from Thread 1 towards their PhD.** This decreases the number of core courses required in graduate school and accelerates the entry of the students into the lab and the completion of their dissertation research. The PhD requirement is a minimum of 25 didactic (carrying a letter grade) graduate course credits; however, each track also has required advanced courses that all PhD students must take. There are 30 credits of required dissertation research and 90 credits total minimum required for the PhD.

Of the PhD BMSP core curriculum, MD/PhD students are required to take the following:

- INDI 6020 On Being a Scientist
- BMSP 6380 Methods in Biomedical Science (BMSP 6380/8380)
- BMSP 7320 Statistical Methods

- INDI 745 MD/PhD Clinical Elective (See Clinical Training during Graduate School)
- Required track-specific courses and journal clubs – students should consult with their Major Advisor, Track Director, and track websites:
    - Cancer Biology
    - Molecular Medicine
    - Medical Microbiology and Immunology
    - Neurosciences and Neurological Disorders
    - Bioinformatics

MD/PhD students are strongly encouraged to also take the following courses since the courses will help them in their research endeavors:

- BMSP 6010 Strategic Approaches to Biomedical Research
- PUBH 6010 Public Health Epidemiology
- BMSP 6250 Grant Writing Worship**

** Must pass Qualifying Exam before taking this course.

Clinical Training during Graduate School (INDI 745)

During graduate school, MD/PhD students are required to take INDI 745; which is the MD/PhD Clinical Elective. This course reinforces preclinical education in pathophysiology, pharmacology, and other areas while beginning to develop the clinical skills you will need as third year clinical clerks. The course consists of 8 hours per month of clinical activity. Students should register for 1 credit of INDI 745 each semester. Students will receive a Satisfactory or Unsatisfactory for the semester. *The INDI 745 credits must be within the 9 credit hours for fall and spring semesters and within the 6 credit hours of summer semester. Students may count up to 4 credits of INDI 745 towards their PhD electives.* A Clinical Mentor/Mentee Contract should be completed by the student and Clinical Mentor indicating their willingness to work together. This only needs to be completed once unless a new clinical mentor is selected. Though the mentor does not need to commit to being present at every clinical session, this individual must ensure that the student receives a meaningful clinical experience. The Clinical Mentor/Mentee Contract can be found in the appendix of this handbook.

Prior to taking these electives, students are required to attend the one-week Bridge to Clerkship Course during the last week of April. The Bridge Course introduces pre-clinical students to life in the hospital and clinics and expectations for students participating in clinical rotations. It should be noted that the student will participate in the Bridge Course two times; first at the end of M2 and again before M3. The student should register for this course during the spring semester in which they will be defending their dissertation. Policy 3364-81-031-00

In addition, student must remain compliant with all test bank trainings:

Name	iCare/Pt. Rights/LIP Attestations	Hand Hygiene Attestation	Mid-Level/High-Level IDA PPE Training	Safety Training for Medical Students	CAPR Training for Non-OR Users

Test to meet requirement:	iCare/Pt Rights/LIP Attestations (158)	Hand Hygiene Attestation (341)	Mid-Level/High-Level IDA PPE Training (347)	Safety Training for Medical Students (583)	CAPR Training for non-OR Staff (1692)
Frequency needed:	Every 3 years	Every 3 years	Every year	Every year	Every year

Trainings can be completed at https://testbank.utoledo.edu/Public/Login.aspx . Students can log in using their UTAD login and password.

RocketMed

Just like during clinical years, MD/PhD students will use RocketMed to log patient encounters and track their clinical experience. At the end of each semester students' preceptors will be provided an evaluation through RocketMed. Students must also complete a preceptor evaluation. Students may view their evaluations through the RocketMed platform. Students can access RocketMed via Rocketmed.utoledo.edu

Dissertation Committee

A student should assemble a Dissertation Committee (student advisory committee) within the first semester after joining a faculty mentor's lab. The Committee is responsible for advising the student with their research project and progress through the PhD side of the program. The Committee also administers the Qualifying Exam (see below) and serves as the decision-making body during the Dissertation Defense when the student presents and defends her/his research as a final requirement for the PhD. Hence it is important the committee contains individuals knowledgeable in the student's research area.

Membership of the Dissertation Committee should be determined in consultation with the student's faculty major advisor. A minimum of five faculty members is required, and inclusion of an extramural member(s) is possible if appropriate but is not a requirement. Not all committee members need to be members of the Track in which the student has chosen to concentrate, but typically, most will be. All members must be Graduate Faculty approved by the UT COGS Graduate Faculty Membership Committee. When committee members are identified, they should agree to serve by their signature on the student's GRAD form, which will be placed in the student's electronic file. The chair of the committee will be selected at the first committee meeting (major advisor cannot chair the student's committee). Occasionally members of the Dissertation Committee must be replaced, usually because of a move to another institution or retirement. In those cases, the minimal number of five members must be maintained by the addition of another member.

The student should meet with the Committee at least once per 6 months to provide a progress report on the research project. The Committee also will determine when the student has generated sufficient data to begin writing the dissertation and scheduling its defense.

PhD Qualifying Examination

MD/PhD students are required to pass the PhD Qualifying Examination before the end of their first full year in graduate school. The purpose of the Qualifying Examination is to evaluate the student's critical thinking skills, and ability to analyze a hypothesis, understand current information in his/her area of concentration, and apply appropriate scientific methods to verify or correct the null (given) hypothesis. The examination provides the student with the opportunity to demonstrate that s/he is adequately knowledgeable in a chosen area of concentration.

Prior to the scheduling of the examination, the GRAD and Plan of Study forms and establishment of the Dissertation Committee must be completed.

The Qualifying Examination is administered by the Dissertation Committee and consists of a written portion in the form of an NIH R21 style grant and an oral exam. The written portion must be written solely by the student, without either generative or grammar AI help of any kind. The oral exam includes questions that probe the breadth and depth of basic knowledge, including past course work, and critical thinking skills of the candidate. A grade of Pass or Fail will be determined by the Committee based on the written and oral portions. The Committee is also responsible for approving the topic for the research proposal. Successful completion of the Qualifying Examination requires a unanimous pass vote of the Committee members. To ensure fairness of proceedings, a representative of the Graduate Faculty who is not on the Committee will serve as an observer of the exam at the student's or Committee's request. The completed Report of the Qualifying Examination Form and pdf of the written exam must be sent to the Senior Associate Dean, College of Medicine and Life Sciences Graduate Programs. If the student fails the exam, it may be repeated at the discretion of the student's Graduate Committee.

After passing the Qualifying Examination, the student is now a Candidate for PhD and eligible to register for Dissertation Research in their research track (9990) to complete the remainder of their research activity as a graduate student. A minimum of 30 credits of Dissertation Research is required for graduation. Students must be registered for at least one credit during the semester in which they defend their dissertation. It is acceptable to defend in the summer term and be registered for courses as a medical student.

Writing and Defending the Dissertation

Typically, after three to five years of intensive research activity, the MD/PhD student has accumulated enough data to write the dissertation in preparation of its defense and completion of the PhD side of the program. The go-ahead to write and defend the dissertation is determined by the Dissertation Committee. The format of the dissertation is typically a series of chapters which may include submitted or published manuscripts as separate chapters. The College of Graduate Studies has instructions and formatting guidelines for PhD dissertations that can be found here. The dissertation is ultimately uploaded and stored electronically to OhioLINK where it is accessible worldwide through the internet.

Graduate Student Forms

All required forms can be found on the College of Graduate Studies website.

Plan of Study: Students must complete the Plan of Study for the Doctoral Degree form that outlines the courses to be taken throughout graduate training. It should be completed within one semester after the student joins a faculty mentor's lab. This form must be submitted before the student is permitted to take the Qualifying Examination.

The student must complete all courses on the Plan of Study to graduate.

The Plan of Study also needs to account for how credits earned in medical school will count toward graduate school credits. The strategy for mapping medical school course credit onto required graduate courses is as follows:

MD/PhD students may count 26 credits of MD credits towards their PhD.

Medical School Course	BMSP Course

Thread 1 (20 Credits)	BMSP 6340: Genes & Genomes BMSP 6360: Cell Membranes BMSP 6470: Systems Pathophysiology BMSP 6350: Cell Biology & Signaling
INDI 745 Clinical Elective	Up to 6 Credits of non-didactic electives

Graduate Research Advisory Committee Approval and Assurances (GRAD Form): Once it has been decided which faculty lab a student will be working in during the duration of their PhD studies the GRAD form will need to be completed. This form should be completed prior to starting research and needs to be signed by members of the committee.

Report of the Qualifying Exam: The Report of the Qualifying Exam form is completed when the student completes their Qualifying exam.

Defense Acceptance & Intellectual Protection form: The Defense Acceptance & IP Protection form is completed when the student and advisor have determined a defense date. This form should be shared with the Senior Associate Dean of COMLS Graduate Programs. (Kandace.Williams@utoledo.edu or MLB 121) so a public announcement can be made regarding the defense. This also alerts COMLS Graduate Programs that the student is nearing the end of their PhD work.

Approval of Dissertation: The Approval of Dissertation form is completed after a student has successfully completed and defended their dissertation.

Re-entry to Medical School

Students should start writing their dissertation well before the planned defense date and keep in mind that scheduling a defense can be difficult when dealing with the various schedules of the Dissertation Committee members.

The timing for completion and defense of the dissertation needs to correlate with the standard medical school calendar, as students will need to participate in the Bridge to Clerkship course that takes place in April and beginning of M3 in early May.

If you defend early in the semester the Biomedical Graduate Executive Committee has endorsed a plan in which the stipend will continue from the dissertation defense date until the date of re-entry to medical school provided 1) that the student continues to work on final corrections to the dissertation or other lab-related work during that time, and 2) that the duration of additional stipend coverage does not exceed the end of the semester in which you defended.

Planning for the 3rd year clerkships begins more than 6 months prior to the start of the third year. Thus, it is very important during the annual spring meeting with the MD/PhD Program Director to indicate one's intention to complete the dissertation and re-enter medical school in the upcoming summer, even if one is not completely certain this timeline will be met. It is easier to cancel a reserved clerkship space than to add one in later.

In addition, the student returning to medical school should re-take the week-long Bridge Course (described above) during April. Students should register for this course during the spring semester in which they are defending. The course introduces rising 3rd year medical students to life in the hospital and clinics and expectations for students.

The MD/PhD Program Director will notify Student Affairs and the Registrar of the student's intention to re-enter Medical School. Once the Student Affairs office has been informed of intent to participate in the following year's third year clerkships, students will be sent information by email and informed about meetings of the second-year medical school class related to 3rd year registration. Students should make sure that they are on the current second year/upcoming third year email list so that they do not miss important communications.

It is critical that MD/PhD students attend such meetings and pay close attention to registration instructions (email communications are sent by DME and OSA). Registration for M3 clerkships occurs in the winter semester of the M2 year at a preset date and time. All students submit a rank order preference list specifying their first through last choices of clerkship tracks. The final clerkship track that a student is assigned is determined by a lottery system.

Although there is a perception that selection of an "easier" or "less critical" rotation early in the rotation may help students adapt to life as a clinical clerk, in practice, rotations deemed "critical" vary from student to student. Because the optimal order of clerkships is different for everyone, most students end up with an order very close to their "ideal" order. Most students find at the end of third year that the order of clerkships conferred little advantage in the context of the entire third year experience. Information about year 3 and 4 of the medical school curriculum may be found here.

In addition to the above, one needs to apply for graduation to the College of Graduate Studies in the Spring term, when the defense is planned, as M3 starts in early May. The website that describes the steps to apply for PhD graduation is here. This is important to remember because you will not be able to graduate without the degree audit that is triggered when you apply to graduate. This application is NOT for the commencement ceremony which will occur at the end of your MD program when you will be awarded the dual degree of MD/PhD.

Residency Applications

Early in the 4th year of medical school, one should finalize one's choice of specialty for residency training.

For many MD/PhD students, the choice of specialty will be a natural outgrowth of research interests (or vice versa), which facilitates the combination of research and clinical interests as an academic career. However, such connections need not be obvious or standardized; there are many possible combinations that make sense for different reasons. For example, a neuroscience PhD might choose Neurology, Neurosurgery, Anesthesiology (due to the extensive neuropharmacology component in that field), Neuroradiology, Physical Medicine and Rehabilitation, Psychiatry, or other areas. Sometimes a specialty is chosen for lifestyle. It is important to realize that residency training does commit one to a clinical field and options for retraining in a different area are limited due to the lack of federal funding for additional years once a residency is chosen.

The application to a residency should clearly state career goals and how one plans to integrate clinical and research interests (if this is one's goal). A letter from one's major advisor is highly recommended - if it is absent, the program will want to know why. The student should also have letters from attending physicians in the chosen field who can comment on clinical skills. If one is interested in a specific program, one should try to arrange an elective clerkship in that program. The importance of such experiences cannot be stressed enough – they demonstrate strong interest in the program and give the faculty a chance to know the student, which will usually be beneficial to the student in the ranking process.

Residency programs are generally very interested in recruiting MD/PhD students, but some may have ambivalent feelings toward trainees who have a significant commitment to research, as they may be concerned that the future resident may not be fully committed to clinical training. It is important to realize (and to stress in interviews) that one sees residency as a critical time in one's training as a clinician and that one's primary goal in residency is to develop as a clinician.

However, some residency programs (often labeled "Physician Scientist Training Programs") also offer research training in the context of residency. These programs can be very attractive, with guaranteed research time, research budgets, travel allowances, etc. However, most residencies and their certifying bodies require that the bulk of training be in clinical areas therefore these programs should be carefully and individually evaluated before committing.

Post-residency fellowships, on the other hand, often provide opportunities for clinical or basic science research and may provide a better springboard for launching into an academic career immediately after training. For that reason, the student should carefully consider what research options and mentors are available when choosing a fellowship program.

Of course, students who clearly decide that they do not want to incorporate clinical care in their careers do not need to pursue residency training. If one is certain that one's career will be exclusively in research, a post-doctoral fellowship is the next step in training. Typically, the student who chooses to pursue this avenue should select another institution and a lab with an excellent national reputation for training outstanding scientists, high productivity, and solid funding. A wide experience during your research training enhances your research career and funding prospects.

Code of Conduct

All students are required to follow the University of Toledo Student Code of Conduct. In addition, Medical students are to follow College of Medicine and Life Sciences policies. A complete list of COMLS Policies can be found here. MD/PhD should also refer to the Biomedical Science Program Handbook for the PhD portion of their studies.

Office of Student Affairs

The Office of Student Affairs (OSA) is a wonderful resource to assist medical students as they progress through their educational programs. The OSA offers academic and career advising, leadership and professional development programming, and transformational bridge ceremonies. The OSA is located on the first floor of the Mulford Library Building on the Health Science Campus. OSA provides a number of mandatory sessions for Medical students. While MD/PhD students may not find all sessions relevant, they still must actively participate.

Student Health Care and Health Insurance

University Health Services (UHS) encompasses services for student health, employee health and acute illness care, occupational medicine and workman's compensation.

Appointments are scheduled through Family Medicine located in Glendale Medical East building across from the HSC campus by calling (419) 383-3777.

For emergency or after-hours visits go directly to the University of Toledo Medical Center Emergency Department or call 911.

UHS provides full-service care for **students** including:

- Illness visits
- Occupational exposures (i.e. needle stick injury)
- Physical examinations and immunizations to fulfill requirements for individual programs of study as well as requirements for foreign travel
- Well woman examinations including immunizations and routine contraceptive care
- Prescription management
- Mental health and counseling services through Harbor Symmetry Wellness (Emergency Mental Health services 24 hours a day 7 days a week 419-475-5338)
- Allergy injections

UToledo graduate students, undergraduate students and medical students who have a valid student ID badge and whose general fees are paid to/received by UToledo are eligible for services at UHS.

As an MD/PhD student, you will be required to have health insurance. Students at the early stages of training may still qualify to be on their parents' plans. In this case, the student can waive the University's student health insurance by logging in to the myUT portal and under the Student Tab/My Toolkit, My Registration selecting Health Insurance – Change or Waive then following the prompts and submitting required additional information. For the purpose of health insurance, MD/PhD students are considered medical students throughout their student tenure, including the graduate student period. Further information about student health services and health insurance can be found on the Student Health and Wellness page.

During the PhD years of the program, students will have UToledo health insurance covered by COMLS during your 1st year and your advisor after this. Students can opt out of this if they wish to keep their own coverage.

Campus Safety

The Safety and Health Department has a comprehensive plan to develop, implement and monitor programs of environmental and occupational safety and health as necessary to protect the health and safety of faculty, staff, students and campus visitors, and to provide compliance with applicable regulations. This department is located in Mulford Library, Room 011 on Health Science Campus and in Transportation Center, Rooms 1200 A-D on the university's main campus.

The Rave Guardian App informs all students, faculty, and employees about emergencies. More information about the app and how to sign up can be found here.

On campus incidents involving theft of personal possession(s) as well as bodily and/or property damage arising from University related maintenance issues should be reported as soon as possible to the University of Toledo Police (Main Campus 419-530-2600; Health Science Campus 419-383-3700). Note: Reporting of such incidents does not automatically grant coverage under the University's insurance. Any threat of physical violence or actual attack should be communicated to the Toledo Police by calling 911. Suspicious behavior or circumstances should be immediately reported to UT Police at 419-530-2600 (x2600). Click here for UT's Police Department Web site.

Most students feel safe on campus at all times of the day or night, but reasonable precautions should be taken. Lab doors should be locked when the lab is empty and when one is there at night. Further, after dark, individuals should walk in pairs through the parking lot and around campus. Also, Campus Police is happy to provide an escort upon request.

Health Risks to Graduate Students in Science Research

It is the graduate student's responsibility to incorporate safe working practices into one's research. The University of Toledo is required to follow OSHA and EPA Regulations. One should work with one's mentor to ensure proper training for any work involving biological/infective hazards, radioactive compounds/isotopes, and animals. The student's mentor MUST obtain the appropriate approvals before a student can actively participate in research projects involving these hazards, even if only for a lab rotation. Please visit the Environmental Health and Radiation Safety department webpage for specific information.

Parking

Every vehicle that parks on UToledo property – student, staff or visitor - is required to have a permit. Students may purchase parking permits through UT's myUT online portal. Additional information is available on UT's Parking Services website.

Organizations, Clubs, and Activities

A wide variety of student-centered organizations, clubs, and activities are available, many of which are sponsored by the COMLS. A list of student organizations can be found here.

Vacation, Holiday, and Sick time

Vacation for the first year Predoctoral students in the Biomedical Science Program is limited to two distinct time periods during the academic year and major holidays. The first is the time between the last day of classes of the fall semester and the first day of classes of the spring semester (traditionally known as the "winter break"). The second vacation period is the entire week of Spring Break as defined by the official UToledo academic calendar.

Starting Monday following the last day of classes of the spring semester of their first year, students will be expected to be in laboratory rotations or have started to work in the laboratory of their selected major advisor.

Predoctoral students, after their first year in the Biomedical Science Program, will be entitled to a total of 2 weeks (10 days) of paid vacation per 12-month year, while on stipend. This time is to be arranged in advance with the major advisor. If additional time off is required, this is to be arranged with the major advisor and the Senior Associate Dean of COMLS Graduate Programs and the student's stipend will be withheld accordingly.

Major single-day holidays and winter break between December 25 and Jan 1 that employees have off are also extended to graduate students. Students should consult their major advisor regarding winter break; not all labs are able to fully shut down due to ongoing experiments.

Sick days - notification to the major advisor by the student who is sick is mandatory at the start of the day that the student will not be in the lab. If the student remains ill at home for more than 3 days, then a doctor's note is required.

Students may not "bank" vacation days from one year to the next, or holidays for future use. Vacation time is based on a 12-month rolling year. For example, if a student uses their entire 10 days of vacation in December, their year period will be until November of the following year before they are eligible for paid vacation time.

Advisors and/or students who have questions regarding time off should consult the Senior Associate Dean of COMLS Graduate Programs or COMLS Graduate Programs office staff.

Volunteer Experiences

Many volunteer opportunities are available, and the program encourages students to get involved! Many students have found time to participate in the America Reads program, the Community Health Project, and the Community Care Clinic among others. These are organized through the Office of Student Affairs. Involvement in these activities not only looks good on residency applications but also instills the spirit of volunteerism and service that should become part of a future doctor's professional commitment to helping others.

Travel to Meetings

MD/PhD students are strongly encouraged to take advantage of opportunities to attend regional and national meetings to present their research or participate in organizations. Funding for travel can come from a variety of sources. Students are encouraged to apply for travel support funding through the Graduate Student Association. Medical students are also encouraged to apply for travel support through the Office of Student Affairs. Depending on research funds, most major advisor are also willing to fund students travel to meetings to present their research.

MD/PhD Student Office

The MD/PhD student office is located in Block Health Science Building, room 378. This area can be used for studying and is a repository for donated medical textbooks. To obtain a key for the office, one must submit a Key Control Form to the police station in the basement of the Mulford Library building.

MD/PhD Monthly Meetings & Yearly Retreat

Every month MD/PhD students at all stages of the program gather for a meeting with the program director. The meetings provide opportunities to discuss clinical cases and issues, receive advice, and communicate any news relevant to the program.

Attendance at monthly meetings is mandatory. If you are unable to attend, you must notify the Program Director prior to the meeting. A web link is available for those clinical students on away rotations.

The MD/PhD program has an annual retreat to serve as an opportunity to share research, develop leadership skills, explore topics of broad interest, and foster socialization in an informal setting. The retreat includes oral presentations by students engaged in research, lunch, and outdoors activities.

People

MD/PhD Program Director

Robert Smith, MD, PhD., FACNP
Professor, Chair, Department of Neuroscience & Psychiatry
Director of MD/PhD Program
419.383.5769
Robert.McCullumsmith@toledo.edu
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Senior Associate Dean of COMLS Graduate Programs office

Kandace Williams, PhD
Professor, Depsrtmrnt of Cell
Senior Associate Dean for Graduate Programs, College of Medicine & Life Sciences
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Laura Megeath, PhD

Graduate Programs Coordinator
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MLB 120

Appendix

MD/PhD Student Clinical Training Agreement

As part of their training program, MD/PhD students are expected to participate in a clinical training (INDI 745) during the graduate school/research phase of their training. The goal of this experience is to reinforce preclinical information and help develop clinical skills that will be used when students transition back to the clinical clerkships after completing their Ph.D. degree requirements.

Learning objectives for this rotation are as follows:

a) Develop and improve history taking and physical examination skills.
b) Describe how to present a cogent history and physical to an attending.
c) Present the differential diagnosis, diagnostic work-up and management for common medical problems.
d) Relate patient presentations and treatments to basic pathophysiology and pharmacology

A Clinical Mentor who will take responsibility for the clinical experience and evaluate student progress. The clinical mentor is not required to proctor all of the clinical exposures, but to ensure that the student is appropriately supervised and receives a good clinical experience. The Clinical Mentor will be asked to complete a RocketMed Evaluation for the student at the end of each semester.

Time Commitment: Students are expected to spend about 8 hours per month in clinical training. This can be divided into weekly 2-hour session, biweekly 4-hour sessions or an 8 hour day per month, or other arrangements as determined by the Student and Mentor. Students are encouraged to discuss the most appropriate schedule with their Research Mentor to ensure that the clinical experience does not interfere with graduate coursework or research progress. Students should see about one patient per hour of training (or more if possible), and should keep a log of patients seen, their diagnoses, and any procedures performed.

Semester(s) of Clinical agreement _____

_____	_____	_____
Student Name	Student Signature	Date
_____	_____	_____
Advisor	Advisor's Signature	Date
_____	_____	_____
Clinical Preceptor	Preceptor's Signature	Date

Submit completed forms to: Paige Mcvay Paige.Mcvay@utoledo.edu

Compact Between Graduate Students and Their Research Advisors

Commitments of Graduate Students

- **I acknowledge that I have the primary responsibility for the successful completion of my degree.** I will be committed to my graduate education and will demonstrate this by my efforts in the classroom and the research laboratory. I will maintain a high level of professionalism, self-motivation, engagement, scientific curiosity, and ethical standards.

- **I will meet regularly with my research advisor and provide him/her with updates on the progress and results of my activities and experiments.**

- **I will work with my research advisor to develop a thesis/dissertation project**. This will include establishing a timeline for each phase of my work. I will strive to meet the established deadlines.

- **I will work with my research advisor to select an Advisory/Supervisory committee**. I will commit to meeting with this committee at least every six months. I will be responsive to the advice of and constructive criticism from my committee.

- **I will be knowledgeable of the policies of my graduate program, graduate school, and institution**. I will commit to meeting these policies. See https://www.utoledo.edu/policies/academic/college_of_medicine/

    - I will be specifically knowledgeable of the COMLS Policy Number 3364-81-22 that describes disciplinary action and due process/appeals pertaining to unprofessional behavior for all COMLS graduate programs, including BMSP. The purpose of this policy is to outline the procedures that the COMLS and COGS will use to address conduct that violates the standards applicable to graduate students, as well as procedures for appealing adverse decisions.

    - As well, all students at the University of Toledo are responsible for understanding and complying with University of Toledo policies regarding professionalism and academic integrity. Applicable policies include, but are not limited to 3364-77-01 Graduate Student Academic Dishonesty, 3364-30-04 Student Code of Conduct, 3364-70-02 Responsible Conduct of Scholarship and Research, and

3364-81-04-017-02 Professionalism and Related Standards of Conduct As scientists-in-training or health care professionals-in-training, COMLS graduate students are held to the highest standards of professionalism, and have a number of professional responsibilities that they are obligated to uphold. A failure to comply may result in disciplinary action.

- **I will be knowledgeable of the requirements of my graduate program, graduate school, and institution**. I will commit to meeting these requirements.

- **I will attend and participate in laboratory meetings, seminars and journal clubs that are part of my educational program.**

- **I will comply with all institutional safety policies, including academic program milestones**.

  I will comply with both the letter and spirit of all institutional safe laboratory practices and animal-use and human-research policies at my institution.

- **I will participate in my institution's Responsible Conduct of Research Training**

  Program (On Being A Scientist) and practice those guidelines in conducting my thesis/dissertation research.

- **I will be a good lab citizen**. I will agree to take part in shared laboratory responsibilities and will use laboratory resources carefully and frugally. I will maintain a safe and clean laboratory space. I will be respectful of, tolerant of, and work collegially with all laboratory personnel.

- **I will maintain a detailed, organized, and accurate laboratory notebook**. I am aware that my original notebooks and all tangible research data are the property of my institution but that I am able to take a copy of my notebooks with me after I complete my thesis/dissertation.

- **I will discuss policies on work hours, sick leave and vacation with my research advisor**. I will consult with my advisor and notify fellow lab members in advance of any planned absences.

- **I will discuss policies on authorship and attendance at professional meetings with my research advisor**. I will work with my advisor to submit all relevant research results that are ready for publication in a timely manner prior to my graduation.

- **I acknowledge that it is primarily my responsibility to develop my career following the completion of my doctoral degree**. I will seek guidance from my research advisor, career counseling services,

thesis/dissertation committee, other mentors, and any other resources available for advice on career plan such as http://myidp.sciencecareers.org/.

Commitments of Research Advisors

- **I will be committed to the life-long mentoring of the graduate student**. I will be committed to the education and training of the graduate student as a future member of the scientific community.

- **I will be committed to the research project of the graduate student**. I will help to plan and direct the graduate student's project, set reasonable and attainable goals, and establish a timeline for completion of the project. I recognize the possibility of conflicts between the interests of externally funded research programs and those of the graduate student, and will not let these interfere with the student's pursuit of his/her thesis/dissertation research.

- **I will be committed to meeting one-on-one with the student on a regular basis.**

- **I will be committed to providing financial resources for the graduate student as appropriate or according to my institution's guidelines, in order for him/her to conduct thesis/dissertation research.**

- **I will be knowledgeable of, and guide the graduate student through, the requirements and deadlines of his/her graduate program as well as those of the institution, including human resources guidelines.**

- **I will help the graduate student select a thesis/dissertation committee**. I will assure that this committee meets at least every six months to review the graduate student's progress. I will provide critical comments on proofs of the graduate student's dissertation/thesis prior to submission to the student's committee.

- **I will lead by example and facilitate the training of the graduate student in complementary skills needed to be a successful scientist, such as oral and written communication skills, grant writing, lab management, animal and human research policies, the ethical conduct of research, and scientific professionalism.**
- **I will expect the graduate student to share common laboratory responsibilities and utilize resources carefully and frugally.**

- **I will not require the graduate student to perform tasks that are unrelated to his/her training program and professional development.**

- **I will discuss authorship policies regarding papers with the graduate student**. I will acknowledge the graduate student's scientific contributions to the work in my laboratory, and I will work with the graduate student to publish his/her work in a timely manner prior to the student's graduation. I will discuss authorship on manuscripts containing experimental results generated by the graduates student prop to submission for scientific peer review and publication.

- **I will discuss intellectual policy issues with the student with regard to disclosure, patent rights and publishing research discoveries.**

- **I will encourage the graduate student to attend scientific/professional meetings and make an effort to secure and facilitate funding for such activities.**

- **I will provide career advice**. **I will advise the student on employment opportunities in both the academic and private sector.** I will provide honest letters of recommendation for his/her next phase of professional development. I will also be accessible to give advice and feedback on career goals.

- **I will provide for every graduate student under my supervision an environment that is intellectually stimulating, emotionally supportive, safe, and free of harassment.**

- **Throughout the graduate student's time in my laboratory, I will be supportive, equitable, accessible, encouraging, and respectful**. I will foster the graduate student's professional confidence and encourage critical thinking, skepticism and creativity.

Our signatures below indicate that we (student and advisor) have discussed and agree on the principles contained in this document. It is clearly understood by both of us that this is not a legal binding contract, but rather as a guide for a successful professional relationship during the student's doctoral training and beyond.

_____ _____

Advisor's Signature Date

_____ _____

Student's Signature Date

Training Program 6-month Committee Meeting Report

Trainees are expected to schedule and meet with their committee every 6 months.

Student Name: _____

Student Signature: _____

Date of Meeting: _____

Committee Chair: _____

Major Advisor: _____

QE expected and/or actual date(s): _____

Tentative Dissertation Title: _____

_____

Committee Chair should fill in the required elements of this worksheet.

At the end of the meeting, the trainee should exit while the committee discuss the trainees progress, fill in the ranking sheet and add any additional goals below.

At the conclusion of the committee meeting, the student will return and be given a copy of this worksheet. Also, this will be given to major advisor & copied to track director, or administrative assistant, to keep on record.

Explanation of rankings:

- ✓ **Exceed Expectation:** Student goes above and beyond normal expectations of graduate work.
- ✓ **Meets Expectations:** student meets the requirements.
- ✓ **Somewhat Meets Expectations:** Student meets some of the requirements but has a limited understanding in some areas. Student needs to work on an aspect of the project.
- ✓ **Does Not Meet Expectations:** Student has no understanding of requirements or area of research.

	Exceeds Expectations	Meets Expectations	Somewhat Meets Expectations	Does Not Meet Expectations
Student demonstrates an understanding of research project.				
Student has formed a good hypothesis and experimental plan.				

Student is making progress toward gathering experiment results.				
Student is making progress towards publications.				
Overall				

The committee and trainee agreed on the following goals/research priorities:

1.

2.

3.

Additional Comments/feedback:

Committee Members Present:

Name	Signature	Date

(Major Advisor)

Name	Signature	Date

(Committee Chair)

Name	Signature	Date