

M.D.-Ph.D. Physician Scientist Training Program

The purpose of the MD-PhD dual degree program is to prepare highly qualified and motivated post-baccalaureate students for careers as physician scientists in academic medicine and biomedical research. To promote a close-knit group of students, MD-PhD training at the University of Kansas Medical Center includes small group interactions with the program directors and monthly interactions with fellow students at all phases of their training. A peer-mentoring program allows students to advise and guide each other on issues related to research and clinical training, personal life-work balance, and professional development. The program is conducted under the auspices of the Dean of Graduate Studies and the Executive Dean of the School of Medicine, with guidance from a MD-PhD Advisory Committee. On average, students spend about 7-8 years in the program; the variable period usually depends on the time needed to complete their research and dissertation.

The Program seeks highly motivated students with outstanding academic credentials and potential, a strong interest in research, and demonstrated research experience. There are no Kansas residency requirements for admission to the MD-PhD program and students with exceptional potential as physician scientists are recruited from around the country.

Applicants need to submit the following credentials: (Deadline October 15th for application through AMCAS, all needed items due October 30th)

- Standard AMCAS medical application with "MD-PhD Combined-Degree Program" selected. Designate The University of Kansas School of Medicine as a recipient. Prepare an addendum and submit it to the Program address (email if possible) only if you wish to make additional or clarifying comments to those already expressed in the three essays in your AMCAS application: [1] Personal Statement. [2] Why are you interested in an MD-PhD Program? [3] Describe your research experience(s) to date, including location and time frame for each, and your research mentor(s).
- MCAT scores will be included in your AMCAS application, otherwise have official copy sent to the MD-PhD Program. Submit GRE scores if taken (not a requirement). Contact the Program if you have any questions.
- Download and complete Information for MD/PhD Physician Scientist Program at University of Kansas Medical Center form (<http://www.kumc.edu/Documents/md-phd/MD-PhD%20Information%20Form.pdf>) using the link provided. Please submit the form via e-mail if at all possible to awolf5@kumc.edu.
- At least three (3) Letters of Recommendation (Please download through AMCAS):
 - a. One must be written by the applicant's mentor from the prior research experience(s) and give some indication about the applicant's potential for research.
 - b. One must be written by a faculty member, other than the research mentor with whom the applicant studied in a science course.
 - c. A letter from any other person selected by the applicant.

- The application fee for our program comes directly to us. Please make out your check for \$50.00 to: KUMC MD-PhD Program and send it to the Program address. You will not be required to pay the medical application fee that is listed on the MD only information.
- Email your current CV to awolf5@kumc.edu.

Interviews

- Selected applicants will be invited for interviews in Kansas City, or in some cases held virtually. All MD/PhD applicants selected to interview with the MD/PhD Admissions Committee must also be interviewed by members of the MD Selection Committee. If you are granted an interview for the MD/PhD program, the Office of MD Admissions will work with the MD/PhD Office to coordinate interviews for both programs. The MD/PhD office will notify you of their interview dates. The interviews are usually held mid January. During the interview, applicants meet with members of the MD-PhD Admissions Committee, MD-PhD and Graduate Program Directors, students currently in the program, and research faculty.
- The Program will cover each selected applicant's basic travel expenses for interviews held in person; details will be provided at the time of the invitation to interview. A student invited to interview but with exceptional circumstances and unable to participate on those dates may be given an alternative date and considered for admission by the Admissions Committee on an individual case basis.

For additional information please see: <http://www.kumc.edu/md-phd-program/application-and-admission.html> for details on the application and admission processes.

If Accepted Into the Program:

Students accepted into the MD-PhD Dual Degree program are admitted into the M.D. Program in the School of Medicine and as a Ph.D. student in one of the graduate programs offered through Graduate Studies. The student must provide an official transcript indicating receipt of a Baccalaureate degree from a fully accredited institution by the time of matriculation into the program (and if applicable, transcripts for any post-baccalaureate studies/degrees).

Admission requirements are subject to change. In most cases, use the catalog of the year the student entered the program. *Other years' catalogs*».

- MD-PhD students must meet the MD degree requirements of the School of Medicine as outlined in their section of this online catalog and the PhD degree requirements as outlined by their PhD department and minimum Graduate Studies requirements also outlined in their respective sections (<https://catalog.ku.edu/schoolofmedicine/>) of this online catalog.
- For MD-PhD students, the first two years of the MD curriculum are considered the equivalent of the Interdisciplinary Graduate Program in Biomedical Science (IGPBS) (<https://catalog.ku.edu/medicine/graduate-program-biomedical-sciences/>) curriculum. Successful completion of the IGPBS curriculum (or its equivalent) is a degree requirement for each of the basic science Ph.D. programs.
- PAON 920 Molecular Medicine: Approaches & Ethics (meets once/week the fall and spring semester of the first year of the medical phase)
- Principles of Statistics in Public Health (online course offered in the summer between the first and second years of the medical phase)
- Research skills and responsible conduct of research will be met prior to taking the oral qualifying exam by the following coursework:

- Research skills: 1) Biostatistics learning activities (first or second year of medical phase) and 2) PAON 920 Molecular Medicine: Approaches & Ethics (fall semester, first year of medical phase)
- Responsible conduct of research can be met via one of the following courses: 1) GSMC 856 Introduction to Research Ethics (fall semester, first year of graduate phase), 2) Stower's Research Integrity Course (spring semester, first year of graduate phase), or 3) an institutional-approved Department-sponsored responsible conduct of research course (fall or spring semester of first year of graduate phase) with permission of the Program Director. For details contact the Program office.
- BIOS 799 Introduction to Statistical Genomics (or a comparable course with permission of the Program Director): taken during the first or second year of the graduate phase
- Research skills and responsible conduct of research training will also be required in the final year of the graduate phase, in consultation with the Program Director.

At any time throughout the course of study, if a student is not meeting the requirements of the MD-PhD program, or of the specific degrees – their tenure in the program will be reviewed by appropriate personnel and action may be taken. Continued advancement in the program is dependent on a student successfully meeting the requirements of the MD-PhD program and those of their current phase (MD or graduate) of study.

Degree requirements and course descriptions are subject to change. In most cases, use the catalog of the year the student entered the program. *Other years' catalogs».*

Matriculation in this program begins with two years of a basic medical science curriculum (<https://catalog.ku.edu/medicine-doctorate/curriculum/>). Students are assigned a clinical preceptor, who meets with the assigned student on a regular basis throughout the first two years of medical school. Students also take a required course PAON 920 Molecular Medicine: Approaches & Ethics offered by the MD-PhD program during the fall and spring semesters of the first year of medical courses. This course is designed to introduce students to cutting edge scientific concepts and research directly related to topics covered in the medical school curriculum.

Introductory laboratory research rotations are typically performed in the summer before and the summer after the first year of medical courses. In addition, the summer after the first year of medical courses, students will be enrolled in an online course, Principles of Statistics in Public Health. During the second year of medical courses, the student devotes time to selecting a research mentor (if not already done so by this time) and begins to develop ideas for the dissertation research problem. Students complete the second year by taking Step 1 of the United States Medical Licensing Examination (USMLE).

Years three through five (or six) of the MD-PhD Program focus primarily on the research problem and the selected graduate curriculum. The number of years in this phase are dependent on individual progress with the required research.

During the first year in the graduate phase (year 3 of the program) the student fulfills the responsible research and ethics requirement for the PhD degree. Once completed, the student will be eligible to take the Oral Comprehensive Examination. For more details, refer to the degree requirements section in this catalog for the PhD programs available in the School of Medicine (<https://catalog.ku.edu/schoolofmedicine/>) or in

KU-Lawrence Engineering (<https://catalog.ku.edu/engineering/>). (<https://bioengr.ku.edu>)

During the first or second year in the graduate phase (years 3 or 4 of the program) the student takes BIOS 799 Introduction to Statistical Genomics, or a comparable course with permission of the Program Director.

During years two through four of the graduate phase, the student will complete any remaining Program specific requirements, including responsible conduct of research the year the student plans to defend, and the student will conduct research for their dissertation culminated by the defense of their dissertation. During this phase, students have several opportunities for clinical training experiences. For example, the student-run JayDoc free clinic provides an excellent opportunity to both practice clinical skills and serve the community. Students complete Basic Life Saving training/certification approximately every 2 years to stay current in those clinical skills. Students may also elect to participate in supplemental instruction opportunities – in which they help teach and review concepts to help their peers prepare for the USMLE Step 1 exam.

After the dissertation defense and successful completion of the requirements of the graduate phase, students enter a transitional introduction to medical clerkships prior to completing their elective clinical rotations (<https://catalog.ku.edu/medicine-doctorate/curriculum/>). After the third year of medical school, the USMLE Step 2 is taken.

In addition to the course of study outlined above, the Program also sponsors a number of other functions designed to develop professional skills relevant to a career in academic medicine. All of the students meet once a month with the program directors and their peers for one hour to discuss program-related activities, issues and events – including planning service and social activities. These meetings conclude with a formal presentation of a research project, ethics case, or a clinical case presentation.

Another important element of the Program is the annual retreat. Each annual summer event focuses on one of three aspects of MD-PhD training: research, clinical practice, and professional development/ leadership. The retreat fosters discussion and learning about the many and varied elements in a physician-scientist's training and career.

Below is the typical plan of study that includes 4 years in the MD phase and 3-4 years in the PhD phase. For numbering, M is for medical phase, G is for PhD phase and P is for total years in program.

| Year 1 | Hours |
|--|-------|
| MD Phase (M1, P1) | |
| See MD Curriculum in MD section of catalog for courses and credit hours. | |
| In addition MD-PhD students take: | |
| PAON 920 (This course is taken in both the Fall and Spring semesters.) | |
| The summer between the first and second year of medical school students will enroll in Principles of Statistics in Public Health | |

Year 2 **Hours**

MD Phase (M2, P2)

See MD Curriculum in MD section of catalog for courses and credit hours.

0**Total Hours 0****Year 1** **Hours**

PhD Phase (G1, P3)

Follow the PhD curriculum for your chosen program.

GSMC 856 (Take Fall semester of first year in PhD phase)

or Stower's Research Integrity course (take Spring semester of first year in PhD phase)

or Department - sponsored RCR course by permission of the Program Director

Oral Comprehensive Examination can be taken Spring semester of the G1 phase or the Fall semester of the G2 phase - depending on the departmental guidelines and when the ethics requirement is met.

In the first or second year of the graduate phase students will enroll in BIOS 799 Introduction to Statistical Genomics, or a comparable course with permission of Program Director

0**Year 2** **Hours**

PhD Phase (G2, P4)

Follow the PhD curriculum for your chosen program.

In the first or second year of the graduate phase students will enroll in BIOS 799 Introduction to Statistical Genomics, or a comparable course with permission of Program Director

0**Year 3** **Hours**

PhD Phase (G3, P5)

Follow the PhD curriculum for your chosen program.

Take RCR course in consultation with Program Director if defending in Year 3 of the graduate phase

Defend dissertation Spring semester of year 3 or 4 of PhD phase.

Graduate with PhD in May (Spring semester) year 3 or 4 of PhD phase.

0**Year 4** **Hours**

PhD Phase (G4, P6)

Follow the PhD curriculum for your chosen program.

Take RCR course in consultation with Program Directors

Defend dissertation Spring semester of year 3 or 4 of PhD phase.

Graduate with PhD in May (Spring semester) year 3 or 4 of PhD phase.

0**Total Hours 0****Year 3** **Hours**

MD Phase (M3, P6 or 7)

See MD Curriculum in MD section of catalog for clerkships and hours.

0**Year 4** **Hours**

MD Phase (M4, P7 or 8)

See MD Curriculum in MD section of catalog for clerkships, electives and hours.

Graduate with MD in May (Spring semester) year 4 MD phase.

0**Total Hours 0**

All individuals admitted to the University of Kansas will be asked to verify that they can meet the technical standards of the program with or without accommodation(s). To view the Technical Standards for the M.D. program, click here (<https://www.kumc.edu/school-of-medicine/academics/degree-programs/md-program/admission-and-aid/technical-standards.html>). Technical Standards for the Ph.D. programs offered are included in their individual catalog section. Click on the list of programs (<https://catalog.ku.edu/schoolofmedicine/>) link and then the specific Ph.D. program to view technical standards for that program.