Post-baccalaureate Programs Designed to Enhance Preparation for Medical School

This information was compiled by the University of Missouri School of Medicine utilizing the AAMC resources. Please note for the most updated information, check AAMC web site: (https://apps.aamc.org/postbac/#/index)

The best resource for a comprehensive list of post baccalaureate programs designed to enhance medical school preparation is through the AAMC. Their website (https://apps.aamc.org/postbac/#/index) lists more than 200 programs across the USA. The program is identified by title and address, whether it is undergraduate or graduate, whether it is formal, informal or individualized, and the program focus (career changers, academic record enhancers, underrepresented minorities, socio-economically disadvantaged, professions other than medicine). Additional information includes a brief description of the program, tuition, program length, anticipated enrollment, academic program location and other details, with a link to the program website. Programs listed through the site fall into five categories, defined below. Examples of all these exist in the Central region of the AAMC. The Central region of the AAMC includes the following states: Illinois, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North and South Dakota, Ohio, and Wisconsin. There are 36 post baccalaureate programs in our region; however, it appears that two programs are counted twice, so the actual number is probably 34.

- North and South Dakota and Iowa have no programs.
- Wisconsin, Nebraska, Minnesota and Kansas have one each.
- Michigan has three, two of which are based at the School of Medicine at the University of Michigan.
- Missouri has four, one at Washington University and one at St Louis University; the others are at private universities (Rockhurst and Avila).
- Illinois has twelve, four at Loyola University, two at Northwestern, one at Rosalind Franklin School of Medicine, four at private universities, and one at Southern Illinois School of Medicine.
- Ohio also has twelve, five at Case Western Reserve, two at Cleveland State (one closely linked to North East Ohio College of Medicine), and one each at Kent State, John Carroll, the Ohio State University (MedPATH), University of Toledo Health Sciences Center, and University of Cincinnati College of Medicine.

What kinds of programs are there?

I have separated the programs into different types below. There are five types of program available; this document summarizes the characteristics of the programs, the goals and desired participants and notes some of those available in the Midwest, with a focus on Missouri.

1. **Undergraduate prerequisite programs.**

   These programs are designed for otherwise successful students who have completed an undergraduate degree and wish to obtain the prerequisite science courses necessary to apply to
a doctoral level health professions program, including medical school. They are usually two year programs, since many medical schools, including ours, require two semesters of chemistry and two semesters of organic chemistry, for which chemistry is generally a prerequisite. Programs like this are available at a number of schools in our region (Avila University and Rockhurst in Missouri, Northwestern in Chicago, John Carroll University and Cleveland State’s individualized option in Ohio). The programs vary in size and success; they report being available to a variety of applicants, including under-represented minority applicants and career changers, are individually designed and more or less informal. It is possible to take post-baccalaureate prerequisites at most colleges and universities, including MU, without being part of an identified program. Some of the more structured programs require a minimum undergraduate GPA. Most have an identified pre-health professions advisor, who will provide some support for cohort development, and some guarantee a pre-health committee assessment and interview prior to medical school application.

2. **Undergraduate academic enhancement programs.**

   These programs are designed for students who already have undergraduate degrees in the sciences, and who want to take additional undergraduate courses to enhance their academic preparation for medical school. Central region includes several of these programs. Southern Illinois University’s two year “MedPrep” program is one of the longest established programs in the country, and has published details of program outcomes. This, and the newer program at Creighton University which is intensive 13 months, are both based in the medical school and focused toward students who have experienced economic or educational disadvantage. They attract and enroll significant numbers of minority students. Other programs are available at Washington University in St Louis, and at Cleveland State University (individualized option). These are more flexible and individualized; Washington University’s may fulfill different functions for different participants. For some participants it may function as a prerequisite program (see 1.), and for others as a provisional acceptance program (see 5.).

3. **Two year degree granting graduate programs.**

   These programs award either Master of Science or Master of Arts degrees. They last more than one academic year. They attract students who wish to enhance their academic preparation in biologically related topics for medical school or other health/science related careers. Participants have undergraduate degrees in biology, chemistry, or another science. Some participants have been advised (either before or after unsuccessful medical school application) that their academic performance and preparation is weak. Many of the participants are intending to apply to medical school, but other participants may be seeking entry into research careers or other health professions; one of the advantages of these programs is that alternative career pathways remain open.
Most of the two year Masters programs are based in basic science departments within medical schools and health sciences centers. These include Case Western Reserve’s series of Master’s programs (Medical Physiology, Nutrition, Applied Anatomy and Pathology), Indiana University School of Medicine’s MS PreProfessional Degree program (Cellular and Integrative Physiology), Midwestern University’s MA in Biomedical Sciences, Loyola University’s MS in Infectious Disease and Immunology and Rosalind Franklin’s MS in Biomedical Sciences. Some programs (Kent State University’s online MPH in their College of Public Health, Northwestern University’s Program in Public Health, Case Western’s MS in Bioethics, Rush University’s MS in Biotechnology) deliver other content related to medicine, such as ethics or public health.

For these degrees, the department granting the degree determines the admissions criteria, curriculum and evaluation for the program. The courses may be taught by medical school faculty. Specific guidance may be provided as part of the program by experienced faculty, or by invited members of the medical school’s admissions office, through special seminars, recruitment visits and mock interviews. From the participant’s point of view, the programs serve to enhance academic preparation for medical school, and also enhance maturation and provide the opportunity to gain knowledge and advice about the application process. They also allow participants to enhance their desirability for other career and academic options should medical school turn out not to be possible or desirable.

4. **One year degree granting graduate programs (“Special Masters”).**

These programs provide academic enhancement through a taught Masters degree that takes only two semesters. These programs benefit applicants who have academic weaknesses, and who have the capacity, focus and resources to complete a taught Masters program in two semesters.

The programs are specifically designed for participants who are expecting to apply to medical school after completion of the program, i.e. during a so-called ‘glide’ year. Admissions requirements may include minimum MCAT and GPA scores. They include Loyola University’s Master of Science in Physiology (MSMP), and Master of Arts in Medical Sciences (MAMS), University of Toledo’s Master of Science in Biological Sciences-Medical Sciences (MSBS-BS) and Indiana University School of Medicine Master of Science Pre-Professional Degree Program. All these programs require minimum academic scores, either GPA (3.0 or above), MCAT (25 or above), or GRE (over the 50th centile) and most require completed medical school prerequisites in biology, chemistry, organic chemistry, math, and physics. They are based either in biology (University of Chicago) or physiology (Indiana, Toledo) departments. They may be taught by medical school faculty, with content heavily focused on physiology and pathophysiology. MSBS-MS students train alongside medical students and also gain clinical or basic science research experience. MAMS offers faculty office hours and premedical advising, as well as access for volunteer and work experience and weekly workshops on medical school application and social justice and ethical issues. Participants also have entry to Loyola’s Pre-Health Professions
Advisory Committee Process. MSMP, which also includes a required course in professional development, guarantees admissions interview at Stritch School of Medicine for those completing the program with a GPA of 3.5 and an MCAT of 30. Guaranteed medical school interview at the University of Toledo College of Medicine is also offered for successful completers of MSBS-MS.

5. **Medical school provisional acceptance programs.**

These are one year intensive academic programs that provisionally guarantee medical school admission to a particular institution (University of Kansas, The Ohio State, NEOMED-CSU, Washington University’s partnership programs) upon successful completion of the program. Participants do not therefore have to manage a ‘glide’ year.

Admissions requirements may include minimum MCAT and GPA scores, a record of previous unsuccessful application to that medical school and membership of a particular socio-demographic group considered desirable by the particular medical school involved. These programs provide additional resources (academic testing, study and test taking skills, individualized advisement and mentoring etc.) and a specific course of study that is otherwise generally not available. Each of these programs has special requirements for application and participation. Besides review and recommendation by a School’s admissions committee, minimum GPA and MCAT may be required, along with membership in specific socio-economic groups. University of Kansas School of Medicine’s program, for example, requires that applicants be US citizens with previous unsuccessful applications to medical school, and be “from a disadvantaged background and/or be a member of a population that is underrepresented or underserved in the health field (i.e. Native American, African American, Hispanic American, Southeast Asian, rural community)”.

The programs typically run through summer, fall, spring and summer, with a combination of student assessment, academic courses, cohort activities in team building, professionalism, time management, test taking and cultural competence/sensitivity seminars, and a pre-admissions program in the summer prior to medical school matriculation. Successful completion results in provisional guarantee of a position in the medical school’s entering class.