

**Western Michigan University  
College of Arts and Sciences Advising Office**

**GUIDE FOR PREMEDICAL STUDENTS**

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## Premedical Advising

### Introduction:

The purpose of the Guide is to provide information you need to design your premedical program and apply to medical school. Premedical students are committed to a rigorous academic schedule and must carefully plan and do well in both course work and extracurricular activities. Preparation for medical school requires dedication, resourcefulness, vigilance, and motivation. It is essential that you contact the Medical Sciences Advisor on a regular basis to be appraised of the latest information on how to get excellent preparation for medical school. Come in as soon as you decide to explore a career in medicine or other health profession. We will offer you a four-year study plan sample and help you draw your individual plan.

This Guide focuses on allopathic medicine, i.e., on becoming a physician with an M.D. degree. However, the medical sciences advisors also offer support to students interested in osteopathic medicine and other health-related careers.

### The Medical Sciences Advisors:

The Advisors, Jacquelyn Bizzell and Tammi Roberts are available throughout the week during the fall and spring semesters and on a more limited basis during the summer sessions.

### Our Location:

College Of Arts and Sciences Academic Advising Office  
2318 Friedmann Hall  
Phone: 269-387-4366  
FAX: 269-387-3999

To schedule an appointment: go to <http://www.wmich.edu/cas/advising/> and click on "Schedule your appointment online" in the upper right corner

### Advising schedule in fall and spring semesters:

Both scheduled appointments and walk-ins are available as follows:  
M, W, R, and F: 8:30-11 am and 1-4 pm  
T: 9:30-11 am and 1-4 pm

### Advising schedules in summer sessions:

Call office for information.

### Important Organizations and Web Sites:

AAMC – Association of American Medical Colleges  
AMCAS- American Medical Colleges Application Service  
Application available in May at [www.aamc.org](http://www.aamc.org)  
Publication: MSAR - Medical School Admission Requirements - Latest edition of this handbook available at Waldo Library's Science Reference Desk under the following call number: R 745.A8

AACOM – American Association of Colleges of Osteopathic Medicine  
AACOMAS - American Association of Colleges of Osteopathic Medicine Application Service  
Application available in May at [www.aacom.org](http://www.aacom.org)

### Services Available:

Academic Advising  
Curriculum Advising  
Premedical, pre dental, and other pre-health professions advising  
Schedule planning  
Orientation for community services and patient care experiences

## The Premedical Curriculum

### Medical School Requirements:

#### What the Medical Schools want in an Applicant:

Medical schools increasingly want students with diverse backgrounds and a variety of skills and interests. A science major is not a prerequisite for medical school, although good training in chemistry, biological sciences and physics is expected. Medical schools are most concerned with the overall quality and scope of undergraduate work and want students to have well-developed communication skills and interests in the humanities and social sciences.

#### The Hardcore Requirements:

Nearly every medical school, including those in Michigan, requires two semesters each of English, physics, biological sciences, inorganic chemistry, and organic chemistry.

#### Additional Requirements:

Many medical schools recommend or require additional courses in biology, and chemistry, mathematics, humanities, and social and behavioral sciences. One should consult individual medical schools and read the Medical School Admission Requirements handbook for specific requirements. Reading the specific bulletins of the medical schools in which you are interested is also important.

### What Courses Should I Take at Western?

#### Chemistry:

Chemistry 1100 and 1110, General Chemistry I  
Chemistry 1120 and 1130, General Chemistry II  
Chemistry 3750 and 3760, Organic Chemistry I  
Chemistry 3770 and 3780, Organic Chemistry II

Many medical schools, including the University of Michigan, require a biochemistry course: CHEM 3550 and 3560 are also recommended.

#### Biological Sciences

BIOS 1500, Molecular and Cellular Biology  
BIOS 1510, Organismal Biology

#### Recommended courses:

Certain courses are desirable and can be especially beneficial for the Medical College Admission Test. These courses include Genetics (BIOS 2500) and Human Physiology for Majors (BIOS 3500). Some medical schools require a genetics course and many prefer at least one additional advanced course. The following will be beneficial once you are in medical school: Anatomy (BIOS 2110), Microbiology (BIOS 3120), Immunology (BIOS 5360), Pathology (BIOS 5700), Pharmacology (BIOS 5610), and Virology (BIOS 5340).

#### Physics

PHYS 1130 and 1140, General Physics I  
PHYS 1150 and 1160, General Physics II  
Alternate calculus based Physics courses taken by physical sciences majors:  
PHYS 2050 and 2060, Mechanics and Heat  
PHYS 2070 and 2080, Electricity and Light

#### English

ENGL 1050, Thought and Writing  
A second English Department course in literature or creative writing is often required as well. Students frequently choose either ENGL 1100-Literary Interpretation (which also covers General Education Distribution Area I-Fine Arts) or ENGL 3050-Practical Writing.

## Mathematics and Computer Science

Although mathematics is not a requirement for most medical schools, you would be well advised to have mathematics in your background. At least one semester of calculus is required if you are a science major.

Recommended courses in mathematics and computer science:

MATH 1180, Precalculus

MATH 1220, Calculus I

CS 1000, Fluency with Information Technology

## What to major in?

When choosing a major, carefully consider your interest, aptitude and alternate career goals. Remember: not everyone who applies is accepted into medical school. It is wise to have a degree in a major you can be comfortable with and one you can fall back on for a career.

Majoring in one of the natural sciences may provide some advantages in terms of the premedical course requirements fitting more easily into degree requirements, but admission statistics show no clear preferences toward science majors. Most premedical students at Western take a major-minor combination of Biology or Biomedical Sciences and Chemistry. Many pursue a second minor in a non-science area, which provides a broader base to personal and intellectual development.

When you choose a major and minor, consult the Undergraduate Catalog (<http://catalog.wmich.edu/content.php?catoid=9&navoid=229>) for information and make an appointment to meet with the appropriate departmental advisors. It is important that you take the correct and most advantageous sequence of courses.

### Suggested Courses for the First Year Science Majors

#### Fall

ENGL 1050

CHEM 1100 and 1110

BIOS 1500

MATH 1180

#### Spring

General Education

CHEM 1120 and 1130

BIOS 1510

MATH1220

## Grades and Medical College Admission Test (MCAT) Scores:

As you probably realize, good grades are a primary consideration when it comes to getting into medical school. For example, the entering classes at medical schools in 2008 had a mean science grade point average (GPA) of 3.54 and a mean non-science GPA of 3.77. These entering classes had mean MCAT scores of 9.7, i.e., 1.0 above the national mean of 8.7 on a scale of 1-15. Although other criteria can play a role in the selection process, your chances for getting into medical school diminish rapidly if your GPA falls below 3.25 and your MCAT below 8.0. If you find after two years that your GPA is less than 3.0, you may want to consider other options for a career. Refer to the **Alternative Careers** section of this guide (page 11).

## Non-Academic Prerequisites:

Although GPA and MCAT scores are very important, admission's committees carefully review all facets of the applicant's background before making a final decision. Such facets may include the nature and extent of extracurricular activities, life experiences, and demonstrated motivation for wanting to become a physician. Such activities as sports, politics, the arts or community service can build skills in leadership, responsibility, and cooperation. Other representative activities include debate, gymnastics, tutoring, yoga, canoeing, music, and hospital volunteer service.

In addition to the above activities, experience in a medical office is strongly recommended. Such experience allows you the opportunity to interact with patients in a supportive role, to observe the

day to day activities of a physician, and to participate in a health care delivery system. They also allow you to assess your interest in a medical career, and to develop your skills in interpersonal relationships.

Work in a research laboratory may be a valuable experience in addition to more “people oriented” jobs. Many students with strong science interests find stimulating experiences assisting in research projects with professors in their departments.

Involvement in extracurricular activities shows that you are a well-rounded individual concerned with your personal and academic development. Be careful, however, not to take on more activities than you can manage. You should not let your grades slip to take on outside activities. Aim for a well-balanced schedule of classes and outside activities.

## The Application Process

### Important Preliminary Information:

You should begin planning for the application process after your first year in college. The MCAT exam should be taken after the Spring semester of your junior year. Be certain that the basic science courses needed for the MCAT are completed. When planning the spring course schedule of your junior year, keep in mind that you will need time to prepare for the MCAT. Consult with the Medical Sciences Advisor on a regular basis (that means a MINIMUM of once per academic year...once each semester is a better plan, however).

### Medical College Admission Test (MCAT):

The MCAT is currently administered many times a year. See this link for information on exact dates the MCAT is offered: <http://www.aamc.org/students/mcat/deadlineandscorerelease.htm> Taking the exam in early Summer (meaning April or May) of the junior year allows the student a second chance later that Summer (perhaps in July or August), if the initial scores are not satisfactory. It also allows for an early decision by medical schools. Because medical school admission committees use “rolling admissions,” even a September test date is satisfactory and will meet official deadlines for most schools.

Beginning in the spring of 1991, the test was designed to encourage students interested in medicine to pursue broad undergraduate study in the natural and social sciences and in the humanities. The MCAT assesses mastery of basic biology, chemistry, and physics concepts; facility with scientific problem solving and critical thinking; and writing skills.

The new test is broken down into four sections: Verbal Reasoning, Physical Sciences, Biological Sciences, and a Writing Sample. The Verbal Reasoning test draws upon materials from the humanities, social sciences, and natural sciences. It assesses students' abilities to comprehend, reason, and think critically. The Biological Sciences and Physical Sciences tests consist entirely of science problems and assess knowledge of basic concepts in biology, chemistry, and physics through their application to the solution of science problems. The Writing Test consists of two 30-minute writing samples, designed to assess the following areas: development of a central idea; synthesis of concepts and ideas; cohesive and logical presentation of ideas; clear writing.

In preparing for the exam, students should complete one year each of biological science, inorganic chemistry, organic chemistry, and physics. Having taken genetics and physiology is also very useful. Preparing for the MCAT is important. The MCAT Essentials, published by the Association of American Medical Colleges, found at this link: <http://www.aamc.org/students/mcat/mcatessentials.pdf>; and A Complete Preparation for the MCAT, published by the Betz Publishing Company are examples of useful guides. Other study guides are available at bookstores, including the WMU Campus Bookstore.

MCAT scores are automatically forwarded to the American Medical College Application Service (AMCAS), which in turn forwards them to the schools designated on the AMCAS application. At the time the MCAT is taken, identify the non-AMCAS schools to which you wish your MCAT scores to be sent. Test results are usually available in about eight weeks.

### **The Application (AMCAS):**

Most of the medical schools use the services of the American Medical College Application Service (AMCAS), and students applying to AMCAS participating schools must use this service. There is a list of AMCAS participating schools in the AAMC publication Medical School Admission Requirements (see this link: <http://www.aamc.org/students/applying/msar.htm>). If you are applying to a non-AMCAS school, you must write directly to that school for an application. The AMCAS application is available online only. Applicants may download the AMCAS software from the AAMC Web site at <http://www.aamc.org>. AMCAS applications may be submitted in the month of June. An early application gets early consideration by the medical school admissions committee.

The AMCAS application asks for personal data, undergraduate grades, extracurricular activities, and personal comments. The personal comment section is important. You should use it to highlight relevant experiences, to discuss your reasons for wanting to become a physician, to discuss your strengths, and to explain data on you that may be interpreted as weaknesses. It should be well written with close attention to writing skills and grammar.

You will submit your AMCAS application via the AAMC Web site, without downloading software. You must also request that the registrar of each post high school institution you have attended send an official transcript to AMCAS. A service fee is charged by AMCAS according to the number of participating schools to which you wish to apply.

Upon receipt of the applicant's material from AMCAS, the medical schools may request supplementary information through what is known as the **Secondary Application**. This application usually requests letters of recommendation, additional essays, and other general information.

### **The Medical School Interview**

The interview is often the last step in the medical school application process. It provides a final screening and evaluation for the medical school admission committee. It gives you an opportunity to have personal contact with the admissions office, to communicate your motivation and commitment, and to clarify any information on your application. You have to be prepared and know what to expect, and know how to deal with the unexpected. The following guidelines should be of help:

1. Know as much about the medical school beforehand as possible. Study catalogs, talk to students who are attending the school, and visit the campus (if possible). This will allow you to ask intelligent questions during the interview and show your interest in the school.
2. Read magazines and newspapers to keep current with issues in the health field.
3. Practice answering the questions out loud to see how you come across. Go through a mock interview with some of your peers.
4. Make sure that you get to your interview on time, and know the name of the person interviewing you. Be polite and considerate to all people you meet.
5. Most important, the medical school wants to know why you made choices and did things and what influence these choices and activities have had upon you.
6. Interviews may vary a great deal. Your interview may last fifteen minutes or one hour. It may be a relaxed interview or a stress interview. Your interviewer may be a skilled interviewer or a novice. He or she may be a medical student, a professor in the medical school, or a school administrator. More than one person may interview you. You may be asked easy or relatively difficult questions. Try to help your interviewer by being cooperative. They need to get to know you, so be yourself. Ask pertinent questions (i.e.,

- about curriculum, evaluation, student affairs, etc.) Thank your interviewer for the interview and clarify any next steps expected.
7. Know your application. Remember what you have said in your application.
  8. Maintain reasonable eye contact with your interviewer, shake hands firmly when you meet, and keep a relaxed body posture. Even if you are nervous, it will not be as noticeable if you keep obvious signals under control.
  9. THINK before answering a question. Do not blurt out the first thing that comes to mind. A few seconds of silence may seem like hours to you, but take the time if you need it. Be tactful in your answers, but do not create a false impression. Do not make excuses. Try to stress the positive side of negative experiences.
  10. Upon your return home, write a letter of appreciation for the opportunity to be interviewed.
  11. A sample of interview questions:
    - a. What would you look for in evaluating a medical school applicant?
    - b. What is your opinion of X, Y, Z current issues in medicine?
    - c. What will you do if you are not accepted into medical school?
    - d. What qualities do you think a good doctor should have? Why?
    - e. Why are you interested in medicine?
    - f. Do you think medicine is a science or an art? Why?
    - g. Why did you major in X? What has it done for you?
    - h. In your application you said . . . Why?
    - i. What are your strong and weak points?
    - j. Why did you apply to our medical school?
    - k. Did you take a commercial test preparation course? Why?
    - l. What type of medical practice are you interested in? Why?
    - m. Would you consider serving the medical needs of the underprivileged?
    - n. Describe the best teacher you have had.
    - o. Why should we admit you to our medical school?
    - p. What do you see as the principal value of your undergraduate education?

### **Where to Apply:**

You should plan on applying to all medical schools in Michigan, if you are a resident of Michigan. An important point to keep in mind is that state supported medical schools take very few nonresidents. If you want to apply out of state, apply to private medical schools. Apply to more than one school. Most students apply to between five and ten. For information on the various schools, see the Medical Sciences Advisor, and consult the AAMC publication Medical School Admission Requirements.

### **Letters of Recommendation:**

Professional schools require three or more Letters of recommendation. You are encouraged to acquire letters from two science faculty and one non-science faculty member. Letters of recommendation that assess a premedical student's academic performance and personal achievement are very important to medical schools. It is important to obtain letters from faculty who know you well and are willing to accurately assess your strengths and abilities. Academic recommendations may be enhanced with additional letters from non-academic sources such as employers and places where you volunteered.

To work proactively towards the goal of obtaining letters of recommendation that represent you well, you must perform well in your courses. You will do better by seeking guidance early in the semester. For example, be sure to meet with your professor during office hours. Introduce yourself to the professor and take questions from lecture or your study time. It is important that you have more than a few simple questions to show your sincere interest in the subject matter. Additionally, let your professor know what your career goals are. A few discussions may help your professor learn more about your personal qualities, such as initiative and perseverance.

Be aware that medical schools require that letters of recommendation be mailed after (never before) they send secondary applications to applicants. If letters are sent before requested, a second mailing may be necessary after the applicant submits the secondary application.

When it is time to request a letter of recommendation, schedule an appointment with your professor several weeks in advance of the application deadline. Provide your professor with a transcript, current resume or curriculum vitae and a personal statement. Remember that most letters of recommendation are submitted **confidentially and directly to the institution to which you are applying**. Be sure to provide the writer with a list of complete addresses of the schools to which you are applying and their respective deadlines. Do not forget to follow up with a short thank you note to your professors. Also, let them know if you were successful in your pursuit.

#### **The Early Decision Program:**

The Early Decision Program (EDP) provides the well-qualified medical school applicant with the opportunity to secure an acceptance to the medical school of his or her first choice by October 1. If not accepted, there is sufficient time to apply to other schools after October 1. Applications to other medical schools must be delayed until 1) passing of the October 1 deadline, 2) receipt of an EDP rejection, or 3) a formal release from the EDP commitment. In addition, the applicant agrees to attend the school if offered an EDP acceptance. Any violations of these conditions will be investigated and, if confirmed, reported to legitimately interested parties. The EDP deadline for the receipt of materials and official transcripts for AMCAS participating schools is August 1. Deadlines for non-AMCAS schools are given in the MSAR manual.

#### **Summary of Steps Leading to Medical School Admission:**

1. List yourself in the Premedical curriculum (PM) when you enroll in school at Western.
2. Consult the handbook, Medical School Admission Requirements (MSAR) and the Medical Sciences Advisor during your freshman year and find out the course requirements for the medical schools in which you are interested.
3. In consultation with your major and minor advisors and the Medical Sciences Advisor, design your first, second, and third year course schedules to fulfill at least the minimum requirements for admission to medical school and to adequately prepare you for the MCAT exam.
4. Join the Health Professionals Society (HPS) and/or American Medical Student Association (AMSA).
5. Make a personal development plan that includes:
  - a. Volunteer or work in a medically relevant area
  - b. Volunteer or work in community service
  - c. Participation in student organizations
  - d. Exploration of medical careers
  - e. Investigation of medical schools to which you may apply
  - f. Periodic self-assessment of professional attributes/maturity
6. Meet with the Medical Sciences Advisor as desired to discuss your plans.
7. Maintain a well-crafted resume that will facilitate your placement in work and volunteer experiences.
8. Identify professionals who will give you their highest recommendation for medical school.
9. **Plan to take the MCAT at the end of your junior year.** You may take the MCAT any time it is scheduled, but most students look at the May or early June test offerings...in case they want to repeat the test in August or September to make the medical school application deadlines. If your MCAT scores are lower than hoped for, discover the cause of your scores and retake the MCAT after substantial additional preparation.
10. **Apply for admission to medical school as early as possible after June 1** of the year before you plan to enter medical school. Keep in mind that medical schools' application deadlines vary and specific information is available in MSAR.
11. Request letters of recommendations from faculty members and employers.

## **Helpful Organizations and Programs:**

### **The American Medical Student Association (AMSA):**

AMSA is a national student-governed organization that provides many opportunities to learn more about health care issues, initiate outreach service projects, and interact with a variety of people in exploring medicine as a career. As a national organization founded in 1950, AMSA has 50,000 members including premedical and medical students, interns, and residents and practicing physicians – MD's and DO's.

AMSA is affiliated with the Health Professionals Society (see below) and you can join both organizations. You can find announcements of the time and location of their meetings on hallway bulletin boards in Wood Hall or the Chemistry Building, or in the student newspaper, the Western Herald.

### **The Health Professionals Society (HPS):**

The Health Professionals Society is a University sanctioned organization for everyone who is interested in the health professions. It was formed as a merger of the Medical Sciences Association, a student organization of the Biological Sciences Department, and the local chapter of AMSA. It provides information and guidance through speaker presentations and peer interaction in planning and participating in special meetings and programs. Speakers usually are deans of admissions or admission committee members from the medical schools in Michigan, who speak about their admission policies and procedures. They also come from other health professions and schools. One of its objectives is to promote exposure of members to medicine and alternate careers in health care. Science and ethics professors often are invited to discuss research opportunities and professional issues. The Members also volunteer to special community programs and visit professional schools as a group. Meetings are scheduled bi-weekly.

## **Minority Students:**

Medical schools continue to seek students from racial/ethnic groups that are currently under-represented. The minority groups that are considered to have inadequate representation in the medical professions include African Americans, American Indians, Mexican Americans, Mainland Puerto Ricans, and those individuals from low-income families. Many medical schools offer programs to encourage and prepare minority students for the study of medicine. To be considered for special admissions and enrichment programs, a student should indicate minority status on the medical school application.

### **Summer Medical and Dental Education Program (SMDEP):**

In 1988, The Robert Wood Johnson Foundation established the Minority Medical Education Program (MMEP) to increase the number of highly qualified medical school applicants from minority groups that were underrepresented in medicine—primarily African Americans, Hispanics, and American Indians. MMEP supported six medical schools in offering a free, six-week medical school preparatory program. The Association of American Medical Colleges assumed the role of National Program Office for MMEP in 1993.

Over the years, MMEP's intensive academic preparation program expanded to 12 campuses. In addition, the program broadened its initial focus on specific minority groups to include students who were from rural areas, economically disadvantaged, and came from groups that have historically received substandard health care regardless of their racial or ethnic background.

In 2003, the program changed its name to the Summer Medical Education Program (SMEP), reflecting the inclusion of students representing a wide range of economic, cultural, racial, and ethnic diversity. The new Summer Medical and Dental Education Program (SMDEP) builds on the lessons learned from those earlier programs. It is now expanding to include pre-dental students who face challenges similar to those of pre-medical students, and it focuses on students in the first two years of their college education because the experience of previous programs indicates that this is when students derive the most benefit. Current sites are as follows:

[Case Western Reserve University](#)

[UMDNJ-New Jersey Med and NJ Dental](#)

[Columbia University](#)

[University of Nebraska](#)

[Duke University](#)

[University of Virginia](#)

[Howard University](#)

[University of Washington](#)

[University of California-Los Angeles](#)

[University of Texas-Houston](#)

[University of Louisville](#)

[Yale University](#)

Each site has its own unique curriculum. However, each includes several core elements that are essential to medical school preparation, including:

- Academic enrichment in the basic sciences (organic chemistry, physics, biology) and pre-calculus/calculus
- Career development
- Learning-skills seminar
- Limited clinical exposure
- A financial-planning workshop

For more information, visit its Web site at <http://www.smdep.org/start.htm> or write to [smdep@aamc.org](mailto:smdep@aamc.org)

#### **BWH STARS Program**

The Office for Multicultural Faculty Careers at Brigham and Women's Hospital (BWH) is recruiting its inaugural cohort of scholars to participate in the Summer Training in Academic Research and Scholarship Program (STARS). This 8 week program allows underrepresented minority college juniors, seniors and first year medical students to engage in basic, clinical or translational research projects under the supervision of BWH and Harvard Medical School faculty advisors. The BWH STARS Program will cover students travel costs to and from Boston, provide free housing and offer a stipend for the summer.

<http://www.brighamandwomens.org/cfdd/omc/stars.aspx>

#### **Short-Term Education Program for Underrepresented Persons (STEP-UP)**

The STEP-UP program is designed to provide short-term research education and training for high school and undergraduate students from racial/ethnic groups underrepresented in biomedical and behavioral research, and students from disadvantaged backgrounds. STEP-UP was created by the National Institute's of Health (NIH) Office of Minority Health Research Coordination in the National Institute of Diabetes and Digestive and Kidney Diseases. <http://stepup.niddk.nih.gov>

#### **Ventures Scholars Program**

The Ventures Scholars Program is a national membership program designed to help underrepresented and first-generation college-bound students interested in pursuing math- and science-based careers find information, resources, and opportunities that will support them in

successfully pursuing their career goals. The program collaborates with colleges, universities, professional associations, and organizations nationwide (VSP Partners) and offers a variety of tools to connect students to the partners' information, resources, and opportunities.

[www.venturescholar.org](http://www.venturescholar.org)

### **University of Michigan Profile for Success**

Profile for Success is six week residential summer program that includes intensive DAT and MCAT preparation and skills-building for 3rd and 4th year pre-dental and pre-medical college students and recent graduates. [www.dent.umich.edu/mac](http://www.dent.umich.edu/mac)

### **Medical Minority Applicant Registry (MED-MAR):**

MED-MAR provides an opportunity for minority medical school applicants to have their basic biographical information circulated, at no cost, to the admissions offices of all U.S. medical schools and other health service organizations that request the MED-MAR lists. Desire to participate in this service can be indicated at the time students sit for the MCAT. Interested schools will contact students directly for more information. For additional information, see the following website: <http://www.aamc.org/students/minorities/resources/medmar.htm> .

Each medical school has a minority contact person and/or minority affairs office. The names and addresses of these people and offices are listed in the resources indicated below. Students may wish to contact these offices for specific information on special programs, admission procedures, etc.

- Career Choices: Health Professions Opportunities for Minorities, Office of Statewide Health Planning and Development, Health Professions Career Opportunity Program, 1600 Ninth Street, Room 441, Sacramento, CA 95814. (Free)
- Chapter 6, "Increasing Diversity in Medical School" Medical School Admission Requirements (MSAR) Association of American Medical Colleges (AAMC). To order, click here: <http://www.aamc.org/students/applying/msar.htm> (Contains valuable information for minority applicants. This AAMC publication includes a listing of the contact persons responsible for minority affairs at each U.S. medical school. This individual should be contacted for information about entrance requirements, application procedures, and financial aid. Revised annually in April, the MSAR manual is available for review at the Waldo Library Science Reference Desk.
- Financial Advice for Minority Students Seeking an Education in the Health Professions, Office of Statewide Health Planning and Development, Health Professions Career Opportunity Program, 1600 Ninth Street, Room 441, Sacramento, CA 95814. (Free)
- Minority Student Opportunities in the United States Medical Schools, Association of American Medical Colleges (AAMC). This AAMC biennial publication provides information on medical school programs for minority students including recruitment, admission, academic aid, summer enrichment, and financial aid. To order, click here: [https://services.aamc.org/Publications/index.cfm?fuseaction=Product.displayForm&prd\\_id=213](https://services.aamc.org/Publications/index.cfm?fuseaction=Product.displayForm&prd_id=213)
- Graduate and Professional School Opportunities for Minority Students, Educational Testing Service, Princeton, NJ

### **International Students:**

Unless an international student is a permanent resident of the United States (possesses a green card), he or she stands little chance of being accepted by an American medical school. State supported medical schools are required to give preference to state residents. In addition, some private schools give preference to residents of the state in which the school is located, because the school receives its financial support from its state government. Some states without medical schools within their boundaries participate in special interstate and regional agreements.

Prospective applicants from other countries should contact medical schools about application considerations and admission criteria. Private schools are more likely to accept international students than public schools.

## Reapplication to Medical School

Each year, many students who are rejected from medical school decide to reapply. Students considering reapplication should consult with the Medical Sciences Advisor and admissions officers from medical schools from which they were rejected, to determine their strengths and weaknesses.

Medical schools look for substantive changes and enhanced experience in second time applicants. A rejected candidate needs to identify his or her weak areas and act. This may take the form of additional course work, health care experience, new achievements and/or greater maturity, depending on the individual. In general, re-applicants presenting essentially the same credentials as in their initial attempt will not be given serious consideration.

## Alternative Careers:

All students contemplating a career in the medical field should develop alternative career goals for a variety of reasons. First, competition for entrance into medical school makes an alternative career choice a reality for many people. Secondly, as part of wise career planning it is important to examine many fields to make sure that potentially rewarding occupations have not been overlooked. Talents and skills can be used in many settings. For example, someone who enjoys people contact, a good salary, some travel, and management responsibility might look into the fields of public relations, management, sales, law, and engineering consulting.

For those who want to stay in a health care setting, the opportunities are excellent. In the 1990's, the number of people employed in health care professions is expected to have surpassed six million. The various health care careers require a range of education and training, from certificate programs to graduate work. The following is a small sample of alternate health care professions:

Allopathic Medicine	Medical Economics	Pharmacy/Pharmacology
Anesthesiologist's Assistant	Medical Records	Physical Therapy
Biomedical Engineering	Administration	Physician's Assistant
Chiropractic Medicine	Medical Social Work	Podiatry
Clinical Psychology	Medical Technology	Public Health
Dental Hygiene	Nursing	Rehabilitation Counseling
Dietetic-Nutritional Services	Occupational Therapy	Speech and Hearing Therapy
Environmental Health	Optometry	Sports Medicine
Health Care Administration	Osteopathic Medicine	Veterinary Medicine
Holistic/ Naturopathic Medicine	Pathology	

## Some Web Sites Linked to the Health Professions:

### Allopathic Medicine:

American Association of Family Physicians, <http://www.aafp.org>  
American Academy of Physician Assistants, <http://www.aapa.org/>  
American Medical Association, <http://www.ama-assn.org>  
Association of American Medical Colleges, <http://www.aamc.org>  
Journal of Family Practice, <http://www.phymac.med.Wayne.edu/jfp.htm>  
Physician Assistants—National PA Page, <http://www.halcyon.com/phyasst/>

### Chiropractic

The American Chiropractic Association, <http://www.chirocolleges.org/collegest.html>  
Cleveland Chiropractic College, <http://www.clevelandchiropractic.edu>  
Southern California University of Health Sciences, <http://www.scuhs.edu/>  
The National College of Chiropractic, <http://www.nuhs.edu>  
Northwestern Health Sciences University, <http://www.nwhealth.edu>  
Parker College of Chiropractic, <http://www.parkercc.edu>  
Western States Chiropractic College, <http://wschiro.edu>

### **Dentistry**

American Association of Dental Schools, <http://www.adea.org>  
American Dental Association, <http://www.ada.org>  
American Student Dental Association, <http://www.asdanet.org/>  
American Academy of Pediatric Dentistry, <http://aapd.org>

### **Disadvantaged Minority Student Programs**

Southern Illinois University School of Medicine, Medical/Dental Educational Preparation Program - MEDPREP, <http://www.siumed.edu/medprep>  
NIH Undergraduate Scholarship Programs for Individuals of Disadvantaged Background. <https://ugsp.nih.gov/>

### **Forensic Sciences**

American Academy of Forensic Sciences, <http://www.affs.org>  
Michigan State University – Forensic Sciences, <http://forensic.msu.edu/>

### **Genetic Counseling**

Genetic Counseling Programs, <http://www.kumc.edu/gec/prof/gcprogs.html>  
National Society of Genetic Counselors, <http://www.nsgc.org/>

### **Holistic/Naturopathic Medicine**

American Association of Naturopathic Physicians, <http://www.naturopathic.org/>  
American Holistic Medicine Association, <http://holisticmedicine.org>  
Bastyr University School of Naturopathic Medicine, <http://BASTYR.EDU/academic/naturopath/>  
National College of Naturopathic Medicine, <http://www.ncnm.edu/>

### **Occupational Therapy**

American Occupational Therapy Association, <http://www.aota.org/Students/Schools.aspx>  
Western Michigan University, <http://www.wmich.edu/hhs/ot/programs.htm#OTGraduate>  
Creighton University School of Allied Health Professions, <http://spahp2.creighton.edu/>

### **Ophthalmology**

American Academy of Ophthalmology, <http://www.eyenet.org/>

### **Optometry**

American Academy of Optometry, <http://www.aaopt.org>  
The Association of Schools and Colleges of Optometry, <http://www.opted.org>

### **Osteopathic Medicine**

American Association of Colleges of Osteopathic Medicine, <http://www.aacom.org>  
Kirkville College of Osteopathic Medicine, <http://www.atsu.edu/kcom/>  
Michigan State University College of Osteopathic Medicine, <http://www.com.MSU.edu>  
Ohio University College of Osteopathic Medicine, <http://www.oucom.ohiou.edu/>

### **Pathology**

Pathology: A Career in Medicine, <http://asip.org/career/index.htm>  
American Association of Pathologist's Assistants, <http://www.pathologistsassistants.org/>

### **Pharmacy**

American Association of Colleges of Pharmacy, <http://aacp.org/>  
Creighton University School of Allied Health Professions, <http://spahp2.creighton.edu/>  
Student National Pharmaceutical Association, <http://snpha.org/>  
American Pharmacists Association, <http://www.pharmacist.com/>

**Physical Therapy**

American Physical Therapy Association, <http://www.APTA.org>

Creighton University School of Allied Health Professions, <http://spahp2.creighton.edu/>

**Podiatric Medicine**

American Association of Colleges of Podiatric Medicine, <http://www.aacpm.org>

American Podiatric Medical Association, <http://www.apma.org>

American Podiatric Medical Student Association, <http://www.apmsa.org>

Dr. William M. Scholl College of Podiatric Medicine, <http://www.rosalindfranklin.edu>

Ohio College of Podiatric Medicine, <http://www.ocpm.edu>

**Public Health**

The American Public Health Association, <http://www.apha.org/>

**Rural Health**

National Rural Health Association, <http://www.NRHArural.org>

**Sports Medicine**

American College of Sports Medicine, <http://www.acsm.org/>

**Student Pages**

Aspiring Doctors,

Student Doctors,

**Therapeutic Recreation**

Therapeutic Recreation Directory, <http://www.recreationtherapy.com/>

**Veterinary Medicine**

Association of American Veterinary Medical Colleges, <http://www.aavmc.org>

Michigan State University College of Veterinary Medicine, <http://www.cvm.msu.edu>

The Ohio State University College of Veterinary Medicine, <http://www.vet.ohio-state.edu>

Tufts University College of Veterinary Medicine, <http://www.tufts.edu/vet/>

**Other Health Professions**

<http://www.healthprofessions.org/>

## **Premedical Literature**

Becoming a Physician: A Practical Guide to Planning a Career in Medicine, Daneck, J. and Daneck, M. 1997, John Wiley & Sons, Inc.

Complete Preparation for the MCAT, Betz Publishing Company, Inc., P.O. Box 34631, Bethesda, Maryland, 20817. Call 800 486-5643, Ext. 8023 to order.

The Columbia Review MCAT System, Williams & Wilkins, P.O. Box 1946, Baltimore, Maryland 21298-9724. Call 800-486-5643, Ext. 8023 to order.

The D.O.s: Osteopathic Medicine in America, Ellis, D. 2000, Jossey-Bass Publishers.  
Get into Medical School! A guide for the perplexed, by Kenneth V. Iserson Galen Press, Ltd., P.O. Box 6400, Tucson, AZ 85728-4400.

Getting into Medical School, Donald J. Solomon, W.B. Saunders Co., 1979. 167 pp.  
Discusses all aspects of admission to medical school: Educational preparation, recommendations, extracurricular activities, MCAT, application forms and essays, the interview, etc.

How to take a Professional School Admissions Interview, Brewster Co., 1977. 65pp. Primarily directed toward medical school admissions interviews. Describes research preparation, type of interviews, typical questions and how to respond to them.

Medical Professions Admission Guide: Strategies for Success, National Association of Advisors for the Health Professions (NAAHP), P.O. Box 5017-1, Champaign, IL, 61825-5017

Medical School Admission Requirements. Association of American Medical Colleges. Updated yearly. To order, call AAMC: 202-828-0416. Discusses medical education, application procedures, admission information, and financial aid. Describes all U.S. and Canadian schools of medicine. Highly recommended. Carried by Western's Campus Bookstore. A copy is kept in the Arts and Sciences Advising Office.

The Medical School Interview, by Randall Zielinski. The National Association of Advisors for the Health Professions, Inc., P.O. Box 5017A, Champaign, IL 61820-9017. Compiled from the opinions of many medical school admissions directors and interviewers

Medical School Admissions Policies for U.S.-Trained Noncitizens, Trachtenberg, Edward N. and Paisner, Wendy A., The Advisor, v.14, Fall 1994, National Association of Advisors for the Health Professions (NAAHP). P. O. Box 5017-A, Champaign, IL, 61825-5017

MCAT Student Manual (includes Practice Test I), MCAT Practice Tests II through VIII. Association of American Medical Colleges, 1995-2005. To order, call AAMC: 202-828-0416 or order online from the AAMC Web site. The manual contains information on the MCAT, including suggestions for taking the test and sample questions. The practice tests closely resemble the test, as it will appear on national administrations.

Minority Student Opportunities in the United States Medical Schools. Call AAMC: 202-828-0416 to order.

The Rejected Medical School Applicant: Options and Alternatives, Carlos Pestana, 1979. (Out of print; limited availability)

Resumes and Personal Statements for Health Professionals, Tysinger, J. W. 1999, Galen press