



## **GUIDE TO PREMEDICAL & PREDENTAL PROGRAMS and SERVICES 2018-2019**

This is a guide for pre-medical and pre-dental students attending Ohio Wesleyan University. **It is not intended as a substitute for meeting personally with your academic advisor or the health professions advisor.** You will, however, find answers here to a lot of basic questions and it will help you in planning and in understanding the processes that lead to medical or dental school acceptances.

## THE BIG PICTURE

Achieving acceptance into a medical or dental school is not an easy task, but one that has been achieved by more than 80% of OWU students who have applied over the past decade. Six things are critical to your achieving similar success. I shall list them here with brief descriptions, but describe them more fully in subsequent portions of this guide. In addition, there are sections on other critical aspects of becoming a health professional.

### **Six basic requirements for application:**

1. ***Take all the courses required*** by the schools to which you apply. This list of courses is not the same for all schools, so you need to do some research early.
2. ***Have a competitive gpa.*** The average gpa of accepted students is close to 3.7 at many professional schools and you need a high gpa both in your overall gpa and in your gpa in science and math courses (BIOL, BOMI, CHEM, MATH, PHYS & ZOOL).
3. ***Achieve a high score on the admissions test*** – these tests are the MCAT for medical school and the DAT for dental school. Overall only some 40% of applicants get accepted to a medical school, so a mere average score is not apt to get you in.
4. ***Be involved in extracurricular activities***, preferably taking on a *leadership* role. In particular, ***service oriented*** activities are important as both professions are service-oriented professions and want to see that you are service oriented. Besides, being actively engaged in extracurriculars while also achieving great grades shows the admissions committee that you have reserve, i.e., you can achieve your great grades without devoting every waking moment to study and classwork.
5. ***Gain some clinical experience.*** Medical schools typically want more than mere shadowing, so volunteering at a free clinic or hospital or participating in our *Practicum in Medicine* (INT 494) are common ways to gain some degree of interaction with patients and learn whether or not the profession really is right for you. Dental schools, on the other hand, typically want anywhere from 50-100 hours of pure shadowing. Again the goal is the same, giving you enough exposure so that you know whether or not you really like the profession.
6. ***Make connections that lead to excellent letters of evaluation.*** At Ohio Wesleyan University we provide a committee letter of recommendation for which we invite every professor you've ever had to contribute. So right from your freshman year, help your professors get to know you and work to make a strong positive impression so that they have compelling things about which to write when the time comes. If you have other contacts outside of Ohio Wesleyan University, e.g., someone you worked for or a medical professional with whom you've interacted extensively, they too can write for you.

## THE DECISION TO BE PRE-MED/PRE-DENT

The original decision, though, cannot be made lightly or quickly. Once you have decided to become a pre-medical or pre-dental student, the faculty and pre-medical/dental committee will do all they can to help you achieve success. But before this time, the onus is on you to consider the points below.

First, consider how much you know about your proposed career. Have you talked about it at length with a practicing professional? Do you know the drawbacks as well as the rewards? Do you know what changes the next years are likely to bring? Can you compare and contrast your choice of profession with the other possibilities in the health professions? Do you know the differences between MDs and DOs? Can you name two health professionals (other than doctors and dentists) who can make over \$150,000/year? Do you know what specialties are available in dentistry? If the answer to these questions is "NO," then find out more about the enormous commitment you are proposing to make. Finally, be certain that the motivation to follow this path comes from within you – not from parents, peers, or others.

Second, your decision must be based on a realistic appraisal of your abilities. If you have done well in high school sciences and your high school program was strong, then you should expect to succeed here. Do not, however, expect this to be a repeat of high school experiences; you will need to work harder, and your study habits will probably have to change. Your performance in first year science courses will give you a good indication of the expected work.

A third factor that you need to weigh is commitment. This is one of the tougher courses of study on campus, and your afternoons will be filled with labs during all four years. If your commitment to academic work is not your highest priority, pre-professional preparation will be overwhelming. It's not that you are supposed to become a one dimensional grind – everyone must allow time to relax and have fun – but you need to get involved in academics in a way that goes beyond merely attending class and turning in assignments on time. Successful pre-medical and pre-dental students get satisfaction out of learning and getting it right. They find excitement in discovery and knowledge and enjoy the camaraderie that develops among students following the same path. They also get to know professors in a personal way, and these associations not only enrich their college experience but also can lead to strong letters of recommendation.

Whatever your combination of circumstances, it makes sense to reexamine your decision periodically. At a minimum, you should consider whether or not you are on track every spring during pre-registration for the fall when you confer with your academic advisor about course selection. In fact, it may be that you should reflect on your progress every pre-registration period, not just each spring.

## COURSES

**General Chemistry:** Virtually all potential premed and predent students take CHEM 110 in fall of their freshman year and then go on to CHEM 111 in spring semester. If you don't take chemistry in your freshman year, you have no chance of being ready to take the MCAT the summer of your junior year and go to medical school without a bridge year unless you attend summer school. If you did not feel prepared to begin chemistry in your first year, talk to your academic advisor or the health professions advisor to arrange an alternative schedule.

**Organic Chemistry (CHEM 260, 261):** These courses tend to command special attention since medical schools have noted a good correlation between undergraduate organic chemistry skills and success in first year basic medical school sciences. Therefore doing especially well in these classes is essential to having a strong application; C+ or less can doom your application.

**Biochemistry (CHEM 340, 341):** The importance of biochemistry has risen dramatically in the eyes of both medical and dental schools and is required by an increasing number of professional schools. Biochemistry-based questions on the MCAT make it prudent for every premed to take at least CHEM 340; questions from 341 appear on some versions of the test.

**Mathematics:** There is no calculus on either the MCAT or DAT, and the math requirements for medical school vary widely – although a few schools require two semesters of calculus, many don't require math at all, and many more are somewhat intermediate and require two semesters of college math. However, calculus can help one understand physics and many medical school applicants in the country have taken it. Note that chemistry and physics majors all require at least two semesters of calculus. An increasing number of medical schools recommend a course in statistics (e.g., MATH 105 or 200.3 or 230 or PSYC 210). Statistical questions are part of the MCAT so taking MATH 110 and MATH 230 or MATH 200.3 (Biostatistics) or taking MATH 108 (Precalculus Mathematics) and MATH 105 are two options for getting two college math courses and enhancing your statistics background.

**Biological Science:** Biology 120 is the course most people start with (unless they have AP credit for it). After 120, you have a choice as to which other courses to select. Although the typical requirement for med schools is two semesters of biology (not counting AP), these need not be BIOL 120 and 122. While both classes provide a solid initial background in biology, courses beyond BIOL122 may offer better preparation for both the MCAT and med school. In fact, recent surveys of medical schools asking which undergraduate bioscience courses would best prepare students for their medical school classes yielded the following list (in order):

- Genetics (BIOL 271 which is offered both semesters with an optional lab in fall)
- Human Physiology (ZOOL 325, offered fall semester and often in the spring)
- Cell and Molecular Biology (ZOOL 351, spring semester)
- Developmental Biology (ZOOL 333, spring semester)

The first three of these are certainly the ones most desirable to prepare for the MCAT. But just as certainly, many other courses in the life sciences can help and provide valuable background for professional school. You and your advisor will need to make some choices. Here are some points to keep in mind. Although BIOL 122 (Organisms and Their Environment) is not officially

a part of the pre-med/dent major, some topics from this course appear on the MCAT and much more on the DAT. Similarly, although neither ZOOL 329 (Human Anatomy) nor ZOOL 331 (Vertebrate Anatomy) is not required for the major (and no medical schools require an undergraduate anatomy class), some dental schools do require anatomy. Besides, you take anatomy in your first year at either type of professional school. Two other biological science courses that provide especially valuable background are BOMI 280 (Medical Microbiology) and ZOOL 356 (Immunology).

**Physics:** There are two physics sequences at OWU, and we have had successful applicants from both tracks. One is PHYS 115-116 (Principles of Physics), and its text is written largely with biologists and premeds in mind. It uses minimal calculus and what is necessary is taught with the physics. The alternative is PHYS 110-111 (General Physics for Physical Science Majors), which is a more rigorous sequence that requires calculus. ASC-certified chemistry majors are required to take 110-111 rather than 115-116. Its advantage is that students experience greater growth, and probably master the concepts more thoroughly. Its disadvantage is that it covers less material, and students may need either to study some MCAT topics on their own or to take another course such as PHYS 280 – Contemporary Physics. Students should discuss this option with a member of the physics department.

**English:** Two English courses are required by many medical schools. Often OWU courses in Comparative Literature (CMLT) can be substituted, but must be approved by the individual medical schools. Taking an advanced composition class, e.g., ENG 260 (Writing Essays) or ENG 265 (Elements of Style and Rhetoric) before writing your application essays can be useful, and many dental schools require that you take an advanced composition class in English.

**Independent Studies:** A substantial experience with a research project can carry weight with admissions committees and is required by some schools. Research projects demonstrate that you can work independently on a task of some complexity and length, and that you have a general understanding of how research might “translate” into medical practice. Most of our top students take on such a project, with the guidance of a faculty member, in the junior or senior year. There are also many summer research opportunities at OWU (<http://ssrp.owu.edu/>) and other institutions across the country especially through the NSF REU program ([http://www.nsf.gov/crssprgm/reu/reu\\_search.jsp](http://www.nsf.gov/crssprgm/reu/reu_search.jsp)) so taking a course during the academic year is not the only way to gain research experience. If you do think you want to do an independent studies project, you should keep this in mind as you go through your first two years and talk about it informally with the professors whose courses you've especially enjoyed. They will be pleased to know of your interest.

**Transferring Summer Credits:** If you make a late decision to go premed or predent, or if you get out of phase, then it is often possible to attend a summer program to catch up. Teaching premeds is a big business nationally, and summer programs in physics and organic chemistry are particularly common. A number of our students have taken one or more required science classes in summer school and have subsequently been accepted into professional school. However, medical schools recognize that one of the most common reasons student take organic chemistry or physics during the summer is that the student is not confident enough to take them as part of a

regular load. Therefore, if you do take these classes elsewhere in the summer, you can be sure that admissions committees will notice; certainly taking more than one or two basic science courses anywhere other than at your primary school is regarded as a “red flag” in your application. In any case, make sure such courses have laboratories and cover material comparable to that given in our courses. Note also that courses taken during the summer will not count toward a major or minor in chemistry here. Check with Dr. Vogt before taking organic chemistry in summer school if you wish to enroll in Biochemistry at OWU. Realize, too, that when you apply to professional school, you will need to submit transcripts from every school you attend and that all of the grades from every school attended will enter into their calculation of your gpa.

## PRE-MED/PRE-DENT TIMETABLE

Nota bene: your precise schedule of classes will vary depending on what major you choose and whether you want to attend professional school starting the summer after your senior year or if you want to take one or more bridge years.

### Freshman year:

- Complete freshman chemistry and introductory biology or math with excellent grades
- Confer with academic or health professions advisor about most appropriate major for you
- Become familiar with all the information available on <https://www.owu.edu/academics/departments-programs/medical-health-professions/pre-medicine-pre-dentistry-major/>
- Participate in the Pre-Health Club as a gateway to general information and campus resources related to health professions
- Before registration for your classes for Fall semester in your sophomore year, assess your progress and make a four-year plan to complete program requirements

### Sophomore year:

- Complete organic chemistry and continue with other requirements, e.g., more biology like genetics or possibly human physiology
- Keep all of your grades high, but especially in your science and math classes
- Develop extracurricular activities, especially service oriented ones
- Inform yourself about current issues in health care
- Participate in the Pre-Health Club

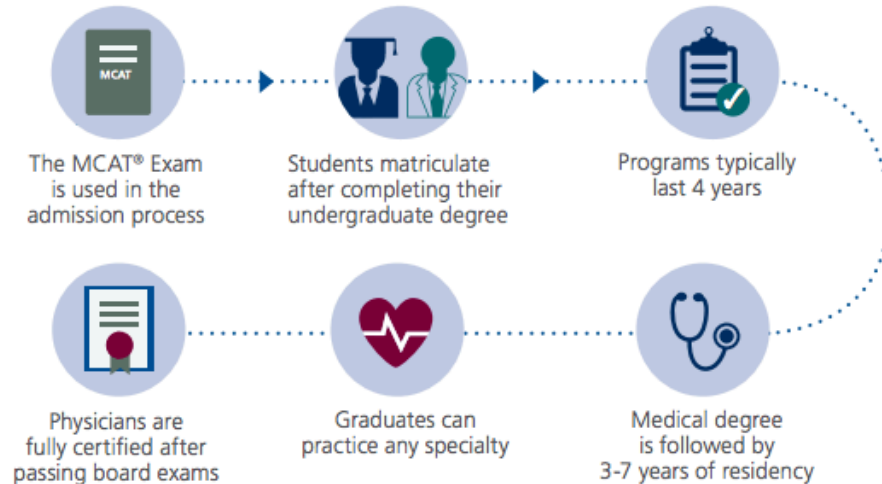
### Junior year:

- There is a huge difference in what you need to do this year if you plan on going to professional school directly from OWU vs. if you will have one or more bridge years
- If you are going direct, you should be ready to apply in June after this year is over; this means that you must complete all coursework needed for MCAT or DAT this year!
- 1) Premeds should take biochemistry, physics (both semesters), and human physiology
  - 2) Register for the MCAT or DAT a minimum of sixty days before the test; some test sites and dates will fill considerably before this, especially for the MCAT
  - 3) You should take the test in the spring or not later than the early summer (June)
  - 4) Submit a draft of your personal statement and activities to the health professions advisor in January
  - 5) Attend the spring meeting to go over the application process
  - 6) Apply using the appropriate centralized application service in early summer after your junior year; the sooner you submit after the cycle opens the better. If you intend to apply to medical school, your first decision is whether you want to apply only to allopathic medical schools (those offering an MD degree), only to osteopathic medical schools (that offering the DO degree) or to both. The following figure taken from an AAMC poster contrasts the two different options.

## M.D. and D.O. Medical Programs

This graphic illustrates many of the similarities and differences between M.D. and D.O. medical school programs. Speak to your pre-health advisor to decide which programs might be right for you.

### Similarities



### Just M.D.

- Applicants apply using AMCAS®
- 141 medical schools in the United States and 17 in Canada
- Students take the USMLE licensing exams

### Just D.O.

- Applicants apply using AACOMAS®
- 30 D.O. medical schools in the United States
- Students take the COMLEX licensing exams
- Additional training in the musculoskeletal system and Osteopathic Manipulative Treatment (OMT)

Notice that either program lets you practice in any specialty and ultimately you take the same board exams.

The application service for MD-granting medical schools is AMCAS (<https://students-residents.aamc.org/applying-medical-school/applying-medical-school-process/applying-medical-school-amcas/>). For osteopathic medical schools, it is AACOMAS (<https://www.aacom.org/become-a-doctor/applying>). Both types of institutions offer excellent educations, a key difference is that only DO schools will train you in OMT (osteopathic manipulative Treatment [or OMM with M for medicine]), explained at this website: [https://www.aacom.org/docs/default-source/become-a-do/aacom-omm-one-pager\\_v7-\(1\).pdf](https://www.aacom.org/docs/default-source/become-a-do/aacom-omm-one-pager_v7-(1).pdf). For dental school, the application service is ADEA AADSAS ([https://www.adea.org/GoDental/The\\_application\\_to\\_dental\\_school\\_ADEA\\_AADSAS.aspx](https://www.adea.org/GoDental/The_application_to_dental_school_ADEA_AADSAS.aspx)).



- 7) Select schools and consider financing strategy.
- 8) Send the health professions advisor a final copy of your personal statement and activities as they appear in your application; *no recommendation letter will be sent until you have submitted your application*, so tell the chief health professions advisor when you have submitted.

If you are not going direct, there is much less pressure this year

- 1) You could take just two rather than all three of physics, biochemistry and human physiology
- 2) Or you could take all these classes and still take a bridge year; in this case you might be able to spend the entire summer studying for the MCAT or DAT and then take it in August so you had that hurdle over with, or you could take just physics as a junior and biochemistry and physiology in your senior year and have the background for the MCAT in January, March or April

**Senior year:**

Double check your degree requirements, recommended courses; complete anything you are missing

If you applied as a junior, you should prepare for interviews in the early fall (including doing a mock interview in career services). Report your application status to the health professions advisor before graduation; if you were successful, hold the minimum number of acceptance offers possible; on 15 May, medical schools may rescind an offer if a student is holding more than one spot.

If you are applying this year, then follow steps 2 – 8 above for junior year applicants.

**Throughout your undergraduate years:**

Obtain service, health care, and research experience.

**International students:** recognize that obtaining acceptance into a U.S. medical or dental school is a real uphill battle and consult with the chief health professions advisor.

## OWU CURRICULUM CONSIDERATIONS AND SCHEDULING

Majors

**There is no single "best" major**, but some combine with meeting medical school admissions requirements much more easily than others. Virtually all medical and dental schools require that applicants take a year of each of the following: general chemistry, biology, physics, and organic chemistry and many also want a semester of biochemistry. Obviously, if you complete this list, you have taken many of the requirements for one of the science majors at OWU (and automatically qualify for a chemistry minor). Because of this overlap, most of our students who apply to med/dent schools major in one of the sciences and may even get a double major in two sciences. The OWU catalog provides all the details for the various majors. Above all, **pick a major that you enjoy!**

In recent years many writers and speakers have been fond of advising students to major in a non-science area. They note that a high percentage of religion majors, for example, are admitted to medical schools. In their eagerness to make the point, however, almost all fail to mention that the advantages only go to those who not only have the non-science major but also complete all the above-mentioned science requirements and more. *Don't be misled: if you do not have a solid record in the sciences, it doesn't matter what your other qualifications might be.*

A key point to retain from this advice, however, is that obtaining a broad academic background is desirable, not only in your application, but also in your life. Your education will be more complete, your life will be richer, and your credentials will be more competitive if you become fluent in some discipline outside the sciences as well as within. (And reading broadly and deeply outside the sciences will likely help you with portions of the standardized admissions tests). Majoring in a department outside the sciences will require advanced planning, and you should work closely with your advisor from the freshman year on. Similarly, study abroad is an excellent opportunity, but requires careful planning.

Scheduling

Many, many variations in schedule are possible as seen in the document "Scheduling Advice" on the major page (<https://www.owu.edu/academics/departments-programs/medical-health-professions/pre-medicine-pre-dentistry-major/>). There are many valid reasons making changes in the order of taking the courses listed, for instance coming in with advanced credit for some introductory science classes. But as you individualize your schedule, recognize that many courses are only offered in a single semester (e.g., general chemistry, physics, and organic chemistry are year-long sequences that begin only in the fall) and some classes for some majors are only offered in alternate years. Your academic advisor or the chief health professions advisor can help you devise a schedule that is appropriate for you. In any case, if you want to go to medical school, you must complete general and organic chemistry and biochemistry, general biology and human physiology, and physics before taking the MCAT; furthermore, if you intend to take general psychology, sociology, and statistics, it makes more sense to take these before you take these classes before you take the MCAT rather than after given that the test contains questions from these disciplines. The underlying point here is that *when* you take these

preparatory courses dictates when you are ready to take the admissions test. For those going to dental school, realize the DAT only requires general and organic chemistry, basic math, and biology; hence, you can take the DAT before you take some of the specialized classes required by dental schools but not covered on the admissions test. The following list indicates classes required by many or most dental schools in the country:

General biology – two semesters

General Chemistry – two semesters

Organic Chemistry – two semesters

Biochemistry – one semester

Human Physiology – one semester

Anatomy (Human or Vertebrate) – one semester

Physics – one or two semesters (varies by school)

Microbiology – one semester

Freshman English – one semester

Advanced Writing Course – one semester

## THE NATIONAL EXAMS – MCAT & DAT

The Medical College Admission Test (MCAT) and Dental Admission Test (DAT) are long, demanding examinations which are required as a part of the applications for health professional school. In principle, they are universal "yardsticks" that enable admissions committees to compare candidates' credentials directly. In one sense, the MCAT and DAT do not seem fair: high scores will not guarantee your acceptance, but low scores will almost certainly eliminate you from consideration.

**MCAT:** The MCAT takes about 7 ½ hours of total seat time to complete and is done on a computer and without the benefit of a calculator. Verification of student identity is via an electronic thumbprint. Results are sent to you about 30 days following the exam. The test is offered on only particular dates and months between January and October. Register as soon as possible after registration opens, because dates and testing locations can fill quickly.

The MCAT includes four sections: Biological and biochemical foundations of living systems (biochemistry – 25%, introductory biology – 65%, general chemistry – 5%, organic chemistry – 5%, and statistics); chemical and physical foundations of living systems (biochemistry – 25%, biology – 5%, general chemistry – 30%, organic chemistry – 15%, physics – 25%, and statistics); psychological, social and biological foundations of behavior (psychology – 65%, sociology – 30%, biology – 5%, and statistics); and Critical analysis and reading skills (requires you to read passages and answer questions about what you read). Scores each section range from 118-132, so total scores can range from 472 to 528. Scores of 508 (77<sup>th</sup> percentile) and above should be your goal to have a strong application. When you actually apply to the medical schools is when you designate to which schools you want your official scores sent.

You can learn much more about the MCAT at the official site: <https://students-residents.aamc.org/applying-medical-school/taking-mcat-exam/> . There are many links including one to a downloadable pdf document called "MCAT Essentials." Other ones provide offer information on how to prepare for the exam, registering for the exam, FAQs, etc.

**DAT:** The 4.25-hour DAT is required by all dental schools, and has the following sections:  
Quantitative reasoning: basic math and algebra, calculations and conversions; no calculus  
Natural Sciences: Principles and problem solving in biology, general & organic chemistry  
Reading comprehension: both dental and basic sciences  
Perceptual ability: 2- and 3-dimensional problems

The DAT is given only in computerized format at Testing Centers; appointments to take the DAT can be scheduled pretty much any time you want when you register.

Scores on the DAT range from 1 to 30, and there are seven basic components: quantitative reasoning, reading comprehension, biology, general chemistry, organic chemistry, total science, and perceptual ability. Score reports also include one summary score; the first five items on the previous list are combined into an Academic Average. To be considered seriously you will need scores above 17 on all sections.

The perceptual ability test deserves explanation. Years ago, carving a block of chalk or soap was used as a measure of the abilities of manual dexterity and perceptual/motor manipulative talent that are important in dentistry. However, as you might imagine, the results were not so easy to grade. Subsequently, it was discovered that these same abilities correlated with performance on interpreting 2- and 3-dimensional drawings and estimating measurements. You will need to practice these. If you've had experience in engineering drawing, or other 3-D and perspective drawing, you have a head start. If you would enjoy them, the three dimensional art classes at OWU would likely help you develop these skills and having such a background can be viewed favorably by admissions committees.

### Preparation

At one time in the past, testing companies and advisors used to say that these exams were so broad, so thorough, and so grandly encompassing that no one could study specifically for them and many older physicians will still give this advice. They were supposed to be true tests of long-term accumulated knowledge. It is now perfectly clear that this is not true, so you should budget the time (and money) to make a conscientious and systematic review of all the appropriate disciplines. This will have a strong impact on your final test scores. Without such review, it is unlikely that you will obtain even average scores. Hence, **to succeed on the tests, you must make time to review broadly and intensively.**

The best source for information about the MCAT is the official website: <https://www.aamc.org/students/applying/mcat/>. Taking full-length practice MCATs is one of the best types of preparation available. Becoming familiar with the testing format is essential for doing well on the test, and given that the test is such a marathon in length, merely enduring that experience of undergoing testing for that many hours is good physical training, too. Commercial review classes are available as are lots of different test prep materials. Whether you choose to take a full review class or just study on your own is clearly up to you. We've had students be very successful both ways and we've also had folks not do well both ways. The key to getting good results is that you dedicate yourself to the preparation whatever form you choose. Most critically, take a lot of practice tests; this will cost money, but it is worth it.

It is possible to prepare well on your own, provided you set aside time regularly. Useful and comprehensive materials include those marketed by Kaplan and Princeton Review; alternatively, some fine the less comprehensive *Examcrackers* series (Biology, General Chemistry, Organic Chemistry and Physics) that focus more on problem solving to be preferable. Again, we've had folks do extremely well on the test using each of these types of preparation. Critical is spending enough time preparing (often more than three months) and taking multiple practice tests. For the DAT, Scholarware, whose website is [www.scholarware.com](http://www.scholarware.com), may be useful.

Ideally, you should time your review so that you hit a peak well before your scheduled exam date. You **must** take a number of simulated tests in their entirety under timed conditions. Repeat: It is not merely nice to do this; it is essential! Unless you have experience in taking the whole thing (feel the fatigue factor) under timed conditions (feel the time pressure), you are likely to make serious blunders during the real test.

The MCAT is only administered about fifteen times a year whereas the DAT can be taken at any time. For the MCAT, most students take the in the spring (April, May or June) of their year of application (junior or senior year). The application cycle begins in early June each year, and having your test scores in hand when you apply is desirable. Most medical and dental schools have rolling admissions, so *applying as early as possible in a cycle is very strongly advantageous*. If you have all the appropriate coursework done by the end of your junior year but haven't had time to study for the admissions test, you may want to study over that summer and take the test in July or August before classes start for your senior year. Then you'll have your score and know whether or not it will meet your needs before you apply the next June. Consult with the health professions advisor well in advance of setting any test date to make sure that what you are thinking about doing makes sense for you. And remember, more than half of the students that you will be competing against for acceptances into medical or dental school will be students who will be taking at least one bridge year – and that means getting more extracurricular experiences, too.

One final point: One of the most critical aspects of your review is not merely to learn facts, but to learn how to take the test. As you proceed, pay special attention to:

- becoming familiar with instructions
- getting used to the style of questions
- learning not to read more into questions than is given
- pacing yourself
- watching out for tricks (look for these in practice exams)
- refining educated guess skills.

As noted above, the AAMC itself offers lots of information on their site about the test and the following items provide an introduction to many of these resources:

#### **Khan Academy MCAT Collection**

This is a great resource for your faculty and students. For faculty using the “flipped-classroom” model, find more than 1,100 video tutorials on concepts tested on the exam. The collection includes 3,000 review questions to support independent study. *The MCAT Collection was created by the Khan Academy with support from the AAMC and the Robert Wood Johnson Foundation.*

[khanacademy.org/mcat](https://khanacademy.org/mcat)

#### **How I Prepared for the MCAT Exam**

There's no right or wrong way to study and prepare for the MCAT exam. Students who performed well on the exam share their study tips and approaches in these testimonials.

[students-residents.aamc.org/mcatprep](https://students-residents.aamc.org/mcatprep)

**What's on the MCAT Exam? Interactive Tool**

Learn all about the MCAT exam with this free online tool. Review content lists for the four test sections, watch videos, and understand how the questions test both skills and knowledge.

[students-residents.aamc.org/mcatexam](https://students-residents.aamc.org/mcatexam)

**Study Plan**

This is a useful resource for students who seek guidance on how to structure a study plan, sequence resources, and create a schedule.

[offers.aamc.org/mcat-study](https://offers.aamc.org/mcat-study)

**Course-Mapping Tool**

This tool helps identify the courses at your school that align with the concepts tested on the exam. The tool helps you find the course levels from which the content is drawn, filter content by course level, and map your students' course content to MCAT exam content.

[students-residents.aamc.org/mcatcoursemappingtool](https://students-residents.aamc.org/mcatcoursemappingtool)

**Psychology and Sociology Textbooks**

Publishers of introductory psychology and sociology textbooks have provided "roadmaps" that show where in their textbooks students can find concepts tested on the exam. Some of the textbooks are free online publications.

[students-residents.aamc.org/applying-medical-school/article/study-mcat-exam](https://students-residents.aamc.org/applying-medical-school/article/study-mcat-exam)

**Retaking the MCAT or DAT**

*You should not take the admissions test unless you have been doing well on several practice tests before the real test date.* If you aren't doing well on the practice tests, you shouldn't expect to suddenly improve on the real thing and to suddenly get a high enough score to be accepted. Our advice would be to forego taking the test and recording a poor grade. Instead, take in the first time later – even if that means having to delay your application – and do well on the test when you do take it. However, if for whatever reason, you take the MCAT or DAT and do poorly on it, then you will have to consider retaking it (talk to the health professions advisor about the advisability in your case). The schools to which you apply will receive all of your scores. Schools vary in how they treat the scores. Some take the most recent, some average the scores and a very few take the best subtest scores. If you do take it again, obviously, you will want to go into the exam with more information, skills, preparation, or whatever it takes to do substantially better. If you ignored all the good advice and took the test without adequate practice, it is possible that just the experience of having taken it once will make a big difference. You most likely will concentrate on the areas that hurt you most, but don't neglect reviewing everything (a lesson from cognitive psychology).

Nationally, about 30% of the students in any MCAT session are taking it for the second (or even third) time. The average student does raise his/her score: approximately 60% raise scores; about 20% remain unchanged, and about 20% get lower scores than they did the first time around. Note that schools anticipate improvement of about 1 point on each test section of the MCAT, based on greater familiarity with the exam format; thus, you need to improve your total score by more than four points to make the retest helpful.

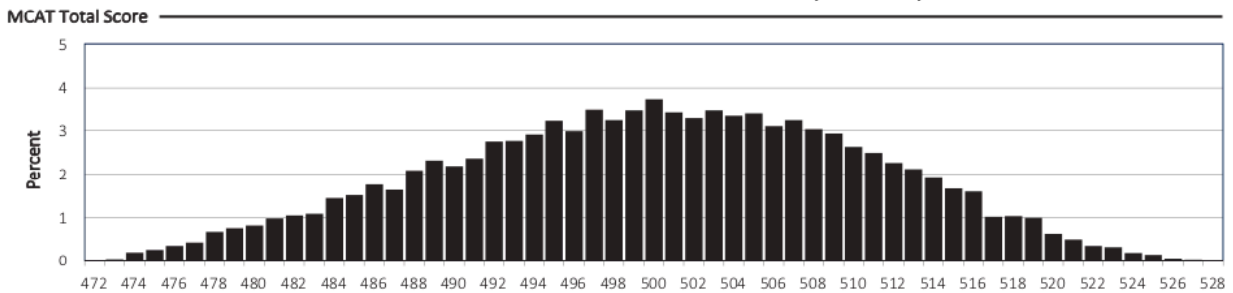
**Test scores:**

Let me reemphasize that it is important that you take the importance of your standardized test scores seriously. A great score will not guarantee you acceptance, but a poor score can prevent it – especially if the rest of your file is not particularly strong. To drive the point home, consider some of the following data based on the experiences of OWU students over a recent 10-year span of time.



Of those accepted to one or more medical schools, 63% had MCAT scores at or above the 67<sup>th</sup> percentile whereas only 9% had an MCAT score below the 50<sup>th</sup> percentile. Those who managed to be accepted with lower test scores tended to have very strong files in such areas as grades, service, and clinical experience and/or more bridge years in which they demonstrated substantial dedication to entering the profession.

Of those not [yet] accepted to medical school (some are still trying and may get in still), the figures were nearly reversed: 63% had MCAT scores below the 50<sup>th</sup> percentile and only 21% had scores at or above the 67<sup>th</sup> percentile. The fact that some folks with perfectly good MCAT scores have not been accepted should be viewed as reemphasizing that it takes more than just a good score on that single test to gain acceptance. Factors such as undergraduate grades, extracurricular such as service experience as well as clinical experience also matter, and some combination of these seems to have thus far precluded acceptances for these folks.



513	89
512	87
511	85
510	83
509	80
508	77
507	74
506	71
505	68
504	64
503	61
502	57
501	54
500	51
499	47
498	43
497	40
496	37
495	34

In the columns above, the number on the left is the MCAT score and that on the right is the corresponding percentile ranking. Obviously the range of scores goes higher and lower. If you score lower, save your money and don't apply until you score higher. If you score higher, congratulations! You could be a competitive applicant at many schools.



## EXTRACURRICULARS

First-year students are adjusting to being away from home, coping with roommates, being recruited by sororities/ fraternities, and participating in college athletics. They are eligible for clubs, committees, and ad hoc organizations. There are lectures, activist groups, departmental seminars, concerts, invited speakers, and parties. Many of these are valuable, and they contribute much to the life of the university community, but be cautious. Four years gives you plenty of time to get involved, and you must make sure that your course work is going well *before* you commit to too many activities. Those who take on too much too early often earn disappointing grades; too low of an initial gpa is very hard to bring up to a competitive level.

After your academic success has been established, the story on extracurricular activities changes. You should get involved for multiple reasons – to nurture your own interests, to enrich your educational and social life, and to show admission committees that you have varied interests and can manage a multidimensional existence!

It is better (probably in all senses) to become more fully immersed in a few activities than to dabble superficially in many. Any sort of activity well done will be respected—sports, dorm counseling, committee work, music, etc. Admissions panels would not want to specify how pre-health students should spend their free time, so don't worry about trying to fit some ideal mold or trying to copy someone else.

There are two types of activities, though, that should be included somewhere in your background. One is a community service activity. We believe that all people—pre-med or not, student or not—should find a way to be of service, but it is especially important to pre-meds. If you are aiming for a helping profession, then it seems incongruous to wait until you are a doctor to get about the business of caring for others. Some recent editorials in medical education journals have called for a pre-med service requirement. There are, of course, innumerable ways to go about this. Our students have worked with handicapped children, tutored local junior high students, served with HelpLine, volunteered as a Big Brother or Big Sister, been regular visitors to nursing homes, and participated in and led OWU mission trips. Some have done this during the school year, and others have arranged it during summers. And our students have found that the personal rewards that come from their investment are more important than any sense of doing it to make their credentials look better.

A second kind of experience that makes sense to seek out is exposure to the practical side of the career. For example, if you want to be a doctor, have you been around sick people much? How do you react to seeing illness or wounds or even death? First-hand exposure will help you decide whether or not the field is right for you, and it will show the admissions panel that your commitment has been made in the light of real understanding. Again, there are lots of options. Some students find work or volunteer positions in hospitals; some volunteer to help or shadow family physicians, surgeons, or dentists; some take an Emergency Medical Technician training course and ride with local emergency squads. Others take medically or dentally related apprenticeships arranged via OWU's participation in the Philadelphia Urban Semester program.

Although not actually an extracurricular, OWU does offer the *Practicum in Medicine* (INT 494 – 0.25 units of credit) available for juniors and seniors at our local hospital. Again, the point is that it makes obvious sense to get exposure to the field and verify that it really is the profession you wish to enter.

The Lawrence E. Young, M.D., Award was established in 1994 by Dr. Young's family to assist students preparing for health related careers to obtain influential experience during a summer recess or on campus with a faculty mentor. The experience could include research, exposure to a health care area including going on a medical mission trip or even some specialized coursework. Information and application forms are available from the Health professions advisor.

## THE APPLICATION PROCESS

The application process begins in the spring of the junior year for students planning to begin professional school directly following graduation. Some fortunate individuals will be accepted as early as the fall of the senior year. For others, the waiting will last a full twelve months.

For most medical and dental schools, there is a centralized application service that saves considerable time and duplication of effort for each applicant. As noted above, most allopathic medical schools (those that offer a MD degree) work through the American Medical College Application Service (AMCAS), and dental schools work through the American Association of Dental Schools Application Service (AADSAS). Osteopathic medical schools (those offering a DO degree and training in OMM) have their own service (AACOMAS) as do schools of Podiatry (AACPMAS) and various other health professions graduate programs. The institutions have agreed upon a common initial application form, so you simply access the computerized application at the appropriate website, complete it, and submit it to the centralized service. The service then distributes your application to the schools you have designated. Some institutions do not belong to the centralized application services, and Texas has its own centralized system. If you apply to schools outside the U.S., contact their admissions offices learn how to apply.

Three rules:

1. Make a hard copy of all materials in case the on-line version is lost.
2. Follow instructions exactly. If any part of the application is filled out improperly, you will need to correct the problem, thus delaying your application. The application service's customer service staff members have been impressively responsive by email and by phone. If you have a problem, first contact them. If the problem is not resolved the pre-med advisor will be happy to help you. This strategy is to protect you. If you have an answer in writing directly from the application service, any problem down the line has been documented.
3. **DO IT EARLY!!!!** This does not mean that you should merely beat the final deadline. It is essential that you get your material in as soon as the centralized service will process it. Students submitting applications after mid-July are at a severe disadvantage because nearly every medical or dental school has rolling admissions. We have been astounded at the casualness with which some students ignore this point. We have some clear cases in which students would have been admitted if they had simply sent things in sooner. We have had other cases in which superior candidates were so overconfident that they delayed applying. They should have had multiple acceptances, and they should have had acceptances from their prestigious first choice schools. Instead, they received one late acceptance from their last choice school. The reason is simple. Some candidates in the country are accepted early, and for every week you delay, the number of available positions becomes smaller. Good early applicants are scheduled for early interviews, and by the time a school may get around to your application if you sent it in relatively late, the class may be filled and your credentials won't matter much. If you are serious about medical/dental school...if you have worked hard...then, of course, **you will apply at the start of the cycle!**

## The Personal Statement

Your application package will include a one page single spaced essay commonly known as “The Personal Statement,” an autobiographical essay that includes insights about who you are and what makes you unique. As you probably know, most medical schools receive thousands of applications each year. Deans, admissions officers, faculty members, doctors, and medical students – your audience – read as many as 50 personal statements a day, spending only 3 to 10 minutes on each essay. Late in the day, tired, bored readers have little patience for predictable story lines, clichés, insincerity, and gimmicks. Admissions officers and medical faculty want honest, authentic, thoughtful narratives of your activities and accomplishments. They also want essays without errors in spelling, punctuation, and grammar.

**Please Note:** In the year you apply to medical school, submit a first draft of your personal statement to the health professions advisor by the first week of spring semester.

Preparation for writing your personal statement should begin at least several months before submitting your application package. Even now, however, you can familiarize yourself with the personal qualities and skill sets most relevant to the healthcare field. You can do so by following the guidelines listed below.

Admissions officers have no set agenda; you can focus on a variety of experiences, including academic, research, personal, family, volunteer, healthcare, work, athletic, language, cross-cultural, and teaching. Ideally, however, you might

- Write about experiences in healthcare and discuss why you chose this profession.
- Include examples that demonstrate your compassion and ability to empathize with others.
- Address, in a direct and positive way, blemishes or inconsistencies (e.g., gaps in work history or a low GPA). In general, be brief in addressing negative areas.

**Most important, however, choose the categories of experience that best reveal your character and qualifications.** For each category you select (for example, travel and volunteer experiences) address the following steps:

1. Identify specific “chapters” of experience within the larger category. For example, volunteer experience might include helping an elderly neighbor with outside chores, serving Thanksgiving meals at a community shelter, being a Big Brother, and volunteering in a surgical ward.
2. Whether you focus on the larger category of experience—i.e., volunteering—or specific “chapters” within that category, list interesting and relevant examples and anecdotes.

3. Describe each anecdote and example and note the significance. Consider: (a) the knowledge or skills you learned, (b) the obstacles or difficulties you encountered, (c) the importance of certain personality traits and (d) the self-knowledge—wisdom—you gained.
4. Explain how the anecdotes and examples relate to your career choice and reveal your knowledge of the healthcare field. Note character traits that are germane to the healthcare field.
5. After completing this inventory, narrow your topic—decide what to emphasize. You can focus on one experience (volunteering in a children’s hospital), a number of experiences centering on a “theme” (working with kids), or on a set of character traits.

At this point, you have generated some potential topics. Now it is time to learn by writing—to discover more specifically what you want to say by drafting paragraphs that focus on the inventory completed above. This represents the first part of a process that includes several steps: (1) developing a narrowly focused first draft; (2) revising for content and organization; (3) revising for paragraph focus and cohesiveness; (4) revising sentences for syntax, concision, diction, and completeness; and (5) proofing for spelling, punctuation, grammar, and formatting errors.

You can set up an appointment (740 368-3925) at the Writing Resource Center for professional help with your medical school essay, or just stop by 9 – 5 Monday through Friday to check out their collection of sample personal statements and the how-to books listed below.

Jones, Stephanie and Emily Angel Baer, eds. *Essays That Worked for Medical Schools: 40 Essays that Helped Students Get Into the Nation’s Top Medical Schools*. New York: Ballantine Books, 2003.

Kaufman, Daniel, Dan Kaufman, Amy Burnham, and Chris Dowhan. *Essays That Will Get You into Medical School*. New York: Barron’s Educational Series, 1998.

Stewart, Mark Alan. *Perfect Personal Statements: Law, Business, Medical, Graduate School*. 2<sup>nd</sup> ed. Lawrenceville: Thomson Learning. 2002.

Tysinger, James W. *Resumes and Personal Statements for Health Professionals*. 2<sup>nd</sup> ed. Tucson: Galen Press, 1999.

## Nuances in the Application Process

### Professionalism

Facebook, Email Address: Younger admissions officers **do** check Facebook pages and any correspondence with schools will include your email address. One way to check on your professionalism: Would you feel comfortable having a future patient view these materials? Consider making any necessary changes now so that professionalism becomes second nature.

Background Checks: Background checks are now used at almost all professional schools. If you have any sort of misdemeanor or felony charge on your record, you should reveal it at your time of application. A problem of this sort does not necessarily keep you from attending professional school, although trying to hide it and having them uncover it for themselves during a background check will. A pro-active approach will best serve your interests much better. You should be transparent and tell what happened and then how you have learned from the experience and changed your ways. If you have concerns about this topic, talk to the health professions advisor.

### Choosing Schools

The average American applicant sends files to about 12-14 medical colleges. Those who apply to 20 to 30 schools are no more successful, so it is clear that there is no point in "shot gunning" large numbers of applications around the country. Consider the following criteria.

- a. State residency: Many medical and dental schools are state supported and, since state tax dollars help pay the bills, legislatures can require that preference be given to resident students. This means, of course, that your personal list should include the schools in your home state. State residency is usually defined on the basis of some objective criteria such as the number of years dwelt therein, where you graduated from high school, where you were born, where your parents have worked, where your voter's registration is, etc. Most schools also attend to the more nebulous measure of "intent" to stay in the state. Not all institutions have the same criteria. We have had people classified as nonresidents by Ohio State, but as residents by the University of Toledo. Your presence at OWU does not give you special status with Ohio medical schools if your parents reside in another state. It is possible to change state residency, but this usually requires that you achieve independent status by working in the state for one year—a year during which you are not attending any college. *International students have extreme difficulty being admitted to American medical schools.*
- b. Most states without a public medical, dental, or veterinary school have agreements with public institutions in neighboring states; so be sure to check on this if your state schools do not offer the program you want.
- c. Public vs. Private schools - A substantial number of schools do not receive state support, and therefore are not compelled to take students from any particular geographic area. This is good in the sense that you are free to apply to more schools; it's bad in the sense that everyone else in the country has the same freedom, and so there are usually very large numbers of applications funneled into these schools. The MSAR gives data for each MD school on residency status of entering classes, and this should be helpful in selecting your

best choices. It should also be noted that in addition to being much more competitive, private schools are usually much more expensive than state schools.

Out-of-State Schools: State institutions do usually accept a very small number of out-of-staters, so if your credentials are very strong (meaning GPA + MCAT + extracurriculars), you might consider one or two in which you have a special interest. Some colleges consider non-residents only on the Early Decision Plan (see below).

Individual Differences Among Schools: Certainly some medical colleges enjoy national reputations for excellence; some names are traditionally more prestigious than others. Prestige, in this context, is based almost solely on one factor: excellence in research. If your interest is in medical research (perhaps a combined M.D./Ph.D. program), then this "prestige" ranking may be important to you.

A 2018 ranking of schools in U.S. News & World Report appears below:

### **2018 - U.S. News & World Report**

<u>Research</u>	<u>Primary Care</u>
1. Harvard	1. U. of North Carolina-Chapel Hill
2. Johns Hopkins	2. U. of California-San Francisco
3. New York University	3. U. of Washington (Seattle)
3. Stanford University	4. U. of California- Los Angeles
5. U. of California-San Francisco	5. Baylor College of Medicine
6. Mayo Clinic School of Medicine	5. Oregon Health and Science U.
6. U. of Pennsylvania	7. U. of Michigan (Ann Arbor)
8. U. of California- Los Angeles	8. U. of Pennsylvania (Philadelphia)
8. Washington U in St. Louis	9. U. of Colorado (Aurora)
10. Duke University	10. U. of California-Davis
	10. Washington U in St. Louis

For some, these lists may be helpful while for others, quite meaningless. It is also remarkable how much these lists change from year to year, and how the lists for different specialties diverge widely from those for primary care. You may wish to focus on factors such as curriculum sequences, special programs, emphasis on various specialties, the roles students play in the college, physical setting (urban or not), etc. Catalogues, school bulletins and home pages will be your best long-distance sources of information on these points, and you should read them carefully. Admissions committee members assure us that there really are differences among programs, and applicants should know what is unique or special for each place they apply.

Osteopathic Schools: The historical roots of osteopathic colleges are unique, and in the distant past, they were distinctly different from schools of allopathic medicine (those granting M.D. degrees). Modern Doctors of Osteopathic Medicine (D.O.), however, are fully trained in all aspects of medicine and can do all the same things and have all the same specialties as MDs. The people who still regard this as a sort of second-class field are mostly older individuals who are not knowledgeable about the profession.

There are some differences in philosophy, and they are differences of which the osteopaths are proud (D.O.'s have rejected offers to become a part of the American Medical Association). D.O.'s claim to bring a more holistic approach to the practice of medicine; many are more concerned with primary care than with research or specialties; they receive extra training on the skeletal and muscular systems through OMM. However, osteopathic graduates may do their residencies in allopathic programs and enter any possible specialty.

Osteopathic schools wish to attract candidates who are specifically interested in their philosophy. Many require a letter from a practicing D.O. as a part of the application, so if you have not already done so, you should attempt to make such a contact. Many of the Osteopathic Colleges are clustered in the Midwest and – as already noted – have their own centralized application service (AACOMAS).

The MCAT scores, but not so much the grades, of entering osteopathic students average somewhat lower than those of students entering allopathic programs. Osteopathic admissions officials emphasize different admissions criteria, giving more credit for variety of life experience and especially people-oriented experience.

Delaying application vs. reapplying: If your test scores are not great and your GPA is marginal, strongly consider delaying your application until these improve. Some schools look with disfavor on re-applicants. Schools view it as a sign of maturity and good judgment if your credentials are good when you apply and may well question these attributes if you apply earlier with weak credentials. In our experience waiting to apply seems to strengthen applicants' qualifications. We have not seen applicants who delay lose interest in their career choice. Apply once and do it right when you do!

The Early Acceptance Program: Qualified OWU juniors may apply to the University of Toledo's MEDstart Program, in which admitted students enroll at the medical school following graduation from OWU. The application process begins in the summer following the sophomore year; students are notified of the admissions decision by about March 1 of that year. Current minimum requirements include a combined SAT score of 1250 or an ACT composite of 29 and a college GPA at the beginning of the junior year of 3.7. The MCAT is not required for application. Students who would like additional information should contact the health professions advisor by the spring of their sophomore year.

The Early Decision Program: A small number of students may wish to apply via the Early Decision Program. This makes sense only if the following is true for you: you must have very strong credentials—strong enough that there is little question about your being admitted; and you must be absolutely sure that one specific medical school is far and away your top choice. If this is true, then talk it over with the health professions advisor. By applying early decision, you will get an early answer (Oct. 1) as to whether you have been accepted or not. This could save time and effort and worry. However, until October 1, you are not permitted to apply to any other medical schools, so if you're rejected, your application will be late to all other schools. For most people, this would be a severe disadvantage and effectively delay them a full year.



Medical Schools Abroad: For most American students, studying medicine abroad is a last resort. There are some fine foreign medical institutions whose training and facilities compare favorably with ours; there are also some institutions that exist mostly to make money from desperate Americans. (Be especially wary if an ad asks for a substantial application fee or even pre-application fee. There are some con artists whose "med schools" are only temporary post office boxes.) Be aware that American graduates of foreign schools may have a difficult time returning to this country to obtain their top residency choices, or even to practice, and do need to pass the same certification exams as students in U.S. medical schools.

Many of the strongest foreign medical schools are in northern Europe, and they admit virtually no American students (for the same reasons that our schools reject their citizens). The largest number of Americans attend schools in the Caribbean. There are an estimated 5,000-10,000 American students abroad; some have very good experiences and are satisfied, but others are disappointed.

Some schools offer something of a hybrid possibility. For example, e.g., The University of Queensland School of Medicine Ochsner Clinical School, holds classes for students the first two years in Brisbane, Australia, and then the students come to the states for two years of clinical rotations in New Orleans.

If you are considering foreign schools, you need to do an especially thorough job of accumulating information. Find out all you can about requirements, fees, transfer possibilities, success of graduates, number of American students already there, etc. The reading file has some information; you should also talk to a graduate of the system if you can, and, if at all possible, arrange to visit the school before enrolling. Our files have catalogues from many schools as well.

Myriads of factors affect the admission committee's decision for acceptance or rejection, and the AAMC table below indicates the relative importance of many of these factors.

**Table 1. Mean Importance Ratings of Academic, Experiential, and Demographic Application Data Used by Admissions Committees for making Decisions about which Applicants to Receive an Interview Invitation and Offer Acceptance (N=127)<sup>1</sup>**

Mean Importance Ratings	Academic Metrics	Experiences	Demographics <sup>2</sup>	Sources of Applicant Information
Highest Importance Ratings (>= 3.0)	<ul style="list-style-type: none"> <li>• UGPA: Cumulative science/math</li> <li>• MCAT total score</li> <li>• Upward or downward grade trend</li> <li>• UGPA: Cumulative total</li> <li>• Performance in a post-baccalaureate program</li> <li>• <i>Selectivity of undergraduate institution (Private)<sup>5</sup></i></li> </ul>	<ul style="list-style-type: none"> <li>• Healthcare experience</li> <li>• Community service/volunteer experience</li> <li>• Experience with underserved populations</li> <li>• Navigated through cultural barriers or challenges</li> <li>• Leadership experience</li> </ul>	<ul style="list-style-type: none"> <li>• <i>U.S. citizenship/permanent residency (Public)<sup>5</sup></i></li> <li>• <i>State residency (Public)<sup>5</sup></i></li> </ul>	<ul style="list-style-type: none"> <li>• Interview assessments<sup>3</sup></li> <li>• Letters of evaluation or recommendation</li> <li>• Personal statements</li> </ul>
Medium Importance Ratings (>=2.5 and <3.0)	<ul style="list-style-type: none"> <li>• On schedule to meet pre-medical coursework</li> <li>• UGPA: Cumulative non-science/math</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Research experience (Private)<sup>5</sup></i></li> <li>• Experience with populations unlike the applicant</li> <li>• Lack of access to optimal educational resources</li> <li>• Special family obligations or other circumstances</li> <li>• Work or athletic scholarship obligations while in school</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Rural or urban background (Public)<sup>5</sup></i></li> <li>• First-generation college student</li> <li>• <i>U.S. citizenship/permanent residency (Private)<sup>5</sup></i></li> <li>• Race/ethnicity</li> <li>• Socioeconomic status (SES)</li> </ul>	<ul style="list-style-type: none"> <li>• Secondary application responses<sup>4</sup></li> </ul>
Lowest Importance Ratings (<2.5)	<ul style="list-style-type: none"> <li>• Completion of challenging non-science courses</li> <li>• <i>Selectivity of undergraduate institution (Public)<sup>5</sup></i></li> </ul>	<ul style="list-style-type: none"> <li>• Experience with prejudice</li> <li>• <i>Research experience (Public)<sup>5</sup></i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Rural or urban background (Private)<sup>5</sup></i></li> <li>• Multilingual</li> <li>• Legacy</li> <li>• Gender</li> <li>• <i>State residency (Private)<sup>5</sup></i></li> </ul>	

<sup>1</sup> Importance was rated on a four-point scale ranging from 1 to 4 ("Not Important," "Somewhat Important," "Important," and "Very Important," respectively). For each variable, we computed an overall mean importance rating based on admissions officers' ratings of importance for making decisions about whom to interview and whom to accept (the mean importance rating for the interview variable is the exception to this rule because interview data were not available until applicants were invited to interview). We chose to classify variables using overall mean importance ratings because their mean importance ratings were similar for the interview and the acceptance phases. Variables are ordered by overall mean importance rating.

<sup>2</sup> The demographic variables listed here were culled from a larger list of variables that included personal attributes such as "Service Orientation," "Integrity," "Communication Skills," and "Cultural Competence," for example.

<sup>3</sup> Only available at the admissions stage where admissions committees make a decision to offer an acceptance

<sup>4</sup> Only available for institutions that use application data to select the applicants who will receive secondary applications

<sup>5</sup> Overall mean importance ratings for public and private institutions were significantly different from one another.

## FINANCIAL AID

This is a complex and constantly changing area, which this brochure cannot begin to cover fully. In general, you should realize that there is much less in the way of scholarship aid for professional schools and much more reliance on loans than is the case for undergraduate institutions.

The U.S. Armed Forces and the National Health Service Corporation both offer generous grant aid for medical school or dental school. These programs are not for everyone but are well worth investigating; your tuition and books are paid for while in school plus you earn a stipend so if you are careful in your spending, you can not only graduate debt-free but also have a bit of savings already. The payback is that you serve four years for the four years you were in school.

You should be able to obtain financial assistance—most via loans—up to the estimated cost of your program, provided that: (1) you do not have bad credit, and (2) you are a U.S. citizen or permanent resident. Here are some things to keep in mind:

- It is typical that you will receive aid as an independent individual. Nevertheless, ask your parents what, if any, assistance they are prepared to give you.
- Different schools have different financial aid requirements, policies, deadlines, etc. Become aware of these.
- When considering different schools, don't look only at costs. Some high cost schools offer more scholarship assistance. Most importantly, consider how well the academic program meets your needs.
- After you are accepted and receive your financial aid package, ask if there is any further aid if you need it.
- Ask schools what educational debt you can anticipate when you graduate. Almost all schools can tell you the average debt of their graduates, but this figure isn't necessarily very useful. It is more important to ask about the number of students who graduate with different debt levels. At a given school, some students may borrow very little, while others borrow large amounts.
- Keep a good credit rating! Credit cards can serve a useful function, but they can also create serious problems. "Use credit cards only for convenience, NEVER for credit" (H. Jackson Brown, Jr. *Life's Little Instruction Book*). Lenders usually require that prospective borrowers be "credit-ready," which means negative credit information cannot appear on your credit report. If you have an unfavorable credit report (unpaid bills, late payments, etc.), you will be denied a loan! Many schools now require students to provide a copy of their credit report. For the most part, this is used to counsel students, but at least one institution rescinded acceptances for students whose credit was so bad that they could not obtain the necessary educational financing.
- Don't bring consumer debt to health professions school. Credit card bills, car loans, etc. cannot be a part of your financial aid budget.

## RECOMMENDATIONS = LETTERS OF EVALUATION

The first phase of decision making by the medical and dental schools depends on (a) your undergraduate transcript; (b) MCAT/DAT scores; and (c) your application forms (AMCAS, AADSAS, etc.). Most of the medical and dental schools will then send you a "secondary application," which comprises a few pages of additional questions. At this point your recommendations should be on file.

For students applying to medical schools and dental schools, a committee evaluation is the normal, and the best, way to proceed. It should be initiated early in the spring semester of your year of application or your senior year (whichever comes first). You should do this even if you know your application will be delayed; the longer you wait, the less your professors will remember, so start a file if you think you will apply at any time after graduation.

A student's OWU evaluation committee helps support their application. Recommendations attempt to positively, but honestly, present a candidate's qualifications. The health professions advisor begins with a list of professors with whom the applicant has studied. The student is invited to identify those professors whom (s)he would especially like to contribute. Students are also invited to list others who know them well enough to help (residential life coordinators, advisors, committee colleagues, etc.). All these people receive a form (see copy below) to fill out electronically. Please remember that faculty and staff will begin to form impressions of you the first time they meet you.

**PRE-MEDICAL STUDENT EVALUATION FORM  
OHIO WESLEYAN UNIVERSITY**

<b>Evaluator:</b>	<b>Program Chair:</b> A. John Gatz
<b>Applicant:</b>	<b>Waiver signed:</b>
<b>Program:</b> Pre-Med/Pre-Dental	<b>Chairperson:</b> A. John Gatz
<b>Applying to:</b>	<b>Due date:</b>

**Courses applicant has taken which you taught:**

CC

**PART I: DECLINE TO RESPOND**

Do you feel that you know the applicant well enough to respond to this evaluation?

CC

**PART II: NARRATIVE COMMENTS**

**PART III**

Please rate this student by marking the boxes which best represent his/her traits and abilities (compared to other students of similar class rank and experience).

GENERAL IMPRESION	OUTSTANDING	GOOD	AVERAGE	BELOW AVERAGE	NO CHANCE TO OBSERVE
Emotional stability					
Empathy					
Reliability					
Maturity					
Cooperative attitude					
Work habits					
Communication skills					
Intellectual capacity					
Manual dexterity					
Motivation for career					

Has there been any reason to question this student's integrity?      Yes    No

Would you eventually be willing to have this applicant serve your family in the health profession position applied for?      Yes    Undecided    No

OVERALL RECOMMENDATION	Highest Recommendation	Recommend w/ Confidence	Recommend	Recommend w/ Reservations	Not Recommended
Medical school					
Dental school					

\_\_\_\_\_ Date

\_\_\_\_\_ Signature

Recommendations are accumulated in a file, and when all are in, a composite letter is written. Complete direct quotes of all the recommenders are used; the chairperson normally only edits the responses if needed grammatically. The committee letter then consists of an introductory paragraph, all the various quotes placed into a logical order with some connecting text, and ends with a paragraph or two of summation. Ratings from the "boxes" checked off by each faculty member are compiled into a summary table. Attention is drawn to special rigors—going beyond minimum requirements, honors in courses, etc. A general information sheet about grading practices at Ohio Wesleyan is included for reference so that the readers know how your particular grades compare to the average grades achieved by students at OWU.

The committee evaluation will *not* be sent before you actually apply, but will be submitted quickly enough thereafter not to delay your application because applications are not released to individual schools until they are verified (and verification of your application – primarily your grades – often takes weeks). We submit these letters electronically to AMCAS once the applicant provides the letter ID number and AAMC number. With AACOMAS, the application service emails the letter writer directly about the letter request, so the committee letter can be sent electronically without any action of the student's part besides listing the letter author(s) and email address(es).

In addition to the committee letter, it is appropriate to ask people outside the University for recommendations: an employer, a physician with whom you have worked, etc. Because they are not OWU personnel, we cannot incorporate their comments into our letter. You, however, can ask them to submit a recommendation directly to the application service. Alternatively, our Career Services office will forward these outside letters for you. The factor that determines how helpful such an outside letter would be is "how well do they know you?" If their comments would be simply character references, then forget it. They'll add no useful information and may even irritate a busy admissions official. If they write well and know you well enough to write specifically about a personal or working relationship and some of your traits as an individual, then it will probably help. Remember that D.O. programs sometimes require, and always recommend, a letter from a practicing D.O.

After your application is complete, the waiting begins. You should send additional items if they would help your candidacy (newest transcript, election to an honorary society, completion of research, etc.). If you do not hear anything for an unreasonable length of time, you may need to contact the school to see whether your file is complete, or to check on your status. Check with the health professions advisor if you have a concern.

#### Closed Vs. Open Files

In 1974, the Privacy Act became law. It prevented individuals or institutions from using students' files in ways for which they weren't intended, and it made certain that students knew how/when/why their files were used. Originally, the law declared that all students must have direct access to all their files, so it was illegal to have confidential recommendations. Immediately a problem arose. Employers, admissions personnel, and other credential evaluators believed that recommenders were more likely to be open and frank about a person if the file was confidential; therefore, many people had little faith in a recommendation to

which a student had open access. For that and related reasons, the law was amended, making it possible for students to sign a voluntary waiver exempting their recommendation files from this open access rule.

We believe that signing this waiver serves your interests best. Virtually all students have done so. In giving this advice, our intent is not to introduce undue secrecy into the process. A student can, and should, come in for an informal conference about his/her references prior to the first interview. The health professions advisor will be pleased to give you the complete list of people who contributed; to tell whether any special strengths or weaknesses were mentioned repeatedly; to say, in his/her judgment, what your general prospects for admission are; and to give you a general "feel" for the letter without violating the confidentiality understanding held by the professors who contributed to the letters.

It is possible to apply without a committee evaluation by relying instead on the recommendations of three persons of your choice. Med schools, however, may rate these as "not worth a damn" (direct quote). Usually, this option is selected only by students whose records are so weak that they are worried about being evaluated.

Pre-dental students may also use individual recommendations, since a number of dental schools do accept them. The best strategy for a pre-dent, however, is to have a committee evaluation prepared as described above; then if there are some dental schools that accept individual recommendations, the students can ask the advice of the advisor. Individual recommendations have not been useful in recent years.

Students applying to other health professional schools (e.g., optometry, physician assistant, etc.) have occasionally had committee evaluations coordinated by the pre-med chairperson although this does not seem to be the norm in these areas.

The application process is costly, so plan accordingly. Fees for the MCAT and DAT are currently in the \$300 range. The common application has a sliding scale which increases with the number of schools applied to. For example, an AMCAS application to one school currently costs over \$160, while each additional school is \$34. In addition, at the time you receive a secondary application from an individual medical school, you will be asked to pay their application fee (another \$25-\$100 per school). Fee reductions or waivers are available to students who meet certain criteria. Finally, you will need to plan to pay for travel to interviews. Students typically spend three to six thousand dollars for all expenses related to the professional school application process. Costs can be contained by staying with friends and alums and careful planning of interview times.



## THE INTERVIEW

The personal interview, the last phase of the application process, has grown in importance. Even after applicants with high GPA's, good test scores, strong recommendations, meaningful extracurriculars and well-written applications have been selected, there are still a lot of candidates. This face-to-face exchange between admissions officers and applicants often makes the impression that tips the balance in your favor.

Please keep in mind, however, that the schools view the interview through a somewhat different lens than do the applicants. Their purposes include positive public relations for the school, answering applicants' questions, recruitment, and data gathering.

Some invitations are extended as early as August or September; others are not given until April or May of the following year. Being invited by some schools is an indication that you have at least a 50:50 chance of being admitted. Other schools invite five times as many candidates as they can hope to admit. At least in the early stages, you should wait for a school to show interest in you. If you don't hear from them, however, you have nothing to lose and everything to gain by contacting them and asking about your status and providing updates on your credentials.

There are several specific, tangible things you must do prior to your first interview:

1. Schedule an informal conference with the health professions advisor in order to discuss interview questions and get a sense of your letter's tone and to find out who contributed to it. Make sure you can explain how recommendations are assembled at OWU.
2. Know all the details of your application; know your test scores, overall GPA, and science GPA (it's a good idea to take a copy of your complete application along with you).
3. Research the school thoroughly—study its catalog, home page and any other information you can find. The website [www.studentdoctor.net](http://www.studentdoctor.net) might have information about questions asked in previous interview cycles. Be able to answer questions like the following: Why this school? What can you offer them? What can they offer you?
4. Keep up with the current issues in medicine or dentistry. Of course, this is something you should be doing for your own sake anyway. You may be asked about what you think is the biggest problem in the field today; you may be asked a specific question; you may be asked nothing about current issues.

**Important:** Contact OWU's Career Services and request a practice interview session. The Career Services staff members are knowledgeable and skillful interviewers; they can simulate your approaching experience and offer specific practical hints about presenting yourself effectively. At least some of the questions they put to you will be taken from the list on the following page that we have developed from former OWU students and from Admissions counselors:

Why do you want to become a doctor/dentist? How do you know this?

What contact have you had with the profession?

Will you make a good doctor/dentist? Why?

Do you have qualities which may be a problem to you as a medical/dental student?  
As a doctor/dentist?

What do you think is the most pressing issue in medicine/dentistry today? Do you have any ideas about possible solutions?

What are your views on the high cost of medical care? How do we care for individuals who do not have medical insurance?

How do we deal with the situation where the greatest expenditure of health care dollars occurs in the last three months of a person's life? Is this money well spent?

How would you care for a terminally ill patient?

If you were having a barbecue and could invite only 3 living persons in the world, who would you ask? Why? Are there 3 people you wouldn't ask? Why?

How can you get to know a patient and make a good diagnosis in 10 minutes, the time allotted by HMO's?

Sooner or later you will care for an individual who is HIV+. How will you react to treating an individual whose disease is potentially life-threatening to you?

If you could change something about yourself, what would it be?

What do you expect to be doing 10 years from now? 20 years?

How well do you cope with emergency situations? With stress?

Are you interested in any particular field of medicine/dentistry?

What do you do in your spare time?

What factors will play a role in molding our decisions on extension of life?

Who are your state senators?

How do you feel about the situation in Afghanistan (or some other current crisis)?

Do you think making life and death decisions makes a doctor callous?

What do you think patients look for in a physician/dentist?

What is the latest book you've read? What was it about?

Give an example of something you have done that has helped someone else.

Tell me about your family.

How would you break some bad medical news to me?

What teacher/person/physician/dentist has had a big influence on you? In what way?

Have you done any research? Tell me about it.

What will you do if you are not accepted? What would you do if you never got into med/dent school?

What other schools are you applying to?

There are 1000 applicants as qualified as you are: Why should we choose you?

What would you do if you saw a peer cheating on an exam? Would you confront that person?

If you were an obstetrician/gynecologist and a woman came to you requesting an abortion, how would you handle her request? (a legal question)

What is your position on stem cell research? (This is an illegally phrased interview question; answer as if the question were phrased in a legal manner; compare with the preceding question on abortion.)

From an ethical standpoint, regardless of a physician's belief, is the responsibility first and foremost to the patient and his or her needs, or are there circumstances where a physician might legitimately refuse to offer information, refer, or treat a patient?

Several students who have been for interviews recently have commented on how much of the conversation centered on current events and ethical issues. If you haven't been keeping up with these, it might be a good idea to do so. Students have also indicated that, if you are well prepared, interviews are an opportunity to relax, be yourself, and learn about both the institutions you are visiting and the medical field. Be aware that medical students often are part of the interview team; do not take interviews with them any less seriously than those with faculty.

After you answer all the interviewer's questions in a calm, natural, honest and intelligent way, you will have the opportunity to ask anything you like. It is important to take advantage of this opportunity. Most interviewers note that the questions they get are usually superficial and not very impressive. Try this: assume you will be admitted to several different institutions...now, what are the things you'd really like to know about the place in which you'll be working and learning and the place with which you will be identified for the rest of your life. Does your list include any of the following?

What is the school's reputation based on? What are its greatest strengths?

What is the school's commitment to teaching? Does it have an office of medical education?

Are there programs for faculty teaching development? Are good teachers rewarded?

What is the size of the clinical teaching groups?

Does the school attempt to teach or instill attitudes? If so, how? If not, why not?

Are there opportunities for students to have input into educational processes and policies?

Are there resources for students (and their families) who are experiencing personal or academic difficulties? What is the drop-out rate? (Be suspicious of zero attrition.)

What types and how many affiliated residency programs are available?

What is the percentage of matched senior students? (Nationally, it was 93% for 2010, 82% to one of top three choices.)

What specialties do your graduates enter?

#### Off-the-Record Questions to Ask Med Students

How good is the teaching faculty here?

What is the general "feel" of the institution? Is it rigid and formal with special attention paid to status and rank or is it informal and easygoing? Do students call faculty by first names?

How accessible is the faculty?

Are there any common complaints, or even legal actions, by students against the school?

Are there certain specialties that are emphasized more strongly than others? Are there overt or subtle encouragements to enter these specialties?

The interviews themselves will vary in atmosphere, style, structure and length. Some schools have one interviewer who sees nearly all candidates for approximately a half-hour. A series of 6 or more short interviews (< 10 minutes) is a relatively new format used at some schools. Some interviews are broken into two- or three-hour long sessions with two or three different people. In some instances, an interviewer purposely may work "blind," that is, he/she will not have read your file, so don't be surprised if this appears to be the case; it is one interviewing technique. It does not usually happen, but you should be ready for some critical, almost belligerent questions. Some panels like to see how you react under pressure.

If you do all these things you will be ready. Of course, you can't anticipate every possible question, but that doesn't matter. Don't play roles; don't answer with what you think they want to hear. Be Honest! Be Positive! Be Yourself!

Additional questions to prepare M.D./Ph.D. candidates, who will have several rounds of interviews:

Define physician scientist.

Why do you want to pursue a M.D.-Ph.D. instead of just an M.D. degree?

Why not just earn a Ph.D. and be involved with clinically related research?

What role does a physician scientist play in the health care system?

Why do you want to take care of people (patients)?

Tell me about your research experiences. (Be prepared to answer this question for a range of people including those with little or no science background and those doing active research in your field.)

What do you like about research? What weaknesses have you discovered about yourself during your research experience? In what ways have you worked on them?

### Before You Graduate

Before you leave campus, please let the health professions advisor know what happened to your candidacy. Many medical/dental schools do not notify anyone in the undergraduate school that their applicants have been accepted. Members of the pre-medical/dental committee and the faculty are truly interested in how you fared. If you are accepted, please tell us, both as a matter of courtesy and so that we might maintain accurate records. If you are not accepted, tell us too; we may be able to help with advice, especially if you think you will reapply in the future.

### After You Graduate

If, at any time after you leave, you need the services of the health professions advisor or pre-medical committee, feel free to call or write. Inquiries are always welcome, and requests are honored at no charge (for reapplications, for example). Whether or not you need any services, drop us a card, send an email or call from time to time—we enjoy trading news with our alumni.

## RESOURCE LIST FOR HEALTH PROFESSIONS ADVISING

### Personnel on campus

Chairperson, Health Professions Advising

Zoology, Dr. John Gatz, SCSC 331, phone 740 368-3889

Other members, Pre-Medical Committee

Chemistry, Dr. Heather Grunkemeyer, SCSC 260, phone 740 368-3534

Physics, Dr. Robert Haring-Kaye, SCSC 131, phone 740 368-3778

Zoology, Dr. Tami Panhuis, SCSC 350, phone 740 368-3859

Director of Career Services, TBA, HWCC 324, phone 740 368-3152

Pre-Pharmacy Advisor - Dr. Katie Thomas, SCSC 362, phone 740 368-3526

Pre-Physical Therapy Advisor - Dr. Danielle Hamill, SCSC 308, phone 740 368-3888

Pre-Public Health Advisor – Dr. Vicki DiLillo, PHIL 052-C, phone 740 368-3816

Pre-Veterinary Medicine Advisor - Dr. Ramon Carreno, SCSC 344, phone 740 368-3893

Pre-Nursing Advisor – Ms. Marsha Tilden, Stuyvesant Hall 223, phone 740 368-3160

Student Health Services

Marsha Tilden, Stuyvesant Hall 223, phone 740 368-3160

Community Service Learning

Ms. Sally Leber, Director, HWCC 407, phone 740 368-3080

### On-line sites

Each of the main organizations offer a tremendous number of resources on their sites designed to help students understand the application process and everything leading up to it. So go to the home page for the AAMC (<https://www.aamc.org/>) and click on links for pre-medical students, or do the same for the AACOM (<https://www.aacom.org/>) to learn about DO schools, or for the ADA (<https://www.ada.org/en>) for dental schools.

Among the things available on line are resources about the particular professional schools. For MD schools, the key document is the MSAR = *Medical School Admission Requirements*. Annually updated by the AAMC (Association of American Medical Colleges), this is THE guide to allopathic medical schools. It contains general chapters on planning, applying, etc., but its greatest value is in its description of every MD-granting medical school in this country and Canada. This is an on-line resource that you need to buy access to (\$28 per year), but it tells you so much information about each school. You can learn more about it at <https://students-residents.aamc.org/applying-medical-school/applying-medical-school-process/deciding-where-apply/medical-school-admission-requirements/> or just purchase access directly at the AAMC store (<https://store.aamc.org/>). Old print versions are available in the Pre-Med corner (SE corner

of SCSC on 3<sup>rd</sup> floor). The Official Guide to Medical School Admissions is also available from these same links or you can preview a pdf of this document online.

For DO schools, the resource is not as complete, but it is free on line or you can download a pdf ([https://www.aacom.org/news-and-events/publications/2018-2019\\_cib](https://www.aacom.org/news-and-events/publications/2018-2019_cib))

Similarly, dental schools have a similar booklet and other materials available from their online site

([https://www.adea.org/GoDental/Application\\_Prep/The\\_Application\\_to\\_Dental\\_School\\_\\_ADEA\\_AADSAS.aspx](https://www.adea.org/GoDental/Application_Prep/The_Application_to_Dental_School__ADEA_AADSAS.aspx) )

Many other folks will happily sell you guides of one sort or another; caveat emptor.

### Pre-Health Corner

The SE corner of the 3<sup>rd</sup> floor of SCSC is the location for a variety of resources including material on medical schools (both allopathic and osteopathic), dental schools, and a diversity of allied health professions. Browsing here may be a good start, but likely you'd rather do most of your searching on-line.