Amherst College Guide for Premedical Students

Part I: Preparing to Apply to Medical School

[https://www.amherst.edu/mm/82412](https://www.amherst.edu/mm/82412)

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Getting Started

Preparing to enter one of the health professions involves both academic preparation and career planning, so health professions advising at Amherst involves both faculty and Loeb Center support:

- Our Health Professions Advisor and Assistant Dean of Students is **Dean Richard Aronson ’69 MD MPH**. You can reach him at (413) 542-2265 or via email at raaronson69@amherst.edu. His office is located on the first floor of College Hall in the Loeb Center for Career Exploration and Planning.

- **Prof. William Loinaz** (Physics) can advise you about academic preparation for the health professions. He also chairs the Health Professions Committee (HPC). You can reach him at (413) 542-7968 or waloinaz@amherst.edu. His office will be located in the New Science Center A022.

- Our Health Professions Specialist, **Rebecca Counter**, can be reached at (413) 542-2265 or rcounter@amherst.edu. Her office is located on the first floor of College Hall in the Loeb Center for Career Exploration and Planning.

Tips for a Successful Medical School Application

No single formula guarantees acceptance into medical school. A practicing pediatrician may need different personal and academic qualifications than a research pathologist, for example. But here are five things we encourage you to do:

- **Meet with Dean Aronson or Prof. Loinaz at least once a year.**

- **Engage enthusiastically in your whole undergraduate education.** Choose a major--science or non-science--that interests you, and pick challenging courses outside the major that also interest you. When you’re genuinely interested in learning, you will be more likely to do well in your courses. Your professors will get to know you and can provide you with strong recommendations.

- **Do well in the required premedical science courses.** Whether your major is in science or non-science, successful applicants have the ability and genuine interest in scientific understanding that shows in their work in the required premed courses. However, if you find yourself struggling with early pre-med science courses, don’t let that overwhelm or discourage you. See Dean Aronson or Prof. Loinaz. And try be more focused on enjoying the learning, in a collaborative way with your classmates, rather than worry about getting high grades. The “doing well” will follow from enjoyment and enthusiasm from learning, your hard work, and taking advantage of the many resources available.

- **Show accomplishment and leadership outside the classroom.** Get involved in a sustained way doing something worthwhile that you both love doing and are good at doing--volunteering, mastering a musical instrument and performing, doing research, or many other things. It’s often more rewarding to become deeply involved in a
couple of projects or activities outside the classroom than spreading yourself thin.

- **Have contact with doctors, health professionals, and hospitals.** During the two or three years prior to applying to medical school, you should shadow, intern, work, or volunteer with doctors and/or in hospitals, community health centers, and other settings, including public health. Clinical experience takes many forms. See Dean Aronson, Prof. Loinaz, or Rebecca Counter.

- Also, it’s important to have **non-medical community service experience**. The purpose of such involvement is to develop your empathy, listening skills, kindness, gentleness, and respect for yourself and others.
• **Consider taking a “gap year” before entering medical school.**
  Applying for admission a year or two after graduation often enhances your qualifications. The average age of all first-year medical students in the U.S. is now 24-25. If you are prepared and motivated to plunge right into the premedical science courses when you arrive at Amherst, then so much the better. But many who are later successful in being accepted don't feel so prepared or motivated at first, and take the courses when they are prepared and motivated.

**Getting Information and Advice**

There is no need for your official faculty advisor to be a member of the Health Professions Committee. Information you need about premedical matters is available from several sources on campus:

- This Pre-Health Guide
- Open advising sessions by Dean Aronson, usually just before pre-registration
- Office hours or appointments with Prof. Loinaz. Dean Aronson's drop-in office hours are 3-4:30 pm on Wednesdays for the fall 2018 semester when classes are in session.
- Loeb Center Resource Library (First floor, College Hall) for books on medical school admissions requirements, MCAT preparation materials, health-related books, etc.
- Bulletin boards located in the Loeb Center and outside the Biology office (which will be located in the New Science Center beginning in fall 2018), displaying notices, ads, articles and summer opportunities
Academic Preparation for Admission to U.S. Medical Schools

When we refer top U.S. medical schools, we refer to both allopathic and osteopathic medical schools. We encourage students to explore both the DO and MD paths to medicine.

Unlike other students at Amherst who only have to fulfill requirements for a major, if you are considering a career in medicine you must also fulfill medical school entrance requirements.

While these requirements vary by medical school, almost every medical school in the country requires at least the following:

- **Lab Sciences:**
  - a year of general chemistry (with lab)
  - a year of organic chemistry (with lab) – typically, but not always, in two consecutive semesters.
  - a year of general physics (with lab)
  - a year of biology (with lab)

- **English:** a year of college English

- **Mathematics:** If you place out of Math 111, you’ve met the calculus requirement for medical school, so you don’t have to take higher-level calculus from the pre-health perspective. An increasing number of schools require statistics (including Brown and Harvard), so we now recommend taking a statistics course. Brown and Harvard require a statistics course, and some schools require 2 semesters of college math chosen among calculus, statistics or computer science. But, in general, Math 111 or placement out of it meets the requirement, and statistics is recommended.

- **Medical schools require biochemistry (with or without lab).**

- **A few schools also require:**
  - Social or behavioral science courses, or more biology.

Information about requirements for specific medical schools can be found in the Association of American Medical Colleges publication, Medical School Admissions Requirements, updated annually.
Amherst Courses that Satisfy the Requirements

Chemistry:
- Chemistry 151 or Chemistry 155 (Chemistry 155 is a more advanced version of first semester Chemistry. You will receive your placement in Chem 151 or 155 at orientation. Friendly advice: Take Chemistry 155 if you are placed there unless there are extenuating circumstances. In that case, see the chair of the chemistry department. Also, don’t feel compelled to take chemistry 151 in the first semester. Waiting to take chemistry 151 until the spring semester, or later, gives you time to explore the curriculum, and the spring class is smaller. The key message here is: Everyone goes at their own pace for pre-health at Amherst. Don’t feel that you have to take what your peers take.
- Chemistry 161 (Requires Math 111 or being placed out of Math 111, or completion of Math 105)
- Chemistry 221 and 231 (as mentioned, this is typically a year-long sequence. Students who end up needing to take organic chemistry after sophomore year should meet with Dean Aronson or Prof. Loinaz to discuss how to arrange this in their overall academic and extra-curricular schedule, such as study abroad.

Biochemistry
- Biochemistry is required, either the lab or non-lab versions offered now at Amherst.

Physics:
- Physics 116 and 117,
- or-
- Physics 123 and 124
  (Physics 116 and 117 are specifically intended for students not majoring in Physics, and are in fact populated mostly by premedical students. Physics 123 and 124 are intended for prospective Physics majors and for students who want a more mathematically rigorous introduction to Physics. Note that Physics 124 requires Math 121.)

Biology (three options)

1. Both semesters of the Introductory Biology sequence, i.e. Biology 181 and Biology 191; OR
2. Biology 191 (required for biochemistry) and a higher level biology course with lab.

Mathematics:

Math 111, or Math 105 and 106. Either Math 111, or completion of both Math 105 and Math 106, are prerequisite for Chemistry 161 and for Physics 116 and 117. At Amherst you must take some calculus if you wish to take the other premed courses. Medical schools require one semester of introductory calculus – Math 111 – or advanced placement out of Math 111. If you’ve placed out of Math 111 or taken Math 111, as mentioned above, you’ve essentially met the Math requirement for medical school.
English:

Any two English courses. You may also take literature or writing courses offered by other departments besides English, e.g. European Studies, or the "literature in translation" courses offered by the foreign language departments, as long as the course is taught in English, involves reading literature and has a lot of writing. We recommend that at least one of the two courses you take to fulfill this requirement be a course called English, i.e. taught in the English Department. Each medical school makes the determination, so the safest option, especially if you're a first year or sophomore, is to take two English courses.

Advanced Placement/Advanced Standing

In the sciences, we recommend that whatever your standing or placement you should take at least two lab Biology courses, two lab Physics courses, and four lab Chemistry courses in college. The reason is that many medical schools state that they do not accept AP credit, or accept it only if it appears on the college transcript, and Amherst doesn't list AP credits on transcripts.

However, we should note that occasionally Amherst students have been able to apply with fewer than the above number of these courses on their transcripts. These were very strong science students who placed out of an introductory course in one discipline, e.g. Biology or Physics, in order to schedule a program with many advanced science courses in another of the three disciplines. This record of strong science achievement, plus a letter from the Health Professions Committee to the medical schools confirming the student's advanced standing, has satisfied at least some medical schools. Still, our attitude would be, "Why take a chance - take the course!"

In math, the situation is more flexible. Students from Amherst have been accepted to medical school having taken high school calculus and no math here. (As noted above, many medical schools have no math requirement or require only pre-calculus math.) The schools that don't accept AP credit in many cases are ones that don't require calculus. The Health Professions Committee can supply a letter confirming any applicant's advanced standing, based on a listing provided by the math department, or based on documented AB or BC calculus scores if the student didn't submit these to the Math Department at the time of entering Amherst. Note that four medical schools (Harvard, Duke, Johns Hopkins, and Washington University in St. Louis) require two semesters of calculus, and a few (e.g. UCSD) insist on seeing two math courses on the college transcript, no matter how advanced a student's placement upon entering college. Whatever the absolute requirements, our friendly advice is to maximize your education and impress medical schools: even if you have advanced math standing or placement, take one or two college math-related courses, which could include more calculus, computer science, and/or statistics. Statistics courses at Amherst suitable for premedical students are Math 130 and Psychology 122.

Choosing a Major

Amherst College has no premedical major. You may major in any subject, while satisfying the premed requirements. Major in a subject that interests you! Humanities or social science majors are not in any way at a disadvantage when applying to medical school, if they have done well in
the required premedical science courses. Of course if you like a particular science subject, choose it as your major. If you major in Biology, Chemistry, Physics, or Neuroscience, some of the courses you take as major requirements will also count as premed requirements. You would almost certainly major in science if you wanted to go on in medical research, e.g. to enter a combined M.D./Ph.D. program.

Friendly advice: If you decide not to major in science, consider taking a science course or two above the minimum requirements, and avoid taking science requirements in the summer. As a non-science major, you want to convince the medical schools that you can do the heavy science workload of medical school.

**Scheduling Premedical Requirements**

At Amherst there are almost as many different paths through the premedical requirements as there are premedical students. There is no single recommended major or sequence of courses. Below we present several possible schedules (there are many others), to give a few examples of the many sequences of premedical courses. The listed courses are the minimum premedical science courses; science majors would take additional science courses, as noted by "[Additional science]." One note: it is always inadvisable to take more than two lab science courses simultaneously.

Please note that these are only rough guidelines of course schedules below. You should always consult with both your academic advisor and Dean Aronson, the Health Professions Advisor, or Prof. Loinaz, as each student has individual academic needs.

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(1) A student with strong high school preparation in the sciences and math who wishes to major in Biology or Neuroscience, might take the following sequence:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>FALL SEMESTER</th>
<th>SPRING SEMESTER</th>
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<tbody>
<tr>
<td>FIRST YEAR</td>
<td>Chemistry 155</td>
<td>Chemistry 161,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Biology 191</td>
</tr>
<tr>
<td>SOPHOMORE</td>
<td>Physics 116,</td>
<td>Physics 117,</td>
</tr>
<tr>
<td></td>
<td>Biology 181 or</td>
<td>[Additional</td>
</tr>
<tr>
<td></td>
<td>other biology course</td>
<td>science]</td>
</tr>
<tr>
<td>JUNIOR</td>
<td>Chemistry 221,</td>
<td>Chemistry 231,</td>
</tr>
<tr>
<td></td>
<td>[Additional science]</td>
<td>[Additional</td>
</tr>
<tr>
<td></td>
<td></td>
<td>science]</td>
</tr>
<tr>
<td>SENIOR</td>
<td>[Biochemistry]</td>
<td>[Additional</td>
</tr>
<tr>
<td></td>
<td></td>
<td>science]</td>
</tr>
</tbody>
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(2) A student with strong high school preparation in the sciences and math who wishes to major in Chemistry would change the order of Organic Chemistry and Physics, i.e. take Organic
Chemistry in sophomore year and Physics in junior year; this order is also possible for students majoring in Biology or Neuroscience.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>FALL SEMESTER</th>
<th>SPRING SEMESTER</th>
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<tbody>
<tr>
<td>FIRST YEAR</td>
<td>Math 111, Chemistry 151 or 155</td>
<td>Chemistry 161</td>
</tr>
<tr>
<td>SOPHOMORE</td>
<td>Chemistry 221, Biology 181 or 191</td>
<td>Chemistry 231, Biology 191 [or additional science]</td>
</tr>
<tr>
<td>JUNIOR</td>
<td>Physics 116, Biology 181 [or additional science]</td>
<td>Physics 117, [Biochemistry]</td>
</tr>
<tr>
<td>SENIOR</td>
<td>[Additional science]</td>
<td>[Additional science]</td>
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</table>

(3) A student who is advised to take Math 105 and 106 rather than Math 111, and who wishes to major in Biology, Neuroscience, or Chemistry:

<table>
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<tr>
<th>YEAR</th>
<th>FALL SEMESTER</th>
<th>SPRING SEMESTER</th>
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<tbody>
<tr>
<td>FIRST YEAR</td>
<td>Math 105</td>
<td>Math 106, Chemistry 151</td>
</tr>
<tr>
<td>SOPHOMORE</td>
<td>Chemistry 161, Biology 181 or 191</td>
<td>Bio 191 [or other Bio or Physics]</td>
</tr>
<tr>
<td>JUNIOR</td>
<td>Chemistry 221, Physics 117</td>
<td>Chemistry 231 [Additional science]</td>
</tr>
<tr>
<td>SENIOR</td>
<td>[Biochemistry]</td>
<td>[Additional science]</td>
</tr>
</tbody>
</table>

Taking a semester or year of study abroad is possible for students like those whose schedules are shown above, but it requires planning ahead, especially for science majors. Consult with faculty in the science department you are majoring in for how to do it, and Dean Aronson/Prof. Loinaz.

Besides study abroad, other options that affect planning are (1) majoring in a non-science subject while also completing premedical requirements (not problematic, but requires planning), (2) applying at the end of senior year or later, so premedical requirements can be spread out over the full 4 years - nearly 90% of Amherst applicants apply at the end of senior year or later you apply to medical school 14 months before matriculation), rather than at the end of junior year for admission to medical school immediately after graduation; and (3) completing some but not all of the premedical requirements at Amherst, and finishing the remainder after graduation, either at a "post-bac" program or via continuing education courses taken in the evenings while working at a full-time job. Here are three out of the many possible schedules consistent with one or more of these options.
(4) A student who begins with Math 111, majors in a non-science subject, and goes on study abroad during the spring semester of junior year:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>FALL SEMESTER</th>
<th>SPRING SEMESTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST YEAR</td>
<td>Math 111, Chemistry 151 or 155</td>
<td>Chemistry 161, Biology 191</td>
</tr>
<tr>
<td>SOPHOMORE</td>
<td>Chemistry 221, Bio 181 or 191</td>
<td>Chemistry 231, Physics 116</td>
</tr>
<tr>
<td>JUNIOR</td>
<td>Physics 117 [Additional science]</td>
<td>[Semester abroad]</td>
</tr>
<tr>
<td>SENIOR</td>
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(5) A student who begins with Math 105, majors in a non-science subject, studies abroad in spring of junior year, and completes requirements by the end of senior year:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>FALL SEMESTER</th>
<th>SPRING SEMESTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST YEAR</td>
<td>Math 105</td>
<td>Math 106, Chemistry 151</td>
</tr>
<tr>
<td>SOPHOMORE</td>
<td>Chemistry 161, Biology 181</td>
<td>Physics 116, Bio 191 [Or additional science]</td>
</tr>
<tr>
<td>JUNIOR</td>
<td>Physics 117, Biology 191</td>
<td>[Semester abroad]</td>
</tr>
<tr>
<td>SENIOR</td>
<td>Chemistry 221</td>
<td>Chemistry 231</td>
</tr>
</tbody>
</table>

(6) A student who either was hesitant about plunging into sciences right away, or who developed premedical or other pre-health interests only near the end of the 4 years at Amherst. This student would take the remaining four premed requirements after graduation:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>FALL SEMESTER</th>
<th>SPRING SEMESTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST YEAR</td>
<td>(Math 111)</td>
<td>--</td>
</tr>
<tr>
<td>SOPHOMORE</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>JUNIOR</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>SENIOR</td>
<td>Chemistry 151, Chemistry 161,</td>
<td></td>
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</tbody>
</table>

Information is subject to change. Last updated in August 2018.
"Post-bac" programs

These programs allow students to complete premed requirements after graduation. They are offered by many institutions; here is the AAMC's list. You would enroll for one or two years, depending on prior science courses taken. These programs are intensive and often expensive, but our graduates who have gone to good quality programs have often been accepted into medical school. It is also possible to fulfill premed requirements after graduation by enrolling in accredited continuing education courses.

Some additional scheduling information:

- Chemistry 151 in the second semester has a smaller enrollment.
- Biology 181 and Chemistry 155 and 221 are taught only in the Fall. Biology 181 is being taught in the fall for the first time in 2018, and biology 191 is now being offered in both semesters instead of just the fall.
- Chemistry 151 and Chemistry 161 and Physics 116 and 117, are normally taught both semesters.

Important:

Don’t rush through the pre-medical science coursework. Go at your own pace. Don’t take more than one lab course in your first semester. Don’t take two labs in the same semester until you’re ready and confident. Take lots of non-STEM courses, and think of ways to develop your empathy, listening skills, respect, kindness, and holistic understanding of health. Find role models. Realize that health professions means more than pre-med at Amherst, and that we encourage and welcome all students interested in any aspect of a health career. Please meet with Dean Aronson, for any interest in health you may have, and it’s perfectly fine not to have decided yet. Everyone is unique and goes at their own pace in this exciting journey.
Thinking ahead to the MCAT Exam

You will take the Medical College Admission Test as part of the medical school application process. The test is given throughout the year on various dates. It is required to take the test by early May of the year you're applying. Exceptions need to be requested. Taking the exam later than early May in the year you're applying means that medical schools will get the results only after they begin reading applications, which puts you at a disadvantage. You must set aside lots of time to prepare for the MCAT, which requires specific science knowledge, not all of which you will have covered in your Amherst science courses. If you are not able to prepare for the MCAT in time to take the test in June of the summer after your junior year, or July at the absolute latest, we strongly suggest not applying until a year later.

Questions, Problems, and Alternatives

"May I take premed requirements in summer school in order to lighten my Amherst load, or to catch up if I decided late to go premed, or to improve my grades?"

Medical schools in principle will accept summer science courses taken at any accredited institution in fulfillment of their requirements, and they will let you count the grades in those courses when you figure your "science GPA" for your applications. However, remember that the medical schools have to decide to accept not just the courses you have taken, but also you as an applicant. Although many Amherst students have been accepted to medical schools with summer courses on their records, in general we believe it does not help students' chances. Remember that much of medical school training is science-based, and at most medical schools it comes in a more concentrated form than you will experience even while taking two lab courses simultaneously at Amherst. You must show medical schools that you can do a heavy load of science and do it well, and taking summer courses may raise questions in that area. Taking a summer course or two shouldn't cause a problem for students with a substantial science load anyway, e.g. a science major, or a student taking lots of science to complete requirements before going away on a study abroad program. Also see Factors affecting the probability of acceptance for categories that may favor admission in spite of a less competitive record.

Regarding the effect of summer courses on a student's Amherst record, as distinct from the effect on medical school admissions: students do not receive credit towards a degree from Amherst for a summer course, unless the course was taken because the student failed an Amherst course. However, subject to approval from the department concerned, a summer course may fulfill a prerequisite requirement for an Amherst course; e.g. taking a semester of Intro. Physics with lab, if it has the content of Physics 116, will allow the student later to take Amherst's Physics 117 if the Physics department approves the course. Note that approval of prerequisites for Amherst courses is up to the Amherst science department involved, not the Health Professions Advisor or the Health Professions Committee.
"May I take a Five College course during the regular semester to fulfill a premed requirement?"

No, you may not get credit for a Five College course that is similar or identical to an Amherst course, unless you can demonstrate to the Dean of the Faculty that an unavoidable scheduling conflict prevents you from taking the course at Amherst. The reason for this rule is that the courses are listed on the Amherst transcript, and the grade in the course counts in figuring your Amherst GPA. It may indeed be possible to find an easier science course at another institution in the Valley. However, taking a course elsewhere for that reason is not the purpose of Five College cooperation, and, since it appears on the Amherst transcript, doing so may be unfair to other students who take the sometimes more rigorous Amherst course.

"Is it all right to take premed requirements Pass/Fail?"

No. Many medical schools will not consider any pass/fail courses as fulfilling premedical requirements. Even in cases where there is no absolute prohibition, it is very inadvisable to take premed requirements pass/fail. A "D" counts as a "Pass" in a pass/fail course, and a "D" is probably what skeptical admissions committee members will assume you deserved in the course.

"Under what circumstances should I consider freshman drop?"

The purpose of freshman drop is not to allow first-year students to take three courses instead of four. Rather, the purpose is to give a break to students who have done everything within their power to succeed in a course but who find, after trying hard, that they are not able to do satisfactory work. As the Amherst Catalog puts it, "The Dean of New Students, in consultation with the instructor and advisor, will decide on the basis of the student's educational needs" whether to allow a course to be dropped. It is not an "educational need", for example, to drop a course simply because it is your potentially lowest grade of the semester. From the point of view of admission to medical school, low grades do not help, but at the same time no single grade, however low, will eliminate your prospects. It is reasonable for you to be concerned if you think you are headed for a grade of, say, C- or below. Even in that case, you need to consider carefully whether to petition to drop the course, when there may be plenty of time left in the semester to improve your work. See your instructor and faculty advisor about options, which may include taking better advantage of the help available in office hours, dropping some extracurricular activities, using the Quantitative Center's resources, and getting a tutor.

A freshman drop request should be made during the sixth through eighth weeks of the semester. Whether a professor will support a first-year student's request to drop a course depends on whether the student has made good efforts in the course from the beginning, and on the timeliness of the request. If a student does not make use of resources as described above, or if the student delays making the request until after the eighth week in the semester, a professor is justified in declining to support dropping the course.
"Will my chances of acceptance be improved if I double major?"

Not that we can detect. It's great to have one or more areas of academic concentration outside your major, but to us the only legitimate occasion to double major is if you really want to take all the courses in the second major, plus any other requirements such as senior seminars and comprehensives. Professors aren't happy to hear excuses about why students can't complete requirements for their major as scheduled because of alleged conflicts with requirements for a second major. Medical school admissions committees will be looking at the overall quality of your academic work. While it is good to have significant strength outside the major, we see no evidence that medical schools are impressed by the addition of a second major per se.

"Is it OK to 'take time off' after graduation before going to medical school, either because I started late, or because I want a break from academics at that point?"

Definitely, we encourage it! It can be a very positive step on your way to becoming a physician. In fact, the median age for first-year medical students is now nearly 25! Of course, what you do should be science- or medicine- or service- related, like working in a research lab or a hospital, teaching, Peace Corps or other service work, or perhaps even traveling, with some medical care contact in the places you visit. The added experience can enhance your qualifications and show your commitment to a career in medicine. (By the way, "taking time off" isn't how we would describe doing experiments until the wee hours of the morning in a research lab, teaching high school, or working in a hospital. Parents might be more supportive of "working before going to medical school.")

One caution: note the very long lead time required to apply to medical school - you must begin the process a full 2 years before you intend to begin medical school. If you have graduated and are away from Amherst, you won't receive notices about this - it's up to you to begin the process on time!

“If I struggle with pre-med science coursework early at Amherst, should I drop pre-med?”

Absolutely not! Many Amherst students do struggle with these courses, and a semester or two early on of lower grades is not a reason in itself to give up the pre-med path. In fact, some of our distinguished Amherst alumni health professionals had a rough start. It’s important to meet with Dean Aronson or Prof. Loinaz to discuss this.

Join the pre-health list serve. Contact Rebecca Counter to subscribe to it.
Study Abroad

A semester or a year studying abroad can be a very rewarding experience. Students interested in medical careers will find it much more feasible to study abroad while they are undergraduates than after they have started their medical education.

While studying abroad, most students do not take science courses. This is because it is desirable and logical to be studying the culture of the country you are visiting, particularly if you are learning a foreign language. It is also difficult to find courses at foreign universities that fulfill exact science requirements for U. S. medical schools, and medical school admission committees usually want to see the 8 minimum premedical lab science requirements on a transcript from a U.S. college or university.

As a consequence, studying abroad and fulfilling premedical requirements before graduation will require some careful planning. (If you defer science courses until after graduation and take a "post-bac" program, there should be no difficulty in going abroad for a semester or even a full year.)

A semester abroad can be arranged either during sophomore or junior year.

1. **Study abroad during sophomore year:** Most students who choose to study abroad have done so during their junior year, but that's not the only possibility. If your foreign language skills are well developed early in your undergraduate career, you can gain admission to most study abroad programs as a sophomore. Study abroad programs usually require as a minimum the equivalent of a fourth-semester course in the foreign language concerned. Many students who have studied a foreign language in high school will complete this requirement by the end of their first year at Amherst, or by the end of first semester sophomore year, which qualifies them for admission to most study abroad programs for the following semester.

   This solution has the advantage of giving time to prepare for MCAT exams in the late spring of the junior year. If you choose this option, it is recommended that you study abroad during the spring semester of sophomore year. Consult faculty on the Health Professions Committee early in your academic career to determine the best sequence of science courses to follow prior to going abroad. If you have had foreign language training in high school, studying abroad during sophomore year may well be the best way to integrate study abroad into your premedical program.

2. **Study abroad during junior year:** This can work well if you apply to medical school at the end of senior year, rather than at the end of junior year. You could take the MCAT in the late summer or fall after you return from study abroad, or any time during the senior year up to June. As noted throughout this Guide, you are not at a disadvantage if you enter medical school a year after graduation!

   It is also possible, though probably more difficult, to go abroad in the Fall of junior year and still apply to medical school at the end of that year, taking the MCAT in the spring of...
junior year as recommended for those applying to enter medical school right after graduation. However, you will need to "double up" on lab courses every semester and may have to take a summer course to finish your premed science requirements prior to taking the MCAT exam. (Note the warning about taking summer courses above.)

The Mount Sinai FlexMed and Early Rochester Assurance Programs

Mount Sinai Medical School has a FlexMed program which allows college sophomores in any major to apply for early assurance of acceptance to their medical school. Once accepted, you are free to pursue your studies unencumbered by the traditional science requirements and the MCAT. This program is an expansion of their longstanding Humanities and Medicine Early Assurance and Science and Medicine (SciMed) programs. If you plan to apply, see Dean Aronson.

Applications are submitted in fall of sophomore year, and anyone accepted is automatically admitted to Mount Sinai Medical School after graduating from Amherst and fulfilling requirements.

In addition, Amherst is one of only a few select schools who participate in the University of Rochester’s Early Assurance program for sophomores. The Rochester program is specifically meant for a very small number of prescreened students who have already reached, by the middle of sophomore year, a certain level of readiness and experience for medical school. Applications to Rochester early assurance require a health professions committee letter and have to go through the Health professions Office. See Dean Aronson.

Life Beyond the Classroom

“Should premedical students participate in medically-related activities?”

Yes! Such activities are absolutely necessary both for you to find out about medicine and to show your commitment to medicine as a career. "Hands-on" interaction with patients and medical personnel gained by working or volunteering in a hospital is preferable to "shadowing" physicians, although the latter is also useful. Even students with high grades and good recommendations sometimes are not admitted to medical school if they have had no contact with doctors and hospitals in the two or three years before applying. (This perhaps does not apply to M.D./Ph.D. applicants with very strong research experience.)

Many Amherst pre-health students are interested in participating in Amherst College Emergency Medical Service (ACEMS) and perhaps becoming certified as an EMT, and that's great. Be aware, however, that many medical schools want applicants to have had contact specifically with doctors and hospitals. By its very nature, ACEMS leaves off where doctors and hospitals begin. ACEMS can supplement, but not substitute for, contact with doctors and hospitals, at least in the eyes of some admissions committees.
**Extracurricular activities**

Applicants' accomplishments and leadership outside the classroom are of great interest to medical school admissions committees. What's important is your sustained commitment to one or a few worthwhile activities, such as music, volunteer work, sports, student newspaper, political activity, or other pursuits. Participate in these activities for the genuine interest you have in them, not primarily to impress medical schools.

**January and summer internships**

Internships in hospitals, laboratories, clinics, or other health-related organizations and in community service work can help you clarify and confirm your career decisions, provide a broad-based, humanistic, and scientific foundation for medical school, and show your commitment once you have decided to enter the health professions. See the Loeb Center web site under internships, and/or contact Victoria Wilson, the Director of Summer Internships at the Loeb Center. Also, discuss your summer plans with Dean Aronson. Again, don’t feel that you have to do a summer internship, especially after the first year.

**Summer jobs**

The summer is an excellent time to get involved in medicine, service, and biomedical science. Programs at many universities invite undergraduates to participate in summer lab research; check our list of these programs, and note that application deadlines typically start in January. Also check out the multitude of paid and unpaid internship possibilities in the Loeb Center. Amherst also has summer opportunities, e.g. through the Howard Hughes foundation grant--watch for announcements at the beginning of the second semester.

**Factors Affecting the Probability of Acceptance**

Good grades, solid MCAT scores, strong recommendations, and a successful interview are important for a successful medical school application. However, there is no such thing as a check list for medical school, and we aim at Amherst to create a collaborative pre-health community in which students, faculty, and staff support our pre-health students in multiple ways; and they support each other.

We would like you to be aware also of other factors, over which you have little or no control, that affect your chances:

1. **Race or ethnicity**: If you are a member of one of the four groups currently designated as underrepresented in medicine, you are more likely to be accepted than a non-minority student with the same other characteristics (grades, MCAT scores, etc.). Commonly, this refers to applicants who are from one of the following groups: “Blacks, Mexican-Americans, Native Americans (that is, American Indians, Alaska Natives, and Native Hawaiians), and mainland Puerto Ricans.”
2. **State of residence:** While your state of residence won't make a difference in applying to private medical schools (Yale, Columbia, Duke, etc.), it matters a lot in applying to state-supported (or "public") schools. All state schools heavily favor state residents, as they are mandated by the state to allocate a certain percentage of seats to in-state residents. Many public schools also have a mission to serve the residents of their state, and so prefer students with a commitment to the state. Thus it is "good" to be from a state with a medical school and a smaller population, like North Dakota. Admission to state schools with larger populations, such as Massachusetts or California, is often more difficult. If you are from one of the six states without a state allopathic medical school, there may be special interstate agreements to provide opportunities for those residents. For example, both Jefferson’s Sidney Kimmel Medical College and the Philadelphia College of Osteopathic Medicine (PCOM) reserve a certain number of admissions places each year for Delaware residents. The University of Washington has a commitment to treat residents of Wyoming, Alaska, Montana, and Idaho the same way as residents of Washington itself.

3. **Having a physician in the family:** Based on a review of records and fates of Amherst premeds, it appears that your chances are improved if a parent is a doctor. Perhaps the rationale is that medical schools can be more confident that an applicant has a realistic, rather than romanticized, idea of what it is like to be a physician if the applicant has had direct contact with medical practice in the family. Your chances seem to be improved at all medical schools, but most improved at the medical school which your physician parent attended, if it was a medical school in the U.S. It is also favorable to have a parent or other close relative on the faculty of a medical school. Whether any of this is fair or not, you might as well be aware of what the situation is.

**Planning and Scheduling your Medical School Application**

During the year before you intend to apply to medical school, a full 2 years before you intend to begin your medical studies, you need to take steps such as registering with the Health Professions Specialist, asking for letters of recommendation, and scheduling to take the MCAT exam. This would be in the fall of your junior year if you intend to apply for admission at the youngest possible age, i.e. to enter medical school during the fall after graduation from Amherst.

However, a recurring theme in this guide is that you do not have to apply at such an early age, and indeed it may be to your great advantage to apply later—you will have graduated, perhaps with honors, at the time you apply, and you will have more medically relevant experience also.

One piece of advice about the timing of the application process through the Health Professions Committee: do not register with the Health Professions Specialist in the fall and begin the process unless you actually plan to apply during the coming year, for admission a year and a half later. It might seem like a good idea to begin the process, collect letters of recommendation, and get the Committee letter written even if you don't intend to apply until a year later, e.g. seniors planning to take two years off before entering medical school. However, this means that faculty recommendations will be dated before—perhaps long before—the medical schools are reviewing applications, and that lowers the impact of recommendations.
Also, we do not have the resources to go through the process of preparing Committee materials more than once for each applicant. Once we prepare materials, all we can do if you don't apply during that cycle is to provide minor factual updating when you eventually do apply. So you will get more timely and appropriate support for your application by registering with the Health Professions Coordinator and collecting faculty recommendations during the year before you actually intend to apply. Even if you are a senior about to graduate, don't worry that faculty will forget you! You can mention to professors that you plan to contact them for a recommendation sometime in the future, rather than trying to get recommendations in advance, hoping to use them later.

Finally, we advise against applying with the intention of requesting a year's deferment after being accepted. Applying with the intention to defer is not the best plan for several reasons. First, you will almost certainly be a stronger applicant in terms of grades, honors, and experience at the end of the additional year, so it's better to apply later rather than sooner. Second, some medical schools don't permit deferments, or have specific criteria for allowing them which you may or may not meet. Third, most schools don't allow deferment for applicants admitted from their waiting list, and it often happens that applicants are admitted to their top choice (i.e. most selective) school from a waiting list.

The next section of the guide (Part II) covers the process of applying to medical school.

Afterward

Originally written by Liz Hartzell, Karen Wood, and Sophia Chang, all members of the class of 1981 and now practicing physicians, this guide has been revised and updated over the years. The latest revision is August 2018.

Included are "hard facts", such as the courses you must take in order to be considered for admission to medical school, plus "friendly advice" that you may choose whether or not to follow, such as what to do during your summers. We hope that this booklet will give you some of the information and support you need to engage productively in your Amherst education, while also preparing successfully for admission to medical school and for a career in medicine.

FROM THE PREFACE TO THE ORIGINAL 1981 EDITION:
Amherst College as an institution prides itself in providing a liberal arts education. As a result, there is no acknowledgement of pre-professionalism, i.e., no pre-med major... Consequently, we have compiled a booklet which we feel outlines information necessary for and helpful to an Amherst College student considering medicine.