

INFORMATION FOR
PRE-MEDICAL
PRE-DENTAL
PRE-VETERINARY
STUDENTS
AT MERRIMACK COLLEGE

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INTRODUCTION

Preparing for a successful professional career is a juggling act. There are three balls that you must keep up in the air in order to have a successful professional school application. Drop one and your application will fail. The three balls are 1. High GPA; 2. Exemplary record of extra curricular, service, research and clinical activities; and a high enough score on the required entrance exam. All of these areas are equally important. Being successful in only two out of three is the same as failing in all three.

Throughout their academic careers, students are aware of their academic standing and extracurricular dossier. The remaining unknown is how they will score on the entrance exam. Therefore, the Health Professions Advisory Committee requires students to have received their scores before they make the final decision to apply and before they solicit letters of recommendation and request a Committee Letter. This strategy saves both time and money for the applicant and the committee, and allows the applicant time to develop strategies to improve test scores, if necessary, before filing an application.

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To prepare to apply to a medical, veterinary or dental school you must...

- 1. Take the required courses.**
- 2. Get more than just a little clinical, service and research experience.**
- 3. Read as much as you can, all the time.**
- 4. Take the required entrance exam *before* your make your final decision to apply.**
- 5. Solicit letters of recommendation and complete an application.**
- 6. Follow all the timelines and deadlines for Merrimack College in this handout!**

Also included are....

- 7. Some Very Helpful Links**

1. Take the required courses

The Pre-Professional Curriculum

The Pre-Med, Pre-Dent and Pre-Vet curricula can be categorized as liberal arts curricula that also include specific courses in biology, chemistry, physics and math to prepare students for their applications to those professional schools. No specific major is required to apply to any of these schools, however, many students do major in biology because of the overlap in courses and interest.

Contrary to a widely held belief, 50% of the matriculants into medical school are non-science majors who have completed all the course requirements for admission, as well as a major in a social science or humanities.

What ever your major, entering a professional medical school requires the demonstration of a high level of academic achievement, emotional maturity and dedicated service.

For a successful application, students should strive for a minimum of:

- 33 on MCAT or equivalent DAT and GRE scores. This will require test taking skill preparation (*not necessarily a paid course*) in addition to reviewing the facts for the physical science and biological science portions of the test.
- GPA > 3.7
- several extracurricular activities at which you excel
- extensive volunteer work, laboratory research, internship and/or job related experience
- excellent reading and writing skills
- completion of specific course requirements for schools to which you apply

The average age of matriculants into medical school is now between 23 and 25. Dental and veterinary schools are similar. That means fewer and fewer students are accepted directly after graduation from their undergraduate institution. You should factor this into your plans. There are many possible paths to follow. After graduation, you should do something that enhances your life experience in a meaningful way, if not your experience in a biomedical or clinical setting.

This information and more can be accessed through the Merrimack College Pre-Med page:

http://www.merrimack.edu/academics/science_engineering/PreMed/Pages/default.aspx

**Required & Recommended Courses:
Check with individual programs for specific requirements:**

**Pre-Med
(MD, DO degrees)**

Universally required:

**Intro Bio I and II
General Chem I and II
Organic Chem I and II
Physics I and II (algebra or
calc based)
Two semesters of English
composition**

**Commonly strongly
recommended:**

**Biochemistry I
Genetics
Statistics
Calc I
Sociology and/or
Psychology**

**Pre-Dent
(DMD, DDS degrees)**

**Required Prerequisite Courses
for the Boston University
School of Dentistry:**

Biology One-and-one-half
years with lab (12 semester
hours). such as basic biology,
genetics, embryology,
molecular biology, cell biology

Biochemistry

Chemistry Two years with lab,
general and organic chemistry.
(16 semester hours).

Physics One year with lab (8
semester hours)

English One year or the
equivalent at the college level,
even if the applicant received
advanced placement credit or
was exempted from English
courses on entry into college

Mathematics One year (6
semester hours). A basic
understanding of calculus is
needed

Social Sciences and Humanities
Three years (18 semester hours)

**Pre-Vet
(DVM degrees)**

**Schools vary in their
requirements. What
follows is an all purpose
pre-vet curriculum:**

General Biology with
laboratory (two semesters)

Biochemistry (one
semester)

**Comparative Physiology or
Zoology** with laboratory
Genetics (one semester)
Microbiology with
laboratory

General Chemistry with
laboratory (two semesters)

Organic Chemistry with
laboratory (two semesters)

Physics (two semesters)

Mathematics (two
semesters), calculus and
statistics

English (two semesters)

**Social and Behavioral
Sciences** (two semesters)

Humanities and Fine Arts
(two semesters)

Sample of a Pre-Med Plan

ONGOING

- ***read all the time***
- ***get an MCAT (DAT, GRE) prep book and look at the sample exams on line early on in your academic career***
- ***investigate specific medical schools***
- ***get really good grades***
- ***get lots of clinical experience***
- ***distinguish yourself (research, sports, music, service)***
- ***check in with the HPA (Health Professions Advisor) periodically***

ACADEMICS

Freshman Year

Gen Chem 1+2
Intro Bio 1+2
Calc 1
Freshman English

Sophomore Year

Organic Chem 1+2
BioChem
Genetics
Philosophy
Writing

Junior Year

Physics 1+2
Comparative Physiology/ Cell
Biology/ Molecular
Biology/Microbiology (pre-vet)
Sociology
Fine Arts/ Humanities

Senior Year

Research and Seminar
Comparative Physiology/ Cell
Biology/ Molecular
Biology/Microbiology (pre-vet)
Fine Arts/ Humanities

TEST

Take MCAT (DAT, GRE) and ***then*** decide whether to apply to professional school, depending on score.

POST GRADUATE

Get some meaningful life experience to grow as a mature person. This will strengthen your application.

Contact the Merrimack College Health Professions Advisor to secure a committee letter, which is an endorsement of your application by the Health Professions Advisory Committee. Please note, this is a **requirement for application** to medical school.

2. Get more than just a little clinical, service and research experience.

This aspect of your dossier is a chance to distinguish your application. Although all the good applicants will have research experience, clinical experience, service experience and extra curricular experience, the set of activities in which you become involved will be unique to you. The important things to keep in mind is that these experiences both reflect your personality and shape your character. They mold your character and philosophy of life. They provide fodder for your personal statements and for letters of recommendation that others will write for you. Choose well and invest your time and energy into them. You will be investing in yourself.

3. Read as much as you can, all the time.

(Suggested reading lists are included.)

Professional schools seek out articulate, erudite, worldly individuals. If this does not describe you, you can become these things, but you must put in the effort. You must turn off the TV, iPod, PSP, YouTube and limit texting and cell phone use. You must read, read, read all the time. Embrace all opportunities to write.

4. Take the required entrance exam before your make your final decision to apply.

MCAT, DAT, GRE: The Make or Break Tests

There are three balls that you must keep up in the air in order to have a successful professional school application. Drop one and your application will fail. The three balls are 1. high GPA; 2. exemplary record of extra curricular, service, research and clinical activities; and 3. a high enough score on the required entrance exam. All of these areas are equally important. Being successful in only two out of three is the same as failing in all three.

That is why the Health Professions Advisory Committee requires students to have received their entrance exam scores before they make the final decision to solicit letters of recommendation and request a Committee Letter and apply to professional school. This strategy saves all parties valuable time and money!

Sample MCAT Scores

Very Good:

MCAT Test Date	VR	PS	WS	BS	Total	Special Accommodations?	Format
18-JUL-2008	10	14	Q	11	35Q	No	C

Safe:

MCAT Test Date	VR	PS	WS	BS	Total	Special Accommodations?	Format
22-MAY-2009	11	09	Q	13	33Q	No	C

Bad:

MCAT Test Date	VR	PS	WS	BS	Total	Special Accommodations?	Format
14-AUG-2009	06	05	M	08	19M	No	C
22-MAY-2009	02	06	N	06	14N	No	C
02-MAY-2009	03	06	M	04	13M	No	C
13-SEP-2008	05	05	Q	06	16Q	No	C
10-JUL-2008	04	03	O	01	08O	No	C

5. Solicit letters of recommendation and complete an application.

GUIDELINES FOR OBTAINING A HPA COMMITTEE LETTER FOR MEDICAL/DENTAL/VETERINARY SCHOOL APPLICATIONS

All medical schools conferring and M. D. (Medical Doctor) and most conferring a D.O. (Doctor of Osteopathic Medicine) currently require a letter of evaluation from the Health Professions Advisory Committee. It is an option for dental schools, and not a practice for veterinary schools. To process a committee letter for an application, materials must be submitted according to the TIMELINE (see previous page and below). Preparation of good committee letters is a **lengthy process** involving careful crafting of the letter by the HPA, editing by the other members of the HPAC, re-writing the letter and final HPAC approval. All this must take place before faculty disperse for the summer. Merrimack College's deadline for submission of these materials is much later than most other college pre-med programs, but it is a strict deadline designed to make your application the most competitive it can be. **PLEASE NOTE: Taking the MCAT, after the April deadline means that you will be applying the following year.**

ALL OF THE FOLLOWING MATERIALS MUST BE SUBMITTED TO THE HPA BY MAY 1:

- a. List of all recommenders who are sending letters
- b. **Confidential** letters of recommendation to be sent directly to HPA. It is the responsibility of the APPLICANT to see that these letters have been sent and received by the HPA on time.
- c. Names and addresses of all schools to which the letters will be sent
- d. Personal statement
- e. Resume
- f. AACOMAS or AMCAS ID#, AADSAS Matching form
- g. AMCAS electronic letter form for the HPAC letter submission

When you are requesting letters of recommendation, you should ask the potential recommender if they can write you a **good** letter. They should respond with integrity, either yes or no. If they say no, they cannot write a good letter, thank them for their candor and seek out another referee.

Many referees will ask what should be included in a letter. Some links that provide excellent guidelines are included in the last page of this guide.

6. Follow all the timelines and deadlines for Merrimack College in this handout!

Sample Medical School Application Timeline

(adapted for Merrimack College from *The College of the Holy Cross*)

Students wishing to apply to medical (and most health professional) schools must begin the application process almost two years before intended matriculation. That means, if you wish to enter medical school in the fall of 2014, you must have started the process in the fall of 2012.

Medical and dental school applicants must assemble three main credentials: (1) the application form (administered through [AMCAS](#), [AACOMAS](#), or [AADSAS](#)), (2) the MCAT or DAT score, and (3) the health professions committee recommendation (optional for dental schools). **To get full consideration from the largest pool of medical schools, the MCAT and DAT must be taken by early April one calendar year before intended matriculation.** (Most medical schools fill slots on a rolling basis, starting late summer based on applications submitted as early as June 1.) That means, if you wish to enter medical school in the fall of 2014, you must take the MCAT by April 2013. Other health professions follow a similar time line.

Beginning two years before proposed date of entering medical/dental school...

- **Early in fall semester two years before intended matriculation:** Information meeting held to outline the application process. Alumni and those off campus need to contact the HPA* to activate credentials file, obtain materials, and get added to e-mail list.
- **Late fall-early spring:** students should finish autobiographical statement and other materials.
- **Late fall through mid-spring:** study for and [take MCAT](#). (The [MCAT](#) is administered via computer at specific testing sites and is offered several times a year.)
- **AFTER GETTING THE MCAT SCORE, students make a decision whether to continue the application process.**
- **Immediately after making the decision to go ahead:** Solicit confidential letters of recommendation to be sent to the HPA. See HPA for guidelines. **Make sure to notify your advisor of your application decision so she or he can write your letter**
- **Mid-to-late spring:** Students meet with the HPA to go over necessary materials for the committee letter.
- **May:** Complete application materials for on-line application (through [AMCAS](#) for MD schools; the [AACOMAS](#) application for DO schools may not be ready until late June).

* HPA – Health Professions Advisor, HPAC – Health Professions Advisory Committee

- **May 1st:** All letters of reference, the personal statement, transcript and resume must be delivered to HPA. ***HPAC letters are take considerable time to prepare ad must be completed before faculty are contractually finished for the 10 month academic year on July 1.***
- **Early June:** Send in application as close to June 1 as possible. Apply as early as possible; most schools have "rolling admissions" which means they start considering (and accepting) applicants as applications are submitted. (Note: DO applications usually open July 1.)
- **Early June:** Bring addressed envelopes with separate stamp to HPA so recommendation letters can be mailed out only for schools not subscribing to the AACAS letter service (or follow other directions given by the HPA).
- **July - August:** Receive and complete secondary application materials from schools.
- **Mid-Late summer:** AMCAS letter service distributes HPAC letters to medical schools who have requested them. For those schools not subscribing to the AMCAS letter service, the HPA mails committee letters to medical schools on a rolling basis, after students notify the HPA that they have received requests for secondary applications
- **Early fall-following spring:** interview at medical schools; hear results; accept one school. If you are certain you will not go to a school in which you are accepted, let school know so your place can go to another student.
- **Following fall:** enter medical school.

PLEASE NOTE: Many students follow the national trend and wait a year or more after graduation before applying to professional school. Committee letters will be written for up to three years after graduation. After that, applicants will be required to submit individual letters of recommendation directly.

7. SOME VERY HELPFUL LINKS

The Merrimack College HPA is a member of the North East Advisors to the Health Professions (NEAHAP), and the National Association of the Advisors to the Health Professions.

The NEAHAP web site is chock full of links to professional societies of all kind of health fields. Below are the most appropriate links for pre-med, dent and vet students:

<http://www.neaahp.org/links.html>

<i>Allied Health</i>	<i>Health, Communication</i>	<i>Public Health</i>
<i>Allopathic Medicine</i>	<i>& Administration</i>	<i>Science and Engineering</i>
<i>Alternative Medicine</i>	<i>Mental and Social Health</i>	<i>Sports Medicine</i>
<i>Chiropractic Medicine</i>	<i>Nursing</i>	<i>Technical Instrumentation</i>
<i>Clinical Laboratory</i>	<i>Nutrition and Dietetics</i>	<i>Therapy and</i>
<i>Services</i>	<i>Optometry</i>	<i>Rehabilitation</i>
<i>Counseling</i>	<i>Osteopathic Medicine</i>	<i>Veterinary Medicine</i>
<i>Creative Arts Therapy</i>	<i>Pharmacy</i>	<i>Vision Care</i>
<i>Genetics</i>	<i>Physician Assistant</i>	
	<i>Podiatry</i>	

...and testing agency home pages:

<http://www.neaahp.org/testinformation.html>

Pre-med organization of the American Medical School Association:

<http://www.amsa.org/AMSA/Homepage.aspx>

Study Skills Management

<http://www.ucc.vt.edu/stdysk/stdyhlp.html>

Letters of reference guides to forward to your recommenders

http://www.naahp.org/resources_writingrec.htm

<http://www.accepted.com/medical/LettersRec.aspx>

<http://www.ivyleagueadmission.com/medreftips.html>