

◦ EARLY GUIDELINES FOR PROSPECTIVE HEALTH PROFESSIONALS ◦

DON'T PANIC!

The most important thing that you can do early in your career at Bowdoin is to take classes that interest you. You do NOT have to take 3 laboratory classes a semester to get into medical school - nor should you! In fact, you are at Bowdoin to get an excellent, and liberal, education. And this is what graduate and professional schools will be looking for. Sample broadly from the curriculum; you may be surprised by what engages you! At the same time, you will want to keep in mind the courses you will need to complete before matriculation into professional school.

Students take many paths to careers in the health professions - yes, you can get into medical school with a BA in English from Bowdoin! However, all the choices you make (major, study away, etc.) will affect the path you take. You should consult your faculty advisors and the Director of Health Professions Advising as you plan your education. Your plan is likely to be longer than the next four years - in fact only about 15% of students matriculate into medical immediately after they graduate! **The majority students choose not matriculate until 2 years or more after graduation. This is true everywhere, not just at Bowdoin, and in fact health professions schools appreciate more mature applicants with greater life experiences.**

The following guidelines specifically address the preparation for and application to schools of allopathic and osteopathic medicine, but much of the information is equally relevant to dental, veterinary, optometry, and podiatry schools, as well as to physician assistant, nursing, physical therapy, and other allied health programs. The veterinary programs and a number of the health care fields have academic prerequisites beyond those outlined in this handout, however. Be sure to work closely with the health professions advisor to obtain the resources and information pertinent to your interests and goals.

FIRST-YEAR COURSE SELECTION

In designing your schedule, work closely with your pre-major academic advisor and the health professions advisor to plan the most appropriate program to meet your individual needs. It is advisable to begin addressing the health professions requirements early during your college career, but it is a mistake to take courses for which you are not ready. Enroll in classes for which you have both the necessary academic preparation and the intellectual maturity. There are instances in which it is advisable to wait a year to take a particular course rather than stumble through it without the appropriate foundation. You also need to make plans to fulfill the College

distribution and division requirements. No two students' course schedules are likely to be exactly the same.

In addition to discussing your schedule with your academic advisor, it may be helpful to ask questions of upper-class students who have taken the courses you're considering. Don't hesitate to talk to the health professions advisor as well, if you have questions about course requirements for any health care field. Try to design a semester that will be challenging without being overwhelming - in other words, one that will allow you to enjoy learning.

LOOKING AHEAD TO YOUR MAJOR

Plan to concentrate in the academic field that is of greatest interest to you - hopefully one for which you have a passion. Bowdoin does not have a specific program for students who are interested in the health professions; it is possible to major in **any** discipline and successfully prepare for a career in health care. Your ability to gain admission to a professional school will be affected **not** by your choice of major, but instead, by your academic performance and intellectual engagement. We encourage you to use your undergraduate years to explore different areas of the curriculum. Admissions committees are seeking candidates who will be successful in the life-long learning required of physicians, not only in the natural sciences but also in the social and behavioral sciences, and in the humanities as well. If you decide to concentrate in the natural sciences, be sure to fit in at least two or three non-science courses each year. Work with your advisors to insure that your college transcript will reflect your interests, potential, and commitment to learning.

ACADEMIC PREREQUISITES

Each medical school lists its specific requirements for admission in the directory "Medical School Admission Requirements" (MSAR), published annually by the Association of American Medical Colleges. There are comparable publications for osteopathic medical schools, dental schools, schools of veterinary medicine, and other health professions programs; these resources are available for review in the Office of Health Professions Advising. Information pertaining to the various health care fields and specific schools can also be found through the "Health Field Links" page on the health professions website:

www.bowdoin.edu/healthprofessions

The following list is applicable for the majority of medical and dental schools, and is the foundation for veterinary and other health care programs that have additional requirements, as well. *Please be aware that AP credits may not be used to fulfill the science prerequisites.*

Biology: Two semesters with lab at a level higher than Biology 109 (109); some additional biology is recommended. Most students interested in the health professions complete Biology 1109 (109) or the 1101-1102 (101-102) sequence by the end of sophomore year. Although only two college biology courses with lab are required for many health care fields, we strongly recommend that you take some additional biology. Prospective biology, biochemistry and neuroscience majors need to be sure to follow the recommendations of those departments. Most students find it more helpful to take introductory chemistry before taking introductory biology, rather than the other way around.

General or inorganic chemistry: Two semesters with lab. Any two of the following may be used to fulfill this requirement: Chemistry 1091, 1092, 1101 (101), 1102 (102), 1109 (109), 2100 (210), 2400 (240), 2510 (251). Based upon the results of the placement test, the Chemistry Department will indicate in which course it is most appropriate for you to start. Please note that Chemistry 1101 is offered only in the fall. If you are advised to start with this course and are giving thought to studying abroad during junior year, you should consider taking Chemistry 1101 first semester. Otherwise, you will be unable to complete Organic Chemistry until senior year.

Organic Chemistry: Two semesters with lab, Chemistry 2250 and 2260 (225 and 226). Prospective science majors and students who plan to study abroad typically complete this sequence during their sophomore year. Students should take the organic sequence in a single academic year.

Biochemistry: One semester Biology 2423 (223) or 2124 (224) or 2432 (232) or Chemistry 2310 or 2320 (232). Although only certain schools require biochemistry, most strongly recommend it. We encourage all students to take at least one semester, and Biochemistry will be included on the MCAT beginning in 2015.

Physics: Two semesters with lab, usually Physics 1130 and 1140 (103 and 104); students who place out of 1130 may take 1140 and 2130 (223).

If you are recommended for Physics 1093 (093), consider fitting it in during your first semester. (It doesn't have a lab.) This course is offered only in the fall and provides a helpful foundation for 1130. Physics 1130 and 1140 are calculus-based, so must be taken after completion of or concurrently with Math 1600 (161) and 1700 (171), respectively, unless you have placed out of these math courses.

Mathematics: Although relatively few medical schools have a specific math requirement, most value competence in calculus and statistics. Be sure to follow the recommendation of the Math Department. As indicated above, our introductory physics sequence requires Math 1600 (161) and 1700 (171) or their equivalent. Math 1050 (050) Quantitative Reasoning, may be a good starting point for those who need to strengthen their quantitative skills. Students might also consider Math 2108 (204) / Bio 1174 (174)

Biomathematics. Students should take at least one statistics course: Math 1200 (155) Statistics, Math 1300 (165) Biostatistics, or Psyc 2520 (252) Data Analysis. Statistics will be included on the MCAT beginning in 2015.

English: Two semesters are required by most health professions programs. Any First-Year Seminar, regardless of the department through which it is taught, will take the place of one semester of English. Although in some instances schools will accept another writing-intensive course in lieu of an English class (with a letter from the professor), we urge you to take at least one course offered through the English Department (English 1070 or any course over 1100 are appropriate, students should seek advice from the English department before enrolling in English 1060).

Humanities, Social and Behavioral Sciences:

Most health professions programs prefer that applicants have some background in these areas, even if there is no specific requirement. However, the new version of the MCAT beginning in 2015 will include questions derived from psychology and sociology. There are several upper-level psychology and sociology that are particularly interesting for pre-health students, so you may wish to take the introductory courses in anthropology, psychology or sociology early in your Bowdoin career. UNE COM requires a year of psychology.

OFF-CAMPUS STUDY

It is absolutely possible to be pre-health and to study abroad. As for any student, you will need to work out a schedule that will allow you to complete the requirements of your major. And you should also keep in mind that study away may impact the timing of your application to a health professions program. Generally, it is best to complete your pre-health prerequisites here at Bowdoin, or at least at an American college or university. Medical schools will not, in fact, accept transcripts issued directly from foreign universities. If you are away for all or part of junior year, you will be well advised to return to campus and complete senior year before applying, which means that you will not matriculate in med/dental/vet school until at least a year after graduating from college. Furthermore, for obvious reasons, it is a mistake to plan to study away during the semester you need to take the qualifying exam (MCAT/DAT/GRE) or the semester when you hope to be interviewing at a professional school. Be sure to discuss your options with your academic advisor and the health professions advisor. Keep in mind, too, that it is not always possible to enroll in the courses you would like to take, so it is important to build some flexibility into your schedule.

PLANNING YOUR BOWDOIN YEARS

Design a schedule that works best for **you**. While the requirements for medical and dental school are relatively standard, and a list of prerequisites for other health care fields is readily available, the route to completing these courses is in no way prescribed. While one student may complete all of the prerequisites through courses taken here at Bowdoin, a roommate may choose to focus on a non-science area of interest during the undergraduate years and complete the science prerequisites in a post-baccalaureate program. Someone else

may decide to pursue a combination of these options, possibly even including a summer course or two, if necessary. Some health care fields actually require courses not taught at Bowdoin, such as human anatomy and human physiology.

OPTIONS GALORE

Just as there are many careers paths in health care from which to choose, there are many viable timelines for pursuing them. There is no reason why your preparation must be completed in the three or four years following high school. A few choose to apply at the end of junior year, thereby entering a health professions program right after college. Most elect to take longer to prepare, or may decide to delay applying simply because they desire to take time away from school before stepping into a rigorous graduate-level program. You should plan to apply when - and not before - you can make the most compelling application possible, and when you feel truly ready to make the commitment to further study. In recent years, less than a quarter of the Bowdoin candidates for health professions programs have applied to matriculate in the fall immediately following graduation. Many end up stronger applicants after completing senior year or after a year or two of additional work experience, community service, or academic achievement after Bowdoin.

BEYOND ACADEMICS

Developing the interpersonal, social and intellectual attributes critical to success in the health professions may well be the most challenging aspect of the preparation process. In addition to proving yourself academically, take advantage of the opportunities for campus leadership, internships, community service, and other rewarding life experience. While developing your plan for preparing for a future in health care, be certain to address the following questions:

How will you demonstrate to the admissions committees a passion for lifelong learning across disciplines? How will you convince the admissions committees you have made a well-informed decision to spend the rest of your life caring for others, especially those who are ill, injured or in crisis? How will you demonstrate your ability to work effectively and collaboratively as a member of a health care team? How will you demonstrate an understanding of the power of cultural and social issues in the maintenance of health and the prevention of disease?

APPLICATION TIMELINE

The application process for health professions programs tends to be a long one. Application to medical school -- both allopathic and osteopathic -- is made approximately fifteen months before matriculation, and there are earlier campus deadlines for the submission of preliminary materials. Anyone who hopes to begin medical school in the fall of 2017 should plan to apply in June of 2016. The basic timeline is as follows: begin preparing your Bowdoin committee packet in January 2016, take the MCAT in the spring of the application year (or earlier); complete the AMCAS application (for M.D. programs) or the AACOMAS application (for D.O. programs) in June of the application year; interview in the fall and winter, and start medical school the following fall. The timeline for dental and

veterinary school is comparable. Other health care programs have somewhat later application schedules.

The majority of applicants from Bowdoin have chosen to matriculate in health professions programs from one to four years after graduation rather than go on immediately after graduation. It is impossible to overemphasize the importance of waiting to apply until you are prepared to make a convincing case for admission. When the time comes, consider your alternatives carefully, and reflect thoughtfully and as objectively as possible on your own credentials. In the meantime, prepare to take full advantage of the exciting and challenging opportunities ahead of you! Remember to explore all your options, within and beyond the classroom and laboratory.

CAMPUS RESOURCES

In addition to your advisor and dean, there are many campus resources available to you. For example, if you need assistance with academics, be sure to keep the Center for Learning and Teaching in mind (www.bowdoin.edu/center-learning-teaching). If you would like to engage in community service, the McKeen Center for the Common Good has lots of great ideas and leads. You might start by checking out the information on their website at www.bowdoin.edu/mckeen-center. For internship information, assistance with resumes and cover letters, or help assessing and exploring your interests and options both inside and outside of health care, the Career Planning Center is the place to go. Their homepage is at www.bowdoin.edu/cpc. Should you be interested in the possibility of studying abroad or at another college or university within the United States, stop by the Office of Off-Campus Study (www.bowdoin.edu/ocs).

HEALTH PROFESSIONS ADVISING

To supplement the assistance provided by your pre-major academic advisor, the health professions advisor will be glad to meet with you to discuss your plans and to answer any questions you may have. Please check in so that you'll be added to the distribution list to receive email notices of upcoming programs and events.

Seth J. Ramus, PhD
Director of Health Professions Advising
116 Moulton Union
email: sramus@bowdoin.edu
phone: ext. 3624 (or 207-725-3624)

To schedule an appointment, please use the button on the left side of the health professions website:

www.bowdoin.edu/healthprofessions

Core Competencies for Entering Medical Students

Thinking & Reasoning Competencies

Critical Thinking: Uses logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.

Quantitative Reasoning: Applies quantitative reasoning and appropriate mathematics to describe or explain phenomena in the natural world.

Scientific Inquiry: Applies knowledge of the scientific process to integrate and synthesize information, solve problems and formulate research questions and hypotheses; is facile in the language of the sciences and uses it to participate in the discourse of science and explain how scientific knowledge is discovered and validated.

Written Communication: Effectively conveying information to others using written words and sentences.

Intrapersonal Competencies

Ethical Responsibility to Self and Others: Behaves in an honest and ethical manner; cultivates personal and academic integrity; adheres to ethical principles and follows rules and procedures; resists peer pressure to engage in unethical behavior and encourages others to behave in honest and ethical ways; develops and demonstrates ethical and moral reasoning.

Reliability and Dependability: Consistently fulfills obligations in a timely and satisfactory manner; takes responsibility for personal actions and performance.

Resilience and Adaptability: Demonstrates tolerance of stressful or changing environments or situations and adapts effectively to them; is persistent, even under difficult situations; recovers from setbacks.

Capacity for Improvement: Sets goals for continuous improvement and for learning new concepts and skills; engages in reflective practice for improvement; solicits and responds appropriately to feedback.

Science Competencies

Living Systems: Applies knowledge and skill in the natural sciences to solve problems related to molecular and macro systems including biomolecules, molecules, cells, and organs.

Human Behavior: Applies knowledge of the self, others, and social systems to solve problems related to the psychological, socio-cultural, and biological factors that influence health and well-being.

Interpersonal Competencies

Service Orientation: Demonstrates a desire to help others and sensitivity to others' needs and feelings; demonstrates a desire to alleviate others' distress; recognizes and acts on his/her responsibilities to society, locally, nationally, and globally.

Social Skills: Demonstrates awareness of others' needs, goals, feelings, and the ways social and behavioral cues affect peoples' interactions and behaviors; adjusts behaviors appropriately in response to these cues; and treats others with respect.

Cultural Competence: Demonstrates knowledge of social and cultural factors that affect interactions and behaviors; shows an appreciation and respect for multiple dimensions of diversity; recognizes and acts on the obligation to inform one's own judgment; engages diverse and competing perspectives as a resource for learning, citizenship, and work; recognizes and appropriately addresses bias in themselves and others; interacts effectively with people from diverse backgrounds.

Teamwork: Works collaboratively with others to achieve shared goals; shares information & knowledge with others and provides feedback; puts team goals ahead of individual goals.

Oral Communication: Effectively conveys information to others using spoken words and sentences; listens effectively; recognizes potential communication barriers and adjusts approach or clarifies information as needed.