

PREMEDICAL HANDBOOK

NORTHERN MICHIGAN UNIVERSITY  
MARQUETTE, MICHIGAN

Twenty Second Edition

NORTHERN MICHIGAN UNIVERSITY  
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HANDBOOK  
FOR  
PREMEDICAL STUDENTS

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Twenty Second Edition

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by

Northern Michigan University

Printed at Northern Michigan University at Marquette

## ACKNOWLEDGMENTS

This is the twenty first edition of the Premedical Handbook. The handbook was originally written by premedical students under the direction of Drs. Robert Wagner and Jacob Vinocur, past premedical advisors. Special recognition is given to Norman Chapin (1979), Paul Hartleben (1979), and Kurt Lehmann (1977) who wrote the first edition. Recent editions have been prepared by Dr. Roger Barry, premedical advisor from 1983 to 1992, Dr. Warren VandeBerg, premedical advisor from 1993 to 1998, and Dr. David Lucas, premedical advisor from 1998 to the present.

## INTRODUCTION

This handbook was written as a guide for individuals who are considering a career as a physician. An attempt has been made to provide information about many aspects of this career, especially the

educational requirements. Included is advice regarding high school preparation, required or recommended college courses, preparing for the Medical College Admission Test, and how and where to apply for admission to medical school.

**SOURCES OF INFORMATION** All premedical students should consult the latest edition of the book *Medical School Admission Requirements (MSAR)* published by the Association of American Medical Colleges (AAMC). This publication contains a wealth of information on premedical preparation and medical school admission. There are chapters on premedical planning, deciding where to apply, how to apply, the selection process, financing medical education, information for minorities, and a brief description of every M.D. granting medical school in the United States and Canada. This book lists the address, phone number, and web pages of the admissions office at each medical school, from which specific information about the school may be obtained. The MSAR is revised annually and the new edition is available in April of each year. A copy of the latest edition is available in the Northern Michigan University Physics Department Office (Room 2517 West Science Building); a personal copy may be ordered on-line at [aamc.org](http://aamc.org).

The American Association of Colleges of Osteopathic Medicine (AACOM) publishes the *Osteopathic Medical College Information Book* each year. The book contains information on each osteopathic (D.O. granting) medical school. The address, phone number, and web page of each admissions office are given, providing a source of specific information for students. A copy of this book is located in the Northern Michigan University Physics Department (2517 West Science Building) or from:

American Association of Colleges  
of Osteopathic Medicine (AACOM)  
5550 Friendship Boulevard, Suite 310  
Chevy Chase, MD 20815-7231  
Telephone: (301) 968-4100  
<http://www.aacom.org/>

The American Association of Colleges of Osteopathic Medicine offers other publications concerning osteopathic medicine and a listing may be obtained upon request to the above address. Further information about osteopathic medicine is available from the American Osteopathic Hospital Association at the following address:

American Osteopathic Association  
142 E. Ontario Street  
Chicago, IL 60611  
Toll-free 1-800-621-1773  
<http://www.osteopathic.org/>

## COMPETITIVE MEDICAL SCHOOL APPLICANTS

Each medical school accepts a specific number of applicants for its entering class. The most competitive applicants to medical school will do the following:

1. Obtain a bachelor's degree.
2. Take college science courses which develop problem solving abilities and provide the basic science knowledge that is needed to do well on the Medical College Admission Test (MCAT) and to succeed in medical school.
3. Maintain a full credit load each semester and receive a high grade point average (minimum of about 3.5).
4. Score in a high percentile on the Medical College Admission Test.
5. Attain awareness and knowledge concerning a career in medicine from volunteer work, discussions with physicians, and other experiences in the medical field.
6. Obtain strong letters of recommendation and a supportive letter of evaluation from the Premedical Advisory Board.

**ABILITY AND MOTIVATION** Successful premedical students must have strong academic abilities, enjoy the challenge of learning, and maintain a high degree of motivation. Development of interpersonal skills, leadership qualities, and the ability to use good judgement are important for anyone who wants to become a physician.

**LEARN ABOUT MEDICINE AS A CAREER** Premedical students should try to learn as much as possible about the career of a physician. Speak with practicing physicians, volunteer to work in a health area such as a hospital or nursing home, and read about medicine and medical practice. It is important to know what a medical career requires and what it has to offer.

Good sources of information on current issues in medicine and medical education include the weekly American Medical News published by the American Medical Association (also available on-line through the AMA home page <<http://www.ama-assn.org>>); and The New Physician, the monthly publication of the American Medical Student Association.

**CHANGES IN MEDICINE** The practice of medicine continues to undergo rapid and significant change. These changes have been the result of various factors including:

1. Increasing complexity of medicine as the result of application of recent discoveries in biochemistry, cell biology, and molecular biology to the diagnosis, treatment, and prevention of diseases.
2. Increased emphasis on patient education and preventive medicine.
3. Changes in management and reimbursement for health care, and development of multi-institutional systems for health care delivery.

4. Demographic changes which include the aging population, more single parents, more women in the work force, adolescent health concerns, drug abuse, and recently identified diseases such as AIDS; all of these factors create cultural and social dilemmas which influence the practice of medicine.
5. Changes in the distribution and supply of physicians and medical specialties.
6. Ethical questions that arise, such as the role of genetic engineering, care for the terminally ill, abortion, and cost versus benefit when deciding on medical treatment.

**WHY BECOME A PHYSICIAN?** Education to become a licensed and practicing physician requires four years of premedical study in an undergraduate college, four years in medical school, and at least three years of postgraduate medical education. Monetary costs for this education can be great, and many physicians have substantial debt by the time they complete their education.

However, the practice of medicine can be very rewarding. There is the opportunity to serve people in a unique way, to practice a highly respected profession, and to earn an above average income.

Possibly the greatest satisfaction medicine offers the practicing physician is the ability to apply acquired skills and knowledge to the goal of helping people; being a physician offers an opportunity to pursue a profession that has the potential to provide great personal fulfillment.

Medicine is a rapidly changing field and the physician must continually learn from other physicians, from reading current periodicals, and from patients. To many physicians, learning new information, techniques, and methods provides continuous stimulation.

Physicians are also teachers, educating patients regarding their care. In addition, many physicians unselfishly devote time to the training of medical students and residents, and gain satisfaction in using their knowledge in the education of others.

**SELF EXAMINATION** Individuals considering a medical career should determine if they have the temperament, character, stamina, talents, and desire to expend the necessary energy, time, and money to attain the goal of becoming a practicing physician. Would this career provide personal fulfillment for a successful life's endeavor?

## HIGH SCHOOL PREPARATION

**COURSES** High school students who plan to pursue a premedical curriculum in college should take college preparatory courses and develop a strong academic background. These courses should include four years of English and four years of mathematics, and at least one year each of biology, chemistry, and physics. Electives in social sciences, humanities, and a foreign language should be chosen to provide a broad general education.

**COMMUNICATION AND LEADERSHIP** Students need to develop good communication and leadership skills; therefore, activities and courses in high school that help cultivate these skills are recommended.

**WELL-ROUNDED STUDENT** Medical schools prefer to admit individuals who have a variety



of interests and experience. In high school there are opportunities to take classes in many areas and to participate in a wide range of extracurricular activities, including medically related volunteer work. High school students are encouraged to utilize these opportunities.

**ACADEMIC ABILITIES (ACT SCORES)** A data review of premedical students at Northern Michigan University who succeed in gaining admission to medical school reveals that most of these students had a composite ACT score of 25 or higher. Rarely were students successful in premedicine if they scored lower on the ACT. Also, successful premedical students have displayed strong mathematics and problem solving abilities.

**ADVANCED PLACEMENT** Most colleges and universities, including Northern Michigan University, offer advanced placement to entering students who pass special examinations. Refer to the Northern Michigan University Undergraduate Bulletin for a list of advance placement subjects. Students who have a strong background in one or more of these subjects should consider taking an advanced placement test in that area. A high school counselor may be of assistance in considering the Advanced Placement Program (APP-CEEB) or College Level Examination Program (CLEP) for advanced placement. However, some medical schools do not accept AP courses for entrance requirements. Students should check with the medical schools they are interested in to see if AP courses are acceptable substitutes for introductory biology, chemistry, etc.

## UNDERGRADUATE PREPARATION

In the undergraduate collegiate years students should discover and develop their unique talents and abilities, determine what provides real pleasure, and discover their own sense of identity. College is a voyage of discovery of yourself, of others, and of the world; it is an inestimable privilege to attend a university, whether or not you become a physician.

**MEDICAL SCHOOL ADMISSION REQUIREMENTS** In recent years many medical schools have modified their traditional course requirements for admission in an attempt to encourage students to take more courses outside the sciences. Medical educators and others believe that physicians need to be well-rounded in their interests and experiences. Premedical students are encouraged to take as many classes outside the traditional sciences as possible during their undergraduate years.

However, students preparing to apply for admission into medical school need to be aware that a firm background in the basic sciences of biology, chemistry, and physics is still required. Also, strong problem solving abilities are necessary in order to do well on the Medical College Admission Test, as well as for the medical school classes taken during the first two years.

Nearly all medical schools require one year of inorganic chemistry, one year of organic chemistry, and one year of physics, all with laboratories. Mathematics is required to support these courses. At least one year of biology is required, although advanced courses are often recommended as well. Nearly all medical schools require one year of English composition along with courses in the social sciences and psychology. A few medical schools require one year of calculus. The prerequisite courses specific to each medical school can be found in the most recent edition of Medical School Admission Requirements. Premedical students should determine the specific admission requirements for the medical schools to which they plan to apply. It is convenient that all medical schools have similar requirements with the possible exception of mathematics (college algebra vs calculus) and an occasionally required course in social science, psychology, or biochemistry (which is very useful to take in any case).

**RECOMMENDED PREMEDICAL COURSES** Based on our experience and the recommendations of our graduates who have gone to medical school, completion of the following science courses is suggested as appropriate preparation for medical school:

Introductory Biology	BI 111
Intro to Cell and Molecular	BI 218 (requires BI111, CH111, CH112)
General Chemistry	CH 111 and CH 112
Organic Chemistry	CH 321 and CH 322 (requires CH111, CH112)
Physics	PH 220 and PH 221 (requires one year of calculus) or PH 201 and PH 202 (requires college algebra)
Human Anatomy/Physiology	BI 201 and BI 202
Genetics	BI 312
Cell Biology	BI 313
General Microbiology	BI 303
Introductory Biochemistry	CH 450
(Human Histology, BI 426; Intermediary Metabolism, CH 452 Embryology, BI321; Immunology, BI 405)	⊗options before entering medical school.

A biology/physiology major or a biochemistry major would take many if not all of these courses (as well as others, including BI112) within their major. An English major normally wouldn't take any, but as a premed, would be required to take the first five sequences (intro biology through physics) and as many of the others as possible, with anatomy, physiology, genetics, and biochemistry highly recommended. More upper level biology is also recommended if possible.

Also, most medical schools consider it desirable for applicants to take a variety of courses outside of the sciences, such as a foreign language, philosophy, art, theater, business, and speech. The choice is up to the student and should be based on their interests. If a student has time in their schedule, they might consider taking a course in the Clinical Lab Sciences area such as Medical Laboratory Testing (CLS120) which will give the prospective physician an idea of the usefulness and interpretation of a patient's lab tests, or in Obtaining a Blood Specimen (CLS100) something that most medical schools typically have students learn how to do. In addition, many premedical students will enroll in the HL245/246 sequence, Basic Emergency Medical Technician Training.

**GRADE POINT AVERAGE** Competitive applicants to medical school need to maintain a minimum grade point average of about 3.5 both in their science courses and overall. Seldom is an applicant accepted with a GPA below 3.0, and in most of these instances other factors such as very good MCAT scores or other exceptional achievement compensates for the low GPA. The mean GPA of all students admitted to U. S. medical schools for the fall of 2007 was 3.56.

Medical schools are concerned with the academic ability of applicants because of the extensive volume of knowledge to be learned and the need for physicians to apply their knowledge using problem solving skills. Physicians also need to continue to learn throughout their lives as new discoveries are made and the practice of medicine changes.

**PERSONAL QUALITIES** In addition to academic qualifications, medical school admission committees consider other factors when screening applicants. These may include demonstration of interpersonal qualities, past experiences, and interests. Such factors are more general but may have a significant influence on admission decisions. Medical schools expect applicants to have a good understanding of the field of medicine, and to have obtained experiences which have enabled

them to confirm that they are well suited for a career as a physician. The Physician Preceptorship Program at Northern Michigan University, which is available to junior and senior premedical students, is one opportunity to obtain exposure to medical practice, but students are encouraged to seek additional experiences as well. It is recommended that students observe with physicians on a regular basis as much as possible during their undergraduate career, if not during their time at school, then at least during their summer break. It is useful to maintain a log book of these experiences in order to better facilitate the future completion of the medical school application which occurs one year before the student graduates from their university. Applicants must confirm that they are comfortable working with people with various physical attributes, illnesses, and mental or physical disabilities, and that they excel in situations in which they are responsible for the care of others. This characteristic of the successful student must be continuously strengthened through volunteer (or paid) work during their entire undergraduate career and a record of these experiences should also be logged.

**STUDENT LOANS** Tuition, fees, living expenses, and other necessary expenditures in medical school are significant. It is recommended that students borrow only what is absolutely necessary for their undergraduate education because it is likely that financial loans will be needed in order to pay for medical school.

### UNDERGRADUATE COURSE SCHEDULE

The following course schedule is fairly typical for the freshmen and sophomore years of premedical education. The schedule will vary somewhat, depending on high school background and the ability and interests of each student, although it is to the advantage of the freshman student to take both biology and chemistry during their freshman year. If a student has credit for AP courses such as biology, other courses will be substituted. The schedule shown below is only an example. Student's specific schedules, which will depend on their choice of major, or if they decide to be undeclared for a while, will be established during their registration period which would be during orientation for new freshmen.

Premedical students should take a full credit load, which is 15-18 credits each semester. An incoming freshmen might decide to drop a course during the first week if they feel the load is too heavy, but will hopefully adapt to the college environment quickly and then schedule full credit loads for subsequent semesters.

	Semester 1		Semester 2		
Composition	EN 111	4	Liberal Studies elective		4
Biology	BI 111	4	Biology	201	3
Chemistry	CH 111	5	Chemistry	CH 112	5
Mathematics		4 or 5	Mathematics		4
		Credits 17 or 18	Credits	17	
	Semester 3		Semester 4		
Liberal Studies elective		4	Biology	BI 218	4
Chemistry	CH 321	4	Chemistry	CH 322	4
Physics		5	Physics		5
Composition	EN 211	4	Psychology	PY 100S	4
		Credits 17	Credits	17	

Students may schedule PH 220 and 221 if they've had calculus, or PH 201 and 202 if they've had

college algebra (MA104) or above. Students are not required to take calculus based physics even if they've had calculus, although it is recommended they do so if it fits their schedule. Both courses include a required laboratory component.

The class schedule for the third and fourth year depends on the choice of major. Students should decide on a major no later than their third semester in college.

#### ADDITIONAL RECOMMENDATIONS

Approximately 11 out of 122 M.D. granting medical schools require calculus (another 25 recommend it), but it is useful, for students with the appropriate mathematics background, because it is part of a rigorous program in the sciences which helps develop problem solving abilities. Courses in computing and in statistics are recommended by some medical schools and some medical schools require a college level mathematics course on the entering student's transcript, even if the student placed above the minimum requirement (e.g., college algebra) for that medical school upon entering their undergraduate program.

#### CHOICE OF MAJOR

Medical schools do not specify a particular major, so students should select a major based upon individual interests and abilities. Since no one can be certain of acceptance into medical school, another consideration is whether the major will lead to a satisfying alternative career, and whether there is a good outlook for employment in that career. Many premedical students tend to major in science, with biology/physiology, biochemistry, and chemistry being the most common choices primarily because this is where their interests lie. However, any major is allowable. If a student chooses a non-science major, it is still important that excellent grades be received in the medical school prerequisite courses to demonstrate abilities in the basic science courses that make up the first two years of medical education. Non-science majors will need to carefully schedule courses in order to complete their major as well as the required (as well as additional biology courses (if possible)...see listing on page 5) premedical courses in a timely fashion. This can be done in a number of different ways including taking summer courses at other universities, taking heavier loads, or taking an extra semester or year of study.

#### PRECEPTORSHIP PROGRAM/CLINICAL CONFERENCES/VOLUNTEERISM

All active NMU premedical students of junior standing or better, and who have completed at least half the required premed courses, are entitled to participate in the preceptorship program. This program matches physicians from Marquette General Hospital and other area physicians to NMU premedical students, allowing the students to gain valuable medically related experience as well as a realistic understanding of what the life of a physician is like. Students not only learn about the practice of medicine, but also about the physician's responsibility to the community.

Once students are matched to physicians, they are required to establish a schedule of times at which they will meet with the physician, preferably several hours each week over the course of several semesters. Students are to keep a log of their experiences and meet with the premedical advisor if they encounter any problems with their preceptorship. This experience can last throughout their junior and senior year at NMU. The student would, in most cases, have a different preceptor during their senior year, and may, under certain circumstances, change preceptors during the course of a given year. Freshmen and sophomore students should make it a point to get their own observation experiences during the summer when they are home. If students remain in Marquette for the summer, arrangements might be made through the premedical advisor for observation experiences.

Juniors and seniors are also entitled to attend Marquette General Hospital's Clinical Conference

each Friday at noon during the academic year. Those attending the conference listen to interesting presentations encompassing a very wide range of medical topics.

All premedical students are requested to pursue volunteerism (or employment) in some medically related field, on a consistent basis. This could involve experiences such as working in nursing homes, emergency rooms, hospices, or wherever volunteers are needed in the hospital or in a host of other environments. Students are strongly encouraged to begin their volunteer efforts early in their college career. The premedical advisor will provide new students with an extended list of volunteer opportunities in the Marquette area. Students are also strongly encouraged to find a unique volunteer experience during their college career. This might involve an overseas medical mission or something in the U.S. but well outside the student's comfort zone. These experiences stand out on the student's medical school application and make them more attractive for possible interviews and admission. Other forms of community service and leadership are also highly desirable by medical schools. In addition, it is useful for undergraduates to gain research experience if possible as medical schools look favorably upon those students which demonstrate the desire and determination to pursue such endeavors.

### MEDICAL COLLEGE ADMISSION TEST (MCAT)

Nearly all medical schools require applicants to take the Medical College Admission Test. The MCAT is a comprehensive examination that is designed to evaluate knowledge and abilities in areas judged to be essential for successful performance in medical school. As of January, 2007, the exam is given exclusively as a computer based test. Students have a much greater flexibility in taking the exam than in the past as it is offered 22 times between January and September each year, and being allowed to take it three times within that time period. Scores are returned in about 30 days. The MCAT consists of the following four sections:

- Physical Sciences
- Verbal Reasoning
- Writing Sample
- Biological Sciences

A 10 minute break is scheduled between each session. Photo identification is required and students are digitally fingerprinted upon entering the testing area at the testing center.

**REGISTERING FOR THE MCAT** There are MCAT test centers throughout the United States, the nearest one to NMU currently located in Sault Ste. Marie, Michigan. A list of test centers is included with the MCAT registration information which is found on-line at [aamc.org](http://aamc.org). Applicants must register at least two weeks in advance for the examination day and time they select. The application fee is approximately \$210 (2007).

52 questions                      70 minutes  
 PREPARING FOR THE MCAT Even with the greatest flexibility in test dates, students won't take

the MCAT until they've completed the courses listed below, typically after the end of the junior year, perhaps in May, June, or July. Students can re-take the MCAT two times during a given application cycle. Before taking the test, students should have completed the following courses:

Introductory

Intro to Cell

			PH 201 and PH 202 Genetics
	M		1
	o		(Cell Biology, BI
	l		313; Genetics, BI 312;
	e		Intro Biochemistry,
	c		CH450; a
	u		General
	l		Microbiology, BI303,
	a		Intermediary Metabolism
	r		(CH452) © options)
	B		H
	I		If possible, students should
	2		also take upper level
	1		science courses such as
	8		Introductory Biochemistry
Human		Organic	(CH 450), General
	P		Microbiology (BI 303), and
	h		Intermediary Metabolism
	y		(CH 452) before taking the
	s		MCAT although this may
	i		not easily happen in the
	o		time frames that students
	l		typically follow. One
	o		objective of the MCAT is
	g		to assess problem solving
	y		ability in the sciences;
			therefore, it is important to
			take science courses that
			require problem solving.
	B		
	I		Preparation for the MCAT
	2		should begin several
	0		months before the
	2		examination. Typically,
General			students will purchase a
	C		study guide from one of
	h		several vendors and begin
	e		studying in January for the
	m		exam in May. Students
	i		may study alone or set up
	s		study groups. MCAT
	t		review sessions with NMU
	r		faculty are provided for the
	y		premedical students in the
		Physics	months prior to PH 220 and PH 221
		or	and a premedical student
	C		group will typically

organize a series of practice MCATs to be administered in the months prior to the end of the winter semester. Students self-score these exams. It should be noted that the practice exams are in the old, bubble sheet form and that it will be necessary for students to utilize on-line materials (free or purchased) as well as the disc that comes with their study guide in order to intensively practice the computer based test format. One should take as many on-line practice tests as possible before taking the MCAT. There is a fee for the on-line tests but having a complete understanding of the testing format, and practicing in the media (in this case a computer) in which the test will be administered, will help the student develop test management skills and gain an understanding of what to expect when the real test is taken.

Commercial review courses are also available for the MCAT. These courses are available either on-line or at an instructional center, commonly located in a large metropolitan area, where students listen to lectures and audio tapes that review the subject matter for the MCAT. These review courses are expensive and the student must ultimately decide if

taking such a course is more useful than studying on their own. Consult with the premedical advisor before deciding to take an MCAT preparatory course.

Regardless of whether one chooses the review books or a commercial course to prepare for the MCAT, it is important to set aside a specific block of time each day beginning at least three or four months before scheduled exam date (which could be several dates in nearly every month between January and September).

**REPEATING THE MCAT**  
The MCAT can be repeated to improve scores; however, it is prudent to consult with the premedical advisor before making a decision whether to repeat the MCAT. All MCAT scores are included in an individual's official record with the AAMC; it is not possible to have only the most recent set of MCAT scores sent to medical schools. Also, there is no standard policy for evaluating the multiple sets of scores when the MCAT is repeated; admissions officials at each medical school can explain the policy in place at that school. The maximum score on the numerically graded portions of the MCAT (verbal reasoning, physical science and

biological science) is 15. Medical school admissions committees recommend that students attain at least an average score of 9 on these three parts, with no score lower than an 8. If a student gets a 7 on any one of these three sections, it is recommended that the student retake the MCAT. A student may repeat the MCAT three times, and this could be in a single year.

**APPLYING TO MEDICAL SCHOOL**  
There are 122 medical schools in the U.S. that award the M.D. (Doctor of Medicine) degree and all but about 10 (7 of which are in Texas) require applicants to use the American Medical College Application Service (AMCAS). There are 20 medical schools that award the D.O. (Doctor of Osteopathy) degree and use the American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS).

AMCAS and AACOMAS registration materials are now only available on line at the web sites listed below. Students should continuously monitor these web sites to determine when the new application cycle begins, typically in mid-April or early May.

AMCAS

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

## AACOMAS

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

The application services act as a central office for distributing applications to medical schools. Each has its own application forms and requires the applicant to provide information in a standard format. The application services use official transcripts to verify the academic information provided by the applicant on the application form. They also compute the official science and non-science grade point averages which are used by the medical schools to evaluate each applicant.

### APPLY EARLY

Applicants must complete the AMCAS and AACOMAS on-line forms during the late spring; in fact, the AMCAS and AACOMAS forms should be sent in by June or July. The earliest postmarked date these applications will be accepted is June 1st. This should be done even if the MCAT will be taken in August. Early application is especially critical since the applicant pool is quite large (typically 35,000

applicants for 18,000 slots). Applications are reviewed and sent to the medical schools in the order in which they are received by the application services. When the applications arrive at the medical schools, applicants begin to receive secondary applications, requests for letters of recommendation, and invitations for interviews. Some medical schools have what is called rolling admission; they begin to accept applicants into the new class as applications are being received. Once the class is filled, additional qualified applicants are placed on an alternate list. It is likely that some early applicants will be admitted to a medical school before other applicants have sent their application to the application service.

The AMCAS and AACOMAS forms are detailed and must be completed exactly as directed. It takes many hours to enter the information on these forms, and sometimes students delay their completion. Although it's not something one would do in one sitting, applicants should keep working on the application until it is fully completed in a timely fashion, perhaps in a couple of weeks. In addition to entering all the college

level courses and grades a student has earned, there are spaces in the application for activities, involvement in organizations, volunteer work, observation experiences (log books will come in handy), and the all-important personal statement which should be very carefully written and reviewed by a professional writer, perhaps an English professor. Also, applicants need to request official academic transcripts from all colleges and universities that they have attended and have them sent to the AMCAS or AACOMAS offices. Information for how this is done is provided during the course of completing the application. As mentioned above, a small percentage of M.D. granting medical schools are not affiliated with AMCAS but handle their own applications. For example, all the medical schools in Texas are affiliated with TMDSAS and a few others must be applied to directly. Students should consult the MSAR for information on which schools are non-AMCAS and on how to obtain an application. The initial cost for submission of AACOMAS applications is \$160 for one medical school (2007) \$30 for each additional school applied



to. AACOMAS fees are similar. Both services provide fee reductions or waivers for qualified students.

**EVALUATION OF APPLICANTS** The application services send copies of completed applications to the medical schools which have been designated by the applicant. At each medical school, medical school admission committees review and rank the applications. Some medical schools will send secondary applications to all applicants while others only to those students who meet their specific requirements. In any case, the secondaries, usually done on -line, must be completed and paid for (a typical fee being \$80). Secondary applications usually require the applicant to respond to several questions unique to each medical school's application process. Medical schools review the completed secondary applications and invite selected applicants for a personal interview at the school. Letters of recommendation (please see below) may be requested by the medical schools at this time.

After the personal interview, applicants are

accepted, rejected, or placed on an alternate list. Most schools will inform the applicant of their decision within two to four weeks of their interview. Applicants placed on an alternate list may receive notification of acceptance or rejection at any time up to the start of classes.

**EARLY DECISION PROGRAM (EDP)** Most medical schools provide a special application procedure, the Early Decision Program. The purpose of this program is to encourage highly qualified students to apply to the medical school that is their first choice. In turn, the medical school will make a decision on admission by October 1, before considering regular applicants. Applicants accepted by early decision are committed to attend the school to which they have been accepted as an early decision applicant.

The Early Decision Plan offers these advantages to the applicant:

- a. Early acceptance eliminates the uncertainty of acceptance into medical school; students

may know by October 1 that they are admitted to medical school.

- b. Accepted applicants may begin finalizing plans for attending medical school earlier.

- c. Successful applicants are accepted into their first choice school.

- d. Application costs are less because the applicant need apply to only one school.

The disadvantage is that the applicant cannot apply to other schools until a decision has been made under the Early Decision Program. This will delay the application process at other schools and is a distinct disadvantage when the applicant pool is large. For this reason only highly qualified applicants should select this option; consult with the premedical advisor before choosing the early decision option. An applicant who is not accepted through the Early Decision Program may apply to the same school through the regular application process.

Deadlines for the Early Decision program are August 1 or August 15 (consult Medical School Admission Requirements). Applicants who use this program must complete their applications in early summer.

**MEDICAL SCHOLARS PROGRAM** Most medical schools offer a special program that enables students to earn both a medical degree (M.D. or D.O.) and a Doctor of Philosophy (Ph.D.) degree. These dual degree programs seek to develop individuals with skills necessary to advance knowledge in medical science and medical practice.

Students who enter these programs usually receive substantial financial assistance in the form of scholarships and tuition waivers. Completion of these programs requires at least seven years, three years longer than traditional medical school.

Applicants to medical scholar programs are those individuals who plan to pursue a research career in the medical field. Competitive applicants are those with a very high GPA, MCAT in a high percentile, and

demonstrated research experience as undergraduates. Applicants interested in this program should contact specific medical schools for additional information.

**APPLICATION COSTS**  
 Medical school application costs can be substantial. Current costs (2010) are listed below, but they will probably increase in the future. In some instances there may be additional costs.,

MCAT  
 REGISTRATION \$  
 230 (2010)

AMCAS

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 175 (1  
 school)....\$3  
 2 for each  
 additional  
 school.

Secondary  
application \$ 80  
Deposit if

### LETTERS OF RECOMMENDATION

Medical school will require that students submit letters of recommendation from faculty, physicians, employers .....people who know them well and can write an in-depth letter that can address issues such as character, work ethic, responsibility, etc. It is the student's job, over a three year period of time (freshmen through junior year of college) to get to know people well enough

Official

such that they can comfortably ask for a letter of recommendation when the time comes, that being at the beginning of the application process the year before they graduate from college.

Typically, medical schools like to see letters from science faculty as well as at least one from a non-science faculty. If a student has observed with a physician over an extended period of time, a letter may be obtained from that individual. Perhaps an employer or volunteer coordinator the student has worked for over an extended period of time will be able to write a good letter. The premedical advisor at NMU will see to it that the letters are collected and sent through the application service to the medical schools to which the student is

Interview  
travel expenses \$  
300 - \$500 per visit

applying. This letter file will be kept on hand with the premedical secretary and can be utilized even if the student decides to delay medical school application for a year. It takes an effort for students to make and maintain contact with potential letter writers but it is of high importance that this be done and that letter writers can be lined up midway through the junior year.

### PREMEDICAL ADVISORY BOARD

In cooperation with the Marquette-Alger County Medical Society, Northern Michigan University established a Premedical Advisory Board in 1972. Six physicians and three Northern Michigan University faculty members presently serve on the Board. The Board oversees the premedical program, offers advice to premedical students, interviews medical school applicants, and prepares a written letter of evaluation for the medical schools. Premedical students must complete a packet of information for the Board by the end of their junior year. This packet consists of five (or so, typically science and non-science faculty, a physician, employer, volunteer

coordinator, etc.) letters of recommendation, a narrative statement about their interest in becoming a physician (similar to the personal statement on their AMCAS application), and their university transcripts. Freshmen students should begin to consider faculty who might write letters of recommendation. This will give the students plenty of time to get to know faculty and vice-versa so that a substantive letter can be constructed by the time the junior year arrives. The application process is carefully explained to applicants during the application year.

#### LETTER OF EVALUATION

Perhaps the most important activity of the Board for premedical students is the letter of evaluation. The Board will conduct a personal interview with qualified students, either during the summer before their final year on campus, or when they return in the fall.. Following the interview, the Board evaluates and ranks the applicant using a scale of **Superior, Very Good, Good, Poor, and Do-Not-Recommend**. This rating is included in

the letter of evaluation written by the Board Chairperson.

#### BOARD INTERVIEW

The purpose of the Board interview is to assess the suitability of the premedical applicant for a career in medicine. The Board considers such factors as MCAT scores, GPA, rigor of the undergraduate program, credit hour load per semester, the applicant's knowledge of the career of medicine, demonstrated leadership ability and other personal qualities, and letters of reference from teachers and other persons. Typically the interview lasts about 30 minutes. After the interview, the premedical advisor holds a personal conference with the student and reviews the Board's findings. The Board's letter of evaluation is shared with the student, and it is the student's decision whether the letter is sent to the medical schools. It is understood by applicants that a Board interview is not guaranteed. In order to maintain the credibility of the Board in recommending students to medical school, students should have a GPA of around 3.5 in the sciences with an MCAT average of 9 with no 7's on any section. The Board will review the applicants credentials and at their discretion, grant an

interview if the applicant has attained numbers near these.

Medical schools to which Northern Michigan University students apply are aware of the Board and the letter of evaluation prepared by the Board. The Board has a well-earned reputation for integrity and good judgement, with the result that admission committees place a good deal of confidence in the Board letter.

If a student is not awarded a Board letter, the application process continues as normal and the other letters of recommendation will be sent upon the request of medical schools. A cover letter will accompany these letters, explaining the NMU Board criteria for awarding letters, and indicating that the student's full application may have information that will be of interest to the medical school

#### FINANCING MEDICAL EDUCATION (2010)

The cost of four years of medical school can be substantial. Tuition at state supported medical schools in Michigan average \$28,000 per year for residents and is about double that for

non-residents. Tuition at private medical schools varies widely; the average typically surpasses \$40,000 per year. Public California medical schools are free for residents and cost \$12,000 for non-residents so tuition varies significantly from state to state. Added to the cost of tuition are living expenses and the costs for instruments, books, and supplies, amounting to perhaps \$15,000 or more depending on location, in addition to tuition. The average indebtedness for medical students who graduated in 2009 was approximately \$150,000.

The book Medical School Admission Requirements provides tuition figures for M.D. granting medical schools; the booklet Osteopathic Medical College Information Book lists tuition for osteopathic medical schools.

#### FINANCIAL AID INFORMATION

Most financial assistance for medical school is in the form of loans; some grants and scholarships are available for medical school but this varies significantly. Medical students, with the help of financial aid officers, are usually able to acquire the loans needed to complete medical school.

Information on financial aid and financial management, and a listing of other sources of information regarding financial planning is provided in the book Medical School Admission Requirements. It is available from the Association of American Medical Colleges at the address listed in an earlier section in this booklet.

#### MEDSTART

Wayne State University School of Medicine has entered into an agreement with Northern Michigan University to reserve two guaranteed spots in their medical school for incoming freshmen at NMU. In order to qualify for an interview for this program, a student must have a high school grade point average of 3.5 with a minimum ACT of 28.

Please go to:

**DisplayText cannot span more than one line!**  
for more information and an application for this program.

#### EARLY ASSURANCE PROGRAM

Michigan State University College of Human Medicine has entered into an agreement with Northern Michigan University to consider at least 3 NMU students for the Early Assurance Program (EAP).

Qualified students would apply for this program during the middle of their junior year but could be accepted into MSUCHM by early June of that year, relieving them of the stress of having to interview with the hope of acceptance into medical school during their senior year. This program focuses on medically underserved students who might be interested in becoming a primary care physician in a medically underserved area. Please check the web site **DisplayText cannot span more than one line!** for the required qualifications.

#### PREMEDICAL SCHOLARSHIPS

Northern Michigan University has several scholarships available to students who meet the specific requirements. Sometimes, the scholarship

they divided up among several students.. Students may apply for these scholarships through the NMU Financial Aid Office. The Board chairman will make final decisions on scholarship awards.

DR. ROGER ASHTON JAMES MEMORIAL SCHOLARSHIP Dr. James was a 1974 graduate of Northern Michigan University and a 1978 graduate of Wayne State

University School of Medicine. This scholarship was established by his family and is awarded each year, with preference given to a student from the Upper Peninsula. The award may be split among several students.

**JOHN G. KARAGEORGE  
PREMEDICAL  
SCHOLARSHIP** This scholarship was established by family and friends of John G. Karageorge, who at the time of his death in 1988 was a premedical student at Northern Michigan University. The recipient(s) must be a deserving junior or senior premedical student who has a minimum overall GPA of 3.50.

**JACOB VINOCUR  
PREMEDICAL  
SCHOLARSHIP** This scholarship honors Dr. Jacob Vinocur, former premedical advisor. It is awarded to an outstanding sophomore premedical student.

**R. G. WILLIAMS, M.D.,  
SCHOLARSHIP** This scholarship was established in 1978 by R. G. Williams, M.D. of Ishpeming, Michigan. The recipient(s) must be a junior or senior premedical student who has a minimum GPA of 3.00. Preference is given to a student from the Upper

Peninsula of Michigan.

**PHYSICIAN ALUMNI  
SCHOLARSHIP** This scholarship was established by NMU graduates who are now practicing physicians. The recipient(s) must be a full-time student, of junior or senior standing with a minimum GPA of 3.25 and demonstration of premedical activities including observation experiences and volunteer work.

**1972**

Diana M. Constance  
Wayne State University

Robert J. Fillion  
Kirkville College of  
Osteopathic Medicine

James W. Moyle  
Wayne State University

**1973**

Larry F. Carlyon  
Wayne State University

Michael P. Hocking  
University of Michigan

Barry D. Johnson  
University of Minnesota

Randy M. Johnson  
University of Michigan

Erhart H. Marz  
Wayne State University

Andrew A. White  
University of Michigan

**1974**

Michael G. Altmann  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Eldon M. Handrich  
University of Colorado

Roger A. James  
Wayne State University

Michael R. Jordon  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Martin H. Matthews  
University of Michigan

Miles J. Mattson  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Thomas R. McCormick  
Michigan State University  
College of Human Medicine

D'Mitri L. Starks  
Wayne State University

James J. Young  
University of Minnesota

**1975**

Dean L. Dalbeck  
Wayne State University

Ralph E. LeBlanc  
Michigan State University  
College of Human Medicine

Wayne M. Nevala  
University of Minnesota

Paul J. Snyder  
Michigan State University  
College of Human Medicine

Douglas L. Villa  
University of Minnesota

**1976**

Robert J. Artwich  
University of Minnesota

Steven K. Dorow  
Michigan State University  
College of Human Medicine

Patti L. Holliday Peterson  
Wayne State University

Dee L. Hubbard  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Dale M. Larson  
University of Michigan

Richard A. Lemon  
University of Michigan

Janet B. Scromme McGill  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Dale L. McGregor  
Kirkville College of  
Osteopathic Medicine

James A. Surrell  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

David C. Waters  
University of Michigan

Laura J. Willoughby  
Michigan State University  
College of Human Medicine

**1977**

John B. DeKeyser  
University of Michigan

Robert E. Koski  
Michigan State University  
College of Osteopathic Medicine

Calvin E. Leazenby  
University of Michigan

Barbara K. Miller  
University of Michigan

Terry J. Ross  
Michigan State University  
College of Osteopathic Medicine

Jonathan H. Salewski  
Michigan State University  
College of Human Medicine

Glenn R. Seagren  
Michigan State University  
College of Human Medicine

**1978**

John P. Cederna  
Wayne State University

Norman A. Chapin  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Michael J. Dionne  
Wayne State University

Haldor Eglisson  
Michigan State University  
College of Osteopathic Medicine

Kari A. Marshall Hortos  
Michigan State University  
College of Osteopathic Medicine

Steven M. Hudock  
Wayne State University

Kurt W. Lehmann  
University of Michigan

Ann M. Pike  
University of Michigan

Susan E. Neiger Roubal  
Michigan State University  
College of Osteopathic Medicine

Scott R. Pynnonen  
University of Michigan

### 1979

E. Steven Conlan  
Wayne State University

Judith L. Beaman Gooch  
University of Michigan

Paul D. Hartleben  
University of Michigan

Philip Hoerlein  
Michigan State University  
College of Osteopathic Medicine

Mark D. Hornbach  
Rush Medical College

Thomas F. Huffman  
Wayne State University

Victoria L. Macki  
Wayne State University

John M. Martell  
University of Chicago

Kathleen C. Pera  
Michigan State University  
College of Human Medicine

James M. Simmering  
Southern Illinois University

### 1980

Janet M. Balbierz  
University of Michigan

Ray H. Cameron  
Medical College of Wisconsin

Robert J. Darga  
University of Michigan

Franklin D. Farmer  
Michigan State University  
College of Osteopathic Medicine

Karin Luokinen  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

W. John Mallgren  
Michigan University  
College of Osteopathic Medicine

William J. McDowell  
Wayne State University

George M. Momany  
University of Michigan

Richard S. Perren  
Wayne State University

Steven F. Rechner  
University of Michigan

Ronald D. Reynolds  
University of Michigan

Jeanne M. Taccolini Groos  
Wayne State University

Timothy P. Trumpeter  
Wayne State University

### 1981

Julia I. Frei  
Michigan State University  
College of Osteopathic Medicine

Toby P. Gendron  
Wayne State University

Frederick C. Hendrickson  
Michigan State University  
College of Osteopathic Medicine

Robert H. McLaren  
University of Michigan

Licia L. Raymond  
University of Michigan

John R. Steel  
Wayne State University

James J. Wallace  
Michigan State University  
College of Osteopathic Medicine

### 1982

Rose M. Andriacchi  
Wayne State University

Robert M. Bleau  
Wayne State University

Larry A. Hooper  
Wayne State University

Charles A. Papp  
Michigan State University  
College of Osteopathic Medicine

Cheryl A. Peterson  
Michigan State University  
College of Human Medicine

Lynn M. Podehl  
Wayne State University

Daniel J. Quenneville  
Uniformed Services University

Connie L. Ryan  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Gina L. Wiitala  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

### 1983

James C. Campau  
College of Osteopathic Medicine



Des Moines, IA

Michael B. Davidson  
Michigan State University

Tangerine R. Dupuis  
Wayne State University

Deborah S. Fischer  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Harold N. Gooch  
University of Michigan

John P. Plante  
Wayne State University

**1984**

Alexander C. Chavez  
University of Michigan

Roger D. Cole  
Bowman Gray  
Wake Forest University

Robin K. Godfrey  
Michigan State University  
College of Human Medicine

David L. Hamacher  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

David W. Kroll  
Wayne State University

Robert J. Monette  
University of Wisconsin

Michael D. Parmer  
Michigan State University  
College of Osteopathic Medicine

Andrew T. Pelto  
University of Michigan

Lori M. Surprenant  
Michigan State University  
College of Human Medicine

Mary Sue Sylwestrzak  
Wayne State University

Michael S. Turner  
Medical College of Ohio

Cheryl C. Utiger  
University of Michigan

**1985**

Douglas N. Beaman  
University of Michigan

Paul R. Bohjanen  
University of Michigan

Bradley B. Bower  
Wayne State University

Jeffrey M. Braxton  
University of Michigan

Michael C. Ennis  
Michigan State University  
College of Human Medicine

Glen D. Enzenberger  
Michigan State University  
College of Osteopathic Medicine

Qamar Z. Hussain  
Liaqat Medical College  
Pakistan

Korhan B. Raif  
University of Istanbul  
Turkey

Martha J. Short  
Michigan State University  
College of Human Medicine

Lori A. Torreano  
Michigan State University  
College of Human Medicine

**1986**

Michelle Bruce Beaman  
University of Michigan

Carol H. Cappuccio  
Wayne State University

John A. Ditri  
Wayne State University

Michael Harrison  
Wayne State University

Anne L. Mattson  
Michigan State University  
College of Human Medicine

Paul C. Peterson  
Wayne State University

Timothy L. Schoonover  
Michigan State University  
College of Osteopathic Medicine

Mark W. Ulrickson  
Michigan State University  
College of Osteopathic Medicine

Steven C. Wright  
Wayne State University

**1987**

Susan M. Day  
Michigan State University  
College of Human Medicine

Michael Karkkinen  
Michigan State University  
College of Osteopathic Medicine

Mary F. Leadbetter  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Kevin J. McCormick  
University of Michigan

Matthew S. Rettke  
Uniform Services University

Cindy S. Sandona  
Michigan State University  
College of Osteopathic Medicine

**1988**

Todd M. Arsenault  
University of Michigan

Jamie L. Bond  
Michigan State University  
College of Human Medicine

Jerome B. Buboltz  
Michigan State University  
College of Human Medicine

Gail A. Schwartz Carrels  
University of Wisconsin

Beverly J. Irwin  
Wayne State University

Noreen R. King  
Michigan State University  
College of Human Medicine

Terry S. Krznarich  
Wayne State University

Randy S. Olli  
Michigan State University  
College of Human Medicine

Steven P. Phillipson  
Michigan State University  
College of Human Medicine

**1989**

Michael Beaulieu  
University of Michigan

Karen Kent  
Michigan State University  
College of Human Medicine

Janelle Keplinger  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Bradley Miller  
Medical University of  
South Carolina

Ron Seagle  
Michigan State University  
College of Human Medicine

Cindy White  
Michigan State University  
College of Osteopathic Medicine

**1990**

David Dias  
Creighton University School  
of Medicine

Pamela Penner  
Wayne State University

John Hartman  
University of Michigan

Robyn Baker  
University of Minnesota

Christine Jack  
University of Health Sciences

**1991**

Paula DeKeyser  
Michigan State University  
College of Osteopathic Medicine

Paula Green  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Eileen Javellana  
Wayne State University

Michelle Kroupa  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Mary McMasters  
Michigan State University  
College of Human Medicine

Bruce Rochefort  
Michigan State University  
College of Human Medicine

Steven Sheedlo  
Uniform Services University

**1992**

Jeffrey Baxter  
Michigan State University  
College of Human Medicine

David Hoenicke  
Michigan State University  
College of Human Medicine

Travis Hunt  
Wayne State University

Robert McCowan  
Chicago College of  
Osteopathic Medicine

Darren Pipp  
Wayne State University

Marc Raslich  
Michigan State University  
College of Human Medicine

Allen Salmi  
Michigan State University  
College of Human Medicine

Todd Sheperd  
University of Michigan

Gregory Woodfill  
Michigan State University  
College of Osteopathic Medicine

**1993**

Jennifer Hronkin  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Krystie Karageorge  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Glenn Kauppila  
Kirksville College of  
Osteopathic Medicine

Mark Kulbieda  
University of Michigan

Gina Rousseau  
Michigan State University  
College of Human Medicine

Jodanne Woodbeck  
Kirksville College of  
Osteopathic Medicine

Jamie Ramsay  
University of Michigan

**1994**

Andy Buchl  
Wayne State University

Robert Carmody  
Wayne State University

Felix Chaltry  
Chicago College of  
Osteopathic Medicine

Charles Olsen  
Michigan State University  
College of Osteopathic Medicine

Carolyn Olson  
Wayne State University

Ted Oswald  
Wayne State University

Wendy Price  
Michigan State University  
College of Human Medicine

Joseph Wiater  
University of Michigan

**1995**

Staci Koski  
Wayne State University

Sandra McCowen  
Michigan State University  
College of Human Medicine

Paula Simmons  
Michigan State University  
College of Human Medicine

Natalie Trepanier  
University of Michigan

**1996**

J' Aimee Bosel  
Michigan State University  
College of Osteopathic Medicine

Thomas Bunnow  
Wayne State University

Julia deAlmeida  
University of Michigan

Erica Ehlers  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Renee Hoynacke  
University of Michigan

Stuart Johnson  
Michigan State University  
College of Osteopathic Medicine

Greta Keplinger  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Michael Luoma  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Jennifer Shirkey  
Michigan State University  
College of Osteopathic Medicine

Rebecca Studinger  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Evelyn Thomas  
Michigan State University  
College of Human Medicine

Christine Weinzierl  
University of Michigan

**1997**

James Picotte  
Michigan State University  
College of Human Medicine

Kristin Walton  
Wayne State University

Shana Weber  
Michigan State University  
College of Osteopathic Medicine

Ronald Zulkiewski  
Wayne State University

**1998**

Michael Benca

Uniformed Services

Jennifer Lachapell  
Michigan State University  
College of Human Medicine

Nicole Linder  
Wayne State University

Terry Meden  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Harvey Pollack  
University of Wisconsin

Ginger Price  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Mike Racine  
Michigan State University  
College of Human Medicine

Gregory Seaman  
Michigan State University  
College of Human Medicine

Peggy Stickney  
Medical College of Wisconsin

**1999**

Thomas Flanigan  
Wayne State University

Kelley Greenleaf  
University of Minnesota-Duluth

Ray Jon Lara  
Michigan State University  
College of Osteopathic Medicine

Val Nordquist  
Jefferson Medical College (PA)

Josh White  
Wayne State University

**2000**

Ryan Burri  
Michigan State University  
College of Human Medicine

Krista Cihlar  
Medical College of Wisconsin

Elizabeth Couchene  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Suzanne Darnell  
University of Minnesota - Duluth

Michael Kuhn  
Michigan State University  
College of Osteopathic Medicine

Jason Loewen  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Joel Slade  
University of Michigan

Namir Sawaf  
Pikesville College of  
Osteopathic Medicine

Danielle Thrasher  
Michigan State University  
College of Human Medicine

Kari Vrzal  
Medical College of Wisconsin

Jill Wuerfel  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

### 2001

Cindy Anderson  
Michigan State University  
College of Human Medicine

Joel Dank  
Michigan State University

Katrina Wills  
Michigan State University  
College of Human Medicine

Stephanie Wise

College of Human Medicine  
Upper Peninsula Program

Tom DeRoche  
St. Louis University  
School of Medicine

Brooke Geddie  
Michigan State University  
College of Osteopathic Medicine

Emily Godec  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Kristi King  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Stephen Knuff  
Michigan State University  
College of Osteopathic Medicine

Robert Rees  
West Virginia School of  
Osteopathic Medicine

Mike Sonnenburg  
St. George's University

Vinson Ulep  
Michigan State University  
College of Osteopathic Medicine

### 2002

Tyanne Dosh  
Michigan State University  
College of Human Medicine

Kelly Freberg  
Michigan State University  
College of Human Medicine

Jonathan Harbin  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Lisa Lepeak  
Wayne State University

Ned Oswald  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Sharon Stoll  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

James Van Beynen  
Michigan State University  
College of Human Medicine

### 2003

Eric Chase  
Wayne State University

Danielle Rayome  
Michigan State University  
College of Osteopathic Medicine

Sara Richmond  
University of New England  
College of Osteopathic Medicine

Bo Rowan  
Nova Southeastern University

Carissa Villa  
Wayne State University

Danielle Waggoner  
Michigan State University  
College of Human Medicine  
Upper Peninsula Program

Michigan State University  
College of Osteopathic Medicine

**2004**

Alissa Holman  
Wayne State University

Jennifer Kretschman  
Michigan State University  
College of Human Medicine

Gwen Panian  
Medical College of Wisconsin

Jody VanHoof  
Medical College of Wisconsin

Ashley Wilson  
Michigan State University  
College of Osteopathic Medicine

**2005**

Michael Butterfield  
Wayne State University

Stacey Carpenter  
Lake Erie  
College of Osteopathic Medicine

Dan Cote  
Michigan State University  
College of Osteopathic Medicine

Chad Ermis  
Kirksville  
College of Osteopathic Medicine

David Hoffelder  
Michigan State University  
College of Human Medicine

Briana Kirt  
Ross University School of  
Medicine

Gretchen Libick  
University of Minnesota  
Twin Cities

Andy Moriarity  
Wayne State University

Ken Onuoha  
Michigan State University  
College of Osteopathic Medicine

Angela Pohl  
Arizona College of Osteopathic  
Medicine of Midwestern

University

Jordan Povich  
Michigan State University  
College of Osteopathic Medicine

Jeff Szymanski  
Wayne State University

**2006**

Chad Bertucci  
Michigan State University  
College of Human Medicine

Jeanise Gorenchan  
Wayne State University

Mark Hauswirth  
Michigan State University  
College of Osteopathic Medicine

Eric Johnson  
Michigan State University  
College of Human Medicine

Alex Larson  
Medical College of Wisconsin

Matt Nielsen  
Michigan State University  
College of Human Medicine

Pete Pelletier  
University of Utah

Danielle Pellow  
Wayne State University

Hilary Schmid  
Michigan State University  
College of Osteopathic Medicine

Emily Vanderwal  
Michigan State University  
College of Human Medicine

Casey Vogelheim  
Michigan State University  
College of Human Medicine

David Wetzel  
Wayne State University

**2007**

Joseph Bettendorf  
Michigan State University  
College of Human Medicine

Nicholas Brown  
Michigan State University  
College of Osteopathic Medicine

Shawn Brown  
University of Michigan

Chena Filizetti  
Michigan State University  
College of Osteopathic Medicine

Jessica Hamill  
Tuoro University  
College of Osteopathic Medicine

Stephanie Humpula  
Michigan State University  
College of Osteopathic Medicine

Viktoria Koskenoja  
Cleveland Clinic  
Lerner College of Medicine

Meri Koski  
Michigan State University  
College of Osteopathic Medicine

Jonathan Kukier  
Michigan State University  
College of Human Medicine

Erica (Bonner) Larson  
Michigan State University  
College of Osteopathic Medicine

Stacey LeJeune  
Michigan State University  
College of Human Medicine

Aimee Leisure  
Michigan State University  
College of Osteopathic Medicine

Louis Ostola  
Michigan State University  
College of Human Medicine

Rebecca Witt  
Medical College of Wisconsin

Amelia Wright  
Lincoln Memorial University

**2008**

Melissa Auer  
Lake Erie  
College of Osteopathic Medicine

Keith Burley  
Michigan State University

College of Human Medicine

James Drinane  
Scholl College of  
Podiatric Medicine

Suzanne Dupler  
Michigan State University  
College of Osteopathic Medicine

David Finkbeiner  
Michigan State University  
College of Human Medicine

Sarah Hagle  
Michigan State University  
College of Human Medicine

Lauren Johnson  
Michigan State University  
College of Human Medicine

Matt Kortez  
Medical College of Wisconsin

Leslie Lemanek  
Wayne State University  
School of Medicine

Ian McLaren  
University of Wisconsin –  
Madison

Amanda Moraska  
Mayo Medical School

Joseph Steele  
Michigan State University  
College of Human Medicine

Andy Swentik  
Michigan State University  
College of Human Medicine

Jonathan Webb  
Michigan State University  
College of Osteopathic Medicine

**2009**

Christina Boncyk  
University of Wisconsin-  
Madison

Aaron Cutlip  
Michigan State University  
College of Human Medicine

Kris Danielson  
Michigan State University  
College of Osteopathic Medicine

Jessica Karasiewicz  
University of Michigan

Kelsey Keskitalo  
Rocky Vista College  
of Osteopathic Medicine

Olabisi Lashore  
Ben Gurion University  
Of the Negev

Bradley Mattson  
Michigan State University  
College of Human Medicine

Grant Nelson  
Wayne State University

Raechel Percy  
Michigan State University  
College of Osteopathic Medicine

Cory Peronto  
Michigan State University  
College of Human Medicine

Jill Seaman  
Michigan State University  
College of Human Medicine

Ivy Vachon  
Michigan State University  
College of Human Medicine

David Viau  
Wayne State University

Nicholas Ward  
Wayne State University

Ryan Woods  
Michigan State University  
College of Human Medicine

**2010**

James Drinane  
Des Moines University  
College of Osteopathic Medicine

Jessica Frankowski  
Wayne State University

Katie (Nettleton) Fulcher  
Michigan State University  
College of Osteopathic Medicine

Courtney Johnston  
Michigan State University  
College of Human Medicine

Alyssa Liubakka  
Wayne State University

Beth Roberts  
Wayne State University

Daniel Schwartz  
Loyola University Chicago  
Stritch School of Medicine

Eileen Vallin  
Wayne State University

**2011**

Kathryn (Niepoth) Das  
Michigan State University  
College of Osteopathic Medicine

Cassie Hegbloom-Bluhm  
Michigan State University  
College of Osteopathic Medicine

Leah Heron  
Michigan State University  
College of Human Medicine

Jessica Krol  
Michigan State University  
College of Osteopathic Medicine

Michael Kulju  
Michigan State University  
College of Human Medicine

Chelsea McNabb  
Michigan State University  
College of Human Medicine

Kristen Millado  
Michigan State University  
College of Human Medicine

Lauren Ottenhoff  
Midwestern University  
Chicago C.O.M.

Jay Szekely  
Michigan State University  
College of Osteopathic Medicine

Brigham Voigt  
Michigan State University  
College of Human Medicine

**2012**

Tovah Aho  
Michigan State University  
College of Human Medicine

James Bailey  
Michigan State University  
College of Human Medicine

Will Barker  
Michigan State University  
College of Human Medicine

Catherine Edgell  
Wayne State University

Erica Lensink  
Des Moines University  
College of Osteopathic  
Medicine

Ryan Overby  
Oakland University  
William Beaumont S.O.M.

Holly Sobel  
Michigan State University  
College of Human Medicine

Riley Toreano  
Michigan State University  
College of Human Medicine

Erica Wilson  
University of Washington  
School of Medicine