



Guiding the Health Professions Student:

A Resource Guide for Community College Counselors

Resource Binder: 2015

Courtesy of:
The Health Professions Advising Office
Long Beach State University

Guiding the Health Professions Student: A Workshop for Counselors

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Allopathic Medicine

Pre-Allopathic (M.D.): Academic and Career Information



Health Professions Advising Office (HPAO) • Jensen Student Access to Science (SAS) and Mathematics Center: **Location:** Hall of Science Building – Room 164 • **Phone:** (562) 985-8061 • **Website:** www.csulb.edu/hpao

NATURE OF THE WORK, EARNINGS, AND OCCUPATIONAL OUTLOOK

Physicians are dedicated to serving the health care needs of society through diagnosing and treating illness, injury, and disease. About one third of physicians in the U.S. work in primary care, acting as the first health professional consulted by patients. Most primary care physicians provide comprehensive health care to patients and families and tend to see the same patients over a long period of time. When necessary, primary care physicians refer patients to medical specialists and surgeons for further expertise. Most physicians work in small offices, clinics or in group medical practices where they see patients. Physicians often work long, irregular hours, and rotate shifts for emergency calls, as well as travel between the office and hospital to care for patients. Anesthesiologists, pathologists, radiologists, surgeons, and emergency physicians, spend the majority of their time working in hospitals or surgical outpatient centers.

Though earnings vary according to number of years in practice, type of practice, geographical location, and specialty, the total median annual income of physicians was \$187,200 (Occupational Outlook Handbook, 2014). The salary can also range from \$150,000 - \$300,000 depending on the specialty and area of practice (www.explorehealthcareers.net). With recent changes in the health care system, there are fewer individual practices, and more physicians joining medical groups or networks. As employees of these medical groups, more physicians are drawing a set salary, so earnings potential may be more limited than in the past when most physicians worked for themselves. Employment of physicians and surgeons will grow faster than average for all occupations through 2022, as a result of current doctors set to retire, continued expansion of the health care industries, and an aging population. Job prospects should be good for physicians looking to practice in rural and low-income areas, which are often underserved (OOH, 2014).

MEDICAL SCHOOL EDUCATION (4 DEMANDING YEARS)

There are 141 accredited **allopathic** medical schools in the U.S. and 17 accredited Canadian medical schools that award the degree of Medical Doctor (M.D.). Medical school usually requires 4 academic years. Studies begin with 2 years of classroom instruction in the basic sciences. The normal structure and function of human systems are taught through gross anatomy, cell biology, biochemistry, medical genetics, behavioral science, physiology, and neuroscience. Subsequently, the education focus shifts to abnormalities of structure and function, disease, and general therapeutic principles through exposure to microbiology, immunology, pathology, and pharmacology. The following two years involve a series of clinical rotations throughout inpatient and outpatient settings where students work with patients under the supervision of attending physicians and medical residents. During the clinical years, students also have an opportunity to take elective rotations. During the last year of medical school, students make decisions about medical specialty and apply for internship or residency programs in their desired area of expertise (*The Official Guide to Medical School Admissions, 2014*).

RESIDENCY AND FELLOWSHIP TRAINING (3-8 YEARS)

Following medical school, graduates begin their graduate medical education or residency, which is paid, on-the-job training in a specialty. The training required varies from 3 to 8 years or more depending on the specialty selected. Family Practice, Emergency Medicine, Pediatrics, and Internal Medicine require 3 years. Training in Obstetrics and Gynecology, Pathology, Anesthesiology, Dermatology, Neurology, Nuclear Medicine, Ophthalmology, Physical Medicine, Psychiatry, Radiology and Radiation Oncology lasts 4 years. The *surgical specialties* including General, Neurological, Orthopedic Otolaryngology, and Urology and they require 5 years of residency. Most specialties also offer advanced training in a subspecialty usually requiring an additional 1 to 3 years of fellowship following residency.

PRE-MEDICAL PREPARATION

Due to the competitive nature of the medical school application process and rigorous training required, *students should carefully consider their motivation, preparation, and commitment for a career in medicine.* In 2013-2014 a total of 48,014 applicants applied to medical school and 20,055 applicants were offered admissions to at least one school. The fall 2014 entering class had a **MEAN SCIENCE** (all courses classified as Biology, Chemistry, Physics and Mathematics - BCMP) **GPA of 3.63**, a **MEAN NON-SCIENCE GPA of 3.76** and **TOTAL GPA of 3.68**. **MCAT score was 31.4 (AAMC).**

MAJOR

No particular major is required or preferred for medical school admissions, thus students are advised to select a major they find interesting and in which they can excel. Students should also consider a major that may lead them to an alternate career, should they decide not to pursue a medical education. Whichever major a student declares, their course of study must incorporate the required pre-medical requirements (please also keep in-mind CSULB's Timely Graduation Policy and see an Academic Advisor if you have questions). Many students who select a natural science major find a great deal of overlap between their major requirements and those required for medical school. Regardless of the major choice, medical schools prefer that students have a well-rounded liberal arts education.

COURSE REQUIREMENTS FOR MEDICAL SCHOOLS

Specific undergraduate course requirements vary from program to program. *Thus, students should consult each school catalog, website, and the **Medical School Admission Requirements: U.S. and Canada, (MSAR)*** published by the Association of American Medical Colleges (AAMC) for specific requirements. A copy of the MSAR is available to view in the HPAO Resource Library or purchase at www.aamc.org.

CSULB Courses that fulfill admission requirements for allopathic (MD) medical schools:

Pre-Medical Coursework	CSULB Courses	Units
One year of General Chemistry with lab	Chemistry 111A & 111B	5, 5
One year of Organic Chemistry with lab	Chemistry 220A & 220B +320L (Physical Science majors) OR 220A w/ 223A & 220B w/ 223B (Biology majors)	4, 4
One year of General Biology with lab	Biology 211 & 212 & 213*	4, 4
One year of General Physics with lab	Physics 100A & 100B OR 151 & 152	4, 4
One year of English (Composition & Literature)	Any 2 courses numbered 100 and above	3, 3

*Required or **Highly** Recommended

Strongly Recommended Courses (required at some schools):

Pre-Medical Coursework	CSULB Courses	Units
One semester to one year of college-level Math (the math varies greatly depending on the school)	Math 119A & 119B OR 122 & 123	3-4
One course in Statistics	Biology 260 OR Stat 108 (required at UCLA & UCI)	3
One upper division molecular/cell biology course	Biology 340 (required at UC Irvine)	3
One course in Biochemistry (MCAT)	Chemistry 441A OR 448 (required at UC Irvine)	3
Genetics	Biology 370	4
Mammalian Physiology	Biology 342	3
Social and Behavioral Sciences (both are recommended for the MCAT)	Sociology 100 and Psychology 100	3, 3

Other courses for consideration include: anatomy, immunology, histology, microbiology, social sciences, humanities, speech, and a foreign language. We recommend pre-health students enroll in courses that meet the following General Education requirements to help you develop a broad understanding of the health professions in relation to other disciplines of study. Visit our website to download the General Education Courses for Pre-Health Students handout at <http://www.csulb.edu/colleges/cnsm/sas/hpao/planning.html>.

Additional Information:

Various U.S. medical schools do not accept AP units toward the satisfaction of stated pre-requisite courses, however some schools are changing their policies. Please check with the individual medical schools directly that you are interested in.

All required courses must be taken for a letter grade, not for Credit/No Credit. If courses are repeated, both grades will be calculated in your AMCAS (American Medical College Application Service) grade-point average, which is *contrary* to the CSULB grade-forgiveness policy.

IMPORTANT FACTORS CONSIDERED FOR ADMISSIONS TO MEDICAL SCHOOLS:

CLINICAL EXPOSURE is strongly recommended for admission to most medical schools. This can include a paid or volunteer position in a doctor's office, local clinic, or a hospital. Most hospitals and clinics gladly accept volunteers (contact the volunteer services office at your local hospital for more information). Medical school admission committees want to know that you have the desire and ability to work with patients ([shadowing](#) a doctor can also provide clinical exposure). The successful participation in clinical volunteer or job experience can demonstrate this.

RESEARCH experience is increasingly important. Options include volunteering in a lab for a professor, getting a job as a lab assistant at a local university, hospital or pharmaceutical company, or participating in a summer biomedical research program. Visit <https://www.aamc.org/students/aspiring/experience/> for summer undergraduate research programs.

COMMUNITY SERVICE experience is **highly** valued by medical schools. Future doctors should be able to demonstrate compassion and a willingness to give back to their communities. Getting involved in community service efforts on or off campus that are of interest to you can enhance a medical school application. CSULB has a number of academic, service and health professions organizations to join.

WORK EXPERIENCE can also be valuable in demonstrating your potential to succeed in medical school. Past success in a work environment can reveal meaningful information to admissions committees. Depending on the setting, work

experience can help develop and showcase a variety of skills including communication (oral and/or written), time management, and problem solving.

LETTERS OF RECOMMENDATION are required for application to medical school. The typical letter packet consists of three to five letters: two from science professors, one from a non-science professor, and the rest from supervisors of relevant work, research, or clinical activities. However, check with the specific schools that you are applying to as requirements may differ. The purpose of the letters is to provide medical schools with an impression of the applicant from faculty or persons who are in a position to observe the applicant's work, as it relates to the study of medicine. Students are encouraged to create and maintain positive contacts with prospective recommenders early in their academic career.

For additional information on writing letters of recommendation, please see AAMC's brochure: *Guidelines for Writing a Letter of Evaluation for a Medical School Applicant* (even if you are not writing for a medical school applicant, this is a great resource): <https://www.aamc.org/download/332578/data/lettersguidelinesbrochure.pdf>. This brochure also includes the different core-competencies and areas of evaluation that schools are moving toward when evaluating their applicants.

MEDICAL COLLEGE ADMISION TEST (MCAT)

The MCAT is changing in the spring of 2015 (the new exam calendar will run from April to September). The new Medical College Admission Test (MCAT) 2015 is a standardized exam consisting of four multiple-choice sections (**the Biological and Biochemical Foundations of Living Systems** section, the **Chemical and Physical Foundation of Biological Systems**, the **Psychological, Social, and Biological Foundation of Behavior Section**, and the **Critical Analysis and Reasoning's Skills** section).

Before attempting the MCAT, students should have completed at least one year each of biology, general chemistry, organic chemistry, and physics, as well as one semester of biochemistry. In addition, students should also complete general sociology and psychology courses as this is a new section added to the MCAT. It is highly recommended, that you take the MCAT in the spring before you apply.

There are many resources on the AAMC website on how to prepare, where to resources, and also information about the Fee Assistance Program (FAP). The total "seat" time including breaks is 7 hours, 33 minutes. The current registration fee is \$300. Visit <https://www.aamc.org/students/applying/mcat/mcat2015/> for important information about the MCAT.

APPLICATION

The American Medical College Application Service (AMCAS) is a non-profit, centralized application processing service for applicants to the first-year entering classes at participating U.S. medical schools. Most medicals schools use AMCAS as the primary application method. Visit www.aamc.org/amcas for applicant information. It is important to **APPLY EARLY** as most medical schools are on rolling admissions. The Health Professions Advising Office recommends students apply mid-late June or early July.

For more information about Allopathic Medicine, visit www.aamc.org/students and see your HPAO advisor for further information on the application process, application assistance, and a list of upcoming workshops and events.



Association of American Medical Colleges

General Details:

Mission: The AAMC serves and leads the academic medicine community to improve the health of all.

Size of Organization: The AAMC represents 141 accredited U.S. and 17 accredited Canadian medical schools; nearly 400 major teaching hospitals and health systems. Through these institutions and organizations, the AAMC represents 128,000 faculty members, 83,000 medical students, and 110,000 resident physicians.

New Institutional Members in Last Two Years: 38 programs have joined PAEA as institutional members. Of these, 29 participate in CASPA as developing programs.

- University of Arizona College of Medicine – Phoenix
- University of California, Riverside School of Medicine
- Frank N. Netter MD School of Medicine at Quinnipiac University
- Central Michigan University College of Medicine
- Western Michigan University School of Medicine

Total Number of Students: approx. 83,000

Total Number of First Year Students: 20,055

Total Number of Graduates in Most Recent Academic Year: 18,156

Data on Employment Rates of Recent Graduates: Not provided

Health Profession Update

Admissions Updates

- Specific Admissions information can be found at MSAR, AMCAS, MCAT, FIRST websites

- **Current Number of Participating Programs Versus Total Member Programs:**
141 accredited U.S. and 17 accredited Canadian medical schools; 7 Texas schools do not participate in AMCAS
- **Open Period (launch date and last deadline):** May 1 to December 1
- **Submission Deadlines:** All deadlines are listed by school at www.aamc.org/students/applying/amcas/participating_schools
- **Applicant Code of Conduct or Required Institutional Certification or Statement:**
AMCAS Certification: [amcas_instruction_manual.pdf](#) (page 12)
Traffic Rules for Applicants: www.aamc.org/students/applying/recommendations/370684/trafficrules-applicants.html
- **Fees:** AMCAS Processing Fee: \$160 (includes one medical school designation); additional medical school designations: \$36 each
- **Fee Waivers:** Fee Assistance program is available: www.aamc.org/students/applying/amcas/faqs/146560/fap_questions_landing_page.html
- **Letters of Reference Delivery Method(s):**
AMCAS Letter Writer Application, Interfolio, VirtualEvals, or by mail.
www.aamc.org/students/applying/amcas/amcasresources/63226/faq_amcasletters.html
- **Background Check Services if Applicable:**
AAMC-facilitated Criminal Background Check Service:
www.aamc.org/students/applying/amcas/amcasresources/63230/faq_background.html

Commitment to Diversity

The AAMC's commitment to diversity includes embracing a broader definition of diversity and supporting our members' diversity and inclusion efforts by providing the following (not inclusive list):

- The Summer Medical and Dental Education Program (SMDEP), a free six-week summer medical and dental school preparatory program for college freshman and sophomores, co-sponsored with the American Dental Education Association (ADEA). The application opens November 1 and closes on March 1. To learn more visit www.smdep.org
- Aspiring Docs, an AAMC program to increase diversity in medicine as it is vital for tomorrow's medical students to be diverse in race, ethnicity, gender, religion, socio economic status, and sexual orientation, as well as express diversity in experience and thought. Having a diverse workforce of doctors is essential to providing the best care for all communities and improving the health of our nation. More information is available at www.aamc.org/aspiringdocs

- The Advancing Holistic Review Initiative: The purpose of AHRI is to develop tools and resources that medical schools can adopt or adapt to create and sustain workforce diversity. The project focuses on the medical school mission and goals and other institutional efforts that promote diversity. More information is available at www.aamc.org/initiatives/holisticreview/. The latest publication, *Roadmap to Excellence: Key Concepts for Evaluating the Impact of Medical School Admissions* was released this year. You can view this publication as well as the other two in the series free of charge online at <https://services.aamc.org/publications/>.
- The AAMC's Diversity Policy and Programs work group hosts the annual Minority Student Medical Career Awareness Workshops and Recruitment Fair during the Annual Meeting. This year, the event is scheduled for Saturday, November 8, 2014, in Chicago, Illinois. The workshops and the recruitment fair targets underrepresented in medicine college and high school students, parents, and other individuals interested in pursuing or learning about a career in medicine. All participants will meet diversity affairs and admissions officers from U.S. medical schools, current medical students, and other health professions schools. Find out more details at www.aamc.org/annualmeeting

Admissions Initiative The goal of the Admissions Initiative is to support medical schools as they work to identify and select the applicants that are the best fit for their institutions in the most informed and efficient manner possible. Currently, we are working on the following:

- Using a set of core competencies for entering medical students to ease the transition to competency-based admissions
- Refining existing tools and investigation/developing new tools in order to help schools evaluate the whole applicant via Letters of Evaluation Guidelines and a Situational Judgment Test
- Working with Medical schools to review and update their prerequisites in an effort to create the least restrictive pathway for applicants
- Continuing to support the implementation of holistic admissions

FIRST

FIRST is the AAMC's financial aid and debt management program. FIRST provides tools to empower students to borrow wisely and repay their student loans responsibly. FIRST offers a host of resources for students, residents, practicing physicians, as well as Financial Aid Officers at member schools. For more information visit aamc.org/first.

Pivio

The Pivio system is a new electronic portfolio from the Association of American Medical Colleges ([AAMC](http://www.aamc.org))

and the National Board of Medical Examiners ([NBME®](#)), designed to make storing, organizing, managing, and sharing vital information more secure, easy and effective throughout one's journey through medicine.

- For students with access to a prehealth advisor, the Pivio system augments the benefits of advising and mentoring. For those students without access to a prehealth advisor, Pivio provides subscribers general guidance on what information is necessary to gather for medical school applications and beyond, makes it easier to document relevant experiences, provides a secure and accessible system for storing MCAT® scores, AMCAS® application information and more. The Pivio system serves as a personal and professional online portfolio, keeping individuals ready for every stage in their medical career, serving individuals through pre-med, medical school, residency, and beyond.
- Subscription to Pivio is optional. Individuals who receive benefits through the AAMC Fee Assistance Program (FAP) will also have access to Pivio at a reduced subscription fee.
- More system and subscription information available at www.pivio.org
- Email: info@pivio.org or call 202-778-4768, Mon-Fri, 9a-5p ET

Fall 2013 Matriculants

Number of Applicants, With Data on the Profile of the Pool Including Gender, Race/Ethnicity, Age, Etc.:

Information pulled from: www.aamc.org/newsroom/newsreleases/358410/20131024.html

A record number of students applied to and enrolled in the nation's medical schools in 2013. The total number of applicants to medical school grew by **6.1 percent to 48,014**, surpassing the previous record set in 1996 by 1,049 students. First time applicants, another important indicator of interest in medicine, increased by 5.8 percent to 35,727. The number of students enrolled in their first year of medical school exceeded 20,000 for the first time (20,055), a 2.8 percent increase over 2012. The overall growth in medical student enrollment can be attributed, in part, to the creation of new medical schools as well as existing schools' efforts to expand their class sizes after the AAMC, in 2006, called for a 30 percent increase in enrollment to avert future doctor shortages. In 2013, 14 medical schools increased their class sizes by more than 10 percent. Four new medical schools welcomed their first classes this year, contributing to about half of the overall enrollment increase. Since 2002, medical schools have increased the number of first-year students by 21.6 percent.

The diversity of students applying to and enrolling in medical school remained relatively steady, with two notable gains. The number of first-time female applicants increased by 1,102 or 6.9 percent, after remaining flat in 2012. The number of Hispanics/Latinos attending medical school continued to increase, rising by 5.5 percent to 1,826 enrollees.

Additional highlights:

- As in past years, the total number of men and women applying to and enrolling in medical school is fairly equally split, with male enrollees accounting for approximately 53 percent and female enrollees accounting for 47 percent of the 2013 class. In addition to the increase in first-time female applicants, the total number of men applying to medical school increased 5.8 percent from 24,338 applicants in 2012 to 25,760 male applicants in 2013.
- The overall quality of this year's application pool remained strong, with nearly three-quarters of applicants reporting research experience and two-thirds reporting voluntary community service. This year's applicants reported an average undergraduate GPA of 3.54 and a combined median MCAT® score of 29.
- For charts and Graphs please use the following link:
[2013applicantandenrollmentdatacharts.pdf](http://www.aamc.org/students/applying/requirements/msar/toolkit/351636/requiredpremedicalcourseworkandcompetencies.html)

Prerequisites

Academic: Prerequisites vary by school. See the Medical School Admission Requirements school profiles (www.aamc.org/msar) or our list of the medical schools' coursework and competencies webpages.

www.aamc.org/students/applying/requirements/msar/toolkit/351636/requiredpremedicalcourseworkandcompetencies.html

Standardized Test(s):

The MCAT Exam (www.aamc.org/mcat)

Experience/Exposure:

Good experiences can include (but is not limited to) shadowing a doctor, volunteering in a medical setting, working in a lab, and participating in a summer or pipeline program.

www.aamc.org/students/aspiring/experience

Letters of Recommendation:

Letters of Evaluation and how to submit them:

www.aamc.org/students/applying/amcas/amcasresources/63226/faq_amcasletters.html

Guide to writing Letters of Evaluation:

www.aamc.org/initiatives/admissionsinitiative/letters/



Timeline for Application/Admission to Medical School

Use this general guide to help prepare for the medical school application and admission process. Be sure to talk to your pre-health advisor to create a schedule that works best for you.

<p>COLLEGE YEAR 1</p>	<ul style="list-style-type: none"> • Talk with an academic advisor about selecting fall semester courses • Make an appointment with a pre-health advisor to introduce yourself, discuss the best way to sequence your classes and get acquainted with campus resources • Attend pre-health meetings on campus and make sure you are on email lists to get relevant updates and information • Seek opportunities to volunteer, shadow a doctor, and, if interested, identify research opportunities on your campus • Develop relationships with faculty, advisors, and mentors on your campus • Explore the AAMC's <i>Considering a Medical Career</i> resources (www.aamc.org/students/considering) • Identify summer volunteer, paid, research and leadership opportunities related to medicine • Apply to summer enrichment programs (http://services.aamc.org/summerprograms/) or research programs (www.aamc.org/members/great161052/great_summerlinks.html) • Complete first year premedical coursework and other school-specific degree requirements
<p>SUMMER FOLLOWING COLLEGE YEAR 1</p>	<ul style="list-style-type: none"> • Work or volunteer for a position in the medical field; consider internships, research and leadership opportunities on campus or in your local community • If you're eligible, participate in summer enrichment or research programs • Take summer courses through a university if desired or necessary
<p>COLLEGE YEAR 2</p>	<ul style="list-style-type: none"> • Check-in with your pre-health advising office; attend all pre-health meetings, and make sure you're still on email lists to receive information and updates • Pursue meaningful clinical experience, medically-related activities, volunteer work research and/or leadership roles • Continue to develop relationships with faculty, advisors, and mentors on your campus • Apply for summer research, internship, or enrichment programs such as the Summer Medical and Dental Education Program (www.smdep.org) • Consider returning to your previous summer position, or apply for a new summer volunteer, paid or research position related to medicine • Complete second year premedical coursework and other school-specific degree requirements
<p>SUMMER FOLLOWING COLLEGE YEAR 2</p>	<ul style="list-style-type: none"> • Work or volunteer in the medical field; consider internships, research opportunities and leadership positions on campus or in your local community • Participate in summer enrichment, research, or internship programs • Take summer courses through a university if desired or necessary • Investigate: <ul style="list-style-type: none"> o The medical school application process (www.aamc.org/students/applying/) o Medical College Admission Test (MCAT®) (www.aamc.org/mcat) o Fee Assistance Program (FAP) (www.aamc.org/fap)
<p>COLLEGE YEAR 3</p>	<ul style="list-style-type: none"> • By this time, you should have a well-established relationship with a pre-health advisor and should be actively participating in pre-health activities • Identify and pursue leadership opportunities within the pre-health organizations on your campus • Consider which faculty, advisors and mentors on your campus, with whom you've developed relationships, you'll approach to write letters of recommendation for your applications • Continue your participation in meaningful clinical experiences, other medically related activities, volunteer work, research and/or leadership roles on campus; if possible, consider taking on a more substantial role • Investigate: <ul style="list-style-type: none"> o Medical schools in the U.S. and Canada (https://services.aamc.org/30/msar/home) o <i>Minorities in Medicine</i> to get information on groups underrepresented in medicine (www.aamc.org/students/minorities/) • Meet with your pre-health advisor to: <ul style="list-style-type: none"> o Strategize about your application timeline, whether it be for immediately following graduation or after one or more gap years o Discuss your schedule for completing remaining premedical coursework and other school-specific degree requirements <p style="text-align: right;">...continued on next page</p>

<p>COLLEGE YEAR 3 (continued)</p>	<ul style="list-style-type: none"> o Identify the best time for you to take the MCAT® exam; visit the MCAT web site to find the best options for test dates and locations (www.aamc.org/mcat) o Discuss letters of recommendation and committee premedical evaluation (if available) o Review your medical education options • If you're prepared and ready, register for and take the MCAT exam in spring • If you are considering a gap/bridge year, investigate a meaningful paid or volunteer medically-related experience to complete during that time • Familiarize yourself with medical school application services: <ul style="list-style-type: none"> o American Medical College Application Service (AMCAS®) (www.aamc.org/students/applying/amcas/) o Texas Medical and Dental Schools Application Service (TMDSAS) (www.utsystem.edu/) • Research medical school curricula and joint, dual, and combined-degree programs • Complete third year premedical coursework and other school-specific degree requirements
<p>SUMMER FOLLOWING COLLEGE YEAR 3</p>	<ul style="list-style-type: none"> • Continue your involvement with meaningful paid, volunteer, internship, medically related, research and leadership experiences • If applying to begin medical school following your senior year: <ul style="list-style-type: none"> o Complete AMCAS application o Work on secondary applications o Ask instructors, mentors, and advisors to write letters of recommendation for you • When you're prepared and ready, if you haven't taken the MCAT exam yet, or if you want to take the exam again, sign up to take the MCAT exam in the summer
<p>COLLEGE YEAR 4</p>	<ul style="list-style-type: none"> • You should be regularly consulting with your pre-health advisor to: <ul style="list-style-type: none"> o Discuss letters of recommendation and committee premedical evaluation (if available) o Review your medical education options, such as a post baccalaureate premedical program (http://services.aamc.org/postbac/) o Discuss the status of your applications and the admission process for schools to which you've applied • If applying for enrollment immediately following senior year: <ul style="list-style-type: none"> o Complete supplementary application materials for schools to which you've applied o Prepare for your interviews and campus visits at medical schools o Become familiar with <i>AAMC Recommendations for Medical School and M.D.-Ph.D. Admission Officers</i> (https://www.aamc.org/students/applying/recommendations/admissionofficers/) o Become familiar with <i>Applicant Responsibilities</i> (www.aamc.org/students/applying/policies/) • Continue with your meaningful clinical experiences, other medically related activities, volunteer work, research and/or leadership experiences • When you're prepared and ready, if you have not previously taken the MCAT exam or want to retake the exam, sign up to take the MCAT exam in the spring • If applying for enrollment immediately following senior year: <ul style="list-style-type: none"> o Receive acceptances! o Make interim and final decisions about your medical school choice o Notify medical schools that you will not be attending on or before the deadline given o Ensure that all IRS and financial aid forms are completed and submitted as early as possible • Complete degree requirements and graduate
<p>SUMMER FOLLOWING GRADUATION</p>	<ul style="list-style-type: none"> • If enrolling immediately following senior year: <ul style="list-style-type: none"> o Purchase books and equipment and make appropriate living arrangements o Attend orientation programs and matriculate into medical school • If applying for enrollment following a gap/bridge year(s): <ul style="list-style-type: none"> o Complete AMCAS application o Work on secondary applications o Ask instructors, mentors, and advisors to write letters of recommendation for you
<p>GAP/ BRIDGE YEAR(S)</p>	<ul style="list-style-type: none"> • Seek meaningful employment, education and/or experience • Pay down credit card and/or undergraduate debt as much as possible • Continue to consult regularly with your pre-health advisor throughout the process • Complete supplementary application materials for schools to which you've applied • Interview and take campus tours at medical schools • Become familiar with <i>AAMC Recommendations for Medical School and M.D.-Ph.D. Admission Officers</i> (https://www.aamc.org/students/applying/recommendations/admissionofficers/) • Become familiar with <i>Applicant Responsibilities</i> (www.aamc.org/students/applying/policies/)
<p>ONCE ACCEPTED INTO MEDICAL SCHOOL</p>	<ul style="list-style-type: none"> o Make interim and final decisions about medical school choice o Notify medical schools that you will not be attending on or before the deadline given o Ensure that all IRS and financial aid forms are completed and submitted as early as possible o Purchase books and equipment and make appropriate living arrangements o Attend orientation programs and matriculate into medical school



How Do I... Decide if a Career in Medicine is Right for Me?

Should I become a doctor?

Think about what kind of future appeals to you. Do you like challenges? Are you interested in science and how the body works? Do you care deeply about other people, their problems, and their pain? Are you a good listener? Do you enjoy learning? Are you intrigued by the ways medicine can be used to improve life?

If you answered "Yes" to most of these questions, chances are you have the right personality for a career in medicine. Talk to career counselor or pre-health advisor to learn more about if this is the right choice for you.

What is a doctor's job like?

Physicians diagnose and care for people of all ages who are ill or have been injured. They take medical histories, perform physical examinations, conduct diagnostic tests, recommend and provide treatment, and advise patients on their overall health and well-being.

While there are several different types of physicians, they can usually be divided into three broad categories:

- **Primary care physicians** are the doctors patients usually visit most frequently. They treat a wide range of illnesses and regularly provide preventive care, and they also enjoy long-term relationships with their patients. Pediatricians, family practitioners and general internists are primary care physicians.
- **Surgeons** perform operations to treat diseases and repair injuries.
- **Specialists** have expertise related to specific diseases as well as body parts, organs, and systems. Cardiologists, Oncologists, Neurologists, and ophthalmologists are examples of specialists. The **AAMC's Careers in Medicine** website contains information and links about various specialties in medicine.

MORE INFORMATION

Careers in Medicine specialty information:

www.aamc.org/cim/specialty/list

Information about financing a medical education and repaying education debt: www.aamc.org/first

How much education does it take to become a doctor?

Becoming a doctor requires a serious educational commitment. It typically takes from 11 to 16 years to complete your education, including four years of college (undergraduate school), four years of medical school and anywhere from three to eight years of training in a specific specialty area (residency training), depending on which specialty you choose to pursue. In order to maintain a medical license, doctors are also required to continue taking courses and learning about advancements in their field throughout their career.

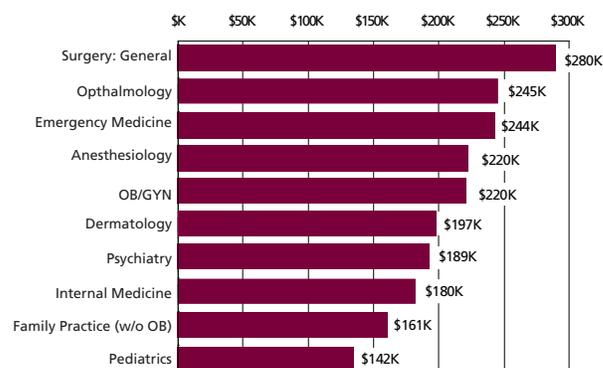
What is the lifestyle and salary like?

While salaries for physicians are among the highest for all occupations, the work hours can be long and unpredictable. Many doctors work more than 60 hours a week. They may also have to respond to emergencies and be on call for their patients. Work hours vary depending on the type, size and location of practice.

Salaries vary depending on where physicians live and the type of medical specialty they practice. The graph below will give you an idea of median starting salaries by specialty.

SAMPLE SPECIALTIES AND SALARIES:

Median Starting Salary: First Year Post Residency or Fellowship Compensation



Source: Physician Placement Starting Salary Survey: 2013 Report Based on 2012 Data. Reprinted with permission from the Medical Group Management Association, 104 Inverness Terrace East, Englewood, Colorado 80112-5306; 303.799.1111. www.mgma.com Copyright 2012.



How Do I... Find Health Care-related Volunteer Opportunities?

Volunteering in a health care-related opportunity or organization will benefit you in addition to enhancing your medical school application. It's a chance to see if you enjoy working in the health or medical field, network with like-minded peers, take on increased responsibility and leadership roles, and build your resume.

Where can I find out about opportunities?

If you are still in school, your first step should be to talk to your academic or pre-health advisor. Also, check to see if there is an office of community service or student activities on campus that maintains a website or database. Be sure to join premed or service clubs since they're one of the best ways to hear about volunteer openings, make friends, and find out about opportunities, conferences, resources, and research positions for premeds. You can also contact hospitals, clinics, labs, research facilities, charities, foundations, or other organizations directly as many have volunteer opportunities listed online.

What types of volunteer experiences are best?

Although you'll benefit from almost any type of volunteer experience, it's best to find a health care-related opportunity. You want to search for an opportunity that genuinely interests you so that you'll enjoy the experience, be motivated to stick with it, and learn from it. You may need to try a few different volunteer experiences until you discover one that will be a good long-term fit, but don't do something just because you think it will "look good." When you talk about your experiences during medical school interviews, it will be easier if you're passionate and invested in the health care work in which you've participated.

Is it better to have one on-going experience, or many different experiences?

It's good to have a variety of experiences, but it's also important to show you've cultivated specific interests and are able to commit to an activity over a sustained period of time. You're more likely to gain significant responsibilities or leadership roles if you volunteer with an organization regularly. This also helps you network and develop relationships with potential mentors and other people who may potentially write your letters of recommendation.

What about non-medically-related experiences?

If you're interested in something not related to medicine, don't be afraid to pursue it. Most volunteer experiences are valuable and will provide you with well-rounded experiences. Just make sure you have at least one solid health care-related experience, in addition to your non-medical volunteer work, so that your experiences speak to your commitment to medicine.

What's the best way to maximize my opportunities during an experience?

"One thing that I always tell students is to make the most of the opportunity they participate in by advocating for themselves," says Lisa Kooperman, assistant dean of studies and director of the Office for Fellowships and Pre-health Advising at Vassar College. "If they find themselves in a hospital for instance, pushing papers, I tell them to befriend a nurse, a PA, a radiologist... or other health care practitioner and ask if they can get more involved. Their motivation is likely to be met with some extra responsibilities that will get them more exposure and respect. It's important to build relationships throughout the experience as a way of learning more about the field, and it can often lead to a strong letter of recommendation."

How can I document these experiences? Should I ask for a letter post-experience?

Start maintaining a resume that documents where you volunteer, when, and who supervised you. You can also keep a journal about your experiences to reference when it comes time to write your personal statements and essays for medical school. It never hurts to ask for a letter of recommendation if you've volunteered somewhere long enough for the writer to get to know you and your goals.

RELATED FACT SHEETS:

How do I... Get Lab Experience?

<https://www.aamc.org/students/aspiring/experience/280610/lab-experience.html>

How do I... Shadow a Doctor?

<https://www.aamc.org/students/aspiring/experience/280582/shadow-doctor.html>



How Do I... Shadow a Doctor?

Shadowing a doctor is a great way to find out if a career in medicine might be right for you. It'll give you a better understanding of what a doctor's typical day is like, and may give you good experience to talk about in your applications and interviews for medical school. It's also a great way to gain familiarity with the vast number of different medical and research environments, as well as specialties.

How do I find a doctor to shadow?

If you have a relationship with your own doctor, or know any doctors, start by asking them. Likely, this will be your strongest and best resource to find a shadowing opportunity. You can also ask your teachers, professors, and pre-med or academic advisors if they know any doctors that other students have shadowed in the past. If you're in college, leverage any relationships your school may have with a medical school or hospital on campus. It's also okay to contact hospitals through their volunteer office, or search online for local doctors with specialties that interest you. Call their office or email them at least a few weeks before you'd like to begin shadowing.

How should I ask them?

Express why you want to shadow this person specifically. Maybe someone recommended them or maybe they practice a specialty that interests you. Briefly tell them where you go to school, any medical or research experiences you've had, and your goals. Be courteous and professional. Many doctors welcome opportunities to talk to students, so if you get turned down, ask other doctors.

How long should I shadow?

Arrange something that fits both the doctor's schedule and your level of interest. You may only want to spend one day with them, or you may want to shadow a few hours a week for several weeks or months. If you have the time in the summer or over a break, you may want to shadow full time for an entire week. Find out what the doctor is comfortable with or what has worked well in the past.

What should I wear and what should I bring?

Dress professionally and comfortably: dress pants and a tie for men, dress pants or a dress for women, and closed-toed shoes you can walk in all day. Bring a notebook. Ask questions and take notes in between patients, not in front of them, and prepare some questions ahead of time.

Should I talk to patients?

The doctor is required to introduce you to each patient and explain that you are a pre-medical student, so expect to talk to patients. Some people may be uncomfortable having you in the room during an examination or the entire appointment, so you may be asked to step out. Other patients may ask you questions about yourself, school or your plans to become a doctor. In either case, it's important that you keep all patient information private. You may be required to sign a HIPAA compliance document stating that you will not disclose any patient information or details that could lead to patient identification.

What should I do afterwards?

Write a thank you note to give the doctor on your last day that thanks them for their time. If you think it went well, ask for a letter of recommendation right away. Don't wait until you need it because the experience may not be fresh in the doctor's mind by that time. Reflect on what you've learned from your shadowing experience and write down anything you may want to remind yourself of when you're writing your personal statements for medical school.

RELATED FACT SHEETS:

How do I... Get Lab Experience?

www.aamc.org/students/aspiring/experience/280610/lab-experience.html

How do I... Find Health Care-related Volunteer Experience?

www.aamc.org/students/aspiring/experience/313730/howdofindhealthcare-relatedvolunteeroportunities.html



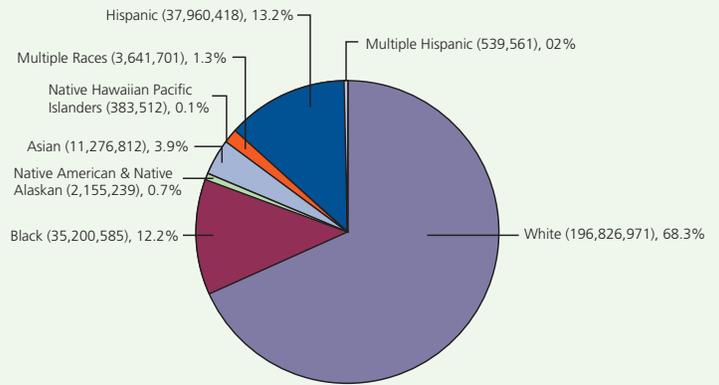
Tomorrow's Doctors, Tomorrow's Cures®

America Needs a More Diverse Physician Workforce

One of the most pressing health care challenges facing the nation is the critical need for more minority physicians. In the next 15 years, the nation is projected to confront an overall shortage of physicians, but the need is, and will continue to be, particularly great for minority physicians.

By 2050, racial and ethnic minorities are projected to account for half of the U.S. population.

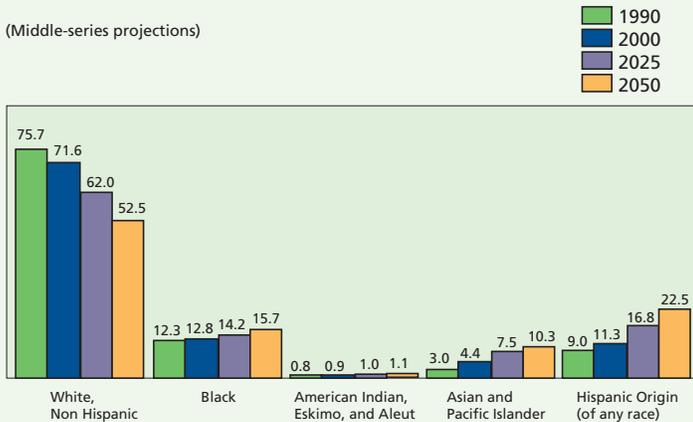
Estimated Population by Race/Ethnicity, 2002



Data Source: Population Division, U.S. Census Bureau: Table 3: Annual Estimates of the Population by Sex, Race and Hispanic or Latino Origin for the United States: April 1, 2000 to July 1, 2005 (NCEST2005-03). Release Date: May 10, 2006.

Percent of Population, by Race and Hispanic Origin: 1990, 2000, 2025, and 2050

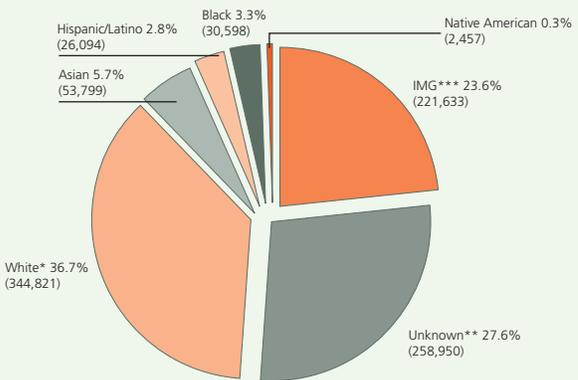
(Middle-series projections)



Source: U.S. Census Bureau, Population Division and Housing and Household Economic Statistics Division. <http://www.census.gov/population/www/pop-profile/natproj.html>

While African Americans and Hispanics are among the fastest growing segments of the population, they are also the most severely underrepresented minorities in medicine. Today, African Americans, Hispanics, and Native Americans together make up 25 percent of the U.S. population. However, only 6 percent of practicing doctors come from these groups.

U.S. Physicians by Race and Ethnicity, 2004



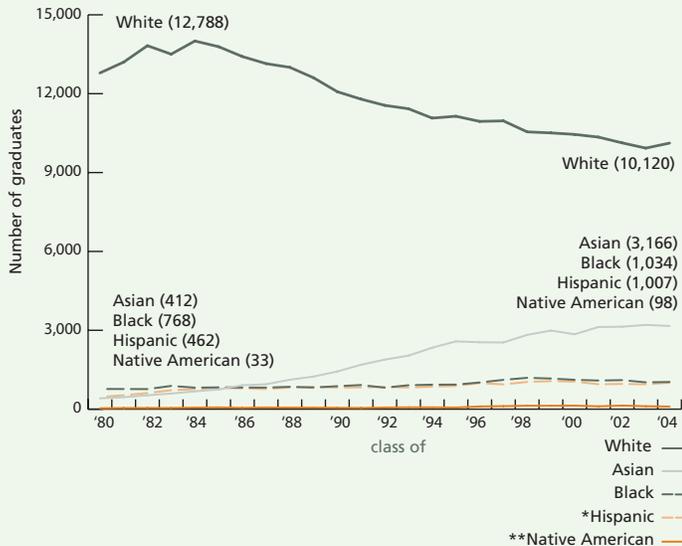
Note: Asian includes Chinese, Filipino, Korean, Japanese, Vietnamese, Indian/Pakistani, Other Asian; Hispanic/Latino includes Mexican American, C'wealth Puerto Rican, Mainland Puerto Rican, Other Hispanic; Native American includes American Indian/Alaska Native, and as of 1996, Native Hawaiians.
 *These data mainly represent White physicians who graduated from U.S. allopathic medical schools from 1978-2004.
 **Includes physicians who graduated from Canadian medical schools, doctors of osteopathic medicine, and most likely Whites who graduated prior to 1978.

Data Source: AAMC Data Warehouse: Minority Physician Database, Applicant-Matriculant File, and AMA Physician Masterfile, as of March 16, 2006.

***International Medical Graduates.

Although the number of minority students entering the medical school pipeline is increasing, it is not growing at a rate that will ensure the nation has the supply of minority physicians it needs. Currently, only 12 percent of students graduating from U. S. medical schools are African American, Hispanic, or Native American, and only 15 percent of medical school applicants are from these groups.

Medical School Graduates by Race and Ethnicity, 1980-2004



* Hispanic includes Mexican American, Puerto Rican, and Other Hispanic. ** From 1997 forward, includes Native American/Alaska Native and Native Hawaiian. Prior to 1997, includes only Native American and Alaska Native.
Data Source: AAMC Data Warehouse: Student_IND, as of 1/05/2005.

The nation’s changing demographics, the health care demands of an increasingly diverse population, and the growing evidence of persistent health care disparities faced by minority populations demonstrate that the need for more African American, Hispanic, and Native American doctors is real. Combined with an overall shortage of physicians that is projected by 2020, the need is urgent.

The Benefits of a Diverse Physician Workforce

Research indicates that physician diversity addresses health care disparities in at least three important ways:

- **Improved access**

Studies show that minority physicians are more likely to treat minority patients and indigent patients and to practice in underserved communities. For example, the AAMC annually surveys graduating medical students about their career plans. The 2004 results of that survey indicated that about one-fifth of all graduates planned to practice in underserved areas, including nearly 51 percent of African American, 41 percent of Native Americans, and 33 percent of Hispanic graduates. By comparison, only 18 percent of white graduates had similar intentions.

- **Increased patient satisfaction**

Studies also indicate that when minority patients can select a health care professional, they are more likely to choose someone of their own racial and ethnic background. Relationships between patients and physicians of the same race or ethnic background also are characterized by higher levels of trust, respect, and the increased likelihood that patients will recommend their physician to others.

- **Ensuring culturally competent care**

The nation needs a culturally competent health care workforce—that is, one with the knowledge, skills, attitudes, and behaviors required to provide the best care to a diverse population. Exposure to racial and ethnic diversity in medical school contributes importantly to the cultural competence of all of tomorrow’s doctors. A diverse student body brings an array of ideas to the learning environment; helps students challenge their assumptions; and broadens their perspectives regarding racial, ethnic, and cultural differences.

Diversity in the physician workforce ensures that the health care system is representative of the nation’s population and responsive to its health care needs. At the foundation of Healthy People 2010 is the premise that “the health of the individual is almost inseparable from the health of the larger community and . . . the health of every community in every State and territory determines the overall health status of the Nation.” The contribution made by a diverse physician workforce to strengthen the foundation of the nation’s health is essential.

Except where other sources are cited, these data are also available in two new AAMC publications: [Minorities in Medical Education: Facts & Figures, 2005](#) and [Diversity in the Physician Workforce: Facts & Figures, 2006](#).

California Physician Workforce Profile

2	State Population:	38,041,430	Total Female Physicians:	32,718
0	Population ≤ age 18	9,798,537	Total Medical or Osteopathic Students	6,780
1	Total Active Physicians:	97,977	Total Residents:	9,904
2	Primary Care Physicians:	34,604		

For additional data, including maps and tables, please see the 2013 State Physician Workforce Data Book online at www.aamc.org/statedatabook

		CA	CA Rank	State Median
Physician Supply	Active Physicians per 100,000 Population, 2012	257.6	20	244.5
	Total Active Patient Care Physicians per 100,000 Population, 2012	224.9	21	217.6
	Active Primary Care Physicians per 100,000 Population, 2012	91.0	25	90.3
	Active Patient Care Primary Care Physicians per 100,000 Population, 2012	82.6	23	81.5
	Percent Active Female Physicians, 2012	33.5%	16	30.8%
	Percent of Active Physicians who are International Medical Graduates, 2012	24.4%	14	18.2%
	Percentage of Active Physicians Who Are Age 60 or Older, 2012	31.5%	2	26.5%
Undergraduate Medical Education (UME)	Students Enrolled in Medical or Osteopathic School per 100,000 Population, AY 2012-2013	17.8	43	29.1
	Students Enrolled in <i>Public</i> Medical or Osteopathic Schools per 100,000 Population, AY 2012-2013	8.3	41	18.8
	Percent Change in Students Enrolled in Medical or Osteopathic Schools (2002-2012)	15.7%	28	18.6%
	Percent of Medical School Matriculants from In-State, AY 2012-2013	37.1%	38	67.7%
Graduate Medical Education (GME)	Total Residents/Fellows in ACGME Programs per 100,000 Population as of December 31, 2011	26.3	28	26.8
	Total Residents/Fellows in Primary Care ACGME Programs per 100,000 Population as of Dec. 31, 2011	9.5	32	10.4
	Percentage of International Medical Graduates in ACGME Programs as of December 31, 2011	11.4%	44	22.4%
	Ratio of Residents and Fellows (GME) to Medical and Osteopathic Students (UME), AY 2011-2012	1.5	10	1.05
	Percent Change in Residents and Fellows in ACGME-Accredited Programs, 2001-2011	12.3%	41	19.7%
Retention	Percent of Physicians Retained in State from Undergraduate Medical Education, 2012	62.4%	1	38.7%
	Percent of Physicians Retained in State from Undergraduate Medical Education (<i>Public</i>), 2012	67.9%	1	44.9%
	Percent of Physicians Retained in State from Graduate Medical Education, 2012	69.5%	1	44.9%
	Percent of Physicians Retained in State from UME and GME Combined, 2012	80.1%	4	68.1%

State Rank: How a particular state ranks compared to the other 49. Rank of 1 goes to the state with the highest value for the particular category.
 State Median: The value directly in the middle of the 50 states, so 25 are above the median and 25 are below and excludes the District of Columbia and Puerto Rico.

California Physician Workforce Profile



Specialty	Total Active Physicians	People Per Physician	Female		Age 60 or Older	
			Number	Percent	Number	Percent
All Specialties	97,977	388	32,718	33.5	30,835	31.5
Allergy & Immunology	541	70,317	162	29.9	247	45.7
Anatomic/Clinical Pathology	1,655	22,986	570	34.5	712	43.0
Anesthesiology	5,063	7,514	1,233	24.4	1,550	30.6
Cardiovascular Disease	2,277	16,707	291	12.8	1,074	47.2
Child & Adolescent Psychiatry**	960	10,207	472	49.2	273	28.5
Dermatology	1,640	23,196	720	44.0	533	32.5
Emergency Medicine	4,551	8,359	1,106	24.3	1,176	25.9
Endocrinology, Diabetes & Metabolism	699	54,423	285	40.8	254	36.3
Family Medicine/General Practice	12,351	3,080	4,820	39.2	3,667	29.7
Gastroenterology	1,491	25,514	234	15.7	539	36.2
General Surgery	2,838	13,404	526	18.6	965	34.0
Geriatric Medicine	457	83,242	223	48.8	94	20.6
Hematology & Oncology	1,440	26,418	431	29.9	454	31.5
Infectious Disease	808	47,081	282	34.9	227	28.1
Internal Medicine	14,242	2,671	5,294	37.3	3,682	25.9
Internal Medicine/Pediatrics**	302	32,445	157	52.0	*	*
Neonatal-Perinatal Medicine**	569	17,221	268	47.1	187	32.9
Nephrology	1,016	37,442	273	26.9	311	30.6
Neurological Surgery	558	68,175	40	7.2	191	34.2
Neurology	1,491	25,514	408	27.4	572	38.4
Obstetrics & Gynecology	4,913	7,743	2,571	52.4	1,665	33.9
Ophthalmology	2,331	16,320	568	24.4	770	33.0
Orthopedic Surgery	2,347	16,209	138	5.9	1,005	42.8
Otolaryngology	1,108	34,333	205	18.5	368	33.2
Pediatrics**	7,185	1,364	4,356	60.7	2,079	29.0
Physical Medicine & Rehabilitation	951	40,002	319	33.6	198	20.8
Plastic Surgery	1,095	34,741	139	12.7	401	36.6
Preventive Medicine	887	42,888	299	33.7	424	47.8
Psychiatry	5,373	7,080	1,851	34.5	2,455	45.7
Pulmonary Disease & Critical Care Medicine	1,408	27,018	246	17.5	488	34.7
Radiation Oncology	513	74,155	143	27.9	158	30.8
Radiology & Diagnostic Radiology	3,154	12,061	737	23.4	1,261	40.0
Rheumatology	645	58,979	255	39.7	250	38.8
Thoracic Surgery	500	76,083	39	7.8	220	44.0
Urology	1,045	36,403	86	8.2	421	40.3
Vascular Surgery	308	123,511	31	10.1	107	34.7

Sources: AMA Physician Masterfile (12/31/12), Population estimates as of July 1, 2012 are from the U.S. Census Bureau (Release date: December 2012)

* Counts for specialties with fewer than 10 physicians are not shown

** Only those 18 years or younger are included in People Per Physician

**Table 13: Race/Ethnicity of Applicants to U.S. Medical Schools,
2013-2014 and 2014-2015**



The table below displays the self-identified racial and ethnic characteristics of applicants to U.S. medical schools.* The category totals do not add to the total number of applicants since an applicant could designate multiple categories. Please email us at datarequest@aamc.org if you need further assistance or have additional inquiries.

Applicants Race/Ethnicity Responses	2013-2014	2014-2015
American Indian or Alaska Native	425	449
Asian	9,793	10,415
Black or African American	3,865	3,990
Hispanic, Latino, or of Spanish Origin	3,999	4,386
Native Hawaiian or Other Pacific Islander	165	177
White	25,729	26,800
Other	2,118	2,276
Unknown Race/Ethnicity	3,299	2,698
Non-U.S. Citizen and Non-Permanent Resident	1,777	1,901
<i>Unduplicated Total Applicants</i>	<i>48,014</i>	<i>49,480</i>

Percent of Applicant Race/Ethnicity Responses	2013-2014	2014-2015
American Indian or Alaska Native	0.9	0.9
Asian	20.4	21.0
Black or African American	8.0	8.1
Hispanic, Latino, or of Spanish Origin	8.3	8.9
Native Hawaiian or Other Pacific Islander	0.3	0.4
White	53.6	54.2
Other	4.4	4.6
Unknown Race/Ethnicity	6.9	5.5
Non-U.S. Citizen and Non-Permanent Resident	3.7	3.8
<i>Unduplicated Total Applicants</i>	<i>100.0</i>	<i>100.0</i>

* In 2013, the methodology for acquiring race/ethnicity information was updated. Rather than one question asking an applicant's Hispanic origin and a second question asking the applicant's race, the Hispanic origin and race response options are now listed together under a single question about how applicants self-identify. Applicants could select multiple response options.

Table 17: MCAT Scores and GPAs for Applicants and Matriculants to U.S. Medical Schools, 2003-2014

Average MCAT scores and GPAs for applicants and matriculants are displayed below. Please email us at datarequest@aamc.org if you need further assistance or have additional inquiries.

Applicants		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
MCAT VR	Mean	8.6	8.9	8.9	8.9	9.0	9.0	9.0	9.1	9.0	9.0	9.1	9.2
	SD*	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.2	2.1
MCAT PS	Mean	8.9	8.9	9.0	9.0	9.2	9.3	9.2	9.4	9.4	9.5	9.5	9.5
	SD	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
MCAT BS	Mean	9.2	9.3	9.4	9.5	9.6	9.8	9.8	9.8	9.9	9.9	9.8	9.9
	SD	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1
Total MCAT	Mean	26.8	27.1	27.3	27.4	27.7	28.1	27.9	28.3	28.2	28.3	28.4	28.6
	SD	5.6	5.5	5.6	5.6	5.8	5.6	5.6	5.5	5.5	5.5	5.5	5.5
MCAT WS	Median	P	O	O	O	O	P	O	P	P	P	P	P
GPA Science	Mean	3.36	3.36	3.37	3.38	3.39	3.40	3.41	3.43	3.43	3.44	3.44	3.45
	SD	0.46	0.46	0.45	0.45	0.45	0.44	0.44	0.43	0.43	0.43	0.43	0.42
GPA Non-Science	Mean	3.60	3.60	3.60	3.61	3.62	3.63	3.64	3.65	3.65	3.66	3.66	3.67
	SD	0.33	0.33	0.32	0.32	0.32	0.31	0.31	0.30	0.30	0.31	0.30	0.30
GPA Total	Mean	3.47	3.47	3.48	3.48	3.49	3.50	3.51	3.53	3.53	3.54	3.54	3.55
	SD	0.37	0.37	0.36	0.37	0.36	0.36	0.35	0.35	0.34	0.34	0.34	0.34
Total Applicants		34,791	35,735	37,372	39,108	42,315	42,231	42,268	42,741	43,919	45,266	48,014	49,480

Matriculants		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
MCAT VR	Mean	9.5	9.7	9.7	9.8	9.9	9.9	9.8	9.9	9.8	9.8	10.0	10.0
	SD	1.7	1.7	1.8	1.7	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.6
MCAT PS	Mean	9.9	9.9	10.0	10.1	10.3	10.3	10.3	10.4	10.4	10.5	10.6	10.6
	SD	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9
MCAT BS	Mean	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.8	10.8	10.9	10.8	10.9
	SD	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6
Total MCAT	Mean	29.6	29.9	30.2	30.3	30.8	30.9	30.8	31.1	31.1	31.2	31.3	31.4
	SD	4.2	4.1	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	3.9
MCAT WS	Median	P	P	P	P	P	P	P	Q	Q	Q	Q	Q
GPA Science	Mean	3.55	3.56	3.56	3.57	3.59	3.60	3.60	3.61	3.61	3.63	3.63	3.63
	SD	0.35	0.35	0.35	0.34	0.33	0.33	0.32	0.32	0.32	0.31	0.31	0.31
GPA Non-Science	Mean	3.70	3.70	3.70	3.71	3.73	3.73	3.74	3.75	3.74	3.75	3.76	3.77
	SD	0.26	0.26	0.27	0.26	0.25	0.25	0.25	0.24	0.25	0.24	0.23	0.24
GPA Total	Mean	3.62	3.62	3.63	3.64	3.65	3.66	3.66	3.67	3.67	3.68	3.69	3.69
	SD	0.28	0.28	0.28	0.27	0.27	0.26	0.26	0.26	0.26	0.25	0.25	0.25
Total Matriculants		16,541	16,648	17,003	17,361	17,759	18,036	18,390	18,665	19,230	19,517	20,055	20,343

* SD = Standard Deviation

Table 18: MCAT and GPAs for Applicants and Matriculants to U.S. Medical Schools by Primary Undergraduate Major, 2014

Average MCAT scores and GPAs for year 2014 applicants and matriculants to U.S. medical schools by primary undergraduate major are displayed below.*
Please email us at datarequest@aamc.org if you need further assistance or have additional inquiries.

Applicants, 2014	MCAT VR		MCAT PS		MCAT BS		Total MCAT		MCAT WS			GPA Science		GPA Non-Science		GPA Total		Total Applicants
	Mean	SD*	Mean	SD	Mean	SD	Mean	SD	25th %ile	Median	75th %ile	Mean	SD	Mean	SD	Mean	SD	
Biological Sciences	9.0	2.1	9.4	2.2	10.0	2.1	28.5	5.4	N	P	Q	3.46	0.41	3.70	0.29	3.55	0.34	26,773
Humanities	9.9	1.8	9.6	2.1	10.0	1.9	29.5	4.9	O	Q	R	3.43	0.45	3.66	0.31	3.55	0.33	1,968
Math and Statistics	9.6	2.2	10.9	2.1	10.5	2.0	31.0	5.3	N	Q	Q	3.54	0.36	3.68	0.30	3.59	0.32	402
Other	9.0	2.2	9.3	2.3	9.7	2.1	28.0	5.5	N	P	Q	3.44	0.43	3.67	0.29	3.54	0.33	8,700
Physical Sciences	9.5	2.1	10.5	2.2	10.2	2.0	30.2	5.3	N	Q	Q	3.51	0.40	3.64	0.32	3.56	0.34	5,015
Social Sciences	9.5	2.0	9.3	2.2	9.6	2.1	28.5	5.4	N	Q	Q	3.38	0.45	3.60	0.33	3.50	0.34	5,202
Specialized Health Sciences	8.5	2.4	8.6	2.3	9.1	2.3	26.1	6.0	M	P	Q	3.41	0.45	3.65	0.30	3.53	0.34	1,380
All Applicants	9.2	2.1	9.5	2.3	9.9	2.1	28.6	5.5	N	P	Q	3.45	0.42	3.67	0.30	3.55	0.34	49,480

Matriculants, 2014	MCAT VR		MCAT PS		MCAT BS		Total MCAT		MCAT WS			GPA Science		GPA Non-Science		GPA Total		Total Matriculants
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	25th %ile	Median	75th %ile	Mean	SD	Mean	SD	Mean	SD	
Biological Sciences	9.9	1.6	10.5	1.9	11.0	1.6	31.3	4.0	O	Q	Q	3.65	0.30	3.79	0.22	3.70	0.25	10,810
Humanities	10.5	1.4	10.4	1.8	10.8	1.6	31.8	3.6	O	Q	R	3.60	0.31	3.76	0.22	3.68	0.23	907
Math and Statistics	10.2	1.9	11.7	1.7	11.3	1.7	33.2	3.8	O	Q	R	3.66	0.28	3.76	0.22	3.70	0.24	187
Other	9.9	1.6	10.4	1.9	10.7	1.6	31.0	3.9	O	Q	Q	3.62	0.32	3.75	0.24	3.69	0.25	3,463
Physical Sciences	10.1	1.6	11.3	1.9	11.0	1.6	32.5	3.9	O	Q	R	3.66	0.30	3.74	0.25	3.69	0.26	2,347
Social Sciences	10.3	1.5	10.5	1.8	10.7	1.6	31.5	3.6	O	Q	R	3.58	0.32	3.71	0.26	3.64	0.25	2,129
Specialized Health Sciences	9.7	1.7	10.0	1.9	10.4	1.6	30.2	4.0	N	Q	R	3.63	0.30	3.76	0.24	3.69	0.25	476
All Matriculants	10.0	1.6	10.6	1.9	10.9	1.6	31.4	3.9	O	Q	Q	3.63	0.31	3.77	0.24	3.69	0.25	20,343

* SD = Standard Deviation



Table 19: MCAT Scores and GPAs for Applicants and Matriculants to U.S. Medical Schools by Race/Ethnicity, 2014

The table below displays the MCAT scores, GPAs, and self-identified racial and ethnic characteristics of applicants and matriculants to U.S. medical schools in 2014.* Please email us at datarequest@aamc.org if you need further assistance or have additional inquiries.

Applicants, 2014		American Indian or Alaska Native	Asian	Black or African American	Hispanic, Latino, or of Spanish Origin	Native Hawaiian or Other Pacific Islander	White	Other	Multiple Race/Ethnicity	Unknown Race/Ethnicity	Non-U.S. Citizen and Non-Permanent Resident	Total
MCAT VR	Mean	8.4	9.2	7.2	7.9	8.6	9.6	8.7	9.1	9.8	8.8	9.2
	SD**	2.3	2.1	2.4	2.4	1.8	1.8	2.2	2.1	1.8	2.2	2.1
MCAT PS	Mean	8.4	10.3	7.4	8.1	8.9	9.6	9.4	9.2	10.0	10.3	9.5
	SD	2.3	2.2	2.1	2.2	2.1	2.1	2.2	2.2	2.1	2.3	2.3
MCAT BS	Mean	9	10.3	7.8	8.8	9.4	10.1	9.8	9.7	10.4	10.4	9.9
	SD	2.5	2.0	2.3	2.2	2.0	1.9	2.0	2.1	1.9	2.2	2.1
Total MCAT	Mean	25.7	29.8	22.5	24.7	26.9	29.3	27.9	28.0	30.2	29.5	28.6
	SD	5.8	5.3	5.7	5.8	4.8	4.7	5.3	5.4	4.7	5.7	5.5
MCAT WS	Median	Q	Q	O	O	O	P	P	P	Q	Q	P
GPA Science	Mean	3.28	3.48	3.08	3.27	3.31	3.52	3.39	3.38	3.47	3.55	3.45
	SD	0.48	0.40	0.50	0.47	0.46	0.37	0.44	0.44	0.40	0.42	0.42
GPA Non-Science	Mean	3.58	3.69	3.49	3.59	3.60	3.71	3.65	3.64	3.67	3.70	3.67
	SD	0.36	0.28	0.36	0.33	0.26	0.28	0.31	0.32	0.30	0.29	0.30
GPA Total	Mean	3.42	3.57	3.27	3.41	3.43	3.60	3.50	3.49	3.56	3.61	3.55
	SD	0.39	0.32	0.39	0.37	0.33	0.30	0.35	0.35	0.32	0.33	0.34
Total Applicants		117	9,208	3,537	2,911	60	24,055	1,636	3,357	2,698	1,901	49,480

Matriculants, 2014		American Indian or Alaska Native	Asian	Black or African American	Hispanic, Latino, or of Spanish Origin	Native Hawaiian or Other Pacific Islander	White	Other	Multiple Race/Ethnicity	Unknown Race/Ethnicity	Non-U.S. Citizen and Non-Permanent Resident	Total
MCAT VR	Mean	9.1	10.1	8.7	8.9	8.9	10.2	9.7	10.0	10.4	9.9	10.0
	SD**	2.2	1.5	1.8	1.9	1.8	1.5	1.7	1.6	1.4	1.6	1.6
MCAT PS	Mean	9.5	11.4	9.0	9.2	9.6	10.5	10.8	10.2	11.0	11.6	10.6
	SD	2	1.7	1.8	1.9	1.8	1.8	1.7	1.9	1.8	1.9	1.9
MCAT BS	Mean	10	11.4	9.6	10.0	10.2	10.9	10.9	10.7	11.2	11.6	10.9
	SD	2	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.7	1.6
Total MCAT	Mean	28.6	32.8	27.3	28.1	28.7	31.7	31.5	30.9	32.6	33.2	31.4
	SD	5.1	3.5	3.7	4.2	3.8	3.5	3.6	3.9	3.5	4.0	3.9
MCAT WS	Median	P	Q	O	O	O	Q	Q	P	Q	Q	Q
GPA Science	Mean	3.48	3.68	3.33	3.49	3.52	3.67	3.62	3.59	3.65	3.76	3.63
	SD	0.43	0.26	0.40	0.36	0.28	0.28	0.32	0.32	0.28	0.25	0.31
GPA Non-Science	Mean	3.70	3.79	3.61	3.68	3.67	3.79	3.77	3.74	3.77	3.82	3.77
	SD	0.27	0.20	0.31	0.29	0.21	0.22	0.25	0.24	0.23	0.19	0.24
GPA Total	Mean	3.58	3.73	3.46	3.57	3.57	3.72	3.68	3.66	3.70	3.78	3.69
	SD	0.34	0.21	0.32	0.30	0.22	0.23	0.27	0.25	0.23	0.21	0.25
Total Matriculants		53	3,816	1,227	1,230	27	10,609	523	1,406	1,152	300	20,343

* In 2013, the methodology for acquiring race/ethnicity information was updated. Rather than one question asking an applicant's Hispanic origin and a second question asking the applicant's race, the Hispanic origin and race response options are now listed together under a single question about how applicants self-identify. Applicants could select multiple response options.

** SD = Standard Deviation



Table 19: MCAT Scores and GPAs for Applicants and Matriculants to U.S. Medical Schools by Race/Ethnicity, 2014

The table below displays the MCAT scores, GPAs, and self-identified racial and ethnic characteristics of applicants and matriculants to U.S. medical schools in 2014.* Please email us at datarequest@aamc.org if you need further assistance or have additional inquiries.

Applicants, 2014		American Indian or Alaska Native	Asian	Black or African American	Hispanic, Latino, or of Spanish Origin	Native Hawaiian or Other Pacific Islander	White	Other	Multiple Race/Ethnicity	Unknown Race/Ethnicity	Non-U.S. Citizen and Non-Permanent Resident	Total
MCAT VR	Mean	8.4	9.2	7.2	7.9	8.6	9.6	8.7	9.1	9.8	8.8	9.2
	SD**	2.3	2.1	2.4	2.4	1.8	1.8	2.2	2.1	1.8	2.2	2.1
MCAT PS	Mean	8.4	10.3	7.4	8.1	8.9	9.6	9.4	9.2	10.0	10.3	9.5
	SD	2.3	2.2	2.1	2.2	2.1	2.1	2.2	2.2	2.1	2.3	2.3
MCAT BS	Mean	9	10.3	7.8	8.8	9.4	10.1	9.8	9.7	10.4	10.4	9.9
	SD	2.5	2.0	2.3	2.2	2.0	1.9	2.0	2.1	1.9	2.2	2.1
Total MCAT	Mean	25.7	29.8	22.5	24.7	26.9	29.3	27.9	28.0	30.2	29.5	28.6
	SD	5.8	5.3	5.7	5.8	4.8	4.7	5.3	5.4	4.7	5.7	5.5
MCAT WS	Median	Q	Q	O	O	O	P	P	P	Q	Q	P
GPA Science	Mean	3.28	3.48	3.08	3.27	3.31	3.52	3.39	3.38	3.47	3.55	3.45
	SD	0.48	0.40	0.50	0.47	0.46	0.37	0.44	0.44	0.40	0.42	0.42
GPA Non-Science	Mean	3.58	3.69	3.49	3.59	3.60	3.71	3.65	3.64	3.67	3.70	3.67
	SD	0.36	0.28	0.36	0.33	0.26	0.28	0.31	0.32	0.30	0.29	0.30
GPA Total	Mean	3.42	3.57	3.27	3.41	3.43	3.60	3.50	3.49	3.56	3.61	3.55
	SD	0.39	0.32	0.39	0.37	0.33	0.30	0.35	0.35	0.32	0.33	0.34
Total Applicants		117	9,208	3,537	2,911	60	24,055	1,636	3,357	2,698	1,901	49,480

Matriculants, 2014		American Indian or Alaska Native	Asian	Black or African American	Hispanic, Latino, or of Spanish Origin	Native Hawaiian or Other Pacific Islander	White	Other	Multiple Race/Ethnicity	Unknown Race/Ethnicity	Non-U.S. Citizen and Non-Permanent Resident	Total
MCAT VR	Mean	9.1	10.1	8.7	8.9	8.9	10.2	9.7	10.0	10.4	9.9	10.0
	SD**	2.2	1.5	1.8	1.9	1.8	1.5	1.7	1.6	1.4	1.6	1.6
MCAT PS	Mean	9.5	11.4	9.0	9.2	9.6	10.5	10.8	10.2	11.0	11.6	10.6
	SD	2	1.7	1.8	1.9	1.8	1.8	1.7	1.9	1.8	1.9	1.9
MCAT BS	Mean	10	11.4	9.6	10.0	10.2	10.9	10.9	10.7	11.2	11.6	10.9
	SD	2	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.7	1.6
Total MCAT	Mean	28.6	32.8	27.3	28.1	28.7	31.7	31.5	30.9	32.6	33.2	31.4
	SD	5.1	3.5	3.7	4.2	3.8	3.5	3.6	3.9	3.5	4.0	3.9
MCAT WS	Median	P	Q	O	O	O	Q	Q	P	Q	Q	Q
GPA Science	Mean	3.48	3.68	3.33	3.49	3.52	3.67	3.62	3.59	3.65	3.76	3.63
	SD	0.43	0.26	0.40	0.36	0.28	0.28	0.32	0.32	0.28	0.25	0.31
GPA Non-Science	Mean	3.70	3.79	3.61	3.68	3.67	3.79	3.77	3.74	3.77	3.82	3.77
	SD	0.27	0.20	0.31	0.29	0.21	0.22	0.25	0.24	0.23	0.19	0.24
GPA Total	Mean	3.58	3.73	3.46	3.57	3.57	3.72	3.68	3.66	3.70	3.78	3.69
	SD	0.34	0.21	0.32	0.30	0.22	0.23	0.27	0.25	0.23	0.21	0.25
Total Matriculants		53	3,816	1,227	1,230	27	10,609	523	1,406	1,152	300	20,343

* In 2013, the methodology for acquiring race/ethnicity information was updated. Rather than one question asking an applicant's Hispanic origin and a second question asking the applicant's race, the Hispanic origin and race response options are now listed together under a single question about how applicants self-identify. Applicants could select multiple response options.

** SD = Standard Deviation

Table 24: MCAT and GPA Grid for Applicants and Acceptees to U.S. Medical Schools, 2012-2014 (aggregated)



The table below displays the acceptance rates at different MCAT and GPA levels for applicants and accepted applicants from 2012 to 2014. The frequencies are combined totals of all three years. Please email us at datarequest@aamc.org if you need further assistance or have additional inquiries.

Acceptance Rate for Applicants, 2012-2014 (aggregated)	Total MCAT Scores										All Applicants	
	5-14	15-17	18-20	21-23	24-26	27-29	30-32	33-35	36-38	39-45		
Total GPA												
3.80-4.00	Acceptees	3	4	57	317	1,363	4,232	7,110	6,298	3,688	1,385	24,457
	Applicants	80	162	524	1,526	3,554	6,978	9,361	7,504	4,176	1,519	35,384
	Acceptance rate %	3.8	2.5	10.9	20.8	38.4	60.6	76.0	83.9	88.3	91.2	69.1
3.60-3.79	Acceptees	.	8	83	371	1,332	3,725	5,997	4,513	1,782	435	18,246
	Applicants	177	367	1,024	2,332	4,866	8,284	9,359	5,973	2,235	514	35,131
	Acceptance rate %	.	2.2	8.1	15.9	27.4	45.0	64.1	75.6	79.7	84.6	51.9
3.40-3.59	Acceptees	1	13	67	314	1,010	2,307	3,600	2,382	819	176	10,689
	Applicants	336	553	1,278	2,607	4,691	7,151	7,455	3,854	1,176	234	29,335
	Acceptance rate %	0.3	2.4	5.2	12.0	21.5	32.3	48.3	61.8	69.6	75.2	36.4
3.20-3.39	Acceptees	.	5	41	249	604	1,012	1,453	889	316	74	4,643
	Applicants	370	561	1,168	2,262	3,344	4,369	4,106	1,902	547	113	18,742
	Acceptance rate %	.	0.9	3.5	11.0	18.1	23.2	35.4	46.7	57.8	65.5	24.8
3.00-3.19	Acceptees	.	2	25	123	373	455	530	313	112	21	1,954
	Applicants	388	553	928	1,578	2,218	2,361	1,851	808	233	40	10,958
	Acceptance rate %	.	0.4	2.7	7.8	16.8	19.3	28.6	38.7	48.1	52.5	17.8
2.80-2.99	Acceptees	.	4	19	54	132	158	179	85	22	7	660
	Applicants	368	386	626	908	1,069	998	746	310	86	24	5,521
	Acceptance rate %	.	1.0	3.0	5.9	12.3	15.8	24.0	27.4	25.6	29.2	12.0
2.60-2.79	Acceptees	.	1	12	24	47	57	59	33	15	3	251
	Applicants	274	284	355	486	512	388	276	117	47	10	2,749
	Acceptance rate %	.	0.4	3.4	4.9	9.2	14.7	21.4	28.2	31.9	30.0	9.1
2.40-2.59	Acceptees	.	.	2	8	19	22	18	6	3	1	79
	Applicants	196	151	179	240	221	152	109	37	17	2	1,304
	Acceptance rate %	.	.	1.1	3.3	8.6	14.5	16.5	16.2	17.6	50.0	6.1
2.20-2.39	Acceptees	.	.	.	.	7	8	6	1	.	.	22
	Applicants	132	77	94	91	88	68	39	14	5	3	611
	Acceptance rate %	.	.	.	.	8.0	11.8	15.4	7.1	.	.	3.6
2.00-2.19	Acceptees	.	.	.	.	.	2	2	.	.	.	4
	Applicants	53	40	42	28	30	14	11	2	.	.	220
	Acceptance rate %	.	.	.	.	.	14.3	18.2	.	.	.	1.8
1.47-1.99	Acceptees	.	.	.	.	.	.	.	.	.	.	.
	Applicants	42	9	10	12	8	6	3	.	.	.	90
	Acceptance rate %	.	.	.	.	.	.	.	.	.	.	.
All	Acceptees	4	37	306	1,460	4,887	11,978	18,954	14,520	6,757	2,102	61,005
	Applicants	2,416	3,143	6,228	12,070	20,601	30,769	33,316	20,521	8,522	2,459	140,045
	Acceptance rate %	0.2	1.2	4.9	12.1	23.7	38.9	56.9	70.8	79.3	85.5	43.6

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- Sports Medicine
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Reconstructive Surgery

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- Ophthalmic Plastic &
Reconstructive Surgery

- **Orthopaedic Surgery**

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Orthopaedics
- Foot & Ankle Orthopaedics

- Hand Surgery
- Musculoskeletal Oncology
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Spine
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- **Otolaryngology**

- Otolaryngology - Neurotology
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- Pediatric Critical Care Medicine
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Applicants A survival kit of financial aid information and materials for medical school applicants.

Financing Medical School Education Presentation A downloadable presentation on financing medical school education appropriate for pre-health advisors. **Feel free to add additional slides, but please do NOT edit, in any way. The slides are a copyright of the AAMC.**

Tools Interactive Web tools, including financial calculators and an interactive budget worksheet.

Financial Aid Fact Sheets for Pre-health Advisors Financial Aid Facts are short, informational sheets on a variety of financial aid related topics. Fact sheets are designed to shorten often confusing or complex topics to the basics. For more information regarding Financial Aid Facts topics, contact first@aamc.org.

[Prospective Medical School Students Brochure](#) PDF
View ALL Financial Aid Fact Sheets

A-Z Reference List An alphabetical list of tools and resources available on the FIRST Web site.

<https://www.aamc.org/students/advisors/first-advisors/>



How Do I... Pay for Medical School?

How much does medical school cost?

In 2013–2014, annual tuition and fees at public medical schools averaged approximately \$31,783 for state residents and \$55,294 for non-residents. At private schools, tuition and fees averaged \$52,093 for residents and \$50,476 for non-resident students. These figures do not include health insurance, housing, or living expenses.

For more information about the cost of medical school and financing a medical education, visit the **FIRST for Medical Education** site or for the tuition and fees at a specific medical school, consult the **Medical School Admissions Requirements** website.

How can I afford medical school?

Don't let the costs discourage you. A variety of loans, scholarships, and grants are available. Some are need-based, some are merit based and some require a service commitment.

Most medical students borrow at least a portion of the money they need to finance their education. In 2013, the median debt for graduating students was \$175,000. That's significant debt. However, a medical education is an investment that will eventually pay for itself. For example, average salary in family medicine for the same year was \$161,000.

Federal student loans include, but are not limited to, the Stafford loan, the PLUS Loan, and the Perkins loan. Non-federal alternative loan programs are also available. For more information about these loans, read the AAMC's Financial Information, Resources, Services and Tools (FIRST) program's **Financial Aid Fact Sheets**.

Grants and scholarships are available from the federal government and from the individual medical schools. Some opportunities are specifically for individuals who plan to

pursue careers in primary care or who agree to practice in under served areas for a pre-determined amount of time. Federal Service programs include the **Armed Forces Health Professions Scholarship** and the **National Health Service Corps**. Scholarships for underrepresented minority students also are available through the **National Medical Fellowships**.

How do I apply for financial aid?

Students applying for financial aid to attend medical school fill out the **Free Application for Federal Student Aid (FAFSA)** form to be considered for federal financial aid, which is the largest source of assistance.

Some medical schools will require you to complete additional forms, as well as provide documentation, such as copies of tax returns. To be considered for all available financial aid, it is essential that you complete all forms on time. Be sure to talk to the financial aid advisor at each of your potential medical schools as early as possible.

To be considered for certain sources of financial aid, your parents may need to provide their financial information even if you are financially independent of your parents. The financial aid advisors at your prospective schools can give you more information about whether your parents will need to submit information and what forms to fill out.

MORE INFORMATION

FIRST: www.aamc.org/FIRST

Medical School Admission Requirements:
www.aamc.org/msar

Financial Aid Fact Sheets for Applicants:
www.aamc.org/services/first/first_factsheets/

FIRST Loan Repayment/Scholarship Programs:
www.aamc.org/stloan

Armed Forces Health Professions Scholarship:
www.afit.edu/cip/hpsp.cfm

National Health Service Corps: <http://nhsc.hrsa.gov/>

National Medical Fellowships: www.nmfonline.org/

FAFSA: www.fafsa.ed.gov/

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The Cost of Applying to Medical School

Before you're even accepted to medical school, you'll have some admissions-related costs to cover, the most significant of which involve the AMCAS® application service and the MCAT® exam.

Application Fees

The fees related to your medical school application are likely to comprise your largest expense. Usually, these costs will fall into the following three categories:

1. Primary application fee. Most medical schools use the AAMC's [American Medical College Application Service \(AMCAS\)](#) to process applications. Through this service, you are able to submit a single set of application materials and have them sent to the schools you specify. For the 2015 entering class, the fee is **\$160** for the first school and **\$36** for each additional school. (Please be aware that not all schools use AMCAS, and that you may incur a different fee in those instances.)

2. Secondary application fee. The majority of medical schools require a secondary application. Those fees typically range from \$25 to \$100. If applicants qualify for the AAMC's [Fee Assistance Program](#), some medical schools will waive the secondary application fee.

3. College service fees. There is usually a small fee for transmittal of your transcript from your college registrar, and occasionally a fee for transmittal of letters of recommendation.

The Cost of the MCAT Exam

The basic registration fee for the MCAT exam is **\$275**, which covers the cost of the exam, as well as distribution of your scores. Beyond that, you will incur additional fees for late registration, changes to your registration, and testing at international test sites. Information regarding these fees is available on the [MCAT website](#).

For details on exam content, the registration system, test-day procedures, score release process, and more, read the [MCAT Essentials](#), on the MCAT website.

The MCAT is changing in 2015; for more information, visit www.aamc.org/mcat2015.

Other Expenses

Keep in mind other costs associated with the application process. Some of those expenses include:

- The purchase of medical school guidebooks such as [The Official Guide to Medical School Admissions](#)
- Travel and overnight accommodations for medical school interviews
- Costs related to MCAT preparation ([AAMC preparation products](#))

The AAMC's Fee Assistance Program

The AAMC's [Fee Assistance Program](#) assists MCAT® examinees and AMCAS® applicants who, without financial assistance, would be unable to take the MCAT exam or apply to medical schools that use the AMCAS application.

The Fee Assistance Program eligibility decisions are tied directly to the U.S. Department of Health and Human Services' poverty-level guidelines. For the complete list of eligibility guidelines and benefits, visit www.aamc.org/fap.

The Importance of Good Credit

It is critical that you maintain strong credit as you begin the medical school application process. In extreme cases, a medical school may actually defer your admittance until you resolve any issues with your credit history. Read [Borrowing 101](#) and [Your Credit Score](#) for more information on the importance of good credit.

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You Can Afford Medical School

If you want to be a doctor or physician scientist – they are good career choices, both socially and financially. Although medical school may be expensive, there are options available for financing your education. The key to affording medical school is educating yourself about your choices.

Things to Think About

There are many different ways to pay for your education; however, student loans are a reality for most medical students. The keys to successful repayment are careful planning and budgeting, learning how to effectively manage your debt, and educating yourself about the various repayment options.

Have a Plan

One of your first steps on the road to creating a sound financial plan should be the [FIRST](#) website. It contains extensive information about the cost of applying to medical school, information about various loan types, repayment information, and other financial topics. Even with these resources, the process can seem overwhelming, so your next step is to identify a financial aid advisor to assist you.

Get Good Advice

The importance of getting sound, accurate, and timely advice cannot be overstated. Whether it's your pre-health advisor, a current medical student or resident, the admissions or financial aid officer, there are people who can help you navigate this often complex topic. Look at the medical school's financial aid website to see school specific information about financing options. When visiting and interviewing at prospective schools,

take your financial aid questions with you and speak with the financial aid administrator(s). They are there to help you, so take advantage of their assistance.

Learn About Repayment/Forgiveness Options

There are many ways to fund your medical education and there are programs to help you repay your student loans. If you are interested in pursuing a career in medicine, but are concerned about paying back your loans, know that there are flexible repayment options for federal loans that are based on the borrower's income. These repayment plans typically make loan payments manageable regardless of a physician's debt or specialty choice.

Other opportunities for repayment and/or forgiveness may be found through service programs. These programs may provide repayment assistance in exchange for a service commitment. For more information about repayment/forgiveness options, visit the FIRST website at: www.aamc.org/FIRST.

Final Thoughts

Stay true to your passion. Explore your options. Find a good advisor and/or mentor. If you can, enter medical school with little or no credit

card debt, and be aware of the status of your undergraduate loans. The less debt you bring to medical school, the less debt you'll have when you graduate from medical school.

Financial Facts

- **The median amount of debt for the class of 2014: \$180,000***
- **The median 4-year cost of attendance for the class of 2015: \$226,447* (public school) \$298,538* (private school)**
- **The 2013 median starting salary for Internal Medicine (first year post residency): \$180,000****

Medical school debt and cost may be high; however, so is the starting salary for the average primary care physician. Generally, it allows for a comfortable monthly budget if finances are wisely managed. More information about medical student education: debt, costs, and loan repayment can be found on FIRST's [Debt Fact Card](#).

* AAMC 2014 GQ data

** MGMA Physician Placement Starting Salary Survey Report 2014; report based on 2013 data

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The Financial Aid Application Process

While the process of applying for financial aid varies by medical school, here are some universal steps to help you get started. Always check with the financial aid office at your medical school for specific instructions.

Step 1: Complete the FAFSA

Completing the [Free Application for Federal Student Aid](#) (FAFSA) is the first step in applying for financial aid for medical school students. In January, preferably after you have filed your federal income taxes, complete the FAFSA form, filling in both the student information and parent information. Parent information is typically required by medical schools for students who wish to be considered for institutional financial aid (aid given by the medical school) even though an applicant is considered independent for purposes of federal loans. Don't forget to list your medical school's [federal ID code](#) to ensure the results of your FAFSA are sent to your medical school's financial aid office.

Step 2: Investigate Sources of Aid

Contact the financial aid office at your medical school to investigate available sources of institutional financial aid. Be proactive; explore additional resources for scholarships and/or grants. If you need loans to cover additional expenses, consider borrowing federal student loans. They typically have some of the best terms and conditions. The only source of federal student loans is the

Department of Education's Direct Loan program.

Note: Applying for a student loan requires a separate and different application from the FAFSA.

Step 3: Apply Early

Paying attention to deadlines is crucial! Obtain, read, complete, and turn in applications on time, preferably early. Occasionally, unexpected situations might arise that could delay your application. If you wait until the last minute to apply, you may not qualify for a financial aid offer simply because of a missed deadline.

Step 4: Receive and Reply to Your Award Letter

Once your FAFSA results are received and processed by your medical school's financial aid office, you will receive an award letter indicating the types of financial aid and amounts for which you are eligible. Follow the directions for accepting or declining the aid. If you are accepting the aid, and it includes student loans, pay particular attention to the information about when your loan funds will be available to you.



Still Have Questions?

If you are still uncertain about the financial aid application process, or if you have questions related to financial aid offered at a specific medical school, contact the financial aid office at that school. The financial aid office is always a source of information for you.

Remember:

- You must re-apply each year for financial aid. Check with your medical school's financial aid office about required forms and deadlines.
- In order to maintain eligibility for federal financial aid, you must maintain Satisfactory Academic Progress.

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Medical School Costs for Non-traditional Students

It is possible to finance a medical school degree and repay the student loan debt that you may incur. As a non-traditional student you may have additional choices and details to consider prior to starting medical school; however, there are resources to help you with these decisions along the way.

Metamorphosis -- Employee to Student

Even though you know that you'll probably need to live on less money as a medical student, the change may still be an adjustment for you. A spending plan is helpful for everyone, but it becomes especially critical for the non-traditional student.

There are three steps in creating a spending plan:

1. Determine your monthly income.
2. Subtract your expenses from your income.
3. Distribute your discretionary income to cover all your expenses.

You may want to consider the following concepts when evaluating how you can make adjustments to your spending plan.

Uncover likely deficits. Compare your anticipated expenses for applying to medical school, and during medical school, with your projected income (or current savings) during that same time. Knowing these expenses will help you determine if you need to borrow, and/or how much you need to borrow to cover these upcoming expenses.

Identify areas where you can cut back. Start this process by using FIRST's [interactive budget worksheet](#) to track and categorize your monthly spending. Your expenses are either "fixed" (those which cannot be changed)

or "variable" (those which can be controlled). Once you know where your money is going, you can then focus on your variable expenses to see where you might be able to decrease spending.

Costs and Considerations

There could be transitional expenses that could impact your budget as you move from a salaried professional to a medical student.

Child care. Perhaps you have a stay-at-home spouse or partner who cares for your children. Will this person need to return to work? If so, child care may be an additional cost.

Relocation. In addition to ongoing housing costs, you may need to relocate to a new area. Expenses beyond the move will probably include a deposit on a new apartment or house. If you currently rent, consider any costs related to breaking your lease. If you own, consider the costs (and time!) of selling or renting your house.

Your Spouse or Partner's

Employment. If you need to relocate, your spouse or partner may not be able to find a new job immediately. Be sure to have a "cash cushion" to cover the time it takes to obtain a new position.

Health Insurance. You may be offered a student insurance plan (or you may be added to your spouse/partner's plan);

however, the cost of the new premium may be more than the one from your previous employer. Be sure to explore all options before deciding on the most suitable insurance coverage.

Tips for Non-traditional Students

Financial aid for the first year: Your financial aid package will be based on your income from the previous year. If you expect a significant drop in income, consult your financial aid officer (FAO) to inquire about using expected income. Find out what documentation may be needed as requirements and processes may vary from school to school.

Providing parental information: When determining eligibility for grants and scholarships, regardless of your age and marital status, many medical schools may require parental information.

Investigate Financial Aid Programs

Familiarize yourself with the various financial aid programs that may be offered to you. These include grants, scholarships, and loans. Review [What is an Award Letter?](#) to learn more about financial aid awards and visit the [FIRST](#) website for more information about paying for medical school.

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Postbaccalaureate Premedical Programs

Some college graduates consider enrolling in or completing a postbaccalaureate premedical program or coursework to be a stronger, more qualified applicant. When researching these programs, make sure to consider any financial implications that may impact your present and future situation.

Why Enroll in a Post-baccalaureate Program?

There are many reasons to enroll in a postbaccalaureate premedical program (often called PostBac program for short). Some are designed for career changers; some are geared to students who need to complete coursework in requisite undergraduate science courses; and some programs focus on applicants who would like to improve their GPA's. Other programs are specifically designed to assist persons from groups underrepresented in medicine or from educationally or economically disadvantaged backgrounds.

Length, Degree, and Linkage Agreements

Make sure to pay close attention to the focus of the PostBac program that will best suit your needs, and to the length of time it will take to complete the course. While some programs may be completed in one year, others may require 18-24 months. Some programs offer certificates of completion, while others are graduate-level degree-granting programs. Additionally, some programs feature linkage agreements or affiliations with medical school programs. For specific details on various programs, degree offerings, and length of time to complete, see the [AAMC's PostBac Database](#).

Financial Aid and the Cost of Applying

If you have been out of school for awhile, you may want to review the [Financial Aid Fact Sheet Library](#) for general information regarding the cost and the process of applying to medical school.

Mid-career applicants often face different challenges when applying to and attending medical school. Be sure to read the ["Medical School Costs for Nontraditional Students"](#) fact sheet for additional tips and facts.

Additionally, if you think you'll need financial assistance to help cover the cost of courses, be sure to speak with the financial aid offices of the PostBac programs you are interested in specifically about whether their program is eligible for federal student aid.

Additional Resources and Information

FIRST for Medical Education is the AAMC's primary resource regarding Financial Aid. The [Financial Aid Fact Sheet Library](#) includes one page information sheets on a variety of financial aid topics.

The AAMC also hosts a searchable database of [PostBac](#) programs that enables you to search according to program type and other characteristics.

Questions regarding applying, qualifying, or attending post-baccalaureate programs should be addressed to the specific program in which you are interested.

Osteopathic Medicine

PRE-OSTEOPATHIC MEDICINE (D.O.): ACADEMIC AND CAREER INFORMATION



Health Professions Advising Office (HPAO) • Jensen Student Access to Science (SAS) and Mathematics Center • **Location:** Hall of Science Building – Room 164 • **Phone:** (562) 985-8061 • **Website:** <http://www.csulb.edu/hpao>

NATURE OF THE WORK, EARNINGS AND OCCUPATIONAL OUTLOOK

Osteopathic physicians, known as D.O.s, use all the tools and technology available to modern medicine with the added benefits of a holistic philosophy and a system of hands-on diagnosis and treatment known as osteopathic manipulative medicine ([American Association of Colleges of Osteopathic Medicine, 2015](#)). This modality can be used to relieve discomfort or musculoskeletal abnormality associated with a number of disorders including: asthma, sinus disorder, carpal tunnel, migraines, and menstrual pain. Osteopathic medicine's goal is to promote the body's innate ability to heal itself. The D.O. **philosophy** considers the impact of lifestyle and community on an individual's health and to treat the patients as a whole, instead of treating an ailment or disease. Osteopathic medicine is growing with 72,779 active D.O.s currently in the U.S., and 20% of U.S. medical students are attending an osteopathic medical school (ACCOMAS, 2015; Osteopathic Medical College Information Book, 2015). They also have a strong history of serving rural and underserved areas (AACOM, 2015). About 60% of D.O.s choose careers in primary care, and the remaining percent practice in any area of specialty found in medicine. D.O.s are licensed to practice the full scope of medicine in all 50 states (as well as more than 65 countries abroad). D.O.s can choose any specialty, prescribe drugs, perform surgeries, and practice medicine (AACOM, 2015).

Though earnings vary according to number of years in practice, type of practice, geographical location, and specialty, the average annual income of physicians can range from \$140,000 - \$300,000 according to www.explorehealthcareers.org. With recent changes in the health care system, more physicians are joining medical groups or networks, instead of having individual practices. As employees of these medical groups, more physicians are drawing a set salary, so earnings potential may be more limited than in the past when the most physicians worked for themselves. The Occupational Outlook Handbook, 2015 reports that employment of physicians and surgeons will grow faster than average for all occupations through 2022 as a result of current doctor's retiring, the continued expansion of the health care industries, and an aging population. Job prospects are expected to be the best for physicians in rural and low-income areas.

MEDICAL SCHOOL

There are currently 30 accredited colleges of osteopathic medicine offering instruction at 40 locations in 28 states. Six of the colleges are publically controlled, and 24 are private institutions ([AACOM, 2014](#)). Osteopathic medical school usually requires 4 academic years. The first two years of osteopathic medical school are geared toward the basic sciences, learning a core set of clinical examination skills, and courses that cover the various systems of the body. The last two years involve a series of clinical rotations throughout inpatient and outpatient settings where students work with patients under the supervision of attending physicians and medical residents. Throughout the 4 years of training osteopathic principles and techniques are integrated into the curriculum and rotations as additional resources for diagnosis and treatment of disease. During the last year of medical school, students make decisions about medical specialty and apply for internship or residency programs in their desired area of expertise (Osteopathic Medical College Information Book, 2015).

RESIDENCY AND FELLOWSHIP TRAINING

Following medical school, graduates begin their graduate medical education or residency, which is paid on-the-job training, in a specialty. The years of training required are between 3 and 7, depending on the specialty that is selected. Due to the Osteopathic philosophy, the majority of D.O.'s choose residencies in Family Practice, Pediatrics, and Internal Medicine (which requires 3 years of training). Training in Obstetrics and Gynecology, Pathology, Anesthesiology, Dermatology, Neurology, Nuclear Medicine, Ophthalmology, Physical Medicine, Psychiatry, Radiology and Radiation Oncology lasts 4 years. The surgical specialties including General, Neurological, Orthopaedic, Otolaryngology, and Urology require 5 years of residency. Most specialties also offer advanced training in a subspecialty usually requiring an additional 1 to 2 years of fellowship following residency. D.O. graduates may apply to osteopathic and allopathic residency programs.

PRE-MEDICAL PREPARATION (COLLEGE)

Due to the competitive nature of the medical school application process and rigorous training required, students should *carefully consider their motivation and preparation for a career in medicine*. Osteopathic medical schools are looking for an academic record that indicates the aptitude and knowledge base needed to successfully complete the medical school curriculum. In 2014, a total of 17,944 applicants applied to osteopathic medical schools for 6,192 seats. The entering class of 2014 had a **mean science GPA of 3.38**, a **mean non-science GPA of 3.6** and a **mean overall GPA of 3.5**. The average MCAT score was **26.8** (Osteopathic Medical College Information Book, 2015).

MAJOR:

Any major is appropriate for osteopathic medical school preparation. While a natural science major requires many of the same basic pre-requisites, it is not required for admission to any medical school. Students are advised to select a major they find interesting and to work at developing a broad-based, interdisciplinary foundation of knowledge and skills from which they can build upon.

COURSE REQUIREMENTS:

Specific undergraduate course requirements vary from program to program. Requirements that differ from those listed below can be found in school catalogs or in the [Osteopathic Medical College Information Book](#) which is available for free online or in the HPAO Resource Library (or feel free to buy your own hardcopy through AACOM). **Below is NOT a comprehensive list of prerequisites for all Osteopathic programs. Students maintain responsibility for verifying course selection with individual programs.**

CSULB courses which fulfill admission requirements for most U.S. Osteopathic programs:

<i>Pre-Medical Coursework</i>	<i>CSULB Courses</i>	<i>Units</i>
One year of General Chemistry with lab	Chemistry 111A & 111B	5, 5
One year of Organic Chemistry with lab	Chemistry 220A & 220B + 320L (<i>Chem. & Biochem. majors</i>) OR 220A w/ 223A & 220B w/ 223B (<i>Biology & other majors</i>)	4, 4
One year of General Biology with lab	Biology 211 & 212 & 213*	4, 4
One year of General Physics with lab	Physics 100A & 100B OR 151 & 152	4, 4
One semester to 1 year of Calculus	Math 119A & 119B OR 122 & 123	3 - 4
One year of English (Composition and Literature preferred)	English 100 AND another course from the English department such as: 102, 180, 300 (some schools MAY take equivalent courses)	3, 3

Strongly Recommended (required at some schools):

Pre-Medical Coursework	CSULB Courses	Units
One (or more) courses in Biochemistry	Chemistry 441A and/or 441B or 448**	3
One course in Molecular Biology	Biology 340	3
Genetics	Biology 370	4
Mammalian Physiology	Biology 208 or 342	3-4
Microbiology	Microbiology 211	5
One course in Statistics	Biology 260 OR Statistics 108	3
One year of Behavioral Science courses	Sociology 100 and Psychology 100 (Required at several schools). Also will be covered on the MCAT	3, 3

*Required or **Highly Recommended**

** CHEM 448 may or may not be accepted

Courses in the Social Sciences, Humanities, Languages, and computer skills are also recommended. Other recommended coursework (depending on school), may require *Immunology, Anatomy and Physiology*.

Check with the [individual schools](#) you are thinking of applying to for specific requirements, including policies on AP credit. **Students who are non-science majors, remember that many of these courses will have pre-requisites.**

IMPORTANT FACTORS CONSIDERED FOR SUCCESSFUL APPLICANTS:

CLINICAL EXPOSURE is strongly recommended for admission to most medical schools. This can include a paid or volunteer position in a doctor's office, local clinic, or a hospital. Most hospitals and clinics gladly accept volunteers (contact the volunteer services office at your local hospital for more information). Medical school admission committees want to know that you have the desire and ability to work with patients. The successful participation in clinical volunteer or job experience can demonstrate this. Working and/or shadowing a Doctor of Osteopathic medicine is strongly encouraged. **Note: Many osteopathic medical schools will require a letter of recommendation from a D.O.**

COMMUNITY SERVICE experience is **highly valued** by osteopathic medical schools. Future doctors should be able to demonstrate compassion and a willingness to give back to their communities. Getting involved in community service efforts on and off campus that are of interest to you can enhance a medical school application. CSULB has a number of academic, service and health professions organizations to join.

WORK EXPERIENCE can also be valuable in demonstrating your potential to succeed in medical school. Past success in a work environment can reveal meaningful information to admissions committees. Depending on the setting, work experience can develop and showcase a variety of skills including communication (oral and/or written) time management, and problem solving.

LETTERS OF RECOMMENDATION are required for application to medical school. The purpose of the letters is to provide medical schools with an impression of the applicant from faculty or persons who are in a position to observe the applicant's work, as it relates to the study of medicine. Students are encouraged to create and maintain positive contacts with prospective recommenders early in their academic career. Generally, the typical letter packet consists of three to five letters; two from science professors, one from a non-science professor and one, or more, from supervisors of relevant work, research, or clinical activities (however, some D.O. schools just require two). Many D.O. programs ask for a letter of recommendation from a D.O. or M.D. However, a letter for a D.O. is *strongly* recommended for many campuses. Check with the individual schools for their specific requirements.

Osteopathic medical schools are looking for candidates who demonstrate: good communication skills and inter-personal skills, have a record of community service, have a record of leadership, have some clinical experience, have participated in a variety of extracurricular activities, come from diverse backgrounds, are motivated to pursue a career in osteopathic medicine, and understand it's unique philosophy, and have shadowed an osteopathic physician (AACOM, 2015).

MEDICAL COLLEGE ADMISSION TEST:

The MCAT is changing in the spring of 2015 (the new exam calendar will run from April to September). The new Medical College Admission Test (MCAT) 2015 is a standardized exam consisting of four multiple-choice sections (**the Biological and Biochemical Foundations of Living Systems** section, the **Chemical and Physical Foundation of Biological Systems**, the **Psychological, Social, and Biological Foundation of Behavior Section**, and the **Critical Analysis and Reasoning's Skills** section).

Before attempting the MCAT, students should have completed at least one year each of biology, general chemistry, organic chemistry, and physics, as well as one semester of biochemistry. In addition, students should also complete general sociology and psychology courses as this is a new section added to the MCAT. It is highly recommended, that you take the MCAT in the spring before you apply.

There are many resources on the AAMC website on how to prepare, where to resources, and also information about the Fee Assistance Program (FAP). The total "seat" time including breaks is 7 hours, 33 minutes. The current registration fee is \$300. Visit <https://www.aamc.org/students/applying/mcat/mcat2015/> for important information about the MCAT.

For more information on Osteopathic Medicine, visit www.aacom.org and see your HPAO advisor for further information on the application process, application assistance, and a list of upcoming workshops and events.



American Association of Colleges of Osteopathic Medicine

Mission: The American Association of Colleges of Osteopathic Medicine (AACOM), founded in 1898, exists to lend support and assistance to all the nation's osteopathic medical schools. The association, guided by its Board of Deans, Assembly of Presidents, and various other councils and committees, is actively involved in all areas of osteopathic medical education.

Size of Organization: Instruction is delivered at 37 campus locations and numerous clinical sites across the U.S. **Number of Member Institutions:** Having grown from a handful of college administrators a century ago, the organization today represents the administration, faculty and students of the 29 colleges of osteopathic medicine, and four branch campuses that offer the doctor of osteopathic medicine (D.O.) degree in the United States.

New Institutional Members in Last Two Years: One new college and two new teaching sites will enroll their first classes in 2014.

- Liberty University College of Osteopathic Medicine in Lynchburg, VA
- Ohio University Heritage College of Osteopathic Medicine in Dublin, OH
- Touro College of Osteopathic Medicine New York in Middletown, NY

-Total Number of Students: Osteopathic Medical College enrollment in 2013-14 exceeded 23,100, over 20% of all US medical students.

-Total Number of First Year Students: New first-year students in fall 2013 numbered over 6,400.

-Total Number of Graduates in Most Recent Academic Year: Graduates, as of June 30, 2013 numbered over 4,700.

National-Level Services Provided by AACOM:

- **A Unified Voice**
Serves as the unified voice and proactive advocacy at the federal government level for the colleges of osteopathic medicine in the United States, which it has done for more than a century.

- **Innovation and Collaboration**

Works with its member colleges to foster collaboration and innovation across numerous areas of osteopathic medical education including research.

- **Centralized Services**

Provides centralized services including data collection and analysis and operation of the online application service for students applying to osteopathic medical schools.

- **Enhanced Awareness**

Develops national initiatives to promote and raise awareness of osteopathic medical education and osteopathic medicine.

Organizational Updates

Legislative initiatives: AACOM works with Congress, the Administration, and other federal officials to promote osteopathic medical education (OME) and works to sensitize policymakers to the needs of osteopathic medical students and educators. AACOM works to elevate OME on Capitol Hill as well as works in concert with numerous national coalitions to influence both legislative and regulatory activities associated with medical education and related issues; represent the needs of its members before Congress, federal agencies, and other policy-making bodies; and promote understanding of policy-related medical education issues in the nation's capital and beyond.

AACOM strongly advocates for a number of important programs and funding priorities on behalf of the COMs and their students, including but not limited to increasing funding for Title VII of the Public Health Service Act health professions education and training programs, the National Health Service Corps (NHSC) scholarship and loan repayment programs and other scholarship and loan repayment programs, comparative effectiveness research, and funding for the Agency for Healthcare Research and Quality, and the National Institutes of Health. AACOM also works to support the implementation of numerous provisions in the Affordable Care Act, including a provision in the law which created the Teaching Health Center Graduate Medical Education Program, a program which provides funding for the creation and/or expansion of primary care residency programs in teaching health centers.

Diversity Efforts:

AACOM awards the Sherry R. Arnstein Minority Student Scholarship program each year to recognize underrepresented minority students at AACOM's member colleges of osteopathic medicine. This year, four

scholarships (totaling \$10,000) will be awarded to at least one newly accepted and at least one continuing underrepresented minority student. To be eligible, an applicant must be an underrepresented minority (*African-American; Native American, Alaska Native, and Native Hawaiian; mainland Puerto Rican, or Hispanic*) student in good academic standing and currently enrolled in his or her first, second, or third year at an AACOM member college of osteopathic medicine OR an underrepresented minority student who has been accepted and is planning to matriculate at one of the AACOM member colleges. Previous Arnstein Scholarship awardees are ineligible.

AACOM also continues to advocate for sufficient funding for Health Professions Education Programs under Title VII of the Public Health Service Act, which includes Health Careers Opportunity Programs (HCOP) and Centers of Excellence (COE) that target underrepresented minority students, as well as loan repayment programs for minority faculty. As AACOM increases its activities in the diversity area, we will be working with the colleges of osteopathic medicine to explore initiatives that will expand the post baccalaureate programs offered to underrepresented minority students to prepare them for medical school. We also will be exploring initiatives to assist the colleges of osteopathic medicine in expanding their cadre of minority faculty and increasing programming on diversity issues.

Recruiting Initiatives:

AACOM will be active at the national NAAHP meeting in San Francisco in June 2014. We are leading the Saturday, June 28th Student Recruitment session and workshop, and will have a Spotlight Session on Osteopathic Medicine on Sunday, June 29. In addition, AACOM will be one of the exhibitor's throughout the meeting.

AACOM continues to play an active role in recruiting students with the help of pre-health advisors. Throughout the application season AACOM coordinates a number of Osteopathic Medicine recruiting events bringing together many colleges to one site. These activities are quite exciting and allow all of the COMs to build on the energy of multiple college activities (Multi-COM events) whereby students and advisors can meet many of them at one event. Advisors are encouraged to let their aspiring premedical students know about **Pre-SOMA Conferences** held at various COMs during the year and to participate in **National ShaDO Week** each April. AACOM partners on these events with **National Pre-SOMA** student medical leaders (www.facebook.com/pre.soma). If your college is interested in hosting a multi-medical school recruitment event, contact Gina Moses (gmoses@aacom.org) Tel: (301) 968-4184

Admissions Updates

Contact Information and CAS Link:

AACOMAS 2015 application will launch in early May, 2014.

The AACOMAS application URL is aacomas.aacom.org

Advisor portal:

www.aic.aacom.org – Register for access at this site.

Current Number of Participating Programs Versus Total Member Programs:

There are 34 colleges of osteopathic medicine and branch campuses. All COMs are part of AACOMAS except the University of North Texas Health Sciences Center College of Osteopathic Medicine.

Open Period (launch date and last deadline):

- Application opens on May 1, 2014.
- First submission date is in early June 2014.

Submission Deadlines: Deadlines vary.

- The earliest AACOMAS deadline is December 2, 2014.
- the last AACOMAS deadline is April 1, 2015.

Applicant Code of Conduct or Required Institutional Certification or Statement:

AACOM publishes the College Information Book (CIB). [Click here](#) to purchase the CIB or to download a free PDF of the CIB.

Application agreements and guidelines are posted in the AACOMAS Application Instructions. [Click here](#) to download a PDF of the instructions.

Fees:

- The fee for submitting the first application is \$195.
- Each additional application submitted at the time of the first submission is \$35.
- Additional applications submitted later are \$50 for the first and \$35 for each additional.

Fee Waivers:

AACOMAS makes a significant number of fee waivers covering application to three medical schools available. Complete information is in the instructions.

Application agreements and guidelines are posted in the AACOMAS Application Instructions. [Click here](#) to download a PDF of the instructions.

Letters of Reference Delivery Method(s):

Each COM has its own requirements for letters. Please see the college listings in the College Information Book.

Background Check Services if Applicable: Background checks are required by all colleges and are conducted by the college.

Fall 2013 Matriculants:

Number of Applicants, With Data on the Profile of the Pool Including Gender, Race/Ethnicity, Age, Etc.:

New first year students in fall 2013 numbered over 6,400. The class was split 45% female and 55% male.

AACOMAS Applications Reach Record Highs for Eight Year!

The 2014 application cycle for AACOMAS shows significant increases in the number of applicants and applications. As of mid-April 2014, the total number of applicants is over 18,100 (an increase of almost 9% from the prior year) and the number of individual college applications is up 13%.

The mean number of application per applicant for the 2014 cycle is 8.8 compared to 8.5 in 2013.

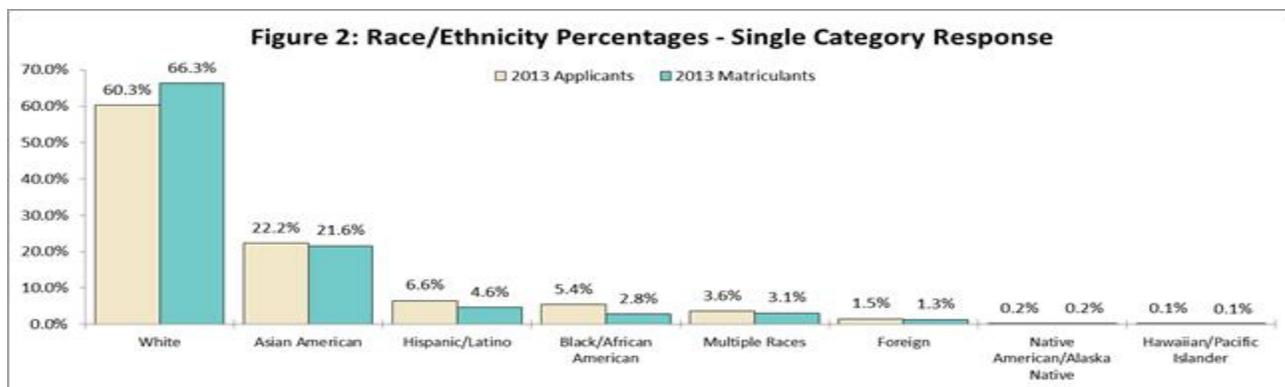
Note: The University of North Texas Health Science Center College of Osteopathic Medicine is not part of the AACOMAS application service.

Profile of the Admitted Applicant Including GPA, Tests Score, Etc.:

- Mean Undergraduate GPA: 3.50 Mean Science 3.38 Mean Non-Science 3.60
- MCAT: BS 9.41 PS 8.74 VR 8.72 Overall (mean) MCAT 8.96

Report on Trends (bar graphs):

Number of applicants, Age, Gender, Race/ethnicity



AACOMAS Applicant Pool Profile 2013 Entering Class



Prerequisites:

Academic: Individual COM prerequisites and qualifications are listed in the College Information Book. [Click here](#) to purchase the CIB or to download a free PDF of the CIB.

Standardized Test(s): Individual COM prerequisites and qualifications are listed in the College Information Book. [Click here](#) to purchase the CIB or to download a free PDF of the CIB.

Experience/Exposure: Individual COM prerequisites and qualifications are listed in the College Information Book. [Click here](#) to purchase the CIB or to download a free PDF of the CIB.

Letters of Recommendation: Individual COM prerequisites and qualifications are listed in the College Information Book. [Click here](#) to purchase the CIB or to download a free PDF of the CIB.

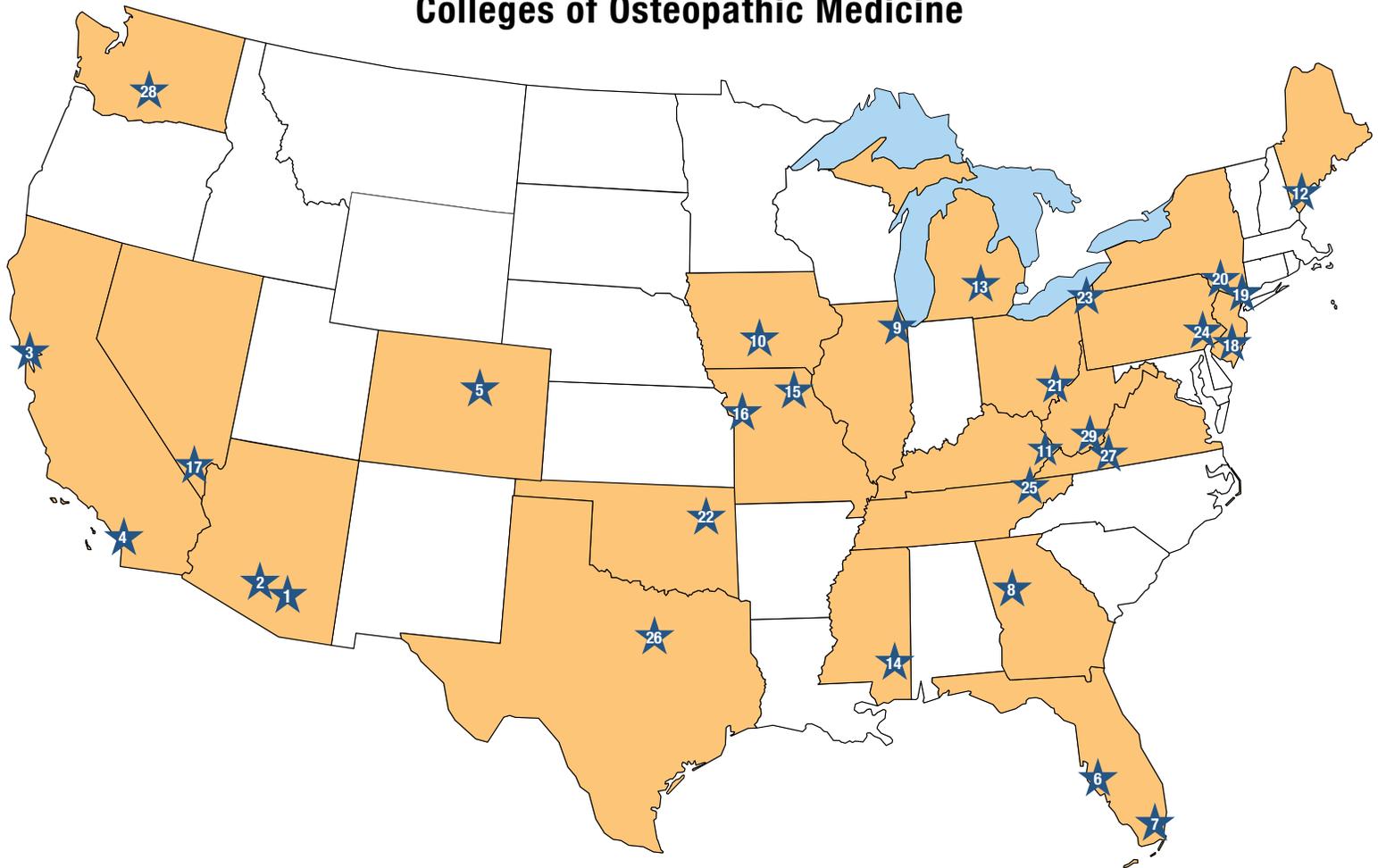
Links/Other Resources for Advisors:

Website www.aacom.org, was launched in November 2007. It has been significantly enhanced for quality content and ease of navigation.

AACOMAS Application: aacomas.aacom.org

- **2015 College Information Book (CIB):** The 2015 College Information Book (CIB) is the official guide for prospective students, applicants, pre-health advisors and others interested in gaining information about or applying to the nation's osteopathic medical colleges. The publication has been expanded to cover a wealth of important, timely topics, including joint-degree programs, international practice rights, residency and matches, board examinations, licensure and much more. To order additional copies of the 2015 CIB, [visit](#) the online AACOM Bookstore.
- **Advisor Information Center (AIC) portal** The Advisor Information Center (AIC) portal, which launched in September 2007, has met with enthusiastic response from Advisors. Matriculation data from 2002-2014 are available in the AIC on behalf of all member colleges. Current admission cycle data is uploaded on a regular basis throughout the application cycle. Advisors wishing to register for an account may do so at: aic.aacom.org
- **Recruitment Events Calendar** A Recruitment Events Calendar is available for Advisors and their students to view Open Houses and related admissions events. [Click here](#) to view the calendar.

Colleges of Osteopathic Medicine



Arizona

1. **MWU/AZCOM**
Midwestern University/
Arizona College of Osteopathic Medicine
19555 N. 59th Ave.
Glendale, AZ 85308-6813
(623) 572-3300 or (888) 247-9277
2. **ATSU-SOMA**
A.T. Still University, School of Osteopathic
Medicine in Arizona
5850 E. Still Circle
Mesa, AZ 85206-3618
(480) 219-6000

California

3. **TUCOM-CA†**
Touro University College of Osteopathic
Medicine-California
1310 Johnson Lane
Vallejo, CA 94592-1159
(707) 638-5200
†TUCOM-CA has a branch campus in
Nevada- TUNCOM
4. **WesternU/COMP†**
Western University of Health Sciences
College of Osteopathic Medicine of the
Pacific
309 East 2nd St./College Plaza
Pomona, CA 91766-1854
(909) 623-6116
†Western U/COMP has an additional
location in Lebanon, Ore.

Colorado

5. **RVUCOM***
Rocky Vista University College of
Osteopathic Medicine
8401 Chambers Road
Parker, CO 80134-9498
(303) 373-2008
*Provisional Accreditation
(COCA's recognition does not allow RVUCOM to be
eligible for participation in U.S. Dept. of Education
Title IV student financial aid programs.)

Florida

6. **LECOM-Bradenton†**
Lake Erie College of Osteopathic Medicine-
Bradenton
5000 Lakewood Ranch Blvd.
Bradenton, FL 34211-4909
(941) 756-0690
†LECOM-Bradenton is a branch campus
of LECOM
7. **NSU-COM**
Nova Southeastern University
College of Osteopathic Medicine
3200 S. University Drive
Fort Lauderdale, FL 33328-2018
(954) 262-1400 or (800) 356-0026

Georgia

8. **GA-PCOM†**
Georgia Campus-Philadelphia College of
Osteopathic Medicine
625 Old Peachtree Road
Suwanee, GA 30024-2937
(678) 225-7500
†GA-PCOM is a branch campus of
PCOM

Illinois

9. **MWU/CCOM**
Midwestern University/Chicago College of
Osteopathic Medicine
555 31st St.
Downers Grove, IL 60515-1235
(630) 969-4400 or (800) 458-6253

Iowa

10. **DMU-COM**
Des Moines University—College of
Osteopathic Medicine
3200 Grand Ave.
Des Moines, IA 50312-4198
(515) 271-1400 or 1450

Kentucky

11. **UP-KYCOM**
University of Pikeville-Kentucky College of
Osteopathic Medicine
147 Sycamore St.
Pikeville, KY 41501-1194
(606) 218-5400

Maine

12. UNECOM

University of New England
College of Osteopathic Medicine
11 Hills Beach Road
Biddeford, ME 04005-9526
(800) 477-4863 or (207) 283-0171

Michigan

13. MSUCOM†

Michigan State University
College of Osteopathic Medicine
A-309 East Fee Hall
East Lansing, MI 48824-1316
(517) 355-9616 or 7740
**MSUCOM has additional locations in
Macomb and Detroit**

Mississippi

14. WCU-COM*

William Carey University-
College of Osteopathic Medicine
498 Tuscan Ave., WCU #27
Hattiesburg, MS 39401-5461
(601) 318-6610
***Provisional Accreditation**

Missouri

15. KCOM

Kirkville College of Osteopathic Medicine-
A.T. Still University
800 W. Jefferson
Kirkville, MO 63501-1443
(660) 626-2354

16. KCUMB-COM

Kansas City University of Medicine and
Biosciences College of Osteopathic
Medicine
1750 Independence Ave.
Kansas City, MO 64106-1453
(800) 234-4847 or (816) 283-2000

Nevada

17. TUNCOM†

Touro University Nevada College of
Osteopathic Medicine
874 American Pacific
Henderson, NV 89014-8800
(702) 777-8687
**†TUNCOM is a branch campus of
TUCOM-CA**

New Jersey

18. UMDNJ-SOM

University of Medicine and Dentistry of
New Jersey-School of Osteopathic
Medicine
Academic Center
One Medical Center Drive
Stratford, NJ 08084-1500
(856) 566-6000

New York

19. NYCOM

New York College of Osteopathic Medicine
of New York Institute of Technology
Northern Blvd.
P.O. Box 8000
Old Westbury, NY 11568-8000
(516) 686-3700

20. TouroCOM

Touro College of Osteopathic Medicine
230 W. 125th St.
New York, NY 10027-4402
(646) 981-4500

Ohio

21. OU-HCOM

Ohio University Heritage College of
Osteopathic Medicine
Grosvenor, Irvine Halls
Athens, OH 45701-2979
(800) 345-1560 or (740) 593-2500

Oklahoma

22. OSU-COM

Oklahoma State University Center for
Health Sciences College of Osteopathic
Medicine
1111 W. 17th St.
Tulsa, OK 74107-1886
(800) 799-1972

Pennsylvania

23. LECOM†

Lake Erie College of Osteopathic Medicine
1858 West Grandview Blvd.
Erie, PA 16509-1025
(814) 866-6641
**†LECOM has a branch campus in Florida:
LECOM-Bradenton
†LECOM also has an additional location
at Seton Hill University**

24. PCOM†

Philadelphia College of Osteopathic
Medicine
4170 City Ave.
Philadelphia, PA 19131-1610
(800) 999-6998 or (215) 871-6100
**†PCOM has a branch campus in Georgia:
GA-PCOM**

Tennessee

25. LMU-DCOM

Lincoln Memorial University-DeBusk
College of Osteopathic Medicine
6965 Cumberland Gap Parkway
Harrogate, TN 37752-8245
(800) 325-0900 or (423) 869-7082

Texas

26. UNTHSC/TCOM

University of North Texas Health Science
Center—Texas College of Osteopathic
Medicine
3500 Camp Bowie Blvd.
Fort Worth, TX 76107-2644
(817) 735-2200 or 2205

Virginia

27. VCOM-Virginia†

Edward Via College of Osteopathic
Medicine
2265 Kraft Drive
Blacksburg, VA 24060-6360
(540) 231-4000
**†VCOM-Virginia has a Branch Campus in
Spartanburg, SC: VCOM-Carolinas**

Washington

28. PNWU-COM*

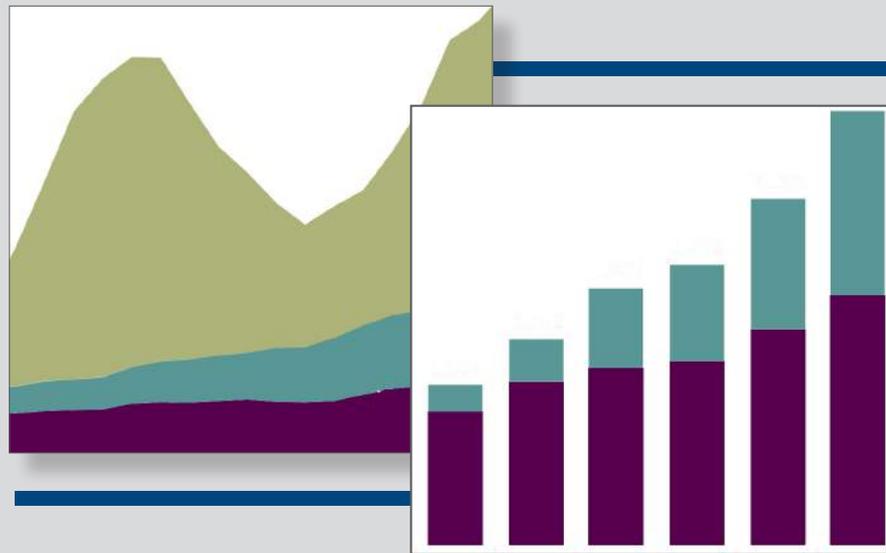
Pacific Northwest University of
Health Sciences, College of Osteopathic
Medicine
111 University Parkway, Suite 202
Yakima, WA 98901-1448
(509) 452-5100
***Provisional Accreditation**

West Virginia

29. WVSOM

West Virginia School of Osteopathic
Medicine
400 N. Lee St.
Lewisburg, WV 24901-1128
(304) 647-6270 or 6373

Trends in Osteopathic Medical School Applicants, Enrollment and Graduates



Prepared by the Research Department
American Association of Colleges of Osteopathic Medicine

2014

aacom[®]

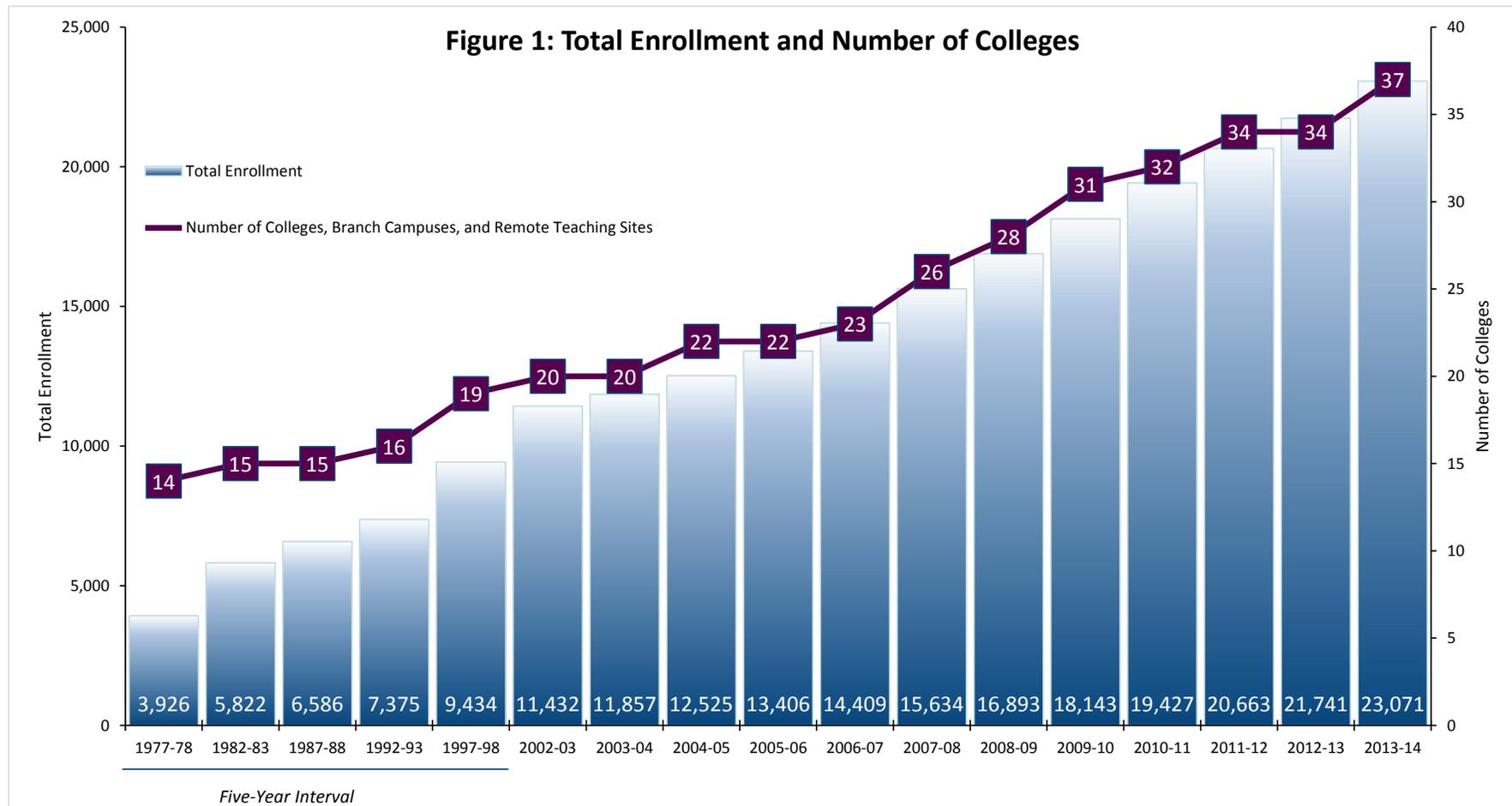
AMERICAN ASSOCIATION OF
COLLEGES OF OSTEOPATHIC MEDICINE

Trends in Osteopathic Medical School Applicants, Enrollment, and Graduates - Figures

The summary tables below display the growth in applicants, enrollment, and graduates since 1977. Applicant data are compiled from the information entered by applicants into the American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS) application. Enrollment and Graduate data are provided by the colleges via the Annual Osteopathic Medical School Questionnaire. Note that since 2000, applicant numbers have not included applicants for UNTHSC/TCOM, which does not use AACOMAS to process applications.

Note: The most recent data for applicants (2014-15), enrollment (2013-14), and graduates (2012-13) differs based on when the data are collected/reported.

Note: An Excel version of the applicants, enrollment, and graduates table can be found on the Data and Trends Website: <http://bit.ly/1EV5rDT>



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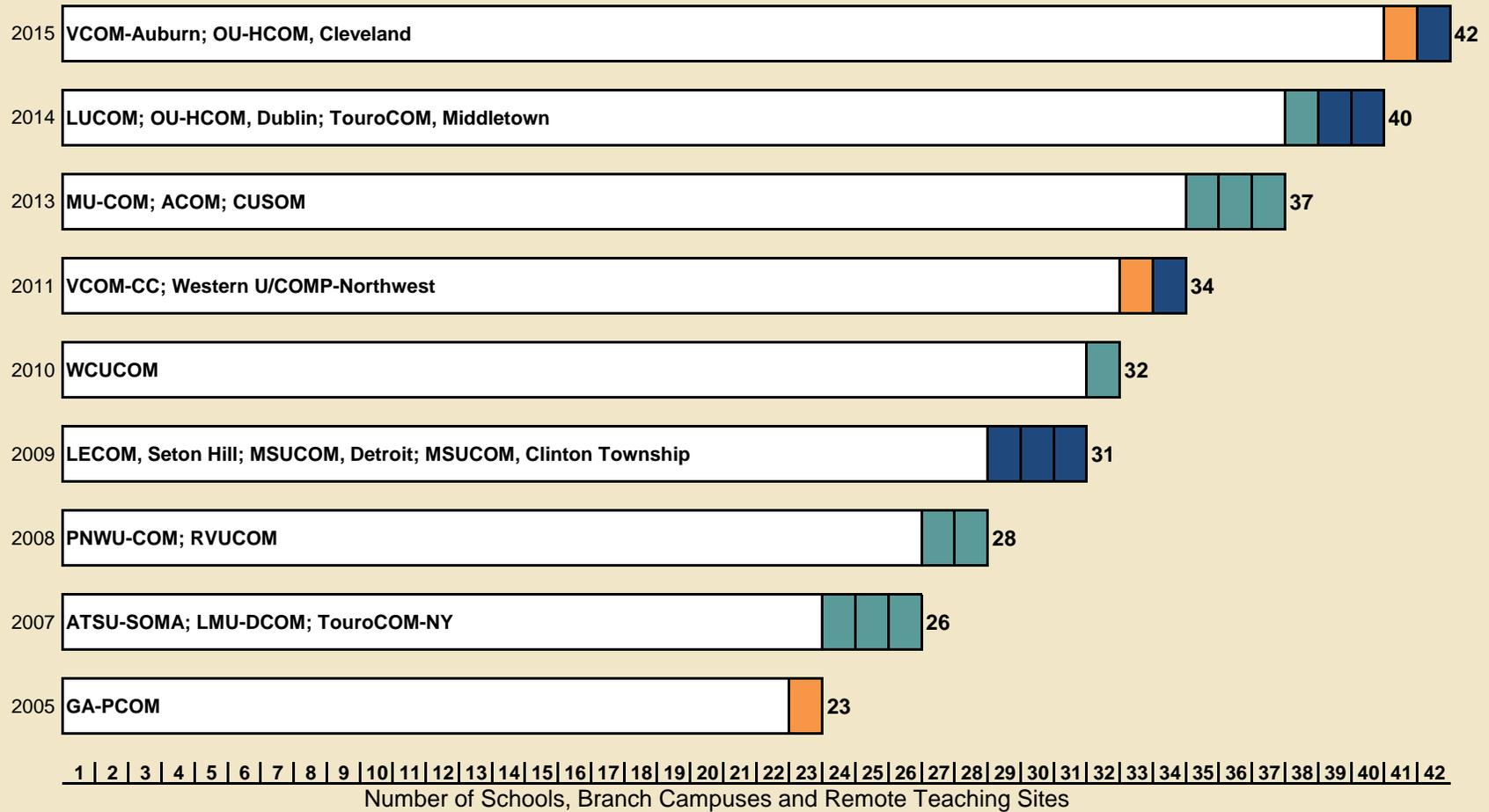
5550 Friendship Blvd., Suite 310, Chevy Chase, MD 20815-7231; 301-968-4100

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Trends in Osteopathic Medical School Applicants, Enrollment, and Graduates - Figures

Figure 2: New U.S. Osteopathic Medical Schools by Year of Inaugural Class - 2005-2015*

Year of Inaugural Class



■ Private school (24)
 ■ Public school (6)
 ■ Branch campus (5)
 ■ Remote teaching site (7)

Note: The schools listed on the white bars are the new colleges/campuses/sites that matriculated their inaugural classes in the listed year.

*The full history of U.S. Osteopathic Medical Schools by Year of Inaugural Class since 1892 is available on the Data and Trends Website: <http://bit.ly/1EV5rDT>



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5550 Friendship Blvd., Suite 310, Chevy Chase, MD 20815-7231; 301-968-4100

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Trends in Osteopathic Medical School Applicants, Enrollment, and Graduates - Figures

Figure 3: Total Enrollment, First-Year Enrollment, Graduates, and Applicants
Growth Since 1977-78

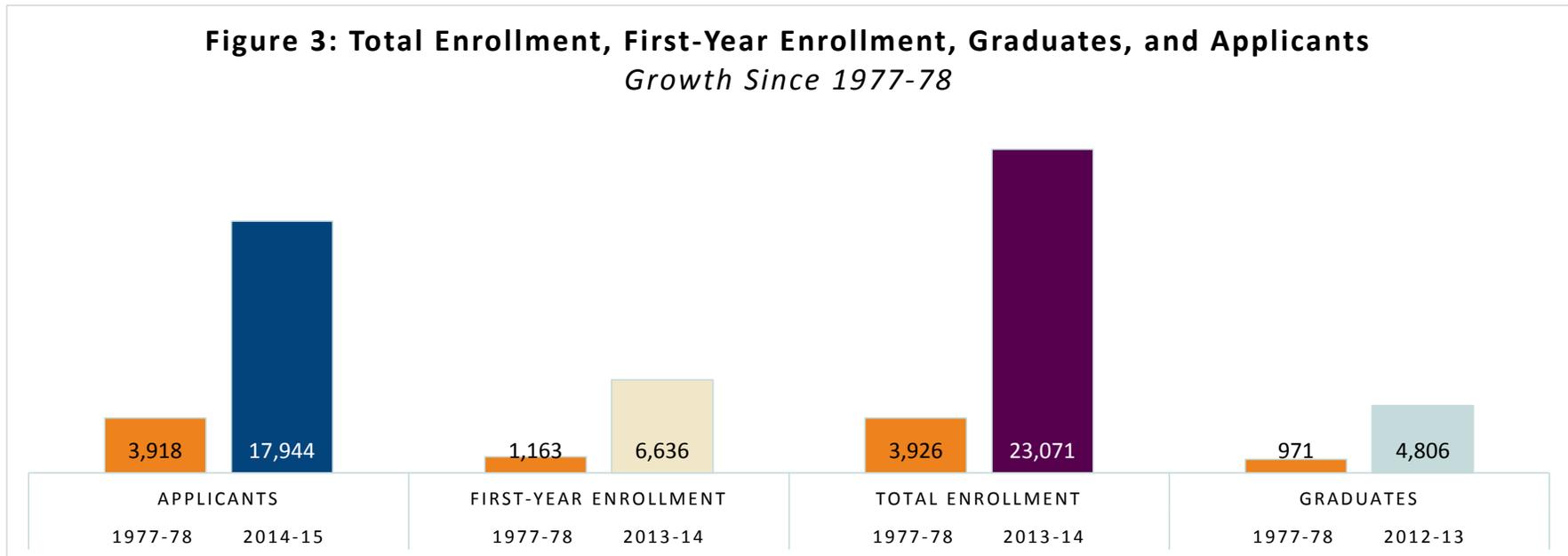
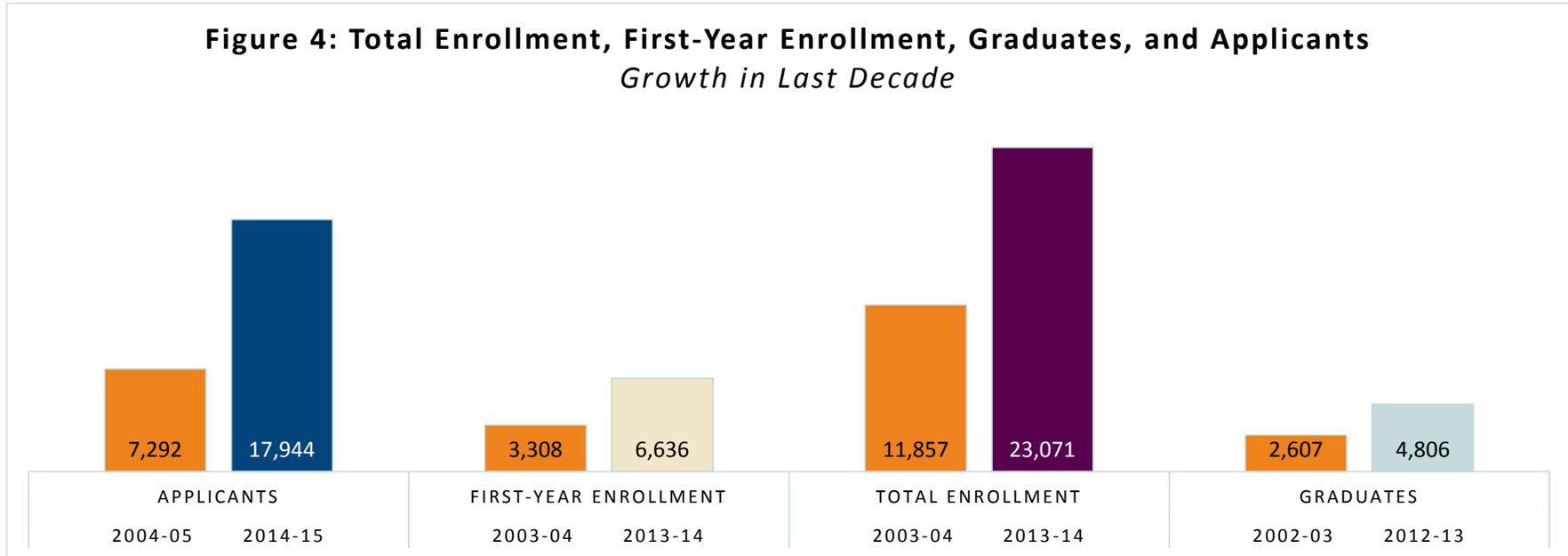
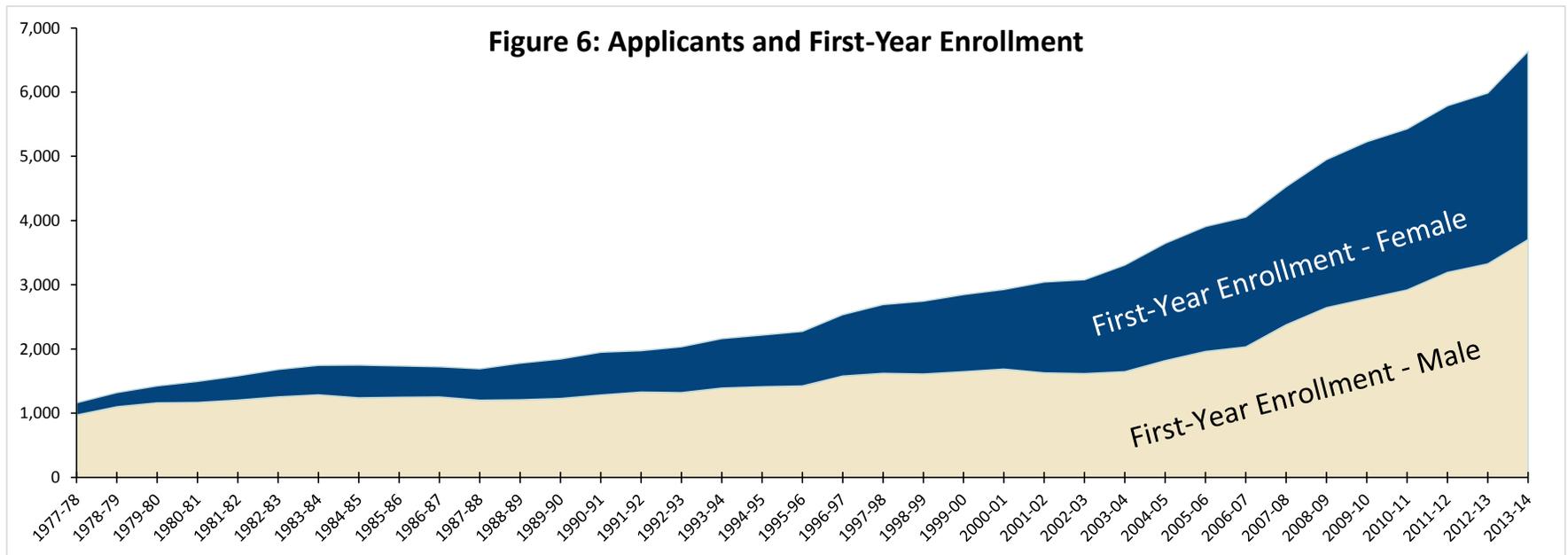
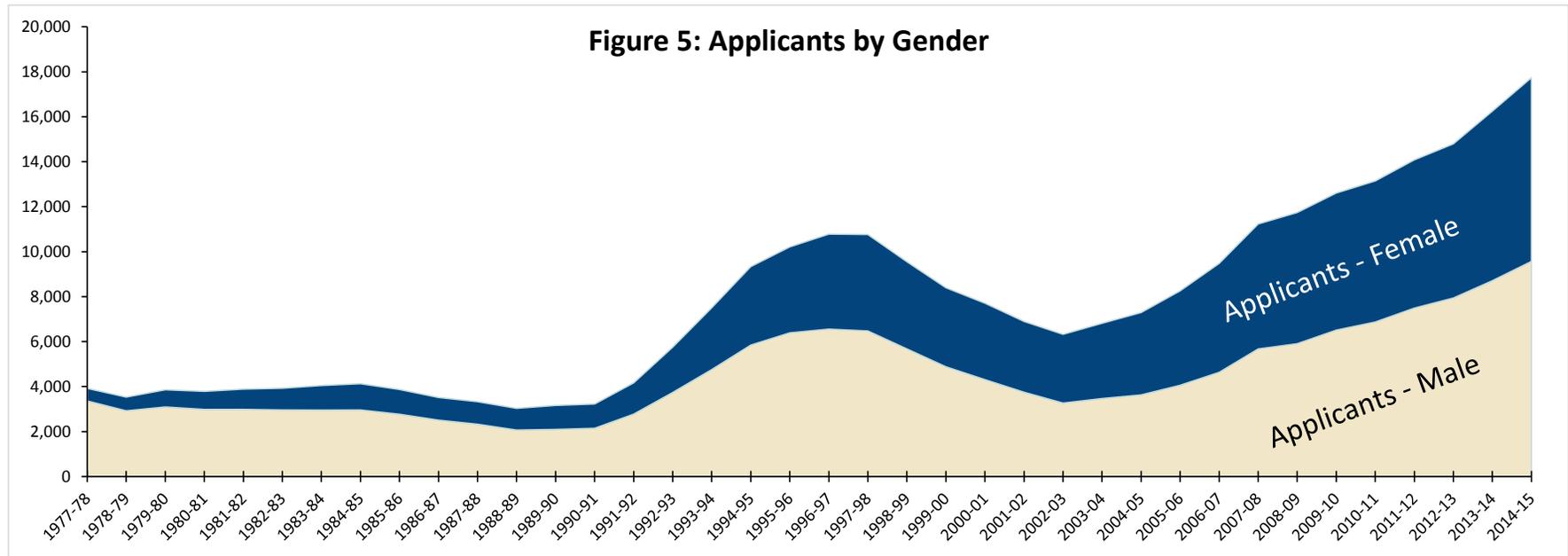


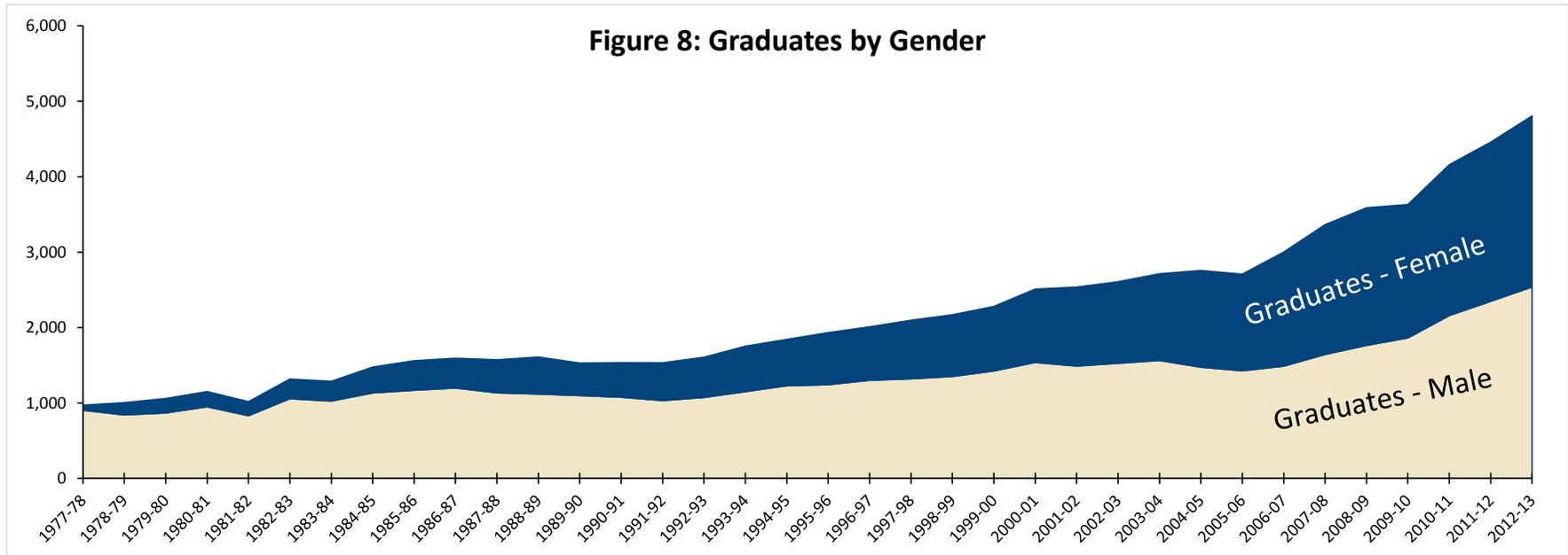
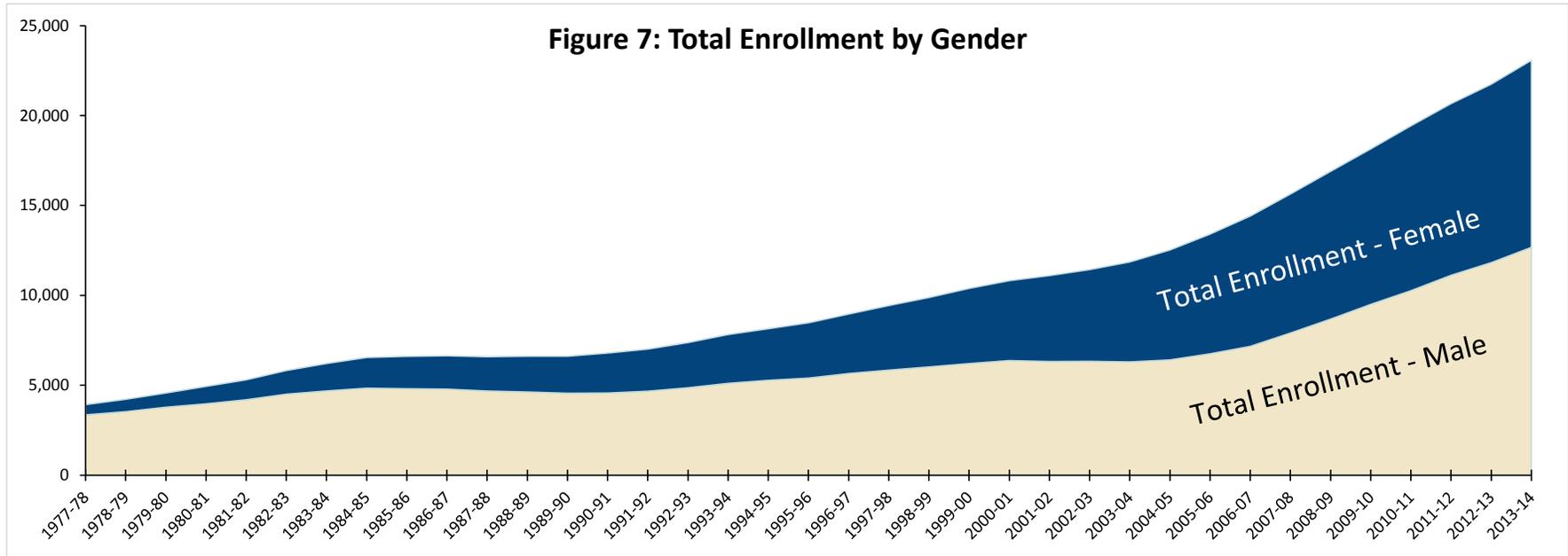
Figure 4: Total Enrollment, First-Year Enrollment, Graduates, and Applicants
Growth in Last Decade



Trends in Osteopathic Medical School Applicants, Enrollment, and Graduates - Figures



Trends in Osteopathic Medical School Applicants, Enrollment, and Graduates - Figures



Trends in Osteopathic Medical School Applicants, Enrollment, and Graduates - Table

Academic Yr	Applicants					First-Year Enrollment				Total Enrollment				Graduates			
	Male	Female	Missing	Total	% Female	Male	Female	Total	% Female	Male	Female	Total	% Female	Male	Female	Total	% Female
1977-78	3,359	559		3,918	14.3%	971	192	1,163	16.5%	3,356	570	3,926	14.5%	903	68	971	7.0%
1978-79	2,920	610		3,530	17.3%	1,100	222	1,322	16.8%	3,533	688	4,221	16.3%	841	163	1,004	16.2%
1979-80	3,091	765		3,856	19.8%	1,161	265	1,426	18.6%	3,782	789	4,571	17.3%	867	192	1,059	18.1%
1980-81	2,982	804		3,786	21.2%	1,167	329	1,496	22.0%	3,969	971	4,940	19.7%	949	202	1,151	17.5%
1981-82	2,984	901		3,885	23.2%	1,204	378	1,582	23.9%	4,196	1,108	5,304	20.9%	831	186	1,017	18.3%
1982-83	2,959	965		3,924	24.6%	1,254	428	1,682	25.4%	4,505	1,317	5,822	22.6%	1,056	261	1,317	19.8%
1983-84	2,953	1,092		4,045	27.0%	1,286	460	1,746	26.3%	4,686	1,526	6,212	24.6%	1,025	262	1,287	20.4%
1984-85	2,958	1,168		4,126	28.3%	1,239	511	1,750	29.2%	4,840	1,707	6,547	26.1%	1,133	343	1,476	23.2%
1985-86	2,767	1,102		3,869	28.5%	1,248	489	1,737	28.2%	4,809	1,799	6,608	27.2%	1,168	392	1,560	25.1%
1986-87	2,505	1,009		3,514	28.7%	1,253	471	1,724	27.3%	4,787	1,853	6,640	27.9%	1,198	395	1,593	24.8%
1987-88	2,324	1,002		3,326	30.1%	1,202	490	1,692	29.0%	4,682	1,904	6,586	28.9%	1,134	438	1,572	27.9%
1988-89	2,064	966		3,030	31.9%	1,209	571	1,780	32.1%	4,628	1,986	6,614	30.0%	1,118	491	1,609	30.5%
1989-90	2,092	1,068		3,160	33.8%	1,229	615	1,844	33.4%	4,559	2,056	6,615	31.1%	1,098	431	1,529	28.2%
1990-91	2,142	1,082		3,224	33.6%	1,283	667	1,950	34.2%	4,571	2,221	6,792	32.7%	1,076	458	1,534	29.9%
1991-92	2,770	1,393		4,163	33.5%	1,329	645	1,974	32.7%	4,672	2,340	7,012	33.4%	1,031	501	1,532	32.7%
1992-93	3,735	2,017		5,752	35.1%	1,320	715	2,035	35.1%	4,863	2,512	7,375	34.1%	1,073	533	1,606	33.2%
1993-94	4,753	2,753		7,506	36.7%	1,391	771	2,162	35.7%	5,108	2,714	7,822	34.7%	1,150	602	1,752	34.4%
1994-95	5,842	3,494		9,336	37.4%	1,412	805	2,217	36.3%	5,276	2,870	8,146	35.2%	1,228	615	1,843	33.4%
1995-96	6,387	3,826		10,213	37.5%	1,424	850	2,274	37.4%	5,400	3,075	8,475	36.3%	1,242	690	1,932	35.7%
1996-97	6,553	4,228		10,781	39.2%	1,578	957	2,535	37.8%	5,653	3,308	8,961	36.9%	1,300	709	2,009	35.3%
1997-98	6,471	4,293		10,764	39.9%	1,621	1,071	2,692	39.8%	5,843	3,591	9,434	38.1%	1,320	776	2,096	37.0%
1998-99	5,673	3,881		9,554	40.6%	1,610	1,135	2,745	41.3%	6,020	3,862	9,882	39.1%	1,351	818	2,169	37.7%
1999-00	4,878	3,518		8,396	41.9%	1,646	1,202	2,848	42.2%	6,207	4,181	10,388	40.2%	1,424	855	2,279	37.5%
2000-01	4,306	3,402		7,708	44.1%	1,687	1,240	2,927	42.4%	6,374	4,443	10,817	41.1%	1,537	973	2,510	38.8%
2001-02	3,747	3,151		6,898	45.7%	1,628	1,415	3,043	46.5%	6,321	4,780	11,101	43.1%	1,489	1,047	2,536	41.3%
2002-03	3,264	3,059	1	6,324	48.4%	1,616	1,463	3,079	47.5%	6,333	5,099	11,432	44.6%	1,526	1,081	2,607	41.5%
2003-04	3,466	3,348		6,814	49.1%	1,646	1,662	3,308	50.2%	6,300	5,557	11,857	46.9%	1,563	1,150	2,713	42.4%
2004-05	3,627	3,665		7,292	50.3%	1,818	1,828	3,646	50.1%	6,410	6,115	12,525	48.8%	1,474	1,282	2,756	46.5%
2005-06	4,056	4,202		8,258	50.9%	1,961	1,947	3,908	49.8%	6,751	6,655	13,406	49.6%	1,426	1,282	2,708	47.3%
2006-07	4,630	4,847		9,477	51.1%	2,032	2,023	4,055	49.9%	7,163	7,246	14,409	50.3%	1,488	1,512	3,000	50.4%
2007-08	5,671	5,560		11,231	49.5%	2,376	2,152	4,528	47.5%	7,904	7,730	15,634	49.4%	1,643	1,721	3,364	51.2%
2008-09	5,903	5,839		11,742	49.7%	2,643	2,307	4,950	46.6%	8,678	8,215	16,893	48.6%	1,763	1,825	3,588	50.9%
2009-10	6,507	6,101	9	12,617	48.4%	2,781	2,446	5,227	46.8%	9,497	8,646	18,143	47.7%	1,862	1,769	3,631	48.7%
2010-11	6,869	6,277	1	13,147	47.7%	2,918	2,510	5,428	46.2%	10,259	9,168	19,427	47.2%	2,159	2,000	4,159	48.1%
2011-12	7,487	6,597	3	14,087	46.8%	3,192	2,596	5,788	44.9%	11,117	9,546	20,663	46.2%	2,347	2,111	4,458	47.4%
2012-13	7,936	6,860	149	14,945	46.4%	3,325	2,661	5,986	44.5%	11,818	9,923	21,741	45.6%	2,538	2,268	4,806	47.2%
2013-14	8,708	7,545	201	16,454	46.4%	3,703	2,933	6,636	44.2%	12,670	10,401	23,071	45.1%				
2014-15	9,564	8,175	205	17,944	46.1%												





The Evolution of Osteopathic Medical Education

Leaders in medical education recently announced that the separate accreditation systems for allopathic and osteopathic graduate medical education (GME) will be unified into a single, streamlined system. The need for a single accreditation system reflects the major growth of the importance of osteopathic medicine in American healthcare, with one in four newly matriculated medical students now pursuing osteopathic medicine, a greater proportion than ever before.



Dr. Andrew Taylor Still rejects now-discredited medical practices of the day - such as *bloodletting, dosing with mercury, and blistering* - in favor of preventive medicine, treating the whole patient, and utilizing osteopathic manipulative treatment to improve the body's ability to function and heal itself.

1874

1892

Dr. Still opens first osteopathic medical school, the American School of Osteopathy, in Kirksville, Missouri.



1910



Flexner Report leads to strong improvements to osteopathic medical colleges, such as expanding facilities, extending the length of instruction, and integrating biological and chemical agents into the curriculum.

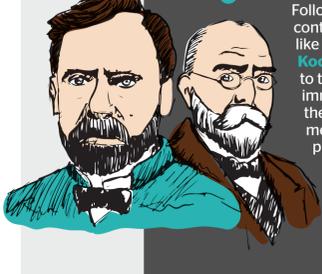
1915

New requirement from **American Osteopathic Association (AOA)** moves to four-year course for osteopathic medical colleges.



1929

Following the contributions of scientists like **Louis Pasteur, Robert Koch** and **Joseph Lister** to the advancement of immunological and germ theory, osteopathic medical schools require pharmacology. Surgery is adopted around this time as well.



1936

Internships are reviewed and approved for training osteopathic physicians.



1947

Residencies are reviewed and approved for osteopathic physician training.



1957

U.S. Department of Health, Education and Welfare recognizes AOA as accrediting body for osteopathic medical education.



1973

Doctors of osteopathic medicine (DOs) are eligible for licensure in **all 50 states** and the District of Columbia.



1991

Graduate medical education approved by the Accreditation Council for Graduate Medical Education (ACGME) is accepted as a second pathway to obtain osteopathic medical licensure, in addition to AOA-approved training.



1995

Osteopathic Postdoctoral Training Institutions (OPTIs) begin serving as accredited academic sponsors for graduate osteopathic medical education, providing an enhanced quality assurance mechanism for a seamless educational continuum between academic medicine, hospitals, and other community-based healthcare facilities.



2001

With Louisiana becoming the 50th state to accept the National Board of Osteopathic Medical Examiners' COMLEX examination, **DOs can be licensed in all states and D.C. with their own licensure examination.**



2007

Osteopathic physicians have full practice rights in **45 countries.**



Rotating osteopathic internship is merged into **residency training.**



2011

AOA approves **ACGME** graduate medical education training as **interchangeable** with **AOA** training for purposes of certification of physicians, through Resolution 29.



2014

Beginning in December, **institutions may go online** to prepare to apply for **ACGME institutional accreditation.** (They may formally begin application on April 1, 2015, which will result in a pre-accreditation status, enabling the programs that they sponsor to apply for ACGME accreditation in 2015.) **AOA and ACOM** appoint Board members to ACGME Board.



ACGME, AOA, and American Association of Colleges of Osteopathic Medicine (AACOM) announce an agreement to create a single accreditation system for GME.

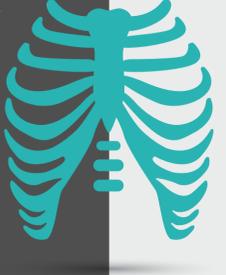


2015

Starting in July, AOA-accredited residency programs can apply for ACGME accreditation and are encouraged to do so. AOA and AACOM representatives will join **Review Committees.**



Two new **Review Committees** will be established, one for **osteopathic neuromusculoskeletal medicine** programs and the other addressing osteopathic principles and practice for osteopathically-focused GME.



2020

AOA-accredited residency programs must have applied for and received ACGME recognition and accreditation, with **ACGME's Common Program Requirements** leveling the field for all osteopathic and allopathic GME programs.



Undergraduate Timeline for the Pre-Medical Student Applying to Osteopathic Medical Colleges

Please note, the following is based on the premise you will start medical school in the fall following your college graduation, and that you will complete undergraduate education four years. If you wish to have a gap-year, or take a different undergraduate path, adjust this timeline accordingly. Please consult with your pre-health advisor to establish your own personalized schedule.

FRESHMAN YEAR

- Meet with your campus health professions advisor to learn the requirements. If your college does not have a health professions advisor, check out the National Association of Advisors for the Health Professions. naahp.org/PublicResources/FindanAdvisor.aspx#find
- Think about a major and minor course of academic study.
- Develop study skills. (Form study groups or use resources on campus.)
- Maintain a competitive GPA.
- Begin extracurricular activities.
- Volunteer/work in a medical field or setting (clinic, ER, hospital).
- Review medical school admission requirements.
- Order or review online AACOM's Osteopathic Medical College Information Book, which includes descriptions of all of the osteopathic medical colleges, admissions criteria, minimum entrance requirements and more.
- Read books on and learn about osteopathic medicine.
- Talk to upperclass pre-med students.
- Get to know an osteopathic physician (DO).

SOPHOMORE YEAR

- Continue meeting with your campus health professions advisor.
- Volunteer/work in a medical field or setting (clinic, ER, hospital).
- Select major and minor courses of study. (Fine-tune schedule.)
- Maintain a competitive GPA.
- Begin to research medical school entrance requirements.
- Order or review online AACOM's Osteopathic Medical College Information Book, which includes descriptions of all of the osteopathic medical colleges, admissions criteria, minimum entrance requirements and more.
- Consider participating in research (with a faculty member or outside campus).
- Learn more about osteopathic medicine (shadowing, classmates, advisor, internet research).
- Join or start a Pre-Student Osteopathic Medical Association (Pre-SOMA) chapter at your undergraduate college. <https://www.studentdo.com/WCM/>

JUNIOR YEAR

- Continue meeting with your campus health professions advisor.
- Maintain a competitive GPA.
- Volunteer/work in a medical field or setting (clinic, ER, hospital).
- Study and register for MCAT.
- Take the MCAT.
- Visit schools in which you are interested and attend Open Houses, health professions career fairs and other recruitment events.
- Order or review online AACOM's Osteopathic Medical College Information Book, which includes descriptions of all of the osteopathic medical colleges, admissions criteria, minimum entrance requirements and more.
- Continue to be involved in pre-health organizations, research and community service activities.
- Look for leadership opportunities.

SENIOR YEAR

- Continue meeting with your campus health professions advisor.
- Sign up for the letters committee process or letter of evaluation service with your advisor.
- Maintain a competitive GPA.
- Make a list of the medical schools to which you plan to apply.
- Order or review online AACOM's Osteopathic Medical College Information Book, which includes descriptions of all of the osteopathic medical colleges, admissions criteria, minimum entrance requirements and more.
- Request official transcripts of all college work attempted. You will need your own copies to use when completing the AACOMAS application as well as official copies to be sent directly to AACOMAS.
- Request letters of recommendation/evaluation. (Begin the summer prior to Senior year.)
- Volunteer/work in a medical field or setting (clinic, ER, hospital).
- Continue extracurricular activities and leadership roles on and off campus.
- Complete AACOMAS application. (The AACOMAS application opens in May of each year.)
- Confirm that schools have received your application.
- Complete secondary applications and submit letters in timely manner.
- Interview at medical schools. (Make a plan to ensure you do not miss classes, assignments, etc.)
- Write thank-you notes to references and medical school admission officers.
- Complete FAFSA financial aid application.
- Consider what you will do this summer (accepted or not accepted).
- Accept offer.
- Thank your campus health professions advisor for his/her assistance.



For a schedule of informational events near you, please visit AACOM's website at www.aacom.org and click on Recruiting Calendar.

Podiatric Medicine

PRE-PODIATRIC MEDICAL: ACADEMIC AND CAREER INFORMATION



Health Professions Advising Office (HPAO) • Jensen Student Access to Science (SAS) and Mathematics Center • **Location:** Hall of Science Building – Room 164 • Phone: (562) 985-8061 • Website: www.csulb.edu/hpao

NATURE OF THE WORK, EARNINGS, AND OCCUPATIONAL OUTLOOK

Doctors of Podiatric Medicine (DPM), also known as Podiatrists, are podiatric physicians or surgeons who diagnose and treat conditions effecting the foot, ankle, and related structures of the leg (American Podiatric Medical Association, 2015). Podiatrists are specialized to prevent, diagnose, and treat ailments of the foot including disorders, diseases, and injuries. DPMs are defined as physicians by the federal government (and most states) and make independent judgments, diagnose, perform surgery, administer medications, and prescribe physical therapy regimens. Practitioners can focus on a particular area of podiatric medicine such as surgery, sports medicine, biomechanics, geriatrics, pediatrics, orthopedics, and primary care. DPMs often detect serious health problems because a number of diseases manifest first through symptoms of the lower extremities (i.e., diabetes, arthritis, heart disease, or kidney disease). The demands for the skills of Podiatrists are increasing as disorders of the foot and ankle are among the most widespread and overlooked health problems (www.explorehealthcareers.org). Students interested in pursuing a DPM should consider a number of factors including the lifestyle offered by a career in podiatric medicine. Because there is a demand for podiatrists that exceeds the supply, the earnings of a podiatrist are high. In addition to desirable salaries, a podiatrist can also enjoy a flexible lifestyle. When comparing to other medical specialties, podiatry offers more options in practice structure. Those who seek a fast-paced, engaging atmosphere in a hospital emergency room and those looking for a more relaxed, family-friendly schedule can both thrive in the field of podiatry (APMA, 2015).

There are an estimated 15,000 podiatrists practicing in the U.S. (Board of Podiatric Medicine). Though earnings vary according to number of years in practice, type of practice, geographical location, and specialty, podiatrists enjoy very high earnings. Podiatrists earned a median net income of \$134,414, (EHC). Podiatrists in partnerships tended to earn more than their colleagues in solo practice (Occupational Outlook Handbook, 2015). The Occupational Outlook Handbook, reports that employment of podiatrists is expected to increase by 23 % from 2012 to 2022, much faster than the average for all occupations. Because of the rising number of injuries sustained by a more active and increasingly older population, those who are severely overweight, and Americans who are diagnosed with diabetes, more people will turn to podiatrists creating an increase in demand for podiatrists (OOH, 2015).

PODIATRIC MEDICAL EDUCATION

There are nine colleges of podiatric medicine in the United States (2 in CA) that are accredited by the Council on Podiatric Medical Education. All of the colleges grant the degree of Doctor of Podiatric Medicine (DPM). DPMs receive medical education and training comparable to medical doctors, which usually require four years of graduate coursework. “The first two years are devoted largely to classroom instruction and laboratory work in

the basic medical sciences, such as anatomy, physiology, microbiology, biochemistry, pharmacology, and pathology. During the third and fourth years, students concentrate on courses in clinical sciences, gaining experience in the college clinics, community clinics, and accredited hospitals. Clinical courses include but are not limited to general diagnosis, dermatology, general medicine, podiatric surgery, trauma, and biomechanics” (American Association of Colleges of Podiatric Medicine, 2015). After four years of study and receiving the DPM degree, doctors can begin a postdoctoral residency program to further strengthen and refine the practitioner’s area of specialty. Residency programs usually last two or more years and are based in accredited hospitals. Practitioners can focus on many different specialty areas within the field of podiatry, including surgery, sports medicine, biomechanics, geriatrics, pediatrics, orthopedics, or primary care (AACPM, 2015).

Most practicing podiatrists are board certified. According to APMA (2015), “certification is considered to be an earned credential for those podiatric physicians who have achieved certain levels of skill and ability based upon completion of specific advanced training and clinical experience and examination. The [American Board of Podiatric Orthopedics and Primary Podiatric Medicine](#) (ABPOPPM) is the certifying board for the specialty areas of podiatric orthopedics and primary podiatric medicine. The [American Board of Podiatric Surgery](#) (ABPS) is the certifying board for the specialty area of foot and ankle surgery.”

PRE-PODIATRIC MEDICAL PREPARATION:

Although most schools require a minimum of 3 years or 90 semester hours at an accredited undergraduate college or university, over 97% of all first-year students entering the colleges of podiatric medicine possess baccalaureate degrees and about 10% have advanced degrees. Potential podiatric medical students may be evaluated on the basis of their grade point average (GPA), performance on the MCAT (or DAT, depending on the school), extracurricular and community activities, personal interview, professional potential, etc. Due to the competitive nature of the podiatric medical school application process and rigorous training required, students should *carefully consider their motivation and preparation for a career in podiatric medicine*. In Fall 2013, a total of 631 applicants entered podiatric medical schools. The entering class had an **average science GPA of 3.2**, an **average non-science GPA of 3.5** and an **average overall GPA of 3.3**. The average MCAT score was a 21.2 (AACPM, 2015).

MAJOR

Any major is appropriate for podiatric medical school preparation. While a natural science major requires many of the same basic pre-requisites, selecting a natural science major is not required for admission to any podiatric medical school. Students are advised to select a major they find interesting and to work at developing a broad-based, interdisciplinary foundation of knowledge and skills from which they can build upon.

COURSE REQUIREMENTS FOR PODIATRIC MEDICAL SCHOOLS:

Admission criteria may vary slightly by institution; therefore, contact the school and college of your choice to obtain specific requirements. **Students maintain responsibility for verifying course selection with individual programs.**

CSULB courses which fulfill admission requirements for most U.S. DPM programs:

Pre-medical Coursework	CSULB Courses
One year of General Chemistry with lab	Chemistry 111A & 111B
One year of Organic Chemistry with lab	Chemistry 220A & 220B + 320L (Chemistry/Biochemistry majors) OR 220A w/ 223A & 220B w/ 223B (Biology and other majors)
One year of General Biology with lab	Biology 211 & 212 & 213*
One year of General Physics with lab	Physics 100A & 100B OR 151 & 152 & 254**
One year of English (Composition & Literature preferred) ***	English 100 AND another course from the English department such as: 102, 180, 300 (some schools MAY take equivalent courses)

*Required (at Dr. William M. Scholl College of Podiatric Medicine) or **Highly** Recommended

** Recommended for MCAT

*** California School of Podiatric Medicine requires 8 semester hours of English/Communication studies

Strongly Recommended (required at some schools)

Pre-medical Coursework	CSULB Courses
One (or more) course in Biochemistry (MCAT)	Chemistry 441A and/or 441B or 448
Genetics	Biology 370
Mammalian Physiology	Biology 342
Microbiology	Microbiology 211
One semester to one year of Calculus	Math 119A & 119B OR 122 & 123*
Social and Behavioral Sciences (MCAT)	Sociology 100 and Psychology 100 (MCAT 2015)

*Recommended but not required at College of Podiatric Medicine & Surgery at Des Moines University

Courses in the Social Sciences, Humanities, Languages, and computer skills are also recommended.

PLEASE NOTE: Some schools may not accept AP units toward the satisfaction of stated pre-requisite courses- contact the program of your choice to find out more information about AP units.

IMPORTANT FACTORS TO CONSIDER FOR A SUCCESSFUL APPLICATION:

CLINICAL EXPOSURE is strongly recommended for admission to most podiatric medical schools. This can include a paid or volunteer position in a doctor's office, local clinic, or a hospital. Most hospitals and clinics gladly accept volunteers (contact the volunteer services office at your local hospital for more information). Podiatric medical school admission committees want to know that you have the desire and ability to work with patients. The successful participation in clinical volunteer or job experience can demonstrate this. **Note: Podiatric medical schools may highly value experience with a Podiatrist.** Visit <http://www.aacpm.org/contactpod/default.asp> to connect to a Podiatrist mentor who can answer questions about

the practice of podiatric medicine, welcome you to visit their offices, and allow you to shadow them as they practice on a daily basis. This one-on-one relationship is a great way to determine if this is the right career choice for you!

COMMUNITY SERVICE experience is also highly valued by podiatric medical schools. Future podiatrists should be able to demonstrate compassion and a willingness to give back to their communities. Getting involved in community service efforts on and off campus that are of interest to you can enhance your application to podiatric schools. CSULB has a number of academic, service, and health professions organizations to join.

WORK EXPERIENCE can also be valuable in demonstrating your potential to succeed in podiatric medical school. Past success in a work environment can reveal meaningful information to admissions committees. Depending on the setting, work experience can develop and showcase a variety of skills including communication (oral and/or written) time management, and problem solving.

LETTERS OF RECOMMENDATION are required for application to podiatric medical school. The purpose of the letters is to provide schools with an impression of the applicant from respected academicians or persons who are in a position to observe the applicant's work as it relates to the study of podiatric medicine. Students are encouraged to create and maintain positive contacts with prospective recommenders early in their academic career. Check individual program admission requirements for specific information about number and types of letters required for each program. Most schools will only accept letters of recommendation through [Interfolio](#) – check the individual's schools requirements (AACPM, 2015).

MEDICAL COLLEGE ADMISSION TEST (MCAT):

The new Medical College Admission Test (MCAT) 2015 is a standardized exam consisting of four multiple-choice sections (**BEHAVIORAL SCIENCES, PHYSICAL SCIENCES, BIOLOGICAL SCIENCES, AND CRITICAL ANALYSIS & REASONING SKILLS**). In addition to the previous prerequisites, students should complete general sociology and psychology courses as this is a new section added to the MCAT. The new MCAT will be administered spring of 2015.

Note: the DAT and GRE are also accepted as an alternate standardized exam by a few schools. Check each school's website for information about standardized exams.

APPLICATION

The American Association of Colleges of Podiatric Medicine Application Service (AACPMAS) is a web-based centralized application service which allows students to apply to all nine podiatric medical schools and colleges with one application. There are no supplemental application forms or fees required in addition to the AACPMAS. AACPMAS begins processing applications the first Wednesday in August for fall admissions the following year. Deadline dates are as follows: April 1st for priority consideration and the final deadline is June 30th for the fall semester (<http://www.aacpm.org/html/careerzone/require.asp>).

See your HPAO advisor for more information on Podiatric Medicine, the application process and assistance, and a list of upcoming workshops and events.

RESOURCES FOR STUDENTS

1. American Podiatric Medical Association (APMA)
 - a. www.apma.org/careers or www.todayspodiatrist.com
2. American Association of Colleges of Podiatric Medicine (AACPM)
 - a. www.aacpm.org or 1-301-948-9760
3. The Nine Colleges of Podiatric Medicine:
 - a. <http://www.cpme.org/colleges/content.cfm?ItemNumber=2425&navItemNumber=2240&RDtoken=59957&userID=>



American Association of Colleges of Podiatric Medicine

Mission: The Mission of AACPM is to serve as the leader in facilitating and promoting excellence in podiatric medical education leading to the delivery of the highest quality lower extremity healthcare to the public.

- **Size of Organization:** There are 9 member institutions.
- **Number of Member Institutions:** There are 9 member institutions.
- **New Institutional Members in Last Two Years:** None
- **Total Number of Students:** For the 2013-14 academic year, there are 2405 students enrolled across 9 member institutions.
- **Total Number of First Year Students:** For the 2013-14 academic year, there 652 first-year students enrolled across 9 member institutions.
- **Total Number of Graduates in Most Recent Academic Year:** There were 572 graduates in the class of 2013.
- **Data on Employment Rates of Recent Graduates:** Of the 561 eligible graduates from the class of 2013, 516 (90.2%) were placed in residency programs.

Admissions Updates

Contact Information and CAS Link: <http://portal.aacpmas.org>

Advisor portal: The AACPM advisor portal is currently under construction and will be available at a later time.

Current Number of Participating Programs Versus Total Member Programs:

All nine of the schools and colleges of podiatric medicine participate in AACPMAS.

Open Period (launch date and last deadline): AACPMAS begins accepting new applications for admission the first Wednesday in August each year for fall admission the following year. Complete and verified applications will be delivered to the designated schools and colleges of podiatric medicine during the third week

of September and will continue to deliver new and revised applications on a daily basis thereafter until the cycle closes.

Submission Deadlines: Deadline dates are as follows: For priority consideration April 1st of each year for the upcoming fall admission. The final application deadline date is June 30th of each year for fall admission of the same year.

Applicant Code of Conduct or Required Institutional Certification or Statement:

The following is the certification statement found on the AACPMAS application that requires each applicant to check each box before submitting their application:

- I certify that the information I have recorded in this application is complete and accurate to the best of my knowledge and that I have recorded my required courses exactly as they appear on my transcript(s).
- I recognize that any intentional misrepresentation on my part, including plagiarism, may cause me to be denied admission to or subsequently dismissed from a podiatric medical college.
- I also give permission to AACPM to use this information for aggregate statistical and research purposes.
- I hereby authorize AACPMAS to release the information reported in this application and my official MCAT scores to the colleges I have designated.
- I give AACPMAS permission to release selected information about the status of my AACPMAS application to the chief health professions advisor and the health professions advisory committee of the post-secondary institution(s) I have attended.
- By releasing this information, advisors are better able to assist applicants in the application process and advise applicants in the future.

Fees: The fee for using AACPMAS is based on a graduated scale that varies according to the number of colleges an individual designates when submitting an application. Applicants may request that the AACPMAS send a completed application to more schools for an additional fee. AACPMAS accepts only MasterCard and Visa for payment of fees. Application materials will not be processed until payment is received.

For the 2014-15 cycle, the initial application and first designated college will be \$180. An additional \$45 will be added for each additional designation at the time of submission. Additional designations after the initial submission of the application will be \$60 for each additional designation.

Fee Waivers: AACPMAS does not have a Fee Waiver Program.

Letters of Reference Delivery Method(s):

Letters of recommendation or evaluation should be sent directly to an applicant's designated colleges or brought to the interview. All schools accept letters via confidential letter transmission services:

SCHOOL	Accepting E-LORs in 2014–15
AZPod	Interfolio or VirtualEvals
BUSPM	Interfolio
CSPM	Interfolio
DMU-CPMS	Interfolio or VirtualEvals
KSUCPM	Interfolio or VirtualEvals
NYCPM	Interfolio or VirtualEvals
SCPM	Interfolio or VirtualEvals
TUSPM	Interfolio or VirtualEvals
WUCPM	Interfolio or VirtualEvals

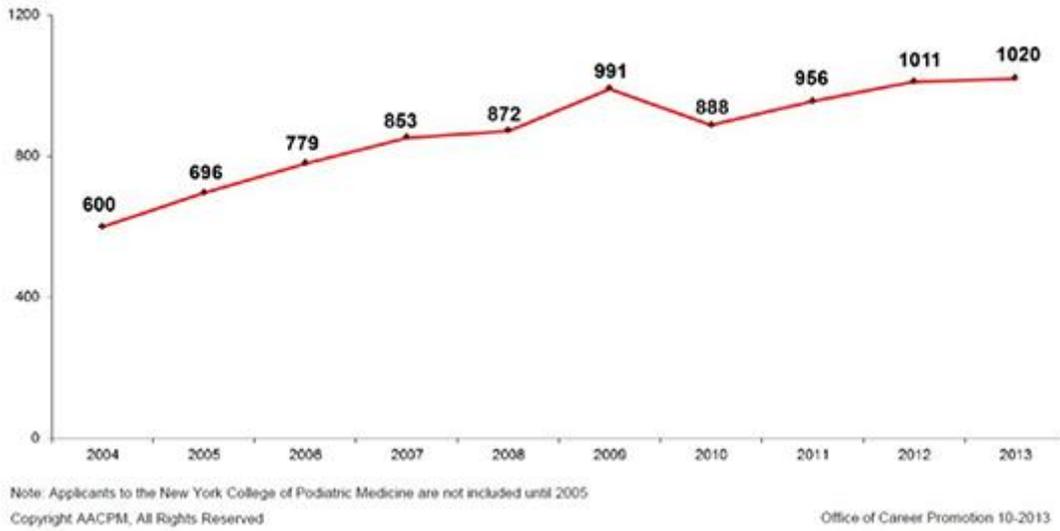
Background Check Services if Applicable:

Background checks are conducted by each institution after acceptance. Each institution has their own policy regarding background checks.

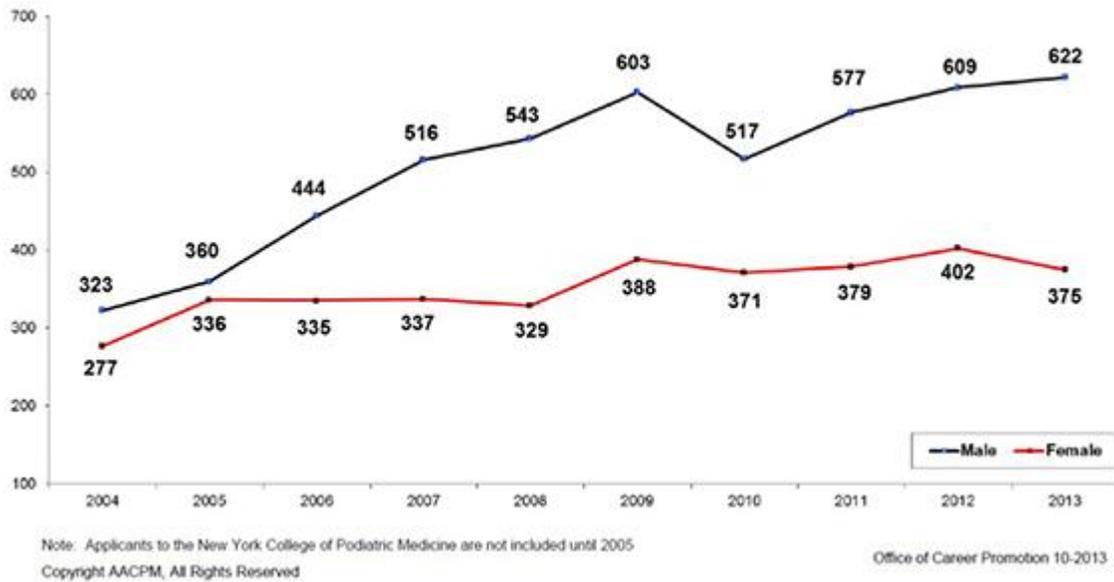
Fall 2013 Matriculants:**Number of Applicants, With Data on the Profile of the Pool Including Gender, Race/Ethnicity, Age, Etc.:***2012-13 Application Cycle Report*

- 997 applicants in the 2012-13 cycle:
 - 622 male applicants, 375 female applicants
 - Ethnic breakdown: 572 (55%) Caucasian, 157 (15%) Asian Pacific Islander, 145 (14%) Indian/Pakistani, 78 (8%) African-American, 68 (7%) Hispanic/Latino, 13 (1%) American Indian/Alaskan Native
 - GPA average 3.2 (Science 3.0, Non-science 3.5)
 - MCAT Average 20.5 (6.6 verbal reasoning, 6.8 physical science, 7.1 biological science)
- 631 matriculants in the fall of 2013
 - GPA average 3.3 (Science 3.2, Non-science 3.5)
 - MCAT Average 21.2 (6.8 verbal reasoning, 7.0 physical science, 7.4 biological science)

AACPMAS Historical Trends 2004 - 2013



Applicants by Gender 2004 - 2013



Applicants by College and Ethnic ID 2012 - 2013

COLLEGE	Verified Application TOTAL	CAUCASIAN	AFRICAN AMERICAN	HISPANIC/LATINO	AMERICAN INDIAN/ALASKAN NATIVE	ASIAN/PACIFIC ISLANDER	INDIAN/PAKISTANI	Ethnicity Total
All Applicants	977	572 (55%)	78 (8%)	68 (7%)	13 (1%)	157 (15%)	145 (14%)	1033 (100%)
AZPOD	446	254 (54%)	24 (5%)	39 (8%)	7 (1%)	74 (16%)	70 (15%)	468 (100%)
BUSPM	512	275 (50%)	40 (7%)	55 (10%)	8 (1%)	78 (14%)	93 (17%)	549 (100%)
CSPM	433	222 (49%)	24 (5%)	41 (9%)	6 (1%)	93 (20%)	70 (15%)	456 (100%)
DMU-CPMS	493	289 (59%)	26 (5%)	29 (6%)	6 (1%)	71 (14%)	71 (14%)	492 (100%)
KSUCPM	599	350 (57%)	37 (6%)	37 (6%)	4 (1%)	87 (14%)	101 (16%)	616 (100%)
NYCPM	606	302 (48%)	46 (7%)	47 (7%)	8 (1%)	114 (18%)	111 (18%)	628 (100%)
SCPM	605	343 (54%)	38 (6%)	42 (7%)	8 (1%)	102 (16%)	100 (16%)	633 (100%)
TUSPM	622	327 (51%)	50 (8%)	45 (7%)	5 (1%)	104 (16%)	113 (18%)	644 (100%)
WUCPM	427	219 (49%)	24 (5%)	45 (10%)	6 (1%)	90 (20%)	66 (15%)	450 (100%)

Note: Columns are NOT to be totaled because an applicant may apply to more than one college.
 Rows are NOT to be totaled because an applicant identify with more than one ethnic group.

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Office of Career Promotion 10-2013

Prerequisite Information

Summary of Course Prerequisites for Admission to Podiatric Medical School

	AZPOD	BUSPM	CSPM	DMU-CPMS	KSCUPM	NYCPM	SCPM	TUSPM	WUCPM
Anatomy/Physiology									
Behavioral Sciences									
Biochemistry									
Biology									
Cell Biology									
Chemistry									
Embryology									
English/Composition									
Genetics									
Histology									
Immunology									
Medical Terminology									
Microbiology									
Organic Chemistry									
Other Liberal Arts									
Physics									
Psychology									
Sociology									
Zoology									
Total Minimum Number of Hours Required (Semester/Quarter)	90/135	90	90/135	90	90/135	90/135	90/135	90/135	90/135
Baccalaureate Degree Preferred	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

- Denotes required course
- Denotes recommended course

Source: Colleges of Podiatric Medicine
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June 2012

Standardized Test(s):

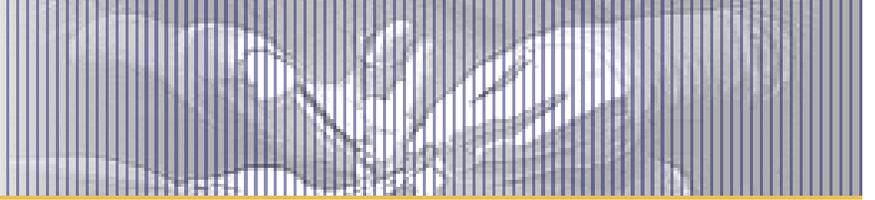
All nine institutions require the MCAT. Temple accepts the DAT on a case by case basis.

SCHOOL	Standardized Tests Accepted During the 2014-15 AACPMAS Cycle
AZPod	MCAT Last MCAT test date: March 2015
BUSPM	MCAT Last MCAT test date: May 2015
CSPM	MCAT Last MCAT test date: May 2015
DMU- CPMS	MCAT Last MCAT test date: May 2015
KSUCPM	MCAT Last MCAT test date: June 2015
NYCPM	MCAT Last MCAT test date: May 2015
SCPM	MCAT Last MCAT test date: May 2015
TUSPM	MCAT Last MCAT test date: July 2015
WUCPM	MCAT Last MCAT test date: June 2015

Experience/Exposure: Not provided

Letters of Recommendation:

- All schools require a letter of recommendation from a practicing medical professional, preferably a podiatric medical physician. Shadowing experiences can be set up through Daniel Taubman at AACPM via email at dtaubman@aacpm.org or by logging on to www.aacpm.org/contactpod/default.asp.
- Letters of recommendation or evaluation should be sent directly to an applicant's designated colleges or brought to the interview. See above chart for information about digital delivery of recommendation letters.



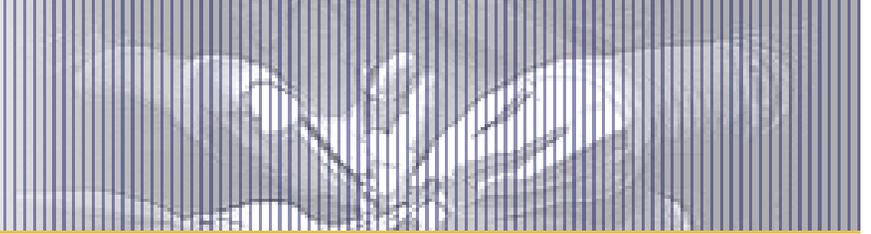
MATRICULANT GPA AVERAGES BY YEAR 2009 - 2013

<u>GPA</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Science	3.1	2.9	3.1	3.1	3.2
Non-Science	3.4	3.5	3.5	3.5	3.5
Overall	3.3	3.3	3.3	3.3	3.3
Total AACPMAS Matriculants	579	622	613	650	631

Only matriculants with verified GPAs are included in this report.



AMERICAN ASSOCIATION OF
COLLEGES OF
PODIATRIC MEDICINE



15850 Crabbs Branch Way Suite 320 Rockville, MD 20855-2622 Tel: 301-948-9760 www.aacpm.org

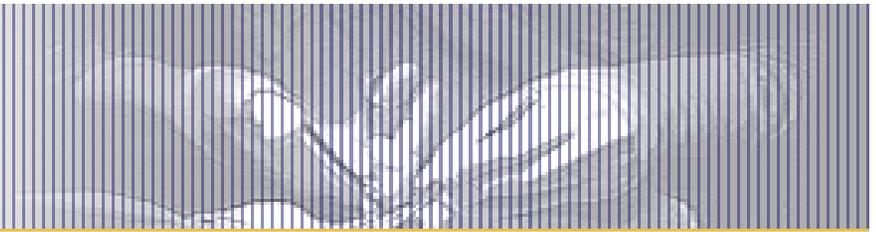
**MATRICULANT MCAT AVERAGES BY YEAR
2009 - 2013**

<u>MCAT</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Verbal Reasoning	7.3	7.0	6.7	6.7	6.8
Physical Science	7.1	6.8	6.8	6.8	7.0
Biological Science	7.7	7.3	7.2	7.4	7.4
Total AACPMAS Matriculants	433	505	546	586	594

Note: As of 2009, MCAT Scores were NOT the only admission test scores accepted by the colleges; the DAT was accepted by NYCPM and TUSPM. Only applicants with MCAT scores are included in this report.



AMERICAN ASSOCIATION OF COLLEGES OF PODIATRIC MEDICINE



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COMPARISON of ETHNIC ID of DPMs and ENROLLEES to TOTAL POPULATION

<u>ETHNIC ID</u>	<u>POPULATION</u>	<u>DPMs</u>		<u>ENROLLEES</u>							
	<u>2010</u> %	<u>2013</u> #	<u>2013</u> %	<u>2010</u>		<u>2011</u>		<u>2012</u>		<u>2013</u>	
				#	%	#	%	#	%	#	%
Caucasian	72.4%	7370	60.3%	1448	59.7%	1411	58.0%	1393	56.5%	1385	56.9%
African Am.	12.6%	241	2.0%	155	6.4%	143	5.9%	139	5.6%	147	6.0%
Am. Ind/Alask.Nat.	0.9%	23	0.2%	10	0.4%	13	0.5%	11	0.4%	7	0.3%
Asian/Pac.Island.	5.0%	478	3.9%	398	16.4%	474	19.5%	568	23.0%	579	23.8%
Hispanic/Latino	16.3%	218	1.8%	126	5.2%	120	4.9%	123	5.0%	125	5.1%
Indian/Pakistani	-	-	0.0%	99	4.1%	-	0.0%	-	0.0%	-	0.0%
Other	6.2%	-	0.0%	103	4.2%	-	0.0%	-	0.0%	-	0.0%
Do Not Wish to Report	-	3887	31.8%	85	3.5%	270	11.1%	231	9.4%	189	7.8%
TOTALS		12217	100%	2424	100%	2431	100%	2465	100.0%	2432	100.0%

Sources:

Population: Bureau of Labor Statistics, 2010 Census. Total Population 308,745,538

DPMs: Ethnic Identification on membership records of APMA, March 2013

Enrollment: Colleges of Podiatric Medicine

Dentistry

Pre-Dental: Academic and Career Information



Health Professions Advising Office (HPAO) • Jensen Student Access to Science (SAS) and Mathematics Center

Location: HSCI – Room 164E **Phone:** (562) 985-8061 **Website:** www.csulb.edu/hpao

NATURE OF THE WORK, EARNINGS AND OCCUPATIONAL OUTLOOK

Dentistry is a branch of the healing arts and sciences devoted to maintaining the health of the teeth, gums, and other hard and soft tissues of the oral cavity and adjacent structures. The United States Department of Labor Statistics reports that in 2012 dentists held about 146,800 active jobs in the United States (OOH) 2014-2015. Dentistry requires diagnostic ability and manual skills. Dentists should have good visual memory, excellent judgment of space and shape, a high degree of manual dexterity, and scientific ability. Good business sense, self-discipline, and communication skills are helpful for success in private practice.

Though earnings vary according to number of years in practice, location, hours worked, and specialty, the ADA reports that in 2012 the average net income for an independent private practitioner who owned all or part of his or her practice was \$202,760, while dental specialists earned an average net income of \$303,790. According to the Occupational Outlook Handbook (OOH) 2014-2015, the overall median pay for a dentist was \$149,310. Employment of dentists is expected to grow faster than average for all occupations through 2022. Although employment growth will provide some job opportunities, most jobs will result from the need to replace the large number of dentists expected to retire. Job prospects should be good as new dentists take over established practices or start their own (OOH, 2014-2015).

DENTAL EDUCATION

Currently there are 65 dental schools in the United States (6 in California) and 10 Canadian dental schools. Most dental schools award the degree of Doctor of Dental Surgery (D.D.S.). The rest award an equivalent degree, Doctor of Dental Medicine (D.M.D.). Dental school usually lasts 4 academic years. Studies begin with classroom instruction and laboratory work in basic sciences including anatomy, microbiology, biochemistry, and physiology. Beginning courses in clinical sciences, including laboratory techniques, are also provided at this time. During the last 2 years, students treat patients, usually in dental clinics, under the supervision of licensed dentists. All 50 States and the District of Columbia require dentists to be licensed. In most states, a candidate must graduate from a dental school accredited by the American Dental Association's Commission on Dental Accreditation, and pass written and practical examinations to qualify for a license. A degree in dentistry can lead to dental careers in a variety of settings including, academic dentistry, general dentistry (private or group practice), dental specialties, dental research, public policy, international health, and government/military.

THERE ARE 10 CLINICAL FIELDS OR SPECIALITIES IN DENTISTRY:

1. **General Dentistry:** use their oral diagnostic, preventive, surgical, and rehabilitative skills to restore damaged or missing tooth structure and treat diseases of the bone and soft tissue in the mouth and adjacent structure
2. **Dental Public Health:** treats the community rather than the individual patient
3. **Endodontics:** deals with diseases of the pulp and other dental tissues

4. **Oral and Maxillofacial Pathology:** study and research of the causes, processes, and effects of diseases with oral manifestations
5. **Oral and Maxillofacial Radiology:** taking and interpretation of conventional, digital, CT, MRI, and allied imaging modalities of oral-facial structures and disease.
6. **Oral and Maxillofacial Surgery:** concerned with diseases, injuries, and defects of the neck, head, jaw, and associated structures
7. **Orthodontics and Dentofacial Orthopedics:** concerned with treating problems related to irregular dental development, missing teeth, and other abnormalities
8. **Pediatric Dentistry:** concerned with the treatment of children, adolescents and young adults whose dental development is not complete
9. **Periodontics:** concerned with diseases that affect the oral mucous membranes that surround and support the teeth
10. **Prosthodontics:** science and art of replacing missing natural teeth with fixed or removable substitutes

(See the ADEA: Official Guide to Dental Schools, 2014 for more information).

PRE-DENTAL PREPARATION

Most schools require a minimum of 2 years of undergraduate education (also called “pre-dental education”). However, most dental students have at least a bachelor’s degree. According to ADEA: Official Guide to Dental Schools 2013, of all the United States students entering dental schools, more than 90.2% had completed 4 or more years of college, and about 6.3% had graduate training. When selecting students, schools consider scores earned on the Dental Admission Test (DAT), the applicants’ grade point average, and information gathered through recommendations and interviews.

Aside from prerequisite courses, it is recommended that students engage in extracurricular activities such as volunteering in a dental setting and community service. Pre-dental students should be able to demonstrate their potential for independent critical thought, leadership, concern for others, and an understanding of the dental profession. Additionally, pre-dental students should work at developing and/or improving manual dexterity and eye-hand-coordination.

For the fall 2012 entering class, about 45% of applicants were accepted to dental school (12,075 applicants and 5,456 enrollees). In 2012, **the mean GPA** for accepted students to US dental schools **was a 3.55 (Total) and 3.47 (Science)** (ADEA: Official Guide to Dental Schools, 2013). The average 2012 enrollee **DAT test score was 19.9.**

MAJOR:

Any major is appropriate for dental school preparation. While a science major requires many of the same basic prerequisites, selecting a science major is not required for admission to any dental school. Students are advised to select a major they find interesting and to work at developing a broad-based, interdisciplinary foundation of knowledge and skills from which they can build upon.

COURSE REQUIREMENTS FOR DENTAL SCHOOLS:

Prerequisite admission requirements vary from school to school. For the specific requirements at individual dental schools, refer to [ADEA: Official Guide to Dental Schools](#) available for purchase, at the American Dental

Education Association (ADEA) website: <http://www.adea.org>. Listed below are the prerequisite admission requirements for most U. S. Dental schools.

The following is NOT a comprehensive list of prerequisites for all dentistry programs. Students maintain responsibility for verifying course selection with individual dental programs. Non-science majors, remember that the courses listed may also have prerequisite courses.

CSULB Courses that fulfill admission requirements for dental schools:

Prerequisite Courses	CSULB Courses
One year of General Chemistry with lab	Chemistry 111A & 111B
One year of Organic Chemistry with lab	Chemistry 220A & 220B + 320 L (Chem. & Biochem. majors) OR 220A w/ 223A & 220B w/ 223B (Biology and other majors)
One year of General Biology with lab	Biology 211 & 212 & 213*
One year of General Physics with lab	Physics 100A & 100B OR 151 & 152
One year of English (Composition and/or Literature)	English 100 AND one of the following 101,102, or 300 (some schools MAY take equivalent courses)

*Required or **Highly Recommended**

Recommended courses (required at some schools):

Prerequisite Courses	CSULB Courses
Additional courses in biology, including anatomy	Biology 208 (required at UOP)
One or more courses in Psychology	Psychology 100 (required at UCLA, UCSF)
One or more courses in Biochemistry	Chemistry 441A and/or 441B or 448 (required at UCLA, UCSF, and Loma Linda)
One semester to one year of Math (Calculus)	Math 119A & 119B OR 122 & 123
One course in Statistics	Biology 260 OR Statistics 108

Other courses for consideration include: anatomy, histology, physiology, microbiology, social sciences, communication, business, technical writing, fine arts, drafting, sculpting, engineering, speech, and foreign language.

There may be a limit on the amount of Community College courses that a student can transfer in – please see the individual school’s policy.

DENTAL ADMISSION TEST:

All United States dental schools require applicants to take the Dental Admission Test (DAT). All Canadian schools require the Canadian Aptitude Test. The American Dental Association states that successful participation in the Dental Admission Test Program requires completion of at least one year of collegiate education (courses in Biology, General Chemistry, and Organic Chemistry). The DAT is entirely multiple-choice and consists of 4 separate sections:

Survey of Natural Sciences (Biology, General Chemistry, and Organic Chemistry)

Perceptual Ability (Three-dimensional manipulation and spatial reasoning problem-solving)

Reading Comprehension (Three academic essays followed by comprehension questions)

Quantitative Reasoning (Mathematical problems in algebra, numerical calculations, conversions, trigonometric identities etc.)

Schools vary in their emphasis on the different parts of the test. The DAT is administered on computer almost any day of the year. *Applicants should register to take the DAT at least one month before the intended test date.* ADA also recommends that applicants take the DAT well in advance of their intended dental school enrollment, and at least one year prior to when they hope to enter dental school.

The UCLA School of Dentistry offers pre-dental laboratory courses to strengthen perceptual skills. These courses are offered over weekend days a few times a year. Visit the following website for additional information: <https://www.dentistry.ucla.edu/learning/pre-dental-courses>.

APPLICATION:

The Associated American Dental Schools Application Service (AADSAS) is a centralized application service sponsored by American Dental Education Association (ADEA). This web-based service is required for all students applying to dental schools located in the United States and Puerto Rico. AADSAS simplifies the application process by allowing applicants to complete a single application form. Once done, AADSAS forwards the standardized application along with the applicant's DAT score to each of the programs they designate.

Note that Canadian dental schools require direct applications. We suggest prospective applicants contact these program's admissions representatives for further instructions.

OTHER FACTORS TO CONSIDER TO MAKE YOURSELF A MORE COMPETITIVE APPLICANT:

- Become involved in pre-dental or pre-health student organizations
- Demonstrate your leadership by organizing a project, working with others, and achieving a goal
- Shadow a practicing dentist and volunteer at community health clinics
- Become involved in a research project (does not have to be dentistry-related). Find an experience that helps you develop critical thinking skills
- Become informed about health care issues, legislation impacting dentistry and health care, and access-to-care issues
- Get acquainted to with faculty and advisors (you will eventually be asking for letters of recommendation)
- Request letters of recommendation early and apply early
- Make sure your social media profiles are either on private or are very professional.
- Proof read your application
- Make sure the personal statement is well written and original.
- Conduct yourself responsibly

http://www.adea.org/GoDental/Application_Prep/The_Application_Process/10_tips_to_apply.aspx

For more information about dental school, visit <http://www.adea.org/GoDental/> and see your HPAO advisor for further information on the application process, application assistance, and a list of upcoming workshops and events.



American Dental Education Association

Mission: The Mission of the American Dental Education Association is to lead individuals and institutions of the dental education community to address contemporary issues influencing education, research, and the delivery of oral health care for the improvement of the health of the public.

Size of Organization: ADEA employs approximately 70 full-time staff and is organized into a Policy Center and the ADEA Enterprise

Number of Member Institutions: All 67 U.S. dental schools (including two new schools that will accept a 2016 entering class) and 10 Canadian dental schools are members of ADEA, as are approximately 220 freestanding advanced, allied, and federal dental education programs, 63 corporations

New Institutional Members in Last Two Years: Two new schools that will accept a 2016 entering class

Total Number of Students: More than 19,500 dental educators and students

Admissions Update:

Contact Information and CAS Link:

www.adea.org (select AADSAS)

ADEA AADSAS

P.O. Box 9110

Watertown, MA 02471

Advisor portal:

2015 Portal: portal.aadsasweb.org/advisors12/index.cgi.

Contact Leslie Payne (paynel@adea.org) if you need a username and password.

Current Number of Participating Programs Versus Total Member Programs: There are 66 participating programs. (Texas applicants applying to Texas dental schools are required to utilize the TMDSAS—the Texas Medical Dental Application Service—Texas residents applying to schools outside Texas utilize AADSAS and non-residents applying to Texas dental schools utilize AADSAS.) The Dalhousie University Faculty of Dentistry is the only Canadian dental school that participates in AADSAS. (There are 65 U.S. dental schools with the start of the 2014-15 school year.)

New Programs for 2015: It is anticipated that there will be no new schools joining ADEA AADSAS for the 2014-2015 cycle. There is one new dental school that is anticipating launching their inaugural class in 2016 and will participate in AADSAS:

- Touro College of Dental Medicine at New York Medical College

Open Period (launch date and last deadline): The 2015 ADEA AADSAS application cycle launches June 2, 2014 and the latest application deadlines are February 1, 2015.

Submission Deadlines: Each dental school indicates its deadline date. The deadline date is the last date applicants can submit their ADEA AADSAS applications. Applicants are strongly encouraged to apply early; individuals submitting applications near a school's deadline should be especially vigilant to ensure that all transcripts are submitted in a timely manner to ensure that applications are transmitted to designated schools as promptly as possible.

Applicant Code of Conduct or Required Institutional Certification or Statement: The ADEA website is being updated. The ADEA AADSAS Applicant Code of Conduct can be found at www.adea.org.

Fees: \$245 for initial designation; \$93 for each additional designation.

Fee Waivers: ADEA AADSAS offers a Fee Assistance Program for applicants with severe financial need. Detailed instructions about the program can be found on in the ADEA AADSAS application. Qualifying applicants receive a waiver of the initial designation fee and two additional schools; they must pay for any additional designations beyond the first three. In 2014, 516 applicants received the waiver.

Letters of Reference Delivery Method(s): ADEA AADSAS accepts letters in both paper and electronic format. Submitting letters of evaluation does not hold up the processing of the application; letters received after the application has been sent to designated schools will be added to updated application materials provide to schools as soon as they arrive at AADSAS. Up to four individual letters of evaluation can be submitted per

applicant; or, one committee report (or composite evaluation) + one additional letter of evaluation. See AADSAS instructions for detailed information.

Fall 2013 Matriculants:

Number of Applicants, With Data on the Profile of the Pool Including Gender, Race/Ethnicity, Age, Etc.:

Applicants

Total Applicants		12,162
Men	51.3%	6,235
Women	47.4%	5,770
Do Not Wish to Report/Unknown	1.3%	157
American Indian or Alaska Native	0.3%	36
Asian	24.0%	2,916
Black or African American	5.2%	635
Hispanic or Latino	7.8%	946
Native Hawaiian or Pacific Islander	0.1%	7
White	49.5%	6,022
Two or More Races	2.9%	353
Do Not Wish to Report/Unknown	4.5%	544
Non Resident Alien	5.2%	624

Enrollees

Total Enrollees		5,769
Men	52.8%	3,045
Women	46.1%	2,660
Do Not Wish to Report/Unknown	1.1%	64
American Indian or Alaska Native	0.2%	10
Asian	23.0%	1,325
Black or African American	4.6%	268
Hispanic or Latino	8.1%	467
Native Hawaiian or Pacific Islander	0.1%	3
White	52.6%	3,034

Two or More Races	3.0%	174
Do Not Wish to Report/Unknown	4.3%	248
Non Resident Alien	3.0%	164

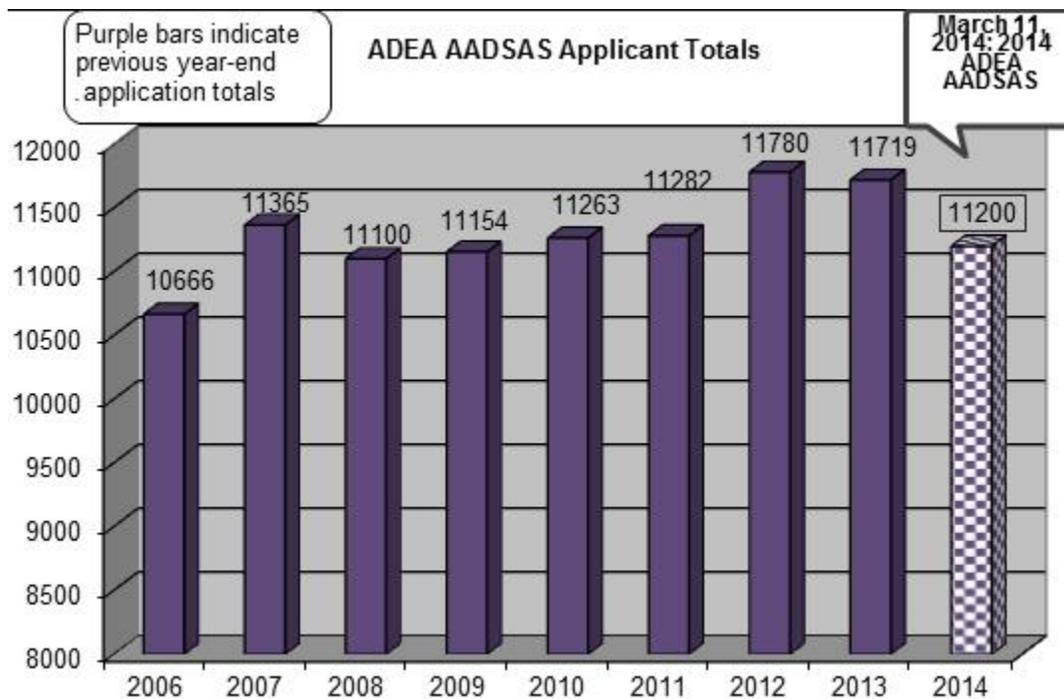
DAT

	Academic Average		Perceptual		Total Science	
	Range	Mean	Range	Mean	Range	Mean
Applicant DAT	10-28	18.8	7-30	19.3	10-30	18.6
Enrollee DAT	12-28	19.9	10-30	20.0	12-30	19.8

GPA

	Science GPA		Total GPA	
	Range	Mean	Range	Mean
Applicant GPA	0.51-4.33	3.25	1.23-4.30	3.36
Enrollee GPA	2.19-4.33	3.46	2.26-4.29	3.54

Total number of applicants by ADEA AADSAS at this time one year ago = 11,719



ADEA AADSAS Minority Applicants by Year

* New Department of Education classifications for race/ethnicity starting with the 2010 application cycle. When comparing race/ethnicity figures starting with the 2010 application cycle, keep in mind that the definitions of categories have changed. Most significantly, non-resident aliens are created as a separate category and applicants now have the option of reporting two or more races.

ADEA AADSAS Ethnic Identification	2008	2009	2010	2011	2012	2012	*2013	**2014
American Indian or Alaska Native	63	50	35	34	23	23	37	39
Asian (includes Native Hawaiian and Other Pacific Islander through 2009)	2818	2910	3136	3244	3351	3324	3259	3172
Black/African American	671	654	653	688	705	696	652	590
Hispanic/Latino	524	631	759	808	900	896	931	886
Native Hawaiian or Other Pacific Islander	—	—	12	10	9	9	7	12
Two or More Races	—	—	252	315	361	361	371	347
Non-Resident Alien	—	—	185	203	184	182	169	163
Unknown	—	—	393	350	355	353	368	357

*As of 3/29/2013

** As of 3/11/2014

Definition of Race/Ethnicity:

- **American Indian or Alaska Native:** A person having origins in any of the original peoples of North and South America (including Central America) who maintains cultural identification through tribal affiliation or community attachment
- **Asian:** A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian Subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam
- **Black or African American:** A person having origins in any of the black racial groups of Africa
- **Hispanic or Latino:** A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race
- **Native Hawaiian or Other Pacific Islander:** A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands
- **White:** A Person having origins in any of the original peoples of Europe, the Middle East, or North Africa
- **Non-Resident Alien:** A person who is not a U.S. citizen or Permanent Resident

ADEA AADSAS Gender	Male	Female
2008	5,917	5,125
2009	5,946	5,164
2010	6,062	5,204
2011	5,976	5,159
2012	6,018	5,634
2013	6,027	5,563
2014*	5,679	5,429

Profile of the Admitted Applicant Including GPA, Tests Score, Etc.: Not Provided

Report on Trends (bar graphs): Number of applicants, Age, Gender, Race/ethnicity Not provided

Prerequisites:

Academic: One year (8 credits) each: English; Biology with labs; General Chemistry with labs; Organic Chemistry with labs; Physics with labs. Some schools now require Biochemistry.

Standardized Test(s): All U.S. dental schools require the Dental Admissions Test (www.ada.org/dat.aspx), which is administered through the American Dental Association (ADA). Individuals applying for the DAT may designate as many dental schools as they wish to have their scores sent. By indicating the schools to which the applicant wants scores sent, those scores will be posted on a secure website for each dental school to view directly from the ADA. DAT scores are automatically imported into the ADEA AADSAS application (and sent to the dental schools designated in the AADSAS application) as long as the applicant has indicated at least one AADSAS-participating school in their DAT registration. Questions about the DAT should be directed to Dr. Kathy Hinshaw (hinshaw@ada.org), Manager, ADA Department of Testing Services.

Experience/Exposure: It is recommended that, prior to applying, students have shadowing experience with a general dentist and/or one of the specialists.

Letters of Recommendation: Required

www.adea.org/dental_education_pathways/aadsas/Applicants/Pages/LettersofEvaluation.aspx

ADA American Dental Association®

America's leading
advocate for oral health

Visit ADA.org/education for more information

Pre dental Timeline

Freshman/Sophomore Years

- Work with your Prehealth Professions Advisor to plan courses and experiences that will help you to prepare to apply to dental school. To locate the health professions advisor on your campus, go to naahp.org
- Begin to complete Chemistry, Biology, Physics and Organic Chemistry requirements
- Check out your career center's dentistry-related resources
- Join a dental-related student organization to get exposure to the dental profession
- Consider job shadowing and/or volunteer experience
- Consider alternative career plans
- Attend your college's health-related career fairs

Junior Year

- Complete prerequisite requirements by end of 2nd semester
- Prepare and take the DAT (information at ADA.org/DAT)
- Apply for admission at least a year in advance
- Review dental school catalogs and/or websites such as:
 - *Official Guide to Dental Schools* at adea.org
 - *ASDA Handbook: A Resource for Pre dental Students* at ASDAnet.org
 - Dental School Listing link at ADA.org/students
- Gather letters of evaluation from faculty and others

Senior Year

- Take advantage of "mock" interview practice with Career Center staff before dental school admission interviews
- Complete forms for financial aid
- Send thank you notes to evaluators and mentors

ADA American Dental Association®

America's leading advocate for oral health

Visit www.ada.org/goto/careers for more information or call the ADA's Career Guidance at 800.621.8099, ext 2390

Ten Great Reasons to Consider Dentistry



Service to Others Help people maintain and improve their oral health, quality of life and appearance

Balanced Lifestyle Dentistry offers flexibility to balance professional and personal life

Empower Your Patients Give patients smiles they are proud to wear

Technology and Research Be involved with the scientific advancement of dentistry

Be a Leader Earn respect from your family, friends and community

Prevention/Education Be an educator on the importance of oral health

Detect Disease Treat oral health and detect disease – including cancer and cardiovascular

Be Creative Use your artistic and scientific talents

Success Potential With the aging population and increase in access to care, the demand and need for dentistry is on the rise

Self-Employment Own a dental practice and be your own boss



Specialty Definitions

Definitions of Recognized Dental Specialties

Approved by the Council on Dental Education and Licensure, American Dental Association

Dental Public Health: Dental public health is the science and art of preventing and controlling dental diseases and promoting dental health through organized community efforts. It is that form of dental practice which serves the community as a patient rather than the individual. It is concerned with the dental health education of the public, with applied dental research, and with the administration of group dental care programs as well as the prevention and control of dental diseases on a community basis. *(Adopted May 1976)*

Endodontics: Endodontics is the branch of dentistry which is concerned with the morphology, physiology and pathology of the human dental pulp and periradicular tissues. Its study and practice encompass the basic and clinical sciences including biology of the normal pulp, the etiology, diagnosis, prevention and treatment of diseases and injuries of the pulp and associated periradicular conditions. *(Adopted December 1983)*

Oral and Maxillofacial Pathology: Oral pathology is the specialty of dentistry and discipline of pathology that deals with the nature, identification, and management of diseases affecting the oral and maxillofacial regions. It is a science that investigates the causes, processes, and effects of these diseases. The practice of oral pathology includes research and diagnosis of diseases using clinical, radiographic, microscopic, biochemical, or other examinations. *(Adopted May 1991)*

Oral and Maxillofacial Radiology: Oral and maxillofacial radiology is the specialty of dentistry and discipline of radiology concerned with the production and interpretation of images and data produced by all modalities of radiant energy that are used for the diagnosis and management of diseases, disorders and conditions of the oral and maxillofacial region. *(Adopted April 2001)*

Oral and Maxillofacial Surgery: Oral and maxillofacial surgery is the specialty of dentistry which includes the diagnosis, surgical and adjunctive treatment of diseases, injuries and defects involving both the functional and esthetic aspects of the hard and soft tissues of the oral and maxillofacial region. *(Adopted October 1990)*

Orthodontics and Dentofacial Orthopedics: Orthodontics and dentofacial orthopedics is the dental specialty that includes the diagnosis, prevention, interception, and correction of malocclusion, as well as neuromuscular and skeletal abnormalities of the developing or mature orofacial structures. *(Adopted April 2003)*

Pediatric Dentistry: Pediatric Dentistry is an age-defined specialty that provides both primary and comprehensive preventive and therapeutic oral health care for infants and children through adolescence, including those with special health care needs. *(Adopted 1995)*

Periodontics: Periodontics is that specialty of dentistry which encompasses the prevention, diagnosis and treatment of diseases of the supporting and surrounding tissues of the teeth or their substitutes and the maintenance of the health, function and esthetics of these structures and tissues. *(Adopted December 1992)*

Prosthodontics: Prosthodontics is the dental specialty pertaining to the diagnosis, treatment planning, rehabilitation and maintenance of the oral function, comfort, appearance and health of patients with clinical conditions associated with missing or deficient teeth and/or oral and maxillofacial tissues using biocompatible substitutes. *(Adopted April 2003)*

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Vinmar Solutions 1 Day Hands-on Pre- Dental Courses

Host at UCLA School of Dentistry



Vinmar Solutions "Putting Eyes and Hands to Work"



Do you know anyone who's interested in Dental School? Before or after they take the DAT, manual dexterity is an important ability to have before going to dental school.

The Pre-Dental Laboratory Technique Courses has helped thousands of participants in major universities and colleges in the Northern and Southern California areas since 1979. Many participants have taken advantage of these courses throughout the United States and have traveled from other countries. These courses has been directed and lectured by Mr. Mark A. Hunt Sr., CDT, here, at the UCLA School of Dentistry for over 35 years. These hands-on experiences have been an excellent foundation for pre-dental students to test their abilities. **These Pre-Dental Courses are like no other.**

Each course goes into detailed instructions and illustrations that will help participants through the construction process in a step-by-step manner. It also helps each participant to get a quick start to practice manual dexterity before dental school. Manual dexterity is an important ability to have, because it is a requirement for dental school.

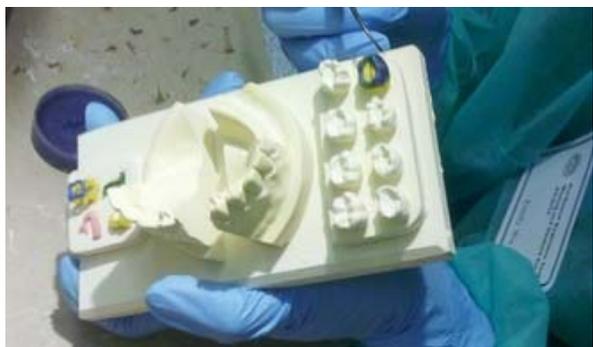
- Learning the basics of tooth anatomy and occlusal surfaces.
- Learning a rapid waxing technique of extensive occlusal rehabilitation of tooth structure.
- Identify in detail the character of mandibular movement and how it can affect occlusal anatomy.
- Self-examination and homework.
- Utilization of dental hand instruments and waxing techniques.
- Final practical examinations.
- **Certificate of Completion and Letter of Recommendation (See more information below)**

In this digital age tooth waxing and setting denture teeth can be very frustrating in dental school. These courses will help beginners to overcome the problem by learning hands-on techniques before the school dental experience. After participating in these courses it will greatly enhance hand instrument techniques such as: finger dexterity, Arm-hand steadiness and aiming, reaction time, which will help their technical skills.

No experience required!!



<http://www.dentistry.ucla.edu/continuing-education/courses-for-pre-dental-students>



Beginners Tooth Waxing and Denture Course



Impression and Cast Making Course



"New" Tooth Waxing Course Part 1 in 2015



Vinmar Solutions Pre-Dental Polymer Clay Tooth # 30 Study

For Pre-Dental Students, Dental Students, Dental Technicians, and Dental Assistants

Registration

UCLA School of Dentistry

Continuing Dental Education

Box 951668, Room A0-121

Los Angeles, CA 90095

Phone: (310) 206-8388

Fax: (310) 206-5281

Contact: Cristina Cody (310)825-6238

E-Mail: tcody@dentistry.ucla.edu

UCLA 1 Day Hands-on Pre-Dental Courses



TA at UCLA for Vinmar Solutions Pre-Dental Courses



For more information about the Pre-Dental Courses Contact:

Mark A. Hunt Sr., CDT, Instructor

Vinmar Solutions, Inc.

12625 Frederick Street, Ste. I-5 #320

Moreno Valley, CA 92553

Phone: (951) 485-6818

E-Mail: markhuntsr@vinmarsolutions.com

markhunt2014@gmail.com

Optometry

PRE-OPTOMETRY: ACADEMIC AND CAREER INFORMATION



Health Professions Advising Office (HPAO) • Jensen Student Access to Science (SAS) and Mathematics Center • **Location:** Hall of Science Building – Room 164 • Phone: (562) 985-8061 • Website: www.csulb.edu/hpao

NATURE OF THE WORK, EARNINGS, AND OCCUPATIONAL OUTLOOK

The American Optometric Association (AOA) states that “Doctors of Optometry are independent primary health care providers who examine, diagnose, treat and manage diseases and disorders of the visual system, the eye and associated structures as well as diagnose related systemic conditions.” Optometry is among the nation’s largest independent healthcare professions with over 33,000 currently employed in the field. According to the American Academy of Ophthalmology about 150 million Americans use some sort of corrective eye gear.

The number of new practicing optometrists is limited by the fact that there are presently only 21 schools and colleges of optometry in the United States and one in Puerto Rico. For the **2014** academic year; 2,604 applicants submitted a total of 13,164 applications for admissions. According to the most up to date information from the Occupational Outlook Handbook, Optometrists held 33,100 jobs in 2012. Employment of optometrists is expected to grow much faster (24% faster) than the national average for all occupations through 2022 in response to the vision care needs of a growing and aging population. Most optometrists are in general practice. Optometrists usually remain in practice until they retire, so job openings arising from replacement needs are low. Employment growth will be fastest in retail optical stores and outpatient clinics. There continues to be a significant need for underrepresented minorities in this profession.

According to the American Optometric Association, the median wage for optometrists in 2012 was \$97,820. The individual net income of optometrists, like that of most professions, tends to rise with the number of years in practice. All states and the District of Columbia require that optometrists be licensed, which requires a Doctor of Optometry (O.D.) degree from an accredited optometry school and a passing score on both a written and a clinical state board examination. Licenses are renewed every 1 to 3 years and in all states, continuing education credits are needed for renewal.

OPTOMETRY EDUCATION

The Doctor of Optometry degree is a 4-year program. Optometry programs include classroom and laboratory study of health and visual sciences, as well as clinical training in the diagnosis and treatment of eye disorders. Included are courses in pharmacology, optics, vision science, biochemistry, and systemic disease. Residencies are not required to develop a specialty. Since the four-year optometry curriculum prepares graduates in all areas, a residency does not introduce but rather enhances experiences in a selected area.

PRE-OPTOMETRY PREPARATION

Admission requirements at all schools require the completion of a minimum of 90 semester units of college coursework; however, a Bachelor’s degree may be required and is always strongly recommended. A student’s academic evaluation is based upon overall GPA, science GPA, college attended, degree progress, and course load difficulty. The **overall average GPA for the 2014 entering class was 3.31.**

COMMON COMPONENTS REQUIRED FOR ADMISSION:

Before applying to Optometry school, each applicant should become acquainted with at least one optometrist and if possible gain some first-hand experience to see what optometrists do on a daily basis to confirm motivation for entering the field.

COURSE REQUIREMENTS FOR OPTOMETRY SCHOOLS:

Prerequisite admission requirements vary from school to school. Please refer to the **Association of Schools and Colleges of Optometry (ASCO)** website: <http://www.opted.org> for more details. Most students major in the sciences (biology, chemistry, etc...) because the prerequisites for optometry schools are science intensive and they find a great deal of overlap between major requirements and those required for optometry school, although a *science major is not required*. **Students maintain responsibility for verifying course selection with individual optometry programs.** Listed below are the prerequisite admission requirements for the 3 Optometry programs in California. Non-science majors, keep-in-mind that the courses listed, may have additional pre-requisites.

CSULB courses that fulfill admission requirements for [Marshall B. Ketchum University](#) (formally Southern CA College of Optometry):

Pre-Optometry Coursework	Semester Units	CSULB Courses
Calculus	3 semester units	Math 115 OR 119A OR 122
General Biology or Zoology	6 semester units	Biology 211 & 212
Microbiology or Bacteriology with lab	3 semester units	Microbiology 211
General Physics with lab	8 semester units	Physics 100A & 100B OR 151 & 152
General Chemistry with lab	8 semester units	Chemistry 111A & 111B
Organic Chemistry (no lab required)	3 semester units	Chemistry 220A
Biochemistry	3 semester units	Chemistry 441A OR 448 OR 302
Human Anatomy with lab	3 semester units	Biology 208
Human Physiology with lab	3 semester units	Biology 207 OR 342 w/ 342L
Psychology	3 semester units	Psychology 100
English Composition & Literature	6 semester units	English 100, 102, OR equivalent
Statistics	3 semester units	Statistics 108 OR Psychology 210 OR Biology 260

CSULB courses that fulfill admission requirements for the [University of California, Berkeley School of Optometry](#):

Pre-Optometry Coursework	Number of Semesters	CSULB Courses
Calculus	1 semester	Math 119A OR Math 122
General Chemistry with lab	2 semesters	Chemistry 111A and Chemistry 111B
Organic Chemistry with lab	1 semester	Chemistry 220A (<i>Chem. & Biochem. majors</i>) OR 220A w/ 223A (<i>Biology & other majors</i>)
Biochemistry	1 semester	Chemistry 448 OR 441A & 441B
General Physics with lab	2 semesters	Physics 100A & 100B OR Physics 151 & 152

General Biology with lab	2 semesters	Biology 211 & 212
Microbiology	1 semester	Microbiology 200 OR 211
Human Anatomy with lab	1 semester	Biology 208
Human Physiology with lab	1 semester	Biology 207
Immunology	1 semester	Biology 430
Calculus	1 semester	Math 122 (preferred) OR Math 119A
Statistics	1 semester	Biology 260 OR Statistics 108
English	2 semesters	English 100, 102, 180 OR equivalent
Psychology	1 semester	Psychology 100 OR equivalent

CSULB courses that fulfill admission requirements for [Western University of Health Sciences College of Optometry](#):

Pre-Optometry Coursework	Semester Units	CSULB Courses
Calculus	3 semester units	Math 119A OR 122
General Chemistry with lab	8 semester units	Chemistry 111A & 11B
Organic Chemistry with lab	3 semester units	Chemistry 220A & 220B + 320 L (Chem/Biochem majors) OR 220A w/ 223A & 220B w/ 223B (Biology and other majors)
Biochemistry	3 semester units	Chemistry 448 OR 441A
General Biology with lab	8 semester units	Biology 211 & 212
Microbiology with lab	3 semester units	Microbiology 200 OR 211 OR 220
General Physics with lab	8 semester units	Physics 100A & 100B
Statistics	3 semester units	Statistics 108
English	6 semester units	English 100, 102, OR equivalent
Psychology	3 semester units	Psychology 100
Human Anatomy with lab (Strongly Recommended)	3 semester units	Biology 208
Human Physiology with lab (Strongly Recommended)	3 semester units	Biology 207 OR 342 w/ 342L

OPTOMETRY ADMISSION TEST:

The Optometry Admission Test (OAT) must be taken by all applicants seeking admission to schools and colleges of optometry. The OAT is a standardized exam, which consists exclusively of multiple choice questions. There are four components to this exam: Quantitative Reasoning, Reading Comprehension, Natural Sciences, and Physics. The OAT is a computerized test offered at Prometric Testing Centers. We advise applicants to take the exam between February of their junior year to October of their senior year in college. Visit www.opted.org for more information.

APPLICATION

In July, 2009, OptomCAS the central application service for schools and colleges of optometry was launched. OptomCAS provides applicants with a single web-based application service and an opportunity to apply to more than one participating optometry school or college with one application. For more information, visit www.optomcas.org.

For more information about Optometry, visit www.opted.org and see your HPAO advisor for further information on the application process, application assistance, and a list of upcoming workshops and events.



Association of Schools and Colleges of Optometry

Mission: Founded in 1941, the Association of Schools and Colleges of Optometry (ASCO) is a non-profit education association representing the interests of optometric education. ASCO's membership encompasses the twenty-one schools and colleges of optometry in the United States and Puerto Rico. A number of foreign optometry schools are affiliate members.

ASCO is committed to achieving excellence in optometric education and to helping its member schools prepare well-qualified graduates for entrance into the profession of optometry.

The mission of the Association of Schools and Colleges of Optometry is to serve the public through the continued advancement and promotion of all aspects of academic optometry.

Size of Organization: Not provided

Number of Member Institutions: Not provided

New Institutional Members in Last Two Years: None.

Total Number of Students: The total enrollment in 2013-2014 for the schools and colleges of optometry was 6676 students.

Total Number of First Year Students: The first year enrollment in 2013-2014 for the schools and colleges of optometry was 1818 students.

Total Number of Graduates in Most Recent Academic Year: The number of graduates in 2013 for the schools and colleges was 1567 students.

Data on Employment Rates of Recent Graduates: Not provided

Admissions Update:

Contact Information and CAS Link:

OptomCAS

PO Box 9119

Watertown, MA 02471

Phone: (617) 612-2888

Email: optomcasinfo@optomcas.org

Website: www.optomcas.org

Advisor portal:

portal.optomcas.org/advisors14/index.cgi

OptomCAS provides a portal for advisors to access school-specific information about their applying advisees. Currently, it does not provide final decisions, but will when the universal Advisor Portal is launched.

Current Number of Participating Programs Versus Total Member Programs:

All twenty-one schools and colleges of optometry participate in OptomCAS.

Open Period (launch date and last deadline):

For application cycle 2014-2015, OptomCAS will launch on July 1, 2014 and will close in early June 2015.

Submission Deadlines:

Submission deadlines vary by school/college and are available at www.optomcas.org.

Applicant Code of Conduct or Required Institutional Certification or Statement:

Once admitted to a professional optometry program, students are considered to be members of the optometry profession and therefore, bear the responsibility to adhere to the professional, ethical, and legal standards prescribed for the practice of optometry and their school or college of optometry. Applicants, although not yet members of the profession, are likewise bound to legal and ethical standards of behavior during the admissions process. Schools and colleges of

optometry are encouraged to admit applicants who possess a high level of professionalism and professional potential.

The Applicant Code of Conduct provides an explicit statement of applicant responsibilities and expected standards of performance and behavior. Applicants must electronically sign a copy of the code of conduct on the OptomCAS application, signifying that they have read and agree to accept the code's provisions.

Applicants are expected to:

- Act with honesty and integrity throughout the admissions process when interacting with school admissions officers, admissions committees, and OptomCAS staff
- Respect the knowledge, skills, and professionalism of those involved in the admissions process, including the faculty and staff at the schools and colleges of optometry and OptomCAS staff
- Respect the autonomy and dignity of fellow applicants, admissions staff, faculty, students, and anyone involved in the admissions process
- Be responsible and accountable for their actions and personally manage and respond to all matters related to their application

Misconduct, as defined in the Applicant Code of Conduct, and all forms of dishonesty, is not tolerated in the application process. An applicant who acts unethically may be denied admission to all OptomCAS participating schools and colleges of optometry for the current and future application cycles. Moreover, such unethical actions, if disclosed after enrollment in a program, or at the beginning of optometric practice, can result in more serious consequences. It is important that applicants understand the significance of exhibiting professional behavior throughout their careers, starting with the application process.

Fees: For 2014-2015, the application fee is \$155 for one institution and \$55 for each additional institution.

Fee Waivers: OptomCAS does not offer fee waivers.

Letters of Reference Delivery Method(s): Applicants may designate up to four letters of recommendation. OptomCAS will only accept electronic LORs. The LOR requirements for each school and college are available at www.optomcas.org.

Background Check Services if Applicable: Criminal backgrounds will continue as an option for schools and colleges of optometry for 2014-2015.

Fall 2013 Matriculants:

Number of Applicants, With Data on the Profile of the Pool Including Gender, Race/Ethnicity, Age, Etc.: For 2012-2013, 67% of accepted applicants were female and 33% were male. The median age for accepted applicants was 23 years old.

Profile of the Admitted Applicant Including GPA, Tests Score, Etc.: Asian and White had the highest rate of acceptance at 73% and 72%; followed by Spanish/Hispanic/Latino/Latina at 70%; American Indian/Alaska Native and Two or More Races at 64%; Native Hawaiian/Other Pacific Islander at 50% and Black/African-American at 46%. The GPA range for all accepted applicants was 3.03 to 3.73.

Prerequisites:

Academic: The requirements for admission to the schools and colleges of optometry vary, but students wishing to study optometry should be certain to take at least a year of biology, chemistry, organic chemistry, general physics, and microbiology; English; college mathematics; and other social science and humanities courses. The science courses should be pre-professional level courses designed for science majors or health professional students and should offer laboratory experience. Brief survey courses in the sciences will not prepare students for optometry school. Students should be sure to consult with the health professions advisor at their school or an advisor at the school or college of optometry that they plan to attend. [Check here](#) for a list of general school-specific prerequisites.

Standardized Test(s): All schools and colleges of optometry require the Optometry Admission Test (OAT). For further information, please go to the [OAT website](#).

Experience/Exposure: Most schools consider an applicant's exposure to optometry to be of vital importance. Each applicant should become acquainted with at least one optometrist and if possible gain some firsthand experience to see what optometrists do on a daily basis.

Letters of Recommendation: Suggested sources strongly encouraged for LORs include:

- An optometrist who can state through documented experience that the applicant knows what the profession of optometry entails.
- A professor with whom the applicant has done personal work (such as assisted on a specific project or served as a TA or reader), or with whom the applicant took a course.
- An employer or extracurricular activity advisor who can comment about the applicant's maturity, diligence, and conscientiousness.



APPLICANT/STUDENT PROFILE AND PREREQUISITES



Applicants

With 21 out of 21 schools and colleges of optometry in the 50 states and Puerto Rico reporting for the OptomCAS application cycle 2013-2014 for admission to optometry school in Fall 2014:

- There were 2,604 individuals who applied for admission to the schools and colleges of optometry in the United States (including Puerto Rico) with a total number of 13,164 applications processed. The average number of applications per applicant was 5.06.
- The median age of applicants was 23 years old, with 69% female and 31% male.
- The ethnicity breakdown for applicants was 50% White, 30% Asian, 8% Two or More Races, 4% Black/African-American, 3% Spanish/Hispanic/Latino/Latina, and less than 1% American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Four percent of applicants did not report a race.
- The average overall cumulative GPA for all applicants was 3.31.

For a complete report of the 2013-2014 applicant pool, please review the OptomCAS Applicant Data Report – National Snapshot at www.optomcas.org.



Enrollment

- At the schools and colleges of optometry in the 50 states and Puerto Rico, there were a total of 6,676 optometry students enrolled during the 2013-2014 academic year.
- For the 2013-2014 academic year, 65.4% of the student body was female and 34.6% was male. In addition, the student body was 55.9% White, 28.8% Asian, 4.5% Hispanic or Latino, 3.1% African American, 0.6% American Indian or Alaskan Native, 0.4% Pacific Islander or Native Hawaiian, and 6.7% Other.
- Each school averaged the grade point averages of their fall 2014 entering class. The highest of these averages was 3.61 and the lowest was 3.08.
- First Year [tuition and fees](#) range from \$16,626 to \$54,460.

Graduates

- In 2013, there were a total of 1,567 students who received O.D. degrees through both regular and special programs at the schools and colleges of optometry in the 50 states and Puerto Rico – an 11.6% increase from the 1,404 the previous year. There were 1,545 optometry students who received O.D. degrees through only regular O.D. programs – a 11.7% increase over 2012.
- Of the optometry students receiving O.D. degrees through both regular and special programs in 2013, 63.9% were female and 36.1% were male. In addition, 56.3% were White, 29.2% were Asian, 5.2% were Hispanic or Latino, 2.6% were African American, 0.3% were American Indian or Alaskan Native, 0.2% Pacific Islander or Native Hawaiian, and 6.2% were Other.

ASSOCIATION OF SCHOOLS AND COLLEGES OF OPTOMETRY
GENERAL AND SCHOOL-SPECIFIC PREREQUISITES
 Updated July 1, 2014

GENERAL REQUIREMENTS for most optometry programs include at least one year of Biology or Zoology, General Chemistry, General Physics, English and College Math. Contact the schools or colleges directly by visiting their websites to confirm prerequisite courses and to learn whether AP credits and/or on-line credits are accepted to complete prerequisites.

ADDITIONAL SCHOOL-SPECIFIC REQUIREMENTS

School	CALC	ANAT	PHYSIO	ORGAN CHEM	BIO CHEM	MICRO	STATS	PSYCH
ALABAMA www.uab.edu/optometry University of Alabama at Birmingham, School of Optometry	1 course	SR	SR	1 sem or 2 qtrs w/lab	1 course	1 course	1 course	1 course
ARIZONA http://www.midwestern.edu/Programs_and_Admission/AZ_Optomety.html Midwestern University, Arizona College of Optometry	1 course	1 course ¹	1 course ¹	1 course w/lab	1 course	1 course	1 course	1 course
CALIFORNIA www.ketchum.edu Southern California College of Optometry at Marshall B. Ketchum University	1 sem or 1 qtr	1 sem or 1 qtr/lab	1 sem or 1 qtr/lab	1 sem or 1 qtr	1 sem or 1 qtr	1 sem or 1 qtr/lab	1 sem or 1 qtr	1 sem or 1 qtr
CALIFORNIA http://optometry.berkeley.edu University of California - Berkeley, School of Optometry ²	1 sem or 1 qtr	1 sem or 1 qtr w/lab	1 sem or 1 qtr w/lab	1 sem or 1 qtr w/lab	1 sem or 1 qtr	1 sem or 1 qtr	1 sem or 1 qtr	1 sem or 1 qtr
CALIFORNIA http://prospective.westernu.edu/optometry/welcome-11/ Western University of Health Sciences, College of Optometry	1 course	SR	SR	1 course w/lab	1 course	1 course w/lab	1 course	1 course
FLORIDA http://optometry.nova.edu Nova Southeastern University, College of Optometry	1 sem or 2 qtrs	1 sem or 2 qtrs ³	1 sem or 2 qtrs ³	1 sem or 2 qtrs w/lab	1 sem or 2 qtrs	1 sem or 2 qtrs	SR	SR
ILLINOIS www.ico.edu Illinois College of Optometry	1 course	Rec	Rec	1 course	Rec	1 course w/lab	1 course	1 course
INDIANA www.opt.indiana.edu Indiana University, School of Optometry	1 course of College Math	SR	SR	SR	1 course ⁴	1 course w/lab	1 course	1 course
MASSACHUSETTS www.mcphs.edu/optometry MCPHS University, School of Optometry	1 course	Rec	Rec	1 course	Rec	1 course	1 course	1 course
MASSACHUSETTS www.neco.edu New England College of Optometry	1 sem or 2 qtrs	Rec	Rec	1 sem or 2 qtrs w/lab	1 sem or 2 qtrs ⁵	1 sem or 2 qtrs	1 sem or 2 qtrs ⁵	1 sem or 2 qtrs
MICHIGAN www.ferris.edu/mco Michigan College of Optometry at Ferris State University	1 sem or 2 qtrs	Rec	Rec	1 yr w/lab	SR	1 course w/lab	1 sem	1 sem or 2 qtrs
MISSOURI http://optometry.ums.edu University of Missouri-St. Louis, College of Optometry	1 sem or 1 qtr ⁶	SR	SR	1 sem or 2 qtrs w/lab	SR	1 sem or 1 qtr w/lab	1 sem or 1 qtr	2 sems or 2 qtrs

¹Separate anatomy/physiology courses or combined anatomy and physiology I, II courses are acceptable. ²1 semester or 1 quarter of immunology (w/o lab) is required. ³If a combined anatomy/physiology course is not taken, separate courses in anatomy and physiology must be taken. ⁴Molecular biology can substitute for biochem. ⁵Effective for class entering fall 2015. ⁶Trigonometry is required either as part of calculus, or as a separate high school or college course. ⁷One course in biochem can substitute for one course of either general or organic chemistry. ⁸More than one course may be required in order to cover complete content. Physiology must be intermediate level. Students must submit physiology syllabus/syllabi. ⁹Organic chemistry – standard one-year course sequence or one semester of organic chemistry combined with one semester of biochemistry. ¹⁰One sem. of organic chemistry I and one sem of organic chemistry II or biochem or molecular bio are required. ¹¹Eight hours of advanced human biological sciences are required; junior or senior-level anatomy or physiology is strongly recommended. ¹²Two sem gen chemistry and one sem org chemistry are required. ¹³Bacteriology can substitute for microbiology.

ASSOCIATION OF SCHOOLS AND COLLEGES OF OPTOMETRY
GENERAL AND SCHOOL-SPECIFIC PREREQUISITES
 Updated May 5, 2014

GENERAL REQUIREMENTS for most optometry programs include at least one year of Biology or Zoology, General Chemistry, General Physics, English and College Math. Contact the schools or colleges directly by visiting their websites to confirm prerequisite courses and to learn whether AP credits and/or on-line credits are accepted to complete prerequisites.

ADDITIONAL SCHOOL-SPECIFIC REQUIREMENTS

School	CALC	ANAT	PHYSIO	ORGAN CHEM	BIO CHEM	MICRO	STATS	PSYCH
NEW YORK www.sunyopt.edu State University of New York, State College of Optometry	1 sem or 1 qtr	Rec	Rec	2 sems or 3 qtrs w/lab ⁷	Rec ⁷	Rec	1 sem or 1 qtr	1 sem or 1 qtr
OKLAHOMA http://www.optometry.nsuok.edu Northeastern State University – Oklahoma College of Optometry	Rec	SR	SR	1 sem	1 sem	1 sem	1 sem	1 sem
OHIO http://optometry.osu.edu The Ohio State University, College of Optometry	1 course	SR	See below ⁸	1-2 sems or 2 qtrs	See below ⁸	1 course w/lab	SR	1 course
OREGON www.pacificu.edu Pacific University, College of Optometry	1 sem or 1 qtr	1 sem w/lab	1 sem w/lab	See below ⁹	See below ⁹	1 sem or 1 qtr w/lab	1 sem or 1 qtr	1 sem or 1 qtr
PENNSYLVANIA www.Salus.edu Pennsylvania College of Optometry at Salus University	Rec	Rec	Rec	1 sem or 2 qtrs ¹⁰	1 sem or 2 qtrs ¹⁰	1 sem or 2 qtrs w/lab	1 sem or 2 qtrs	1 sem or 2 qtrs
PUERTO RICO www.optonet.inter.edu Inter American University of Puerto Rico, School of Optometry	1 sem or 2 qtrs	Rec	Rec	1 sem or 2 qtrs	1 sem or 2 qtrs	1 sem or 2 qtrs	1 sem or 2 qtrs	1 sem or 2 qtrs
TENNESSEE www.sco.edu Southern College of Optometry	1 course	Rec	Rec	1 course w/lab	1 course ⁴	1 course w/ lab	1 course	1 course
TEXAS www.opt.uh.edu University of Houston, College of Optometry	1 course	SR ¹¹ (Jr. or Sr. level only)	SR ¹¹ (Jr. or Sr. level only)	1 course w/lab	1 course	1 course w/lab	1 course	1 course
TEXAS http://optometry.uiw.edu/ University of the Incarnate Word, Rosenberg School of Optometry	1 sem or 2 qtrs	SR	SR	1 sem or 2 qtrs w/ lab ¹²	1 sem or 2 qtrs ⁴	1 sem or 2 qtrs w/lab ¹³	1 sem or 2 qtrs	1 sem or 2 qtrs

¹Separate anatomy/physiology courses or combined anatomy and physiology I, II courses are acceptable. ²1 semester or 1 quarter of immunology (w/o lab) is required. ³ If a combined anatomy/physiology course is not taken, separate courses in anatomy and physiology must be taken. ⁴Molecular biology can substitute for biochem. ⁵Effective for class entering fall 2015. ⁶Trigonometry is required either as part of calculus, or as a separate high school or college course. ⁷One course in biochem can substitute for one course of either general or organic chemistry. ⁸More than one course may be required in order to cover complete content. Physiology must be intermediate level. Students must submit physiology syllabus/syllabi. ⁹Organic chemistry – standard one-year course sequence or one semester of organic chemistry combined with one semester of biochemistry. ¹⁰One sem. of organic chemistry I and one sem of organic chemistry II or biochem or molecular bio are required. ¹¹Eight hours of advanced human biological sciences are required; junior or senior-level anatomy or physiology is strongly recommended. ¹²Two sem gen chemistry and one sem org chemistry are required. ¹³ Bacteriology can substitute for microbiology.

qtr = quarter; sem = semester; Rec = Recommended; SR = Strongly Recommended

www.opted.org

Association of Schools and Colleges of Optometry

Profile of Applicants to OD Degree Programs for Fall 2014 Entering Class

School	First-Year Tuition Plus Fees*	Total # OptomCAS Applicants	# OptomCAS Applicants who Completed Supp App/Pd. Supp Fee	# Applied Residents/Non-Res/Total	# Admitted Residents/Non-Res/Total	#Male/#Female Applicants	Avg GPA All Applicants/ Admitted Applicants	Last Test Date Accepted	AA Avg OAT All Applicants	AA Avg OAT Admitted Applicants	TS Avg OAT All Applicants	TS Avg OAT Admitted Applicants
ALABAMA University of Alabama at Birmingham, School of Optometry	\$26,083 In-State, \$38,560** Non Res merit scholarship, \$54,460 Non-Res	366	291	26/265/291	16/87/103	88/203	3.35/3.61	April 1	305	323	296	317
ARIZONA Midwestern Univ., AZ College of Optometry	\$40,980	669	669	NA/NA/669	NA/NA/143	217/452	3.19/3.39	April 1	310	323	304	319
CALIFORNIA Southern Calif. College of Optometry at Marshall B. Ketchum University	\$36,065	631	581	280/301/581	121/48/169	151/430	3.28/3.48	March 1	317	333	313	332
CALIFORNIA Univ. of Calif., Berkeley-School of Optometry	\$32,279 Res/\$44,525 Non-Res***	256	224	168/88/256	68/14/82	55/201	3.20/3.40****	December 1	330	348	323	349
CALIFORNIA Western University of Health Sciences, College of Optometry	\$35,060	837	565	293/544/837	120/68/188	226/611	3.20/3.32	May 1	311	324	305	321
FLORIDA Nova Southeastern Univ., College of Optometry	\$28,210 In-State/\$31,800 Out-of-State	1,006	718	136/582/718	53/133/186	214/504	3.62/3.42	April 1	300	324	294	321
ILLINOIS Illinois College of Optometry	\$36,464	1177	682	94/1083/1177	57/321/378	346/831	3.29/3.43	February 15	314	324	308	321
INDIANA Indiana University, School of Optometry	\$25,040 Res \$37,576 Non-Res	553	344	57/287/344	41/106/147	101/243	3.40/3.58	Feb 28	317	327	310	323
MASSACHUSETTS MCPHS University, School of Optometry	\$41,902	655	Not Required	41/614/655	24/140/164	189/466	NA/3.18	May 1	NA	296	NA	287
MASSACHUSETTS New England College of Optometry	\$39,512	840	776	42/798/840	18/315/333	224/616	3.28/3.39	March 31	316	330	311	327
MICHIGAN Michigan College of Optometry at Ferris State University	\$25,461 Res/\$38,212 Non-Res	292	292	88/204/292	43/11/54	192/100	3.25/3.59	February 15	304	322	295	315

*These are the tuition and fees figures that are reported directly to ASCO, but are subject to change. Applicants are strongly encouraged to speak to each institution they are applying to about available scholarship and financial aid opportunities. Mandatory billable fees do not include books, supplies or instruments.

**Most UAB non-resident students qualify for a merit scholarship decreasing non-resident tuition significantly.

***Out-of-state students are eligible for in-state residency following one full year of residency in Calif. (for UC Berkeley), New York (for SUNY Optometry), and in Ohio (for OSU).

Association of Schools and Colleges of Optometry

Profile of Applicants to OD Degree Programs for Fall 2014 Entering Class

School	First-Year Tuition Plus Fees*	Total # OptomCAS Applicants	# OptomCAS Applicants who Completed Supp App/Pd. Supp Fee	# Applied Residents/Non-Res/Total	# Admitted Residents/Non-Res/Total	#Male/#Female Applicants	Avg GPA All Applicants/ Admitted Applicants	Last Test Date Accepted	AA Avg OAT All Applicants	AA Avg OAT Admitted Applicants	TS Avg OAT All Applicants	TS Avg OAT Admitted Applicants
MISSOURI Univ. of Missouri at St. Louis, Coll. of Optometry	\$22,013 Res \$37,779 Non-Res	403	329	40/363/403	23/83/106	137/266	3.33/3.52	February 1	291	322	284	315
NEW YORK State Univ. of New York, State Coll. of Optometry	\$ 24,590 In-State \$44,250*** Out-of-State	614	487	127/487/614	58/126/184	168/446	3.51/3.54	February 28	320	345	316	349
OKLAHOMA Northeastern State University, Oklahoma College of Optometry	\$16,626 Res \$31,731 Non-Res	277	198	41/236/277	23/22/45	100/177	3.36/3.54	February 1	306	314	295	302
OHIO The Ohio State Univ., College of Optometry	\$24,408/\$53,463***	582	328	73/509/582	47/58/105	191/391	3.31/3.56	March 31	313	328	307	325
OREGON Pacific University, College of Optometry	\$35,826	576	405	30/375/405	16/149/165	150/255	3.32/3.51	February 1	320	330	310	330
PENNSYLVANIA Pennsylvania College of Opt. at Salus University	\$37,195	1032	NA	85/947/1032	54/331/385	307/725	3.22/3.40	June 1	300	310	290	310
PUERTO RICO Inter American University, School of Optometry	\$26,831	335	285	80/255/335	NA	88/247	2.90/3.87	May 1	305	300	303	287
TENNESSEE Southern College of Optometry	\$19,925/\$31,425	787	737	46/741/787	27/214/241	279/508	3.32/3.53	March 1	312	330	304	324
TEXAS Univ. of the Incarnate Word, Rosenberg School of Optometry	\$34,420	674	644	194/480/674	81/79/160	198/476	3.18/3.43	May 31	298	317	289	312
TEXAS University of Houston, College of Optometry	\$23,600 Res/\$42,100 Non-Res	618	464	170/448/618	84/52/136	200/418	3.59/3.52	March 31	314	335	308	333

*These are the tuition and fees figures that are reported directly to ASCO, but are subject to change. Applicants are strongly encouraged to speak to each institution they are applying to about available scholarship and financial aid opportunities. Mandatory billable fees do not include books, supplies or instruments.

***Out-of-state students are eligible for in-state residency following one full year of residency in Calif. (for UC Berkeley), New York (for SUNY Optometry), and in Ohio (for OSU).

NA= Not Available

For OAT average scores, AA= Academic Average and TS = Total Science

Association of Schools and Colleges of Optometry

Profile of Applicants to OD Degree Programs for Fall 2014 Entering Class

School	Bachelor's Degree Required?	% Applicants with Bachelor's Degree	% Applicants Admitted w/Bachelor's Degree	# Applicants In-State	# Applicants Out-of-State (Domestic)	# Applicants from Foreign Country	# States Represented
ALABAMA University of Alabama at Birmingham, School of Optometry	Strongly Preferred	N/A	95.0%	26	249	16	40
ARIZONA Midwestern Univ., AZ College of Optometry	Yes	92% (8% Not Reported)	95% (5% Not Reported)	31	579	59	47
CALIFORNIA Southern Calif. College of Optometry at Marshall B. Ketchum University	Yes	100.0%	100.0%	280	246	55	41
CALIFORNIA Univ. of Calif., Berkeley-School of Optometry	Yes	NA	100.0%	168	77	11	27
CALIFORNIA Western University of Health Sciences, College of Optometry	No	69.0%	84.0%	293	459	85	44
FLORIDA Nova Southeastern Univ., College of Optometry	No	96.0%	94.0%	136	509	73	47
ILLINOIS Illinois College of Optometry	Preferred	98.0%	97.0%	94	924	159	46
INDIANA Indiana University, School of Optometry	No	NA	97.0%	57	NA	NA	NA
MASSACHUSETTS MCPHS University, School of Optometry	No	NA	91.0%	41	559	55	42
MASSACHUSETTS New England College of Optometry	No	94.0%	94.0%	42	638	160	41
MICHIGAN Michigan College of Optometry at Ferris State University	Preferred	94.8%	85.2%	88	173	31	34

*These are the tuition and fees figures that are reported directly to ASCO, but are subject to change. Applicants are strongly encouraged to speak to each institution they are applying to about available scholarship and financial aid opportunities. Mandatory billable fees do not include books, supplies or instruments.

Association of Schools and Colleges of Optometry

Profile of Applicants to OD Degree Programs for Fall 2014 Entering Class

School	Bachelor's Degree Required?	% Applicants with Bachelor's Degree	% Applicants Admitted w/Bachelor's Degree	# Applicants In-State	# Applicants Out-of-State (Domestic)	# Applicants from Foreign Country	# States Represented
MISSOURI Univ. of Missouri at St. Louis, Coll. of Optometry	Recommended	90.1%	92.5%	40	345	18	43
NEW YORK State Univ. of New York, State Coll. of Optometry	No	NA	97.0%	127	406	81	34
OKLAHOMA Northeastern State University, Oklahoma College of Optometry	Preferred	97.0%	96.0%	41	221	15	41
OHIO The Ohio State Univ., College of Optometry	No	91.2%	92.4%	73	468	41	47
OREGON Pacific University, College of Optometry	No	97.0%	95.0%	30	308	67	46
PENNSYLVANIA Pennsylvania College of Opt. at Salus University	No-Traditional, Yes-Scholars	97.0%	98.0%	85	826	121	47
PUERTO RICO Inter American University, School of Optometry	No	95.0%	93.0%	NA	NA	NA	22
TENNESSEE Southern College of Optometry	Strongly Preferred	98.0%	99.0%	46	698	43	46
TEXAS Univ. of the Incarnate Word, Rosenberg School of Optometry	No, Preferred	93.8%	100.0%	194	446	34	46
TEXAS University of Houston, College of Optometry	Yes	NA	100.0%	170	414	34	44

*These are the tuition and fees figures that are reported directly to ASCO, but are subject to change. Applicants are strongly encouraged to speak to each institution they are applying to about available scholarship and financial aid opportunities. Mandatory billable fees do not include books, supplies or instruments.

NA= Not Available

For OAT average scores, AA= Academic Average and TS = Total Science

Association of Schools and Colleges of Optometry

Profile of the 2014 Optometry Entering Class

School	# first-year slots (no transfer or repeat)	# Matriculants (Regular only-no transfer or repeat)			Average GPA	AA ¹ Average OAT	TS ² Average OAT	% with Bachelor's Degree	# In-State	# Out-of-State (Domestic)	# Foreign Country	# States Represented
		Male	Female	Total								
ALABAMA Univ. of Alabama at Birmingham, School of Optometry	44	19	25	44	3.60	316	310	93.0%	14	30	0	15
ARIZONA Midwestern Univ., Ariz. College of Optometry	53	32	21	53	3.43	318	313	100.0%	11	39	3	19
CALIFORNIA Southern Calif. College of Optometry at Marshall B. Ketchum University	100	19	81	100	3.42	330	328	100.0%	78	18	4	15
CALIFORNIA Univ. of Calif., Berkeley- School of Optometry	64	12	52	64	3.40	349	350	100.0%	55	8	1	8
CALIFORNIA Western Univ. of Health Sci., Coll. of Optometry	86	17	51	68	3.27	314	309	99.0%	45	19	4	15
FLORIDA Nova Southeastern Univ., Coll. of Optometry	100	33	67	100	3.36	322	320	96.0%	49	38	13	25
ILLINOIS Illinois College of Optometry	171	48	116	164	3.39	320	316	92.0%	44	85	35	25
INDIANA Indiana University, School of Optometry	75	23	52	75	3.56	324	319	97.0%	36	36	3	17
MASSACHUSETTS MCPHS University, School of Optometry	66	21	45	66	3.18	296	287	91.0%	16	45	5	21
MASSACHUSETTS New England College of Optometry	125	36	99	135	3.30	323	317	97.0%	16	87	32	27
MICHIGAN Michigan College of Optometry at Ferris State University	37	23	14	37	3.61	323	314	78.4%	35	2	0	3

¹AA Average OAT = Average Score of Academic Average OAT

²TS Average OAT = Average Score of Total Science OAT

Association of Schools and Colleges of Optometry

Profile of the 2014 Optometry Entering Class

School	# first-year slots (no transfer or repeat)	# Matriculants (Regular only-no transfer or repeat)			Average GPA	AA ¹ Average OAT	TS ² Average OAT	% with Bachelor's Degree	# In-State	# Out-of-State (Domestic)	# Foreign Country	# States Represented
		Male	Female	Total								
MISSOURI Univ. of Missouri at St. Louis, Coll. of Optometry	45	21	24	45	3.47	318	310	95.5%	22	22	1	14
NEW YORK State University of New York, State College of Optometry	100	27	71	98	3.53	342	346	97.0%	54	39	5	16
OKLAHOMA Northeastern State University, Oklahoma College of Optometry	28	11	17	28	3.51	310	300	93.0%	20	8	0	6
OHIO The Ohio State Univ., College of Optometry	66	22	44	66	3.51	324	321	92.4%	41	25	0	18
OREGON Pacific University, College of Optometry	91	35	56	91	3.50	330	330	96.0%	14	59	18	19
PENNSYLVANIA Pennsylvania College of Optometry at Salus University	165	49	116	165	3.36	310	300	93.0%	40	114	11	28
PUERTO RICO Inter American Univ., School of Optometry	Not Available	13	47	60	3.08	305	303	95.0%	10	24	26	20
TENNESSEE Southern College of Optometry	135	51	84	135	3.56	328	321	99.0%	25	107	3	33
TEXAS Univ. of the Incarnate Word, Rosenberg School of Optometry	67	23	44	67	3.40	310	300	100.0%	40	25	2	18
TEXAS University of Houston, College of Optometry	100	35	65	100	3.52	332	331	100.0%	71	29	0	21

¹AA Average OAT = Average Score of Academic Average OAT²TS Average OAT = Average Score of Total Science OAT

Pharmacy

PRE-PHARMACY: ACADEMIC AND CAREER INFORMATION

Health Professions Advising Office (HPAO) • Jensen Student Access to Science (SAS) and Mathematics Center
 • Location: Hall of Science Building – Room 164 • Phone: (562) 985-8061 • Website: www.csulb.edu/hpao



NATURE OF THE WORK, EARNINGS AND OCCUPATIONAL OUTLOOK

Pharmacists are health professionals who are concerned with serving the pharmaceutical needs of patients and communities. The American Association of Colleges of Pharmacy reports the principal goal of pharmaceutical care is “to achieve positive outcomes from the use of medication which improves patients’ quality of life. These outcomes include: cure of a disease, elimination or reduction of symptoms, arresting or slowing a disease process, prevention of disease, diagnosis of disease, and desired alterations in physiological processes, all with minimum risk to patients.” As a result of society’s changing health and social issues, Pharmacists today do much more than simply compound and dispense medication. Their roles have broadened to include direct patient care, education, and case management duties. Pharmacists can be found in a variety of settings including community and consultant pharmacies, hospitals and institutions, managed care organizations, the pharmaceutical industry, academics and research, government agencies and many more. The most common setting is community pharmacies, which include independent, prescription only pharmacies, such as those found in medical office buildings, and chain pharmacies (local drug stores), which generate income from the sale of other merchandise. Opportunities are becoming increasingly available for pharmacists with advanced training to work as clinical pharmacists in recognized pharmacy practitioner specialties such as ambulatory care, clinical pharmacokinetics, geriatrics, oncology, psychopharmacology, drug information, and nutrition support. The advanced training for such programs usually requires a fellowship or residency after the Pharm.D. degree. The most up to date information on the Occupational Outlook Handbook reports that the number of pharmacists in 2012 was 286,400, and projects that by 2022 that number will grow to 327,800 (14% growth rate). This expected growth is primarily attributed to the increased pharmaceutical needs of a larger and aging population and the increased use of medications. The median annual of wage-and-salary pharmacists in May 2012 was \$116, 670. The top 10% earned more than \$145,910. Salaries vary by work setting and geographic location.

PHARMACY EDUCATION

There are 130 accredited pharmacy programs offering the Doctor of Pharmacy (Pharm.D.) professional degree (and 3 schools with pre candidacy status). The Pharm.D. is a four-year program that produces a scientifically and technically competent pharmacist that can use their knowledge to provide maximum health care services to patients. Pharmacy students gain experience in patient-centered learning experiences and in working in close, cooperative relationships with health practitioners. After completing a Pharm. D. degree, graduates seeking an advanced position, have the option to pursue residency training in institutional and community pharmacy practice (AACP, 2015).

PRE-PHARMACY PREPARATION

Requirements for admission to colleges of pharmacy vary. The vast majority of students who enter a pharmacy program have completed a minimum of three years of pre-pharmacy courses or a bachelor’s degree. Common coursework completed includes calculus, inorganic chemistry, organic chemistry, biology, physics, and additional courses in the humanities and social sciences. Many programs outside of California require applicants to take the Pharmacy College

Admissions Test (PCAT). For the 2015-2016 testing cycle, tests will be offered on one or more dates in July, September, October, November, and January. No California Pharm.D. programs currently require the PCAT (AACP, 2015). Programs select applicants based on a variety of characteristics, including academic background, clinical experience, personal statement, interview, letters of recommendation and personal qualities including motivation, communication, critical thinking skills, and empathy. PharmCAS states that applicants for the 2013 entering class earned an **average 3.25 undergraduate science GPA, and a 3.38 overall cumulative GPA (the non-science GPA average was 3.58 and the Math GPA average was a 3.33)** (NAAHP AACP Updates 2015). Most schools expect applicants to gain first-hand paid or volunteer experience in a pharmacy setting to confirm their interest in the pharmacy profession. As pharmacists become more involved in educating patients, communication and interpersonal skills are increasingly important to demonstrate.

MAJOR:

No particular major is required or preferred for pharmacy school admissions, thus students are advised to select a major they find interesting and in which they can excel. Students should also consider a major that may lead them to an alternate career, should they decide not to pursue the field of pharmacy. Whichever major a student declares, their course of study must incorporate the required pre-pharmacy requirements. Many students who select a science major find a great deal of overlap between their major requirements and those required for pharmacy school. Regardless of the choice in major, pharmacy schools prefer that students have a well-rounded liberal arts education.

COURSE REQUIREMENTS FOR CALIFORNIA PHARMACY SCHOOLS:

Below is a list of requirements for the 8 Pharmacy programs in California (there are also 2 additional CA schools that the accreditation is in pre-candidate status). **Students maintain responsibility for verifying course selection with individual Pharmacy programs.** For further information on these programs or Pharmacy programs outside of California, consult the Pharmacy School Admissions Requirements book, available at www.aacp.org. For AP credit policies, check with the individual schools.

CSULB Courses that fulfill admission requirements for the [University of California, San Diego](http://www.ucsd.edu):

Pre-pharmacy Coursework (all courses must have a "C" or better)	CSULB Courses
One year of General Chemistry with lab	Chemistry 111A & 111B
One year of Organic Chemistry with lab	Chemistry 220A & 220B + 320L (<i>Chem/Biochem. majors</i>) OR 220A w/ 223A & 220B w/ 223B (<i>Biol & other majors</i>)
One year of Calculus	Math 122 & 123 OR Math 119A & 119B
One year of General Physics (Only 1 lab)	Physics 100A & 100B OR 151 & 152
One year of General Biology with lab	Biology 211 & 212 & 213
One year of English	English 100 OR Asam 100 OR Chls 104 OR Afrs 100 & Engl 101 OR 102 OR 300
One course of Public Speaking	Communication 130
One course of Macro OR Micro Economics	Economics 100 OR 101
One elective course	Psychology 100 OR Sociology 100 OR Anthropology 120

Students are also encouraged to take upper division courses in Biochemistry, Physiology, and Cellular and Molecular biology. Foreign Language such as Spanish is considered highly desirable.

CSULB Courses that fulfill admission requirements for the [University of California, San Francisco](http://www.assist.org) (www.assist.org):

<i>Pre-pharmacy Coursework</i>	<i>CSULB Courses</i>
One year of General Chemistry with lab	Chemistry 111A & 111B
One year of Organic Chemistry with lab	Chemistry 220A & 220B + 320L (<i>Chem/Biochem. majors</i>) OR 220A w/ 223A & 220B w/ 223B (<i>Biol & other majors</i>)
One year of Calculus	Math 122 & 123 OR Math 119A & 119B
One year of General Physics (Only 1 lab in electricity & magnetism)	Physics 100A & 100B OR 151 & 152 (calculus based physics strongly recommended)
One year of General Biology (Only 1 lab)	Biology 211 & 212 & 213
One course of Mammalian Physiology	Biology 207 OR 342
One year of English	English 100 OR ASAM 100 OR CHLS 104 OR AFRS 100 & ENGL 101 OR 102 OR 300
One course of Public Speaking	Communication 130
One course of Macro OR Micro Economics	Economics 100 OR 101
One elective course	Psychology 100 OR Sociology 100 OR Anthropology 120
One additional elective in the Humanities or Social Sci.	See Advisor
Computer Literacy	http://pharmacy.ucsf.edu/pharmd/enteringstudents/computer/reqs/2013/literacy/

CSULB Courses that fulfill admission requirements for the [California Northstate College of Pharmacy](http://www.cnc.edu):

<i>Pre-pharmacy Coursework</i>	<i>CSULB Courses</i>
One year of General Chemistry with lab	Chemistry 111A & 111B
One year of Organic Chemistry with lab	Chemistry 220A & 220B + 320L (<i>Chem/Biochem. majors</i>) OR 220A w/ 223A & 220B w/ 223B (<i>Biol & other majors</i>)
One course of Biochemistry or Cell & Molecular Biology	Chemistry 441A OR 448 OR Biology 340
One year of General Biology with lab	Biology 211 & 212 & 213*
One course of Microbiology	Microbiology 200 OR 211
One course of General Physics	Physics 100A OR 151
One course of Physiology	Biology 207 OR 342
One course of Anatomy	Biology 208
One course of Calculus	Math 122 OR Math 119A
One course of Statistics	Biology 260 OR Stat 108
One course of Public Speaking	Communication 130
One course of Macro OR Micro Economics	Economics 100 OR 101
One course of Psychology	Psychology 100

CSULB Courses that fulfill admission requirements for [Touro University](http://www.touro.edu):

<i>Pre-pharmacy Coursework</i>	<i>CSULB Courses</i>
One year of General Chemistry with lab	Chemistry 111A & 111B
One year of Organic Chemistry with lab	Chemistry 220A & 220B + 320L (<i>Chem/Biochem. majors</i>) OR 220A w/ 223A & 220B w/ 223B (<i>Biol & other majors</i>)
One course of Calculus	Math 119A OR 122
One course of Human Anatomy with lab	Biology 208
One course of Human Physiology with lab	Biology 207 OR 342 w/ 342L
One course of Microbiology with lab	Microbiology 200 OR 211

CSULB Courses that fulfill admission requirements for the [Loma Linda University](#):

<i>Pre-pharmacy Coursework</i>	<i>CSULB Courses</i>
One year of General Chemistry with lab	Chemistry 111A & 111B
One year of Organic Chemistry with lab	Chemistry 220A & 220B + 320L (<i>Chem/Biochem. majors</i>) OR 220A w/ 223A & 220B w/ 223B (<i>Biol & other majors</i>)
One course of Biochemistry	Chemistry 441A OR 448
One year of General Biology with lab	Biology 211 & 212 & 213
One course of Microbiology	Microbiology 200 OR 211
One year of General Physics with lab	Physics 100A & 100B OR 151 & 152
One course of Anatomy	Biology 208
One course of Calculus (integral & differential)	Math 122 OR Math 119A & 119B
One course of Public Speaking	Communication 130
One course of Macro OR Micro Economics	Economics 100 OR 101
One course of Psychology	Psychology 100

The following courses are strongly recommended, but not required: Histology, Immunology, and Physiology and Cellular and Molecular biology. Students who do not plan to finish their bachelor's degree, there are additional requirements.

CSULB Courses that fulfill admission requirements for the [University of Southern California](#):

Note: Additional GE courses may be required for applicants with international degrees.

<i>Pre-pharmacy Coursework</i>	<i>CSULB Courses</i>
One year of General Chemistry with lab	Chemistry 111A & 111B
One year of Organic Chemistry with lab	Chemistry 220A & 220B + 320L (<i>Chem/Biochem. majors</i>) OR 220A w/ 223A & 220B w/ 223B (<i>Biol & other majors</i>)
One course of Biochemistry	Chemistry 441A OR 448
One course of Calculus	Math 122 OR Math 119A OR 119B
One course in Statistics	Biology 260 OR Statistics 108 OR Psychology 210
One course of General Physics with lab	Physics 100A OR 100B OR 151 OR 152
One year of General Biology with lab	Biology 211 & 212 & 213
One course in Molecular or Cell Biology	Biology 340 OR 370
One course in Human Physiology	Biology 208 OR Biology 342
One course of Microbiology	Microbiology 200 OR 211
One course of Psychology OR Sociology	Psychology 100 OR Sociology 100
One course of Microeconomics	Economics 101

CSULB Courses that fulfill admission requirements for the [University of the Pacific](#):

<i>Pre-pharmacy Coursework</i>	<i>CSULB Courses</i>
One year of General Chemistry with lab	Chemistry 111A & 111B
One year of Organic Chemistry with lab	Chemistry 220A & 220B + 320L (<i>Chem/Biochem. majors</i>) OR 220A w/ 223A & 220B w/ 223B (<i>Biol & other majors</i>)
One course of Calculus	Math 115 OR Math 119A OR 122 OR 123
One course of General Physics with lab	Physics 100A OR 151
One year of General Biology with lab	Biology 211 & 212 & 213
One course of Microbiology	Microbiology 200 OR 211

One Year of English	English 100 OR Asam 100 OR Chls 104 OR Afrs 100 & Engl 100, 101, 102, 300, 310, 317, 410/510, 411/511, 419, 488, 491 (Select any two courses)
One course of Public Speaking	Communication 130 OR 335
One course of Economics	Macroeconomics 100 OR 300. Students with a bachelor's can substitute 101
One course of Psychology	Psychology 100 OR 370

CSULB Courses that fulfill admission requirements for [Western University of the Health Sciences](#):

<i>Pre-pharmacy Coursework</i>	<i>CSULB Courses</i>
One Year of General Chemistry with lab	Chemistry 111A & 111B
One Year of Organic Chemistry with lab	Chemistry 220A & 220B + 320L (<i>Chem/Biochem. majors</i>) OR 220A w/ 223A & 220B w/ 223B (<i>Biol & other majors</i>)
One Year of Biochemistry (or 1 semester of Biochemistry and 1 semester of Molecular Biology)	Chemistry 441A & 441B OR 441A & 447, 448 OR 448 & Bio 340
One course of Microbiology	Microbiology 100 OR 200 OR 210 OR 211 OR 320
One course of Anatomy	Biology 208
One course of Human Physiology	Biology 207 OR 342 w/ 342L
One course of Calculus	Math 115 OR 119A OR 119B OR 122 OR 123
One year of English	English 100 OR 101 OR 102 OR 205 OR 206 OR 300 OR 317 OR 320
One course of Public Speaking	Communications 130
Electives (2 semesters)	One course in two of the following areas: Public Speaking/Debate, Social Science and Economics

Schools with Pre-Candidacy Accreditation Status:

CSULB Courses that fulfill admission requirements for [Chapman University](#):

<i>Pre-pharmacy Coursework</i>	<i>CSULB Courses</i>
One Year of General Chemistry with labs	Chemistry 111A & 111B
One Year of Organic Chemistry with labs	Chemistry 220A & 220B + 320L (<i>Chem/Biochem. majors</i>) OR 220A w/ 223A & 220B w/ 223B (<i>Biol & other majors</i>)
One course in Physics with lab	Physics 100A OR 151
One semester of Biology with lab	Biology 211
One course of Microbiology with lab	Microbiology 200 OR 211
One course of Anatomy with lab	Biology 208
One course of Human Physiology with lab	Biology 207 OR 342 w/ 342L
One course of Genetics	Biology 370
One course of Calculus	Math 119A OR 122
One course of Statistics	Biology 260 OR Statistics 108
One course is Psychology or Sociology	Psychology 100 OR Sociology 100
One course of English Composition	English 100
One course of Public Speaking	Communications 130
One course of Economics	ECON 100 OR 101
Electives 6 units required	See Advisor

CSULB Courses that fulfill admission requirements for [California Health Sciences University](#):

<i>Pre-pharmacy Coursework</i>	<i>CSULB Courses</i>
One Year of General Chemistry with lab	Chemistry 111A & 111B
One Year of Organic Chemistry with lab	Chemistry 220A & 220B + 320L (<i>Chem/Biochem. majors</i>) OR 220A w/ 223A & 220B w/ 223B (<i>Biol & other majors</i>)
One course in Physics	Physics 100A OR 151
One Year of General Biology	Biology 211 & 212
Biochemistry or Molecular Biology	Chemistry 441A or 448 or Biology 340
One course of Microbiology with lab	Microbiology 200 OR 211
One course of Anatomy with lab	Biology 208
One course of Human Physiology with lab	Biology 207 OR 342 w/ 342L
One course of Calculus	Math 119A OR 122
One course is Psychology	Psychology 100
One course of Public Speaking	Communications 130
One course of Economics	ECON 100 OR 101

APPLICATION

Pharmacy College Application Service (PharmCAS), is a centralized web-based application service for applicants to pharmacy colleges and schools allowing applicants to submit one application and apply to multiple first-year professional pharmacy degree programs. Applicants to programs that do not participate in PharmCAS should apply directly to each institution using the traditional application process. All of the CA pharmacy programs participate in the PharmCAS application service. For more information and a list of schools participating, please visit the PharmCAS web site at www.pharmcas.org. Letters of Recommendation: PharmCAS accepts up to four letters of reference.

For more information about Pharmacy, visit www.aacp.org and see your HPAO advisor for further information on the application process, application assistance, and a list of upcoming workshops and events.



American Association of Colleges of Pharmacy

Mission: Founded in 1900, the American Association of Colleges of Pharmacy (AACCP) is the national organization representing pharmacy education in the United States. The mission of AACCP is to lead and partner with our members in advancing pharmacy education, research, scholarship, practice and service to improve societal health.

Size of Organization: AACCP has 28 staff members

Number of Member Institutions: AACCP is comprised of all accredited colleges and schools with pharmacy degree programs accredited by the [Accreditation Council for Pharmacy Education](#), including more than 6,000 faculty, 62,700 students enrolled in professional programs (PharmD) and 6,000 individuals pursuing graduate study.

New Institutional Members in Last Two Years:

- California Health Sciences
- Keck Graduate Institute
- University of North Texas

Total Number of Students:

- 62,700 students enrolled in professional programs (PharmD)
- 6,000 students pursuing graduate study

Total Number of First Year Students: 15,435

Total Number of Graduates in Most Recent Academic Year: 13,207

Data on Employment Rates of Recent Graduates: Graduating student surveys available on the www.aacp.org website.

Admissions Update:

Contact Information and CAS Link: www.pharmcas.org

PharmCAS

P.O. Box 9109

Watertown, MA 02471

617-612-2050

TTY line: 617-612-2060

info@pharmcas.org

Advisor portal:

- portal.pharmcas.org/advisors/advisors.htm (PharmCAS Advisor Portal)
- Click on the current admissions cycle to request a login if you do not have one.

Current Number of Participating Programs Versus Total Member Programs: 118 participating / 131 programs

Open Period (launch date and last deadline):

- The application service launches in mid July
- The application service closes each year on April 1

Submission Deadlines:

- November 3, 2014
- December 1, 2014
- January 5, 2015
- February 2, 2015
- March 2, 2015

Applicant Code of Conduct or Required Institutional Certification or Statement: Available online at www.pharmcas.org

Fees:

- PharmCAS = \$150 for the first designation, \$55 for each additional designation
- Deadline is September 4
- Info available online at www.pharmcas.org

Fee Waivers:

- 532 Fee waivers to those with financial need
- fee waiver expires in 45 business days if it is not applied to the application
- Info available online at www.pharmcas.org

Letters of Reference Delivery Method(s):

- 4 Letters
- Electronic
- Info available online in the Application Instructions page 49-55

Background Check Services if Applicable:

- Yes, only for applicants offered admission by a participating program
- Info available online at www.pharmcas.org
- PharmCAS also has a centralized Drug Screening program for applicants offered admission by a participating program

Fall 2013 Matriculants

Number of Applicants, With Data on the Profile of the Pool Including Gender, Race/Ethnicity, Age, Etc.:

- 17605 applicants in PharmCAS
- 4.5 applications per applicant

Profile of the Admitted Applicant Including GPA, Tests Score, Etc.:

- GPAs

- Science 3.25
- Non-Science 3.58
- Math 3.33
- Cumulative 3.38
- Test Scores
 - 52.5 percentile = Composite PCAT

Report on Trends (bar graphs): Number of applicants, Age, Gender, Race/ethnicity

- 60.8% = Female / 37.8% = Male / 1.4% declined to state
- 17.56% = Underrepresented Minorities
- 88.9% = U.S. Citizens
- 5.6 applications per seat (*all pharmacy schools*)

Tuition and application trends (all schools) can be found on the www.aacp.org website.

Prerequisites

Academic: The undergraduate classes required for admission into a pharmacy degree program vary significantly from one institution to the next. Due to the variations in admission requirements and procedures among the colleges and schools of pharmacy, it is advisable to research different pharmacy programs. Visit the pharmacy school Web sites for course requirements. School specific information is also available on the [PharmCAS](#) site and in the AACP annual publication, “Pharmacy School Admission Requirements” ([PSAR](#)).

- Common/core
 - General Chemistry I & II
 - Organic Chemistry I & II
 - General Biology I & II
 - Physics
 - Microbiology
 - Calculus
 - Anatomy and Physiology
 - English I & II
 - Public Speaking

- Additional (*that are generally subject to individual schools, but frequent enough*)
 - Psychology
 - Behavioral statistics

Standardized Test(s): The Pharmacy College Admission Test (PCAT), an exam developed Pearson is a specialized test that helps identify qualified applicants to pharmacy colleges. It measures general academic ability and scientific knowledge necessary for the commencement of pharmaceutical education. The [PCAT](#) is constructed specifically for colleges of pharmacy.

www.pcatweb.info

Experience/Exposure: Pharmacy colleges encourage or require applicants to have volunteer or paid experience working with patients in a pharmacy or health-related setting (hospital, nursing home, etc.). Ongoing work or volunteer experience in a pharmacy setting may be an important factor in the admissions process. If you are unable to gain work or volunteer experience directly related to pharmacy, contact your selected pharmacy school admission offices to determine what other experiences they might accept that will adequately demonstrate your knowledge of the profession.

Letters of Recommendation: Many pharmacy degree programs require 1-4 letters of recommendation (also known as “letters of evaluation” or “letters of reference”) as part of the pharmacy admissions process. Schools may require you to submit letters from particular individuals, such as a pharmacist, professor or academic advisor. If letters are required, select individuals who know you well and can speak to your maturity, dependability, dedication, compassion, communication-skills, leadership and any hands-on experience in the field. Your selected pharmacy schools may require your evaluators to use a school-specific evaluation form in lieu or in addition to the letter from the evaluator. Pharmacy schools generally require evaluators to submit and sign letters on the evaluator’s official business or university letterhead. Review the admission requirements of each pharmacy school for instructions.

Resources:

Pharmacy Careers:

- www.aacp.org/pharmacycareers

Pharmacy is Right for Me:

- www.pharmacyforme.org/

PHARMACY - A Prescription for a Rewarding Career

Why Pharmacy?

- **A well-rounded career.** Pharmacy is an exciting blend of science, health care, direct patient contact, computer technology, and business.
- **A vital part of the health care system.** Pharmacists play a vital role in improving patient care through the medicine and information they provide.
- **Excellent earning potential.** Pharmacy is one of the most financially rewarding careers.
- **Outstanding opportunities.** There is an unprecedented demand for pharmacists in a wide variety of occupational settings.
- **A trusted profession.** Pharmacists are consistently ranked as one of the most highly trusted professionals because of the care and service they provide. **According to data by Gallup International*

Pharmacy Career Options

- Academic pharmacy
- Community pharmacy
- Government agencies
- Hospice and home care
- Hospital and institutional practice
- Long-term care or consulting pharmacy
- Managed care pharmacy
- Medical and scientific publishing
- The pharmaceutical industry
- Trade or professional associations
- Uniformed (public health) service

Pharmacists Help Patients Get Well

While responsibilities vary among the different areas of pharmacy practice, the bottom line is that pharmacists help patients get well. Pharmacist responsibilities include a range of care for patients, from dispensing medications to monitoring patient health and progress to maximize their response to the medication. Pharmacists also educate consumers and patients on the use of prescriptions and over-the-counter medications, and advise physicians, nurses, and other health care professionals on drug decisions. Pharmacists also provide expertise about the composition of drugs, including their chemical, biological, and physical properties and their manufacture and use. Pharmacists ensure drug purity and strength and make sure that drugs do not interact in a harmful way. They are the drug experts ultimately concerned about their patients' health and wellness.

Shortage of Pharmacists

The Department of Health and Human Services (HHS) released a report in 2000 titled "The Study of the Supply and Demand for Pharmacists" to determine to what extent a shortage of pharmacists exists. The report concludes that there is an increasing demand for pharmacists' service that is outpacing the current and future pharmacist supply. The report also states that factors causing the shortage are not likely to abate in the near future.

Your Future in Pharmacy Begins with Education

A balanced and comprehensive high school and college education is an important first step in the pursuit of a professional degree in pharmacy, especially in the areas of math and science. The Doctor of Pharmacy (Pharm.D.) degree program requires at least two years of pre-professional (undergraduate) study followed by four academic years of professional study. The majority of first-year students enter a pharmacy program with three or four years of college experience. The requirements for admission into a pharmacy program vary.

Don't delay...find out more today!

Visit the American Association of Colleges of Pharmacy web site for more information about career opportunities and links to all U.S. colleges and schools of pharmacy. <http://www.aacp.org>





Top Ten Reasons to Become a Pharmacist

Provided by the American Association of Colleges of Pharmacy

1. I Want to Help People Get Well

Pharmacists play a key role in helping patients feel better and get well as quickly as possible. Pharmacists can be instrumental in improving the health of patients by choosing the best medicines and helping to avoid side effects. There are often multiple medications available on the market to treat a single disease or ailment. Pharmacists work with prescribers to determine the best drug- and non-drug therapy for a patient's particular illness, age, gender, health, etc. Pharmacists screen patients for drug allergies and adverse drug effects.

2. I Like to Work Directly with Patients

Since pharmacies are often located within a residential community and in common shopping places like grocery stores, pharmacists are generally considered the most accessible member of the healthcare team. Patients can often visit their local pharmacist to seek advice about the medications they are taking without making an appointment. Pharmacists may also provide other services such as immunizations, asthma care, blood pressure monitoring services, cholesterol screening, diabetes disease management, smoking cessation consultation, bone density scans for osteoporosis screening, anticoagulation management clinics and more.

3. I Enjoy a Wide Variety of Career Opportunities

Pharmacists can work in a myriad of professional settings. The majority of pharmacists (60 percent) work in an independent or retail chain community pharmacy and provide counseling to patients on the use of prescription and over-the-counter (OTC) medications. Pharmacists work in numerous other healthcare environments as well, including hospitals, nursing homes, managed care organizations, the pharmaceutical industry, colleges and schools and the federal government. Pharmacists play key leadership roles in all aspects of the healthcare system.

4. I Can Benefit from the Increased Demand For Pharmacists

There is an ongoing demand for pharmacy services throughout the U.S. in most sectors of the profession. The demand is fueled by the following factors:

- Increased demand for patient services. The transition to the doctor of pharmacy (Pharm.D.) degree for all new pharmacy graduates has increased the type of services pharmacists are able to offer. Pharmacists are able to work in a wider array of practice settings and positions than ever before.
- Increase in number of prescriptions filled each year. According to the National Association of Chain Drug Stores, the number of prescriptions filled increased from 1.9 million in 1992 to more than 3.1 million in 2002 (~60 percent increase over 10 years). Our society will continue to need more pharmacists to fill the growing number of prescriptions as more medicines become available and the population ages.
- Increase in the number of medicines available on the market. There is a greater selection of prescription and OTC drugs manufactured today than in the past. Multiple medications are often available to treat a single disease. Pharmacists help prescribers and patients decide which medicine will have the most beneficial results.
- Increase in the elderly population. According to the U.S. Census Bureau, 1 in 5 Americans will be classified as elderly by 2030. Older patients generally have more chronic illness and more complicated drug regimens than younger individuals. Pharmacists play a key role in helping the elderly patients navigate complicated

medication requirements and explore ways to minimize their financial burden. The aging population has also increased the need for long-term care, geriatric and consultant pharmacists.

5. I Want to be an Important Member of the Healthcare Team

Pharmacists work with other health care professionals to maximize health outcomes. Numerous studies have proven that the presence of a pharmacist on hospital rounds as a full member of the patient care team has been shown to prevent drug errors and reduce costs. The collaboration of healthcare professionals, such as physicians and pharmacists, can help to ensure that patients properly take their medications as prescribed and avoid any harmful drug interactions.

6. I Can Have Job Mobility, Stability, and Flexibility

Pharmacists are employed in every part of the country. Pharmacy licensure is generally reciprocal between U.S. states, however, additional tests or criteria may be required to transfer licensure status. Pharmacists may be able to establish non-traditional or part-time work hours, depending on the practice setting. With the shortage of pharmacists, student pharmacists often receive multiple job offers prior to graduation.

7. I am Excited to be a Part of Major Innovations in Drug Therapy

One of the many exciting developments in the pharmacy profession is the growth of a discipline, known as pharmacogenomics. Genetic variations in genes can affect a body's response to a drug. In the future, specialists in this area hope to sequence the entire human gene in each individual. Pharmacists and other healthcare providers will be able to use that information to select the best medicines, treat diseases earlier than now possible, or prevent them entirely with individually-tailored drug therapies.

8. I Want to Work with State-of-the-Art Technology

Digital innovations in pharmacy include electronic prescriptions, robotics for central prescription processing and use of computers in practice as well as pharmaceutical research. These technological advances enhance efficiency and help to promote patient safety. Pharmacists use these same tools to help prioritize work, fill prescriptions with greater accuracy and spend more time with patients. By law, pharmacists must oversee an automated dispensing process for quality control purposes.

9. I Can Help Defend Against Bioterrorism

Pharmacists are educated to recognize signs and symptoms of diseases that may be used in a biological attack. The accessibility of pharmacies could be one of the keys to a successful mass immunization or drug distribution program in an emergency. In an epidemic or bioterror situation, pharmacists are prepared to play a major role in preventing the spread of disease and overseeing the distribution of appropriate and safe medications.

10. I Would Like to Be a Highly Respected Member of My Community

According to a November 2003 Gallup Poll, pharmacists' honesty and ethics were rated as "high" or "very high" by 67 percent of Americans, and surpassed in ranking only by nurses. Pharmacists are visible leaders in our community who are entrusted with the health of our families.



www.aacp.org/pharmacycareers

Career Information Clearinghouse

This brochure was sponsored and prepared in conjunction with the Career Information Clearinghouse, a group of pharmacy organizations with a common interest of ensuring a strong future for the pharmacy profession. For additional information about a career in pharmacy, contact AACCP or any of the following CIC Members:

Academy of Managed Care Pharmacy
www.amcp.org

American Association of Pharmaceutical Scientists
www.aaps.org

American College of Apothecaries
www.americancollegeofapothecaries.com

American Pharmacists Association
www.pharmacist.com

American Society of Consultant Pharmacists
www.ascp.org

American Society of Health-System Pharmacists
www.ashp.org

National Association of Boards of Pharmacy
www.nabp.org

National Association of Chain Drug Stores
www.nacds.org

National Community Pharmacists Association
www.ncpanet.org

Pharmaceutical Research and Manufacturers of America
www.phrma.org



1727 King Street • Alexandria, VA 22314

p: 703-739-2330 • f: 703-836-8982 • www.aacp.org

Prescription FOR A REWARDING CAREER



Why pharmacy?

While it varies by pharmacy practice area, recent pharmacy graduates can earn top salaries right out of college! Pharmacy is a career that offers great benefits, flexible work schedules, outstanding growth opportunities, profit sharing and much more.

If you enjoy working with people, excel in science and would like a rewarding healthcare career, pharmacy is for you!

Outstanding opportunities. There is a need for pharmacists in a wide variety of occupational settings.

Excellent earning potential. Pharmacy is one of the most financially rewarding careers.

A well-rounded career.

Pharmacy is an exciting blend of science, healthcare, direct patient contact, computer technology and business.

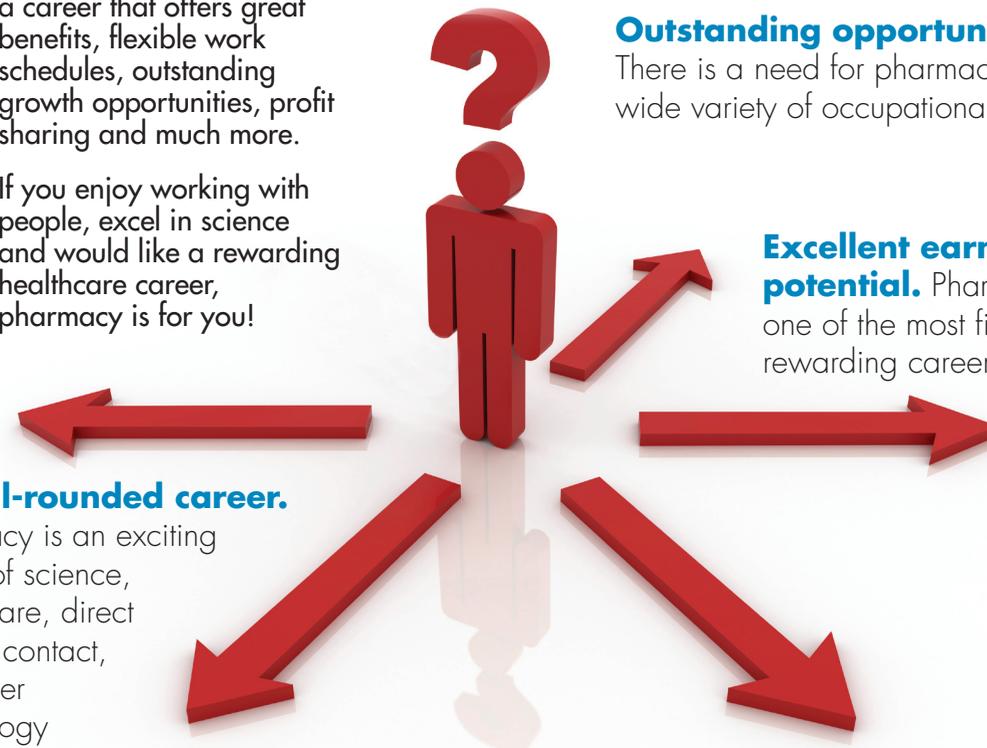
A vital part of the healthcare system.

Pharmacists play an integral role in improving patients' health through the medicine and information they provide.

A trusted profession.

Pharmacists are consistently ranked as one of the most highly trusted professionals because of the care and service they provide.*

*According to data by Wirthlin Worldwide and Gallup International



The Benefits of a Career in Pharmacy



The University of Louisiana at Monroe

Pharmacy Career Options

There are many career options in pharmacy including:

- Academic pharmacy
- Community practice
- Government agencies
- Hospice and home care
- Hospital and institutional practice
- Long-term care or consulting pharmacy
- Managed care pharmacy
- Medical and scientific publishing
- Pharmaceutical industry
- Pharmaceutical sciences
- Trade or professional associations
- Uniformed (public health) services

Pharmacists Help Patients Improve Their Health



The University of Louisiana at Monroe

Pharmacists' responsibilities include a range of care for patients, from dispensing medications to monitoring patient health and progress to maximize their response to the medication. Pharmacists also educate consumers and patients on the use of prescriptions and over-the-counter medications, and advise physicians, nurses and other healthcare professionals on medication decisions.

Pharmacists provide expertise about the composition of medications, including their chemical, biological and physical properties, as well as their manufacture and use. They ensure drug purity and strength and make sure that medications do not interact in a harmful way. Pharmacists are the medication experts ultimately concerned about their patients' health and wellness.

Your Future in Pharmacy Begins with Education



Idaho State University

A balanced and comprehensive high school and college education is an important first step in the pursuit of a professional degree in pharmacy, especially in the areas of math and science.

The Doctor of Pharmacy (Pharm.D.) degree program requires at least two years of pre-professional (undergraduate) study followed by four academic years of professional study. A growing number of first-year students enter a pharmacy program with three or four years of college experience.

The requirements for admission into a pharmacy program vary. Admission requirements for all U.S. pharmacy programs can be found at www.aacp.org/pharmacycareers.

An Exciting Curriculum

The professional pharmacy curriculum is designed to educate pharmacists to:

- Counsel patients on the proper use of their medications;
- Promote the public health;
- Develop and manage medication distribution and control systems;
- Manage pharmacy practice; and
- Plan and perform ongoing evaluations to provide patients with the best drug therapy for their individual healthcare needs.



The University of New Mexico

Take the first step toward an exciting career in pharmacy by visiting the American Association of Colleges of Pharmacy at www.aacp.org/pharmacycareers for links to all U.S. colleges and schools of pharmacy.

Doctor of Pharmacy (Pharm.D.) Degree

The Pharm.D. curriculum is designed to produce a scientifically and technically competent pharmacist who can apply this education in such a manner as to provide maximum health care services to patients. Students are provided with the opportunity to gain greater experience in patient close cooperative relationships with health practitioners. It is the goal of all pharmacy schools to prepare pharmacists who can assume expanded responsibilities in the care of patients and assure the provision of rational drug therapy.

If you examine several pharmacy college catalogs, you will notice that courses are similar but NOT identical. There are no rigid rules on curricula enforced on colleges, but a common core of subjects is found in every college of pharmacy curriculum. You will find that certain colleges emphasize certain subjects, and thus place less emphasis on others. Since you will likely examine catalogs of colleges that interest you, this summary will touch largely on the core of subjects common to most colleges of pharmacy.

Length of Study

The Doctor of Pharmacy (Pharm.D.) degree program requires at least 2-years of specific pre-professional (undergraduate) coursework followed by 4-academic years (or 3-calendar years) of professional study. Pharmacy colleges and schools may accept students directly from high school for both the pre-pharmacy and pharmacy curriculum, or after completion of the college course prerequisites. The majority of students enter a pharmacy program with 3 or more years of college experience. College graduates who enroll in a pharmacy program must complete the full 4-academic years (or 3-calendar) years of professional study to earn the Pharm.D. degree. The AACP does not track the availability of accelerated programs of study for individuals with a baccalaureate degree in a related health career or science field.

Goals of Degree Program

The professional pharmacy curriculum is designed to produce pharmacists who have the abilities and skills that are necessary to achieve outcomes related to:

- Providing pharmaceutical care to patients
- Developing and managing medication distribution and control systems
- Managing the pharmacy
- Promoting public health
- Providing drug information and education
- Major Areas of Instruction

Major Areas of Instruction

In order to provide students with the opportunity to develop a strong foundation on which to build these skills, the curriculum emphasizes six major areas of instruction.

1. **Pharmaceutical chemistry** emphasizes the application of chemical sciences to pharmacy. Some of the courses deal with chemicals used as medicines-their use, nature, preparation and preservation. In other courses, attention is given to the processes and tests used to determine the purity and strength of a chemical or its pharmaceutical form. The pharmacy student learns, for

example, how to find out if aspirin is pure, or how to determine how much vitamin C is contained in a particular solution or tablet.

2. **Pharmacognosy** deals with the nature and sources of "natural drugs"-those obtained from plants or animals, either directly or indirectly. For example, with a drug such as quinine, this study involves the source, the commercial production, the marketing, the chief pure chemicals contained in the drug, and the uses made of the drug and its derivatives.
3. **Pharmacology** is concerned with understanding the action of drugs in the body. Attention is given to the effects of various doses of each medicinal substance and to the different ways in which medicine can be introduced into the body. The effects of poisons and the means to overcome them are studied in toxicology. Generally, animal tests are required to learn the strength of drugs. Physicians know a great deal about pharmacology and toxicology; yet, as the expert about drugs, the pharmacist must maintain this knowledge to an even greater extent.
4. **Business management** is important for graduates who plan to enter community pharmacy and some institutional practices. This area is commonly designated pharmacy administration. Instruction frequently includes principles of basic economics, accounting, management, computer applications, marketing, merchandising, and legal phases of the profession of pharmacy. Courses in pharmacy administration are especially helpful to pharmacists who become executives in pharmacies, hospitals, service wholesale houses, or manufacturing.
5. **Pharmacy practice** is offered in a variety of courses by colleges of pharmacy. These courses are designed to give an appreciation of the background and nature of the profession, to familiarize students with the many skilled processes used in pharmacy, to introduce the various forms of medicines, and to teach them how to dispense medication accurately and skillfully. Instruction in pharmacy practice again emphasizes the fact that pharmacy blends science and technology, and that throughout the professional services of the pharmacist there is a continuous responsibility both to the patient and the physician. Instruction in the pharmaceutical sciences and in the professional areas (except for most of the administration courses) includes some laboratory work. This laboratory work is both traditional and clinical. Laboratory instruction explores various scientific phenomena, as well as studies the clinical application of the principles of pharmaceutical sciences. Pharmacy practice is that area within the pharmacy curriculum which deals with patient care, placing an emphasis on drug therapy. Pharmacy practice seeks to develop a patient-oriented attitude in the student. The education of pharmacists who are able to meet the needs of society can be attained only through a careful blending of theoretical course work and clinical experiences.
6. The **clinical component** of the pharmacy curriculum varies from school to school, however, the basic objectives are the same. Some of these objectives are
 - to develop students' communication skills for effective interaction with patients and with practitioners of other health professions,
 - to help students develop a patient awareness in the practice of pharmacy
 - to enable students to integrate the knowledge acquired in course work prior to clinical exposure, and to apply it to the solution of real problems, and
 - to develop students' awareness of their responsibility for monitoring the drugs taken by patients,
 - to help students become more aware of the general methods of diagnosis and patient care specifically related to drug therapy

Fields of Study in Pharmacy Education and Profession

The profession of pharmacy blends science, technical art, and human relationships in a unique fashion. Basic to the science in pharmacy are contributions from four broad fields-mathematics, physics, chemistry, and biology so courses in these basic sciences are required in pharmacy curricula.

Mathematics is an important tool in most scientific courses, so two or more semesters of college

mathematics are usually required. In addition, a pharmacist uses math a great deal in dispensing prescriptions, in determining proper drug dosage levels, in preparing formulas of many types, in management procedures, and in certain chemical calculations. Hence, additional instruction is given in the various kinds of weights and measures used in pharmacy, in calculating doses of drugs given to persons of different ages and weights, in calculating the amount of material to use for a solution, and in many other operations.

Physics and Chemistry - Instruction in physics is usually given because the principles are basic to many pharmaceutical practices. In addition, physics has a close relationship to chemistry; both sciences are needed in order to understand the behavior and properties of matter. The fineness of powdered drugs, the transfer of heat, the behavior of gases, the formation and decay of radioactive isotope - these and other phenomena of pharmacy can be well understood only through knowledge of the principles of physics. The active ingredients of most medications are pure chemicals; so it is easy to see why a thorough knowledge of chemistry is important. From simple table salt to substances so complex that their formulas are not completely known, pharmacists are continually dealing with chemicals. They must know how to handle and store them, as some are dangerous; how to analyze them to determine their purity; and how to dissolve them, combine them, package them, and preserve them - as well as how chemical substances behave in the body. Small wonder then that pharmacy students study the principles of the common divisions of chemistry and finish off this study with several courses in pharmaceutical chemistry, where the principles of basic chemistry are applied in the study of medicinal products. Many drugs come from plants and animals.

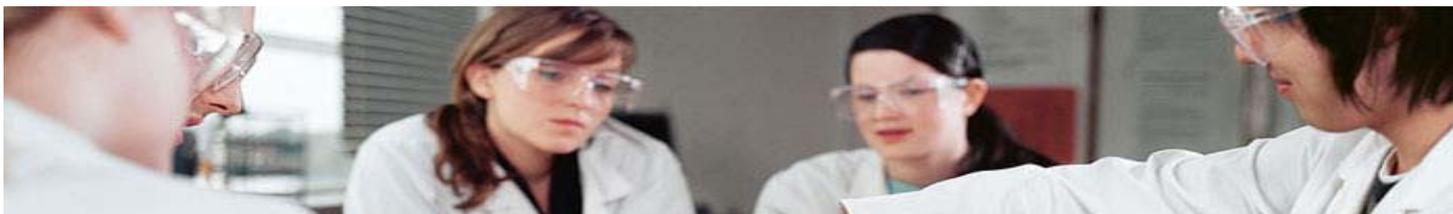
Biology - Moreover, the practical use of nearly all medicinal substances is within, or upon, the bodies of humans or animals. Hence, the study of biological sciences, including anatomy, physiology, zoology and biochemistry, is important for building a strong foundation of knowledge of natural drugs and their actions within the body.

Courses in **English, psychology, and sociology** are usually given in the pre-professional years, but some may be scheduled throughout the curriculum. These social sciences provide the students with a better ability to understand and communicate with people, thereby enabling them to practice more effectively within society.

Post-Professional (Post-PharmD) Graduate Study

Residency - After graduating from pharmacy school, an increasing number of students are seeking residency training in pharmacy practice. Over 400 pharmacy residency programs are offered in hospitals, community pharmacies, and some specialized facilities. These residency programs may be taken in general pharmacy practice, clinical pharmacy practice, or other specialty areas depending upon personal interests and specific career requirements. Completion of a pharmacy residency is sometimes a requirement for employment in hospital pharmacy practice or as clinical faculties at pharmacy schools.

Graduate Study - Students also have the opportunity to complete advanced study. Graduate study in one of the pharmaceutical sciences may qualify the student for a Master of Science (M.S.), or doctor of philosophy (Ph.D.) degree. These advanced degree programs require an undergraduate degree at least at the bachelor's level prior to enrollment; however, the undergraduate degree need not be in pharmacy. The M.S. and Ph.D. degrees are research degrees and do not qualify the student to be a licensed pharmacy practitioner, unless the student has also earned a B.S. in Pharmacy (program no longer offered) or Pharm.D. degree.



[Pharmacy School Admission Requirements](#)

[Pharm.D. School Information](#)

[Pharmacy College Admission Test](#)

[AACP](#) > [Resources](#) > [Student Center](#) > [Is Pharmacy for You](#) > [Admissions](#) > Pharmacy School Admission Requirements



Pharmacy School Admission Requirements

The Pharmacy School Admission Requirements (PSAR)® is designed to provide the most up-to-date information about each pharmacy school, including specifics about admission requirements, selection factors and educational costs for students entering pharmacy school. Previous printed copies of the Pharmacy School Admission Requirements® can be purchased at the [AACP lulu store](#). The PSAR is \$35 plus shipping and handling. We no longer produce physical copies of new publications, as all information can be found below.

[School Admission Requirements](#) - Includes General Information, Curriculum, Admission Requirements, and Further Information for each AACP member institution.

[PSAR Table 1: Pharm.D. Programs](#)  - Pharm.D. Degree Programs Anticipated for 2015-16.

[PSAR Table 2: Post-B.S. Programs](#)  - Post-B.S. Pharm.D. Programs Anticipated for 2015-16.

[PSAR Table 3: Graduate Programs](#)  - Institutional Information and Graduate Degree Programs Anticipated for 2015-16.

[PSAR Table 4: Dual-Degrees](#)  - Dual-Degree Programs Anticipated for 2015-16.

[PSAR Table 5: First Year Pharm.D. Class](#)  - Characteristics of fall 2013 First Year Class for Pharm.D. Degree Programs.

[PSAR Table 6: Admissions Policies](#)  - Admission Policies and Practices for Pharm.D. Degree Programs Anticipated for 2015-16.

[PSAR Table 7: Post-B.S. Admissions](#)  - Admission Policies and Practices for Post-B.S. Pharm.D. Degree Programs Anticipated for 2015-16.

[PSAR Table 8: First Professional Year Tuition](#)  - First Professional Year Tuition and Fees for Pharm.D. Degree Programs in 2014-15.

[PSAR Table 9: Second Professional Year Tuition](#)  - Second Professional Year Tuition and Fees for Pharm.D. Degree Programs in 2014-15.

[PSAR Table 10: Third Professional Year Tuition](#)  - Third Professional Year Tuition and Fees for Pharm.D. Degree Programs in 2014-15.

[PSAR Table 11: Fourth Professional Year Tuition](#)  - Fourth Professional Year Tuition and Fees for Pharm.D. Degree Programs in 2014-15.

[PSAR Table 12: Postgrad Tuition](#)  - First Professional Year Tuition and Fees for Postgraduate Degree (Traditional and Nontraditional) Programs in 2014-15.

[PSAR Table 13: M.S./Ph.D. Tuition](#)  - First Year Tuition and Fees for Postgraduate Degree (M.S. and Ph.D.) Programs in 2014-15.

[Course Prerequisites by Pharmacy School](#)  - Summary of pre-professional course requirements by pharmacy degree institution.



Pharmacy Career Information

While the majority of pharmacists work in community pharmacies, there is an unprecedented demand for pharmacists in a wide variety of occupational settings.

- **Academic Pharmacy**
- **Ambulatory Care Pharmacist**
- **Community Pharmacy**
- **Consultant Pharmacy**
- **Federal Pharmacy - Armed Services**
- **Federal Pharmacy - Public Health**
- **Hospital and Institutional Pharmacy**
- **Informatics**
- **Managed Care Pharmacy**
- **Pharmaceutical Sciences/Industry**

For more information on each of these areas, please go to:

<http://www.aacp.org/resources/student/pharmacyforyou/pharmacycareerinfo/Pages/default.aspx#academic>

Table 5
Characteristics of Fall 2013 First-Year Class for Pharm.D. Degree Programs

Institution	Location	First Professional-Year Enrollment ^{a,b}			Total School Enrollment ^b	Seats Available for Fall 2015 Entering Class (numbers may be approximate)		Mean GPA ^c	Age Range	Application to Enrollment Ratio
		Male	Female	Total		In-State	Out of State			
Auburn	AL	47	112	159	595	NA	NA	3.4	21-45	3.4:1
Samford	AL	37	97	134	493	NA	NA	3.45	19-42	3.82:1
Midwestern/Glendale	AZ	67	90	157	454	NA	NA	3.35	20-48	6:1
Arizona	AZ	37	62	99	396	NA	NA	3.58	19-46	2:1
Harding	AR	21	41	62	236	NA	NA	3.4	20-32	4:1
Arkansas	AR	49	75	124	479	NA	NA	3.55	19-39	4.46:1
California Health Sciences	CA	NA	NA	NA	NA	NA	NA	3.1	21-53	4:1
California Northstate	CA	38	77	115	410	NA	NA	3.25	23-47	13:1
Chapman*	CA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Keck (KGI)	CA	NA	NA	NA	NA	NA	NA	NA	22-44	NA
Loma Linda	CA	22	67	89	323	NA	NA	3.38	20-37	7:1
Touro-CA	CA	45	66	111	414	NA	NA	3.4	20-43	16.67:1
California–San Diego	CA	24	39	63	238	up to 60	5-10	3.7	20-50	18:1
California–San Francisco	CA	37	83	120	491	NA	NA	3.55	19-39	9.5:1
Pacific–California	CA	84	134	218	642	NA	NA	3.4	20-40	13:1
Southern California	CA	67	128	195	734	NA	NA	3.5	21-35	5.2:1
West Coast	CA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Western	CA	31	95	126	478	NA	NA	3.42	22-43	11.5:1
Regis	CO	20	37	57	282	NA	NA	3.10	23-45	9:1
Colorado	CO	59	106	165	628	NA	NA	3.35	20-60	5:1
Saint Joseph	CT	32	59	91	226	NA	NA	3.12	21-50	4:1
Connecticut	CT	48	54	102	396	NA	NA	3.3	18-42	4:1
Howard	DC	33	34	67	248	NA	NA	3.25	25-34	10:1
Florida A&M	FL	52	125	177	624	NR	NR	NR	NR	NR
Nova Southeastern	FL	73	152	225	926	NA	NA	3.40	18-50	3:1
Palm Beach Atlantic	FL	29	46	75	310	NA	NA	3.3	20-50	6:1
Florida	FL	114	191	305	1,165	NA	NA	3.5	18-49	4.6:1
South Florida	FL	52	55	107	224	NA	NA	3.5	21-34	NA
Mercer	GA	58	118	176	614	NA	NA	3.25	20-50	5:1
PCOM–GA	GA	53	48	101	365	NA	NA	3.14	18-45	10:1
South (GA)	GA	44	100	144	427	NA	NA	3.25	19-45	5.9:1
Georgia	GA	51	94	145	582	NA	NA	3.5	19-34	4.81:1
Hawaii	HI	40	40	80	344	NA	NA	3.1	20-58	7.5:1
Idaho State	ID	34	37	71	291	58	17	3.50	19-45	4:1
Chicago State	IL	36	51	87	357	NA	NA	3.1	19-43	5:1
Midwestern/ Downers Grove	IL	89	133	222	844	NA	NA	3.25	22-26	5:1

Table 5 (continued)
Characteristics of Fall 2013 First-Year Class for Pharm.D. Degree Programs

Institution	Location	First Professional-Year Enrollment ^{a,b}			Total School Enrollment ^b	Seats Available for Fall 2015 Entering Class (numbers may be approximate)		Mean GPA ^c	Age Range	Application to Enrollment Ratio
		Male	Female	Total		In-State	Out of State			
Roosevelt	IL	NR	NR	NR	NR	NA	NA	3.2	24-27	11:1
Rosalind Franklin	IL	34	37	71	204	NA	NA	3.2	20-40	11.75:1
Southern Illinois	IL	31	52	83	324	NA	NA	3.56	19-37	3.8:1
Illinois at Chicago	IL	69	131	200	812	NA	NA	3.4	22-45	6:1
Butler	IN	48	86	134	513	NA	NA	3.54	20-21	3:2
Manchester	IN	29	46	75	135	NA	NA	3.2	20-40	11.9:1
Purdue	IN	58	101	159	625	NA	NA	3.50	19-46	4.5:1
Drake	IA	32	78	110	452	NA	NA	NA	20-50	3.1:1
Iowa	IA	29	79	108	432	NA	NA	3.4	20-45	5:1
Kansas	KS	58	110	168	646	NA	NA	3.45	19-48	2:1
Sullivan	KY	40	55	95	301	NA	NA	3.34	20-43	5:1
Kentucky	KY	52	88	140	535	NA	NA	3.3	20-43	4:1
Louisiana at Monroe	LA	36	72	108	379	NA	NA	3.5	21-35	3:1
Xavier	LA	48	105	153	632	NA	NA	3.3	18-47	2.4:1
Husson	ME	27	27	54	233	NA	NA	3.3	20-32	6:1
New England	ME	43	59	102	390	NA	NA	3.15	19-50	6.7:1
Notre Dame	MD	20	38	58	255	NA	NA	3.15	20-37	9:1
Maryland	MD	62	106	168	675	110	50-60	3.4	20-45	6:1
Maryland Eastern Shore	MD	28	27	55	165	~40	~20	3.31	19-39	7:1
Massachusetts–Boston	MA	128	194	322	2,063	NA	NA	3.4	20-35	21:1
Massachusetts–Worcester	MA	129	192	321	893	NA	NA	3.5	20-53	NA
Northeastern	MA	43	94	137	851	NA	NA	3.9	18-19	10:1
Western New England	MA	31	44	75	223	NA	NA	3.5	19-31	6:1
Ferris State	MI	77	79	156	584	NA	NA	3.50	NA	4:1
Michigan	MI	23	59	82	331	NA	NA	3.5	20-39	6.6:1
Wayne State	MI	46	52	98	369	NA	NA	3.60	19-33	3.5:1
Minnesota	MN	59	108	167	663	NA	NA	3.55	20-41	2:1
Mississippi	MS	31	84	115	524	87	28	3.40	22-30	3:1
St. Louis	MO	94	150	244	1,350	NA	NA	3.3	22-40	NA
Missouri–Kansas City	MO	48	76	124	500	NA	NA	3.45	19-40	3:1
Montana	MT	30	35	65	260	NA	NA	3.6	20-43	2:1
Creighton	NE	68	122	190	732	NA	NA	3.3	22-55	4:1
Nebraska	NE	23	36	59	221	45-55	5-15	3.55	20-39	2.25:1
Roseman	NV	111	149	260	760	NA	NA	3.4	20-60	3:1
Fairleigh Dickinson	NJ	32	54	86	160	NA	NA	3.3	20-43	7:1
Rutgers	NJ	77	147	224	1,251	NA	NA	3.5	17-18	18.6:1
New Mexico	NM	33	50	83	341	NA	NA	3.45	22-45	5:1

Table 5 (continued)
Characteristics of Fall 2013 First-Year Class for Pharm.D. Degree Programs

Institution	Location	First Professional-Year Enrollment ^{a,b}			Total School Enrollment ^b	Seats Available for Fall 2015 Entering Class (numbers may be approximate)		Mean GPA ^c	Age Range	Application to Enrollment Ratio
		Male	Female	Total		In-State	Out of State			
D'Youville	NY	36	38	74	266	NA	NA	3.3	20-34	6:1
A&M Schwartz	NY	87	118	205	779	NA	NA	3.4	NA	4:1
St. John Fisher	NY	33	51	84	322	NA	NA	3.40	NA	10:1
St. John's	NY	116	164	280	1,660	NA	NA	3.2	17-25	4:1
Touro-NY	NY	28	76	104	388	NA	NA	3.25	21-54	6:1
Buffalo	NY	62	70	132	497	NA	NA	3.5	22-32	5:1
Albany	NY	100	137	237	1,361	NA ^d	NA ^e	3.3 ^f	19-32 ^g	20:1 ^h
Campbell	NC	35	72	107	427	NA	NA	3.48	18-48	10.5:1
North Carolina	NC	63	99	162	644	120-140	25-50	3.5	18-43	4.5:1
Wingate	NC	33	65	98	380	NA	NA	3.52	20-47	6:1
North Dakota State	ND	32	53	85	345	NA	NA	3.68	NA	1.15:1
Cedarville	OH	19	28	47	101	NA	NA	3.45	21-42	2.9:1
Northeast Ohio	OH	34	44	78	268	NA	NA	3.24	NA	4:1
Ohio Northern	OH	61	122	183	996	NA	NA	NA	18-20	3:1
Ohio State	OH	52	83	135	557	NA	NA	3.52	21-40	5:1
Cincinnati	OH	37	60	97	393	NA	NA	3.5	20-42	4:1
Findlay	OH	24	35	59	378	NA	NA	3.3	17-55	5.6:1
Toledo	OH	62	51	113	423	NA	NA	3.7	19-41	1.5:1
SW Oklahoma	OK	42	45	87	340	NA	NA	3.6	20-41	3:1
Oklahoma	OK	46	56	102	428	75-80	20-25	3.65	20-50	3:1
Oregon State	OR	36	48	84	356	NA	NA	3.5	20-55	6:1
Pacific-Oregon	OR	37	65	102	302	NA	NA	3.4	19-37	7:1
Duquesne	PA	86	114	200	1,182	NA	NA	3.42	20-39	2:1
LECOM ⁱ	PA	62	86	148	957	143	143	3.5	18-53	10:1
Philadelphia	PA	86	108	194	1,255	NA	NA	3.5	20-21	10.64:1
Temple	PA	72	85	157	591	NA	NA	3.30	19-41	7:1
Thomas Jefferson	PA	27	34	61	297	NA	NA	3.3	18-37	8:1
Pittsburgh	PA	41	72	113	437	NA	NA	3.6	19-30	3:1
Wilkes	PA	26	46	72	288	NA	NA	3.60	20-23	2:1
Puerto Rico	PR	14	31	45	177	45	0	3.69	19-31	1:4
Rhode Island	RI	42	86	128	728	NA	NA	4.1	17-18	8.3:1
Presbyterian	SC	26	57	83	331	NA	NA	3.27	19-47	5:1
South Carolina COP	SC	57	138	195	749	133-190	0-66	3.6	19-31	3:1
South Dakota State	SD	31	49	80	319	NA	NA	3.7	19-40	3:1
Belmont	TN	33	41	74	290	NA	NA	3.4	18-36	10.4:1
East Tennessee State	TN	47	44	91	330	NA	NA	3.40	20-51	8:1
Lipscomb	TN	37	40	77	304	NA	NA	3.20	20-36	8:1

Table 5 (continued)
Characteristics of Fall 2013 First-Year Class for Pharm.D. Degree Programs

Institution	Location	First Professional-Year Enrollment ^{a,b}			Total School Enrollment ^b	Seats Available for Fall 2015 Entering Class (numbers may be approximate)		Mean GPA ^c	Age Range	Application to Enrollment Ratio
		Male	Female	Total		In-State	Out of State			
South (TN)	TN	NR	NR	NR	NR	NA	NA	3.0	21-38	4:1
Union	TN	25	36	61	220	NA	NA	3.3	19-40	8:1
Tennessee	TN	66	99	165	631	135	40	3.4	22-32	4:1
Texas A&M	TX	56	34	90	347	NA	NA	3.31	18-41	4.25:1
Texas Southern	TX	43	72	115	445	NA	NA	3.49	18-53	3:1
Texas Tech	TX	55	101	156	632	155	15	3.55	18-46	4:1
Houston	TX	40	86	126	455	NA	NA	3.55	19-43	5:1
Incarinate Word	TX	36	60	96	388	NA	NA	3.8	20-44	6.1:1
North Texas	TX	37	45	82	82	90	10	3.42	19-46	6:1
Texas at Austin	TX	49	89	138	504	NA	NA	3.6	18-46	5.4:1
Utah	UT	32	28	60	235	NA	NA	3.57	22-40	4:1
Hampton	VA	14	44	58	268	NA	NA	3.30	19-49	2:1
Shenandoah	VA	52	70	122	399	NA	NA	3.32	18-42	10:1
Appalachian	VA	26	50	76	221	NA	NA	3.0	21-51	7.3:1
Virginia Commonwealth	VA	50	88	138	543	NA	NA	3.4	20-50	NA
Washington	WA	37	61	98	372	NA	NA	3.5	19-49	4:1
Washington State	WA	40	43	83	370	NA	NA	3.4	19-44	3.5:1
Marshall	WV	NR	NR	NR	NR	NA	NA	3.15	18-55	3.5:1
Charleston	WV	38	52	90	310	NA	NA	3.2	19-45	8:1
West Virginia	WV	35	53	88	343	60-80	20-40	3.5	20-40	3.6:1
Concordia	WI	43	55	98	294	NA	NA	3.3	20-50	4:1
Wisconsin	WI	61	78	139	538	100	40	3.6	21-42	3:1
Wyoming	WY	18	39	57	190	32	20	3.6	19-46	5:1
Lebanese American	LB	0	0	0	90	NA	NA	3.2	20-40	2:1

Notes

a: Class of 2017 for Pharm.D. and class of 2016 for accelerated Pharm.D. programs

b: Data reported in the Fall 2013 Profile of Pharmacy Students

c: 4.0 scale

d: Colchester, VT campus: 14

e: Colchester, VT campus: 56

f: Colchester, VT campus: 3.2

g: Colchester, VT campus: 19-37

h: Colchester, VT campus: 7.5:1

i: Data reported does not include Bradenton campus or Distance Education Pathway

NR: Not reported

NA: Not applicable

*: No ACPE status as of Fall 2014



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Financial Aid and Scholarships

The American Association of Colleges of Pharmacy (AACP) does not administer any financial assistance programs directly to students. Federal and state grants and scholarships, although widely available, are generally reserved for the most economically disadvantaged students. Your college advisors are often the best sources of information about loan, grant and scholarship programs. Additionally, pharmacy colleges and schools may offer financial assistance. Other financial assistance opportunities are provided below.

Financial Aid Overview

What is all of this going to cost?

How much your education will cost depends on where you enroll, distance to your hometown and the extent to which public dollars are used to support the pharmacy institution. As you make plans to fund your education, remember that every dollar you spend is a dollar well-invested. The return in direct salary benefits and other less tangible gains will be far less than your initial investment.

AACP does not administer any financial assistance programs directly to students. Federal and state grants and scholarships, although widely available, are generally reserved for the most economically disadvantaged students. Your college financial aid advisors are often the best sources of information about loan, grant and scholarship programs.

Additionally, pharmacy colleges and schools may offer financial assistance directly to students. Pharmacy colleges also administer student financial assistance funds provided by local or state pharmaceutical associations and their auxiliaries, practicing pharmacists, drug manufacturers and wholesalers, memorial funds and foundations, alumni associations, local chapters of pharmaceutical organizations and fraternities, as well as general university funds allocated for this purpose. For further information about aid that may be available, write to the college or school of pharmacy of your choice. Pre-professional students may be eligible to receive similar assistance from the community colleges or universities they plan to attend before entering professional schools.

Potential Grants and Scholarships

[Express Scripts Scholars Program](#) - AACP is working with Express Scripts to facilitate the application process for the new Express Scripts Scholars Program. As an organization, Express Scripts recognizes that students interested in dual degrees may have increased financial need and supports the efforts of academic pharmacy to educate students with diverse interests. The Express Scripts Scholars Program will provide **four (4) \$10,000 scholarships** to enrolled dual degree students each year. The awarded students are given \$2,500 per semester for 4 consecutive semesters, totaling \$10,000 over 2 years.

Application Deadline: May 15, 2014 at 5:00 p.m. EST. Questions? E-mail ExpressScriptsScholars@aacp.org.

[Federal Loans and Grants](#) - Information about federal aid for undergraduate and professional student pharmacists.

[Explore Health Careers' Financial Aid Tool](#) - This site includes some portable, non-school-specific funding. In addition, research the availability of financial aid

opportunities offered by pharmacy schools.

[Guide to College Financing for Students and Parents](#) - To help you learn more about paying for a college education, this site offers helpful resources, including information on college planning, saving for college, Scholarships, student loans, parent loans and college financing processes.

[RESPy Award](#) - *Pharmacy Times* and Walmart award honors outstanding student pharmacists who display exemplary behavior and great potential as community pharmacist candidates.

[Tylenol Scholarship](#) - Started in 1992, this program helps students who are pursuing careers in the medical field manage the rising costs of education.

[American Foundation for Pharmaceutical Education](#) - AFPE provides funding for research scholarships, graduate school scholarships, pre-doctoral fellowships in the pharmaceutical sciences, post-Pharm.D. fellowships in the biomedical research sciences and pharmacy faculty new investigator grants.

[Indian Health Service Division of Health Professions Support](#) - The Federal IHS provides and administers scholarships, externships, loan repayment, recruitment, grants and other career support services to assist healthcare professionals in Indian health programs across the nation.

Scholarship Search Tool
Search for Scholarships

fastweb!
 SEARCH MORE THAN
1.5 MILLION
SCHOLARSHIPS!

--Select One--
 Grade Level
 State
 GPA
 Search

Symposium

[Paul Ambrose Symposium](#) - The symposium provides leadership training and prevention education to 40 health professions students interested in public health, prevention, healthcare policy and medical and health sciences education.



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Financial Literacy

Financial Literacy Guide for Student Pharmacists

The AACP Financial Literacy Guide for Student Pharmacists includes module-based presentations on various topics, which you may choose to utilize at your convenience. Fact Sheets are also provided to give you printable resources.

Financial Literacy - The Basics

- [Module 1: Introduction](#)
- [Module 2: Financial Planning 101](#)
- [Module 3: Banking and Account Management](#)
- [Module 4: Budgeting for Student Pharmacists](#)
- [Module 5: Debit vs. Credit Cards](#)
- [Module 6: Students and Cards](#)
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- [Module 10: Paycheck Deductions](#)

Financial Literacy - Fact Sheets

- [Dealing with Debt](#) 
- [Avoiding Fees](#) 
- [Banking 101](#) 
- [Budgeting](#) 
- [Credit Reports & Credit Scores](#) 
- [Glossary of Important Financial Terms](#) 

Other Resources

[The DIY Student Debt Repayment Guide](#) - An online guide from Total Mortgage that helps students evaluate and compare the best ways to save money and pay off debt after graduation.

[IBR Info](#) - An independent, nonprofit source of information, IBR helps student loan borrowers learn about two new federal loan programs: Income-Based Repayment (IBR) and Public Service Loan Forgiveness. This is a service of the Project on Student Debt.

[Mint.com](#) - A free financial management Web site.

[Student Aid on the Web at MyMoney.gov](#) - The U.S. Financial Literacy and Education Commission provides financial education resources for all Americans. This page focuses on students and education financing.

[The Project on Student Debt](#) - The Project on Student Debt works to increase public understanding of borrowing, which has become a primary way to pay for higher education.

[The Simple Dollar](#) - A comprehensive guide to finding the best credit card and maximizing rewards.

[Dollars and Sense: A Global Look at Student Debt](#) - Graduate unemployment and debt are not just American phenomena, and this article compares and contrasts the systems from other countries.

KEY
General Guidelines: If applicable, courses should be for science majors and include a lab. Check the institution's web site for specific guidelines or clarification
R: Required for admission
CR: Conditional Requirement, subject may be substituted to fill prerequisite
S: Suggested/Recommended, not required for admission
^a Social Science requirement may include any of the following subjects: Psychology, Sociology, Anthropology, Political Science, Economics, Geography. Please contact individual school to determine how many hours/classes are required to fulfill their requirements.
^b Humanities requirement may include any of the following subjects: History, Civilizations, Fine Arts, Literature, Philosophy, Religious Studies, Ethics, Foreign Language, Cultural Diversity, Performing Arts, Visual Arts. Please contact individual schools to determine institution specific requirements.
^c Contact institution for specific course equivalencies
^d Contact schools with this requirement for course equivalencies
^f General Education requirement is often the non-science courses pre-requisites. Contact schools with Gen Ed requirement for courses.
** These colleges of pharmacy are not yet eligible to join AACP as institutional members. They participate in PharmCAS and have had an ACPE site visit approved but have no official ACPE status. All PharmCAS applicants that designate these schools are required to apply to another school with ACPE status (last updated on August 21, 2010)
[^] Units
^{^^} Two courses are required for subject
^{^^^} Three courses are required for subject
^{^^^^} Four courses are required for subject
¹ Microeconomics
² Macroeconomics
³ Core Fine Arts: Art Appreciation, Art History, Music Appreciation, or Theater Appreciation
⁴ Healthcare related ethics
⁵ American Government / Politics
⁶ U.S. History
⁷ Medical Microbiology
⁸ US and/or Texas Government/History: check school's requirements
⁹ Must meet the UW-Madison Communication "A" requirement
¹⁰ U.S. Society
¹¹ The United States Before 1877 or equivalent and The United States Since 1877 or equivalent
¹² Must be fluent, or near fluent, in Spanish. All patient interaction is conducted in Spanish.
¹³ American Culture
¹⁴ Performing and Fine Arts (including Music), Physical Education, Foreign Languages, Computers or similar courses will not meet this requirement.
¹⁵ Sophomore Level English Composition Course
¹⁶ Rhetoric and Composition Course
¹⁷ Calculus course must include Analytical Geometry component
¹⁸ Accounting
¹⁹ Introduction to Technical Communication
²⁰ World History
²¹ Professional / Technical Writing
²² Technical or Creative Writing
²³ Speech/Interpersonal Communications
²⁴ Statistics: Biostatistics
²⁵ General Biology I and II will no longer be required beginning with the class of 2008, see note 30
²⁶ Molecular Biology and Genetics will be required beginning with the class of 2008
²⁷ Physiology and lab not required
²⁸ Statistics - Must have a general statistics or biostatistics emphasis; a course in business statistics is not acceptable.
²⁹ Course for life sciences majors
³⁰ American Diversity
³¹ World Civilizations
³² Masterworks in Literature
³⁴ Physics: Calculus or Trigonometry based
³⁵ Mammalian or Human Physiology (Upper Division Required): 4-6 semester hours PLUS Human Anatomy & Physiology I and II: 8 semester hours
³⁶ Physics must include mechanics, thermodynamics, force, and motion. May be non-calculus based.
³⁷ Calculus with integration and differentiation
³⁸ Global and Historical Studies
³⁹ Calculus and Analytical Geometry
⁴⁰ Pathogenic Microbiology
⁴¹ Physiology upper division; not anatomy and physiology
⁴² Exclusively physiology, two courses may be required if taking combined anatomy and physiology
⁴³ US History and World History or World Cultural Geography
⁴⁴ Global Diversity
⁴⁵ Physics: with lab, including the study of electricity and magnetism
⁴⁶ Physiology: whole animal / human / mammalian physiology
⁴⁷ Physics: including thermodynamics and electromagnetism
⁴⁸ Functional Anatomy and Pathophysiology
⁴⁹ Physiology and Pathology
⁵⁰ Public Speaking must include at least 3 major individual speeches and 1 minor presentation for 50% of course grade. A course syllabus may be required to confirm course content if the course is not titled as Public Speaking.
⁵¹ Biological Sciences (8 hours are required, 12 hours are strongly recommended): Recommended: General Biology, Human Anatomy & Physiology, &/or Microbiology. Also Appropriate: Immunology, Cell Biology, Genetics, Medical Terminology, Biochemistry.
⁵² Pharmacy Calculations- Can be completed at Cedarville University during the summer prior to enrollment.
⁵³ World History

Nursing
Physician Assistant
Public Health



American Association of Colleges of Nursing

Mission: The American Association of Colleges of Nursing (AACN), a unique asset for the nation, serves the public interest by setting standards, providing resources, and developing the leadership capacity of member schools to advance nursing education, research, and practice.

- **Size of Organization:** 750 member schools of nursing employing more than 18,000 full-time faculty members.
- **Number of Member Institutions:** Not provided
- **New Institutional Members in Last Two Years:** 60 schools of nursing

Total Number of Students: 450,000 undergraduate and graduate students

Total Number of First Year Students: Not provided

Total Number of Graduates in Most Recent Academic Year: 135,171 graduates

Data on Employment Rates of Recent Graduates: For new baccalaureate prepared nurses:

- 59% were employed at graduation
- 89% were employed 4-6 months after graduation.

Fall 2013 Matriculants:

Number of Applicants, With Data on the Profile of the Pool Including Gender, Race/Ethnicity, Age, Etc.:

- The 2012 – 2013 application cycle officially close on July 1, 2013.
- **Pool:** 75,000 applicants, 15% male, 38% minority

Profile of the Admitted Applicant Including GPA, Tests Score, Etc.:

- **Average Cumulative Undergraduate GPA:** 3.2
- **Average Post-Baccalaureate GPA:** 3.5
- **Average Graduate GPA:** 3.6

Report on Trends (bar graphs): Number of applicants, Age, Gender, Race/ethnicity Not provided

Prerequisites:

Academic: Varies by school and program

Standardized Test(s): Varies by school and program

Experience/Exposure: Varies by school and program

Letters of Recommendation: Varies by school and program

Links and other Resources for Advisors:

- **Search Schools Offering Baccalaureate and Graduate Nursing Programs:**
 - www.aacn.nche.edu/students/nursing-program-search
 - www.discovernursing.com/program_search.aspx
- **Guide to Graduate Nursing Programs:**
 - www.aacn.nche.edu/student/news/2011/grad-brochure
- **Financial Aid for Nursing Students:**
 - www.aacn.nche.edu/students/financial-aid
- **Career Advice for Prospective Nursing Students:**
 - www.aacn.nche.edu/students/your-nursing-career
- **Accelerated Nursing Programs for Non-Nursing Graduates:**
 - www.aacn.nche.edu/students/accelerated-nursing-programs



**Schools Offering Master's for Nonnursing College
Graduates (Entry-level/2nd Degree Master's*) Programs, Fall 2013 (N=65)**

Alabama

University of Alabama at Birmingham
University of South Alabama

Arizona

University of Arizona

California

Azusa Pacific University
California Baptist University
California State University-Dominguez Hills
California State University-Fresno
California State University-Fullerton
California State University-Los Angeles
Charles R. Drew University of Medicine and Science
Samuel Merritt University
San Francisco State University
Sonoma State University
United States University
University of California-Los Angeles
University of California-San Francisco
University of San Diego
University of San Francisco
Western University of Health Sciences

Connecticut

University of Connecticut
Yale University

Georgia

Georgia Regents University

Hawaii

University of Hawaii at Manoa

Illinois

DePaul University
Millikin University
Rush University Medical Center
University of Illinois at Chicago

Indiana

University of Indianapolis

Iowa

University of Iowa

Kentucky

Midway College

Maine

University of Southern Maine

Maryland

Towson University
University of Maryland

Massachusetts

Boston College

Massachusetts, cont.

Elms College
MGH Institute of Health Professions
Northeastern University
Regis College
Salem State University
Simmons College
University of Massachusetts Medical School

Minnesota

Metropolitan State University
University of Minnesota

Missouri

Saint Louis University

New Hampshire

University of New Hampshire

New Jersey

Rutgers, The State University of New Jersey, SON
Seton Hall University

New York

University of Rochester

Ohio

Case Western Reserve University
College of Mount Saint Joseph
The Ohio State University
University of Toledo
Xavier University

Oklahoma

Oklahoma City University

Tennessee

University of Memphis
University of Tennessee Health Science Center
Vanderbilt University

Texas

University of Texas-Austin

Vermont

University of Vermont

Virginia

University of Virginia
Virginia Commonwealth University

Washington

Pacific Lutheran University
Seattle University

Wisconsin

Marquette University
University of Wisconsin-Milwaukee

*Master's for Nonnursing College Graduates (Entry-Level/2nd Degree Master's) Program: Admits students with baccalaureate degrees in other disciplines and no previous nursing education. Program prepares graduates for entry into the profession and awards a master's degree in nursing.



**Schools that Offer Accelerated Baccalaureate Programs for
Nonnursing College Graduates, Fall 2013 (N=256)**

Alabama

Samford University
University of North Alabama
University of South Alabama

Arizona

Arizona State University
Brookline College
Grand Canyon University
Northern Arizona University

Arkansas

Arkansas State University-Jonesboro

California

California Baptist University
California State University-Long Beach
California State University-Northridge
California State University-San Marcos
California State University-Stanislaus
Concordia University-California
Loma Linda University
Mount Saint Mary's College
National University
Samuel Merritt University

Colorado

Colorado State University-Pueblo
Denver School of Nursing
Metropolitan State University of Denver
Regis University
University of Colorado
University of Colorado at Colorado Springs
University of Northern Colorado

Connecticut

Fairfield University
Quinnipiac University
Southern Connecticut State University
University of Connecticut
University of Saint Joseph

Delaware

University of Delaware

District of Columbia

Georgetown University
The Catholic University of America
The George Washington University

Florida

Barry University
Florida Atlantic University
Florida International University
Florida State University
Jacksonville University
Remington College of Nursing

Florida cont.

University of Central Florida
University of Florida
University of Miami
University of North Florida
University of South Florida

Georgia

Albany State University
Emory University
Georgia Southwestern State University
Kennesaw State University
Valdosta State University

Idaho

Idaho State University

Illinois

Blessing-Rieman College of Nursing
Bradley University
Illinois State University
Lewis University
Loyola University Chicago
Methodist College
Olivet Nazarene University
Saint John's College, Springfield
Southern Illinois University Edwardsville
Trinity College of Nursing and Health Sciences

Indiana

Ball State University
Indiana State University
Indiana University Northwest
Indiana University South Bend
Indiana University-Purdue University (Indianapolis)
Indiana Wesleyan University
Marian University- Indiana
Purdue University
Purdue University-Calumet
Saint Joseph's College
Saint Mary's College- Indiana
Valparaiso University

Iowa

Allen College

Kansas

MidAmerica Nazarene University
University of Saint Mary
Wichita State University

Kentucky

Bellarmine University
Eastern Kentucky University
Northern Kentucky University
Spalding University

Schools that Offer Accelerated Baccalaureate Programs for Nonnursing College Graduates, Fall 2013 (N=256), cont.

Kentucky, cont.

University of Kentucky
University of Louisville
Western Kentucky University

Louisiana

Louisiana College
Louisiana State University Health Sciences Ctr
Our Lady of the Lake College
Southeastern Louisiana University

Maine

University of Maine-Fort Kent
University of New England
University of Southern Maine

Maryland

Bowie State University
Coppin State University
Johns Hopkins University
Salisbury University

Massachusetts

Curry College
Elms College
MCPHS University
MGH Institute of Health Professions
Northeastern University
Regis College
Simmons College
University of Massachusetts-Amherst
University of Massachusetts-Boston

Michigan

Eastern Michigan University
Ferris State University
Grand Valley State University
Michigan State University
Oakland University
University of Detroit Mercy
University of Michigan
University of Michigan-Flint
Wayne State University

Minnesota

Concordia College - Minnesota
Saint Catherine University
The College of St. Scholastica

Mississippi

University of Mississippi Medical Center

Missouri

Central Methodist University
Chamberlain College of Nursing - St. Louis
Cox College
Goldfarb School of Nursing at Barnes-Jewish College
Research College of Nursing
Saint Louis University
Southeast Missouri State University
Truman State University

Missouri, cont.

University of Missouri-Columbia
University of Missouri-Kansas City
University of Missouri-St. Louis
William Jewell College

Montana

Montana State University- Bozeman

Nebraska

Creighton University
Nebraska Methodist College
University of Nebraska Medical Center

Nevada

Nevada State College
Roseman University of Health Sciences-Nevada
Touro University

New Jersey

Caldwell College
Fairleigh Dickinson University
Felician College
New Jersey City University
Rutgers, The State University of New Jersey
Rutgers, The State University of New Jersey, SON
Seton Hall University
Thomas Edison State College
William Paterson University

New Mexico

New Mexico State University
University of New Mexico

New York

Adelphi University
American University of Beirut
Binghamton University
College of Mount Saint Vincent
College of New Rochelle
Columbia University
Concordia College New York
Dominican College of Blauvelt
Farmingdale State University
Hartwick College
Hunter College of CUNY
Lehman College
Long Island University
Molloy College
New York University
Niagara University
Pace University
Stony Brook University
SUNY Downstate Medical Center
The College at Brockport
The Sage Colleges
University at Buffalo-SUNY
University of Rochester
Utica College

**Schools that Offer Accelerated Baccalaureate Programs for
Nonnursing College Graduates, Fall 2013 (N=256), cont.**

New York, cont.

Wagner College

North Carolina

Duke University
Methodist University
North Carolina A&T State University
North Carolina Central University
Queens University of Charlotte
The University of North Carolina-Chapel Hill
Western Carolina University
Winston-Salem State University

North Dakota

University of North Dakota

Ohio

Ashland University
Capital University
Cleveland State University
Kent State University
Kettering College
Mount Carmel College of Nursing
Ohio University
Otterbein University
The University of Akron
University of Cincinnati
Ursuline College
Walsh University
Wright State University

Oklahoma

Oklahoma City University
University of Oklahoma

Oregon

Linfield College
Oregon Health and Science University

Pennsylvania

DeSales University
Drexel University
Duquesne University
Eastern University
Edinboro University of Pennsylvania
Misericordia University
Pennsylvania State University
Robert Morris University
Thomas Jefferson University
University of Pennsylvania
University of Pittsburgh
Villanova University
Waynesburg University
West Chester University
Wilkes University

Puerto Rico

Universidad del Turabo

South Carolina

Anderson University-South Carolina

South Carolina, cont.

Clemson University
Medical University of South Carolina

South Dakota

South Dakota State University
University of Sioux Falls

Tennessee

Belmont University
Cumberland University
East Tennessee State University
Union University-Tennessee
University of Memphis
University of Tennessee Health Science Center
University of Tennessee-Knoxville

Texas

Baylor University
Midwestern State University
Texas A&M Health Science Center
Texas A&M University-Corpus Christi
Texas Christian University
Texas Tech University Health Sciences Center
Texas Tech University Health Sciences Center-El Paso
University of Houston-Victoria
University of Texas Health Science Center-Houston
University of Texas Health Science Center-San Antonio
University of Texas Medical Branch
University of Texas-El Paso
University of Texas-Tyler

Utah

University of Utah

Virginia

Eastern Mennonite University
George Mason University
Jefferson College of Health Sciences
Lynchburg College
Marymount University
Norfolk State University
Old Dominion University
Shenandoah University
Virginia Commonwealth University

Washington

University of Washington

West Virginia

West Virginia University
Wheeling Jesuit University

Wisconsin

Edgewood College
Milwaukee School of Engineering
University of Wisconsin-Oshkosh

Wyoming

University of Wyoming

PRE-PHYSICIAN ASSISTANT: ACADEMIC AND CAREER INFORMATION



Health Professions Advising Office (HPAO) • Jensen Student Access to Science (SAS) and Mathematics Center •
Location: Hall of Science Building – Room 164 • Phone: (562) 985-8061 • Website: www.csulb.edu/hpao

NATURE OF THE WORK, EARINGS AND OCCUPATIONAL OUTLOOK

Physician Assistants (PAs) provide a wide range of health care services and work as a team under the supervision of physicians and surgeons. They should not be confused with medical assistants, who perform routine clinical and clerical tasks. Many PAs work in primary care areas such as general internal medicine, pediatrics, and family medicine. Others work in specialty areas, such as general and thoracic surgery, emergency medicine, orthopedics, and geriatrics. PAs take medical histories, perform physical exams, order and interpret laboratory tests, diagnose and treat illnesses, counsel patients, assist in surgery, and set fractures. The responsibilities of a PA depend on the practice setting, education, and experience of the PA, and on the state laws and regulations. Settings typically include private practice, clinics, hospitals, the armed forces, and other federal government agencies. Physician Assistants are required to have leadership skills, self-confidence, and emotional stability. They must be willing to continue studying throughout their career to keep up with medical advances.

According to the American Academy of Physician Assistants, the number of practicing PA's has doubled in the last decade, and should reach between 137,000-173,000 jobs by 2022. State laws regulating physician assistants have expanded access to physician services provided by PAs, including the authority to prescribe medications in all 50 states and the District of Columbia, and Guam. The development of HMOs and other prepaid plans and the growing acceptance of PAs by other health care professionals have combined to strengthen the job market for PAs. Employment of PA's is expected to grow much faster than average (38%) for all occupations through 2022 (Occupational Outlook Handbook, 2014-2015). According to the Occupational Outlook Handbook, the median income for physician assistants is \$90,930. The income varies by specialty, practice setting, geographical location, and years of experience.

PHYSICIAN ASSISTANT EDUCATION

There are many entry pathways into the physician assistant profession. **Options include certificate of completion, as well as associate, baccalaureate, and master's degree** – admissions to these different *programs are highly competitive*. There are 189 accredited physician assistant programs in the United States, and they are located at medical schools, medical centers, hospitals, two- and four-year colleges and universities, and in the uniformed forces (Physician Assistant Education Association). The vast majority award Masters degrees, and most applicants to PA programs have a bachelor's degree and 3-years of health care experience at the time of entry.

PAs are educated as generalists in medicine; all programs emphasize primary care. PA programs require students to complete approximately 26 months of classroom studies, and the educational program is modeled after the medical school curriculum with a combination of classroom and clinical instruction (Association of Physician Assistant Programs). PA education includes classroom instruction in biochemistry, nutrition, human

anatomy, physiology, microbiology, clinical pharmacology, clinical medicine, geriatric and home health care, disease prevention, and medical ethics. Students obtain supervised clinical training in several areas, including primary care medicine, inpatient medicine, surgery, obstetrics and gynecology, geriatrics, emergency medicine, psychiatry, and pediatrics. PAs must complete 100 hours of continuing medical education every 2-years and take recertification exams every 10-years ([AAPA](#)).

PRE-PHYSICIAN ASSISTANT PREPARATION

Prerequisite admission requirements vary from school to school. Selection criteria may also vary according to the individual institution's philosophy, thus **refer to the individual program website for detailed information**. For a list of programs accredited by the Accreditation Review Commission on Education for Physician Assistant (ARC-PA) visit the **Physician Assistant Education Association (PAEA)** website www.paeonline.org, and click on the Accredited Programs tab.

MAJOR

Any major is appropriate for PA preparation. Students are advised to select a major they find interesting and to work at developing a broad-based, interdisciplinary foundation of knowledge and skills from which they can build upon. Most PA programs require that applicants have a minimum of two years of college credits and some health care experience prior to admission. Analysis of student enrollment data shows that more than half of those who apply to physician assistant programs already have a college degree (PAEA).

For the 2013 matriculated class, the median age of applicants was 24. The average **science GPA was 3.45**, **average non-science GPA was 3.58**, and the **cumulative GPA was 3.51** (PAEA –NAAHP).

COURSE REQUIREMENTS FOR CALIFORNIA PHYSICIAN ASSISTANT PROGRAMS:

Many Schools require a certain amount of hours of direct patient care (check with the school that you are considering), some examples of preferred clinical experiences are: Military medic or corpsman, Back Office Medical Assistant (MA), Certified Nurses' Aide, EMT (patient care hours only), Paramedic, Physical Therapy Aide or Physical Therapist, Radiological Technician, Nurse (LVN or RN), Respiratory Therapist, Occupational Therapist Aide or Occupational Therapist, Athletic Trainer (others that are considered on a case-by-case basis depending on the patient interaction i.e. phlebotomy, scribe, etc...).

Examples of clinical experiences *not preferred*: Administrative duties, Massage therapy, Personal trainer, Home care aid, Home health aide, Pharmacy technician, Certified Nurses' aide, Shadowing a physician or PA, Research with no patient contact, Hours received during training programs (i.e. medical school, internship, etc...).

Below is a list of requirements for the 9 PA schools in California (there are also two additional programs that has developing accreditation). *Students maintain responsibility for verifying course selection with individual PA programs.*

Master Level Programs:

CSULB Courses that fulfill admission requirements for the [Keck School of Medicine - University of Southern California](#):

Pre-Physician Assistant Coursework	CSULB Courses
One year of General Chemistry with lab	Chemistry 111A & 111B
One year of General Biology with lab	Biology 211, 212, 213
One course of Human Anatomy with lab	Biology 208
One course of Physiology with lab	Biology 207 OR 342 w/ 342L
One course of Microbiology with lab	Microbiology 200 OR 211
One course in Statistics	Biology 260 OR Statistics 108 OR HDEV 250
One course of Psychology	Psychology 100
One year of Beginning Spanish Language	Spanish 101B & 201A

CSULB Courses that fulfill admission requirements for [Loma Linda University](#):

Note: Documented hands-on patient care experience, 2000 hours.

Pre-Physician Assistant Coursework	CSULB Courses
One year of General Chemistry with lab	Chemistry 111A & 111B
One course of Human Anatomy with lab	Biology 208
One course of Physiology with lab	Biology 207 OR 342 w/ 342L
One course of Microbiology with lab	Microbiology 200 OR 211
One course of Psychology	Psychology 100
Once course of Sociology or Cultural Anthropology	Sociology 100 OR Anthropology 120
One year of English	English 100 & 1 Additional
One course in College-level Algebra	Math 113
One course in Statistics (Recommended)	Biology 260 OR Statistics 108 OR Psychology 210
One course in Medical Terminology (Recommended)	Health Science 150
Conversational Spanish	One course in Spanish

CSULB Courses that fulfill admission requirements for [Samuel Merritt](#):

Note: Most competitive applicants will have a minimum of 1,000 hours of related direct patient contact

Pre-Physician Assistant Coursework	CSULB Courses
One course of General Chemistry with lab	Chemistry 111A
One course of Organic Chemistry with lab	Chemistry 220A w/223A (Biology and other majors) OR 220A (Chemistry and Biochemistry majors)
One course of Human Anatomy with lab	Biology 208
One course of Physiology with lab	Biology 207 OR 342 w/ 342L
One course of Microbiology with lab	Microbiology 200 OR 211
One additional Biology course	Any course offered by the biological sciences
One course in Statistics	Biology 260 OR Statistics 108 OR Psychology 210

CSULB Courses that fulfill admission requirements for [Touro University](#):

Joint master's in public health and physician assistant studies (MSPAS/MPH)

Pre-Physician Assistant Coursework	CSULB Courses
One year of General Chemistry with Lab	Chemistry 111A & 111B
One year of General Biology with lab	Biology 211 & 212
One course of Human Anatomy with lab	Biology 208
One course of Physiology with lab	Biology 207 OR 342 w/ 342L
One course of Microbiology with lab	Microbiology 200 OR 211
One course in Statistics	Biology 260 OR Statistics 108 OR Psychology 210

CSULB Courses that fulfill admission requirements for [Western University of Health Sciences](#):

Pre-Physician Assistant Coursework	CSULB Courses
One year of General Chemistry with lab	Chemistry 111A & 111B
One course of Human Anatomy with lab	Biology 208
One course of Physiology with lab	Biology 207 OR 342 w/ 342L
One course of Microbiology with lab	Microbiology 200 OR 211
One course in Genetics	Biology 370*
One course in Statistics	Biology 260 OR Statistics 108 OR Psychology 210
One course in College Algebra	Math 113
One course of Psychology	Psychology 100
One course of Sociology	Sociology 100
One year of English	English 100 & 1 additional course
Three courses of the Humanities	e.g. Art, Music, Ethics, Philosophy, Religion, etc.
Spanish (strongly recommended)	Spanish 101B & 201A

*Please be aware of the prerequisites for this upper-division course.

CSULB Courses that fulfill admission requirements for [University of California, Davis School of Medicine](#):**Note: A minimum of 1,000 hours direct (hands-on) patient care is required.**

Pre-Physician Assistant Coursework	CSULB Courses
One course of General Chemistry with Lab	Chemistry 111A
One course of Human Anatomy with lab	Biology 208
One course of Physiology with lab	Biology 207 OR 342 w/ 342L
One course of Microbiology with lab	Microbiology 200 OR 211
One course of English Composition	English 100
One course in College Algebra, Statistics or Calculus	Math 113, Math 108 or Math 119A or Math 122 or Bio
Two courses in Social Sciences	Psychology 100 OR Sociology 100 OR Anthropology

CSULB Courses that fulfill admission requirements for [Marshall B. Ketchum University](#)

Note: A minimum of 1,000 hours of direct patient care experience

Pre-Physician Assistant Coursework	CSULB Courses
One course in Biochemistry or Organic Chemistry	CHEM 448 or 441A, OR CHEM 220A
One course of Human Anatomy with lab*	Biology 208
One course of Physiology with lab*	Biology 207 OR 342 w/ 342L
One course of Microbiology with lab*	Microbiology 200 OR 211
One Additional course from any area of Biology	See Advisor
One course in Statistics	STAT 108
One course of Psychology	Psychology 100

CA Programs with Developing Accreditation:

- [Chapman University](#) Master of Medical Science Physician Assistant Studies Program
- [Charles Drew University](#) Master of Health Science Physician Assistant Studies

Certificate Programs:

CSULB Courses that fulfill admission requirements for [Moreno Valley College](#):

Note: Priority is given to Riverside Community College students – Read Board Policy 5055. A minimum of 3,000 hours of paid “hands-on” patient care experience in the disciplines of medicine, nursing or allied health is required. Volunteer experience will not fulfill the patient care experience requirement.

Pre-Physician Assistant Coursework	CSULB Courses
One course of General Chemistry	Chemistry 111A & Chemistry 111B
One course of General Physics with Lab	Physics 100A OR 151
One course in Statistics	Biology 260 OR Statistics 108 OR Psychology 210
One course in College Algebra, or Calculus	Math 109 OR higher
One course of Human Anatomy with lab	Biology 208
One course of Physiology with lab	Biology 207 OR 342 w/342L
One course of Microbiology with lab	Microbiology 200 OR 211
One course of English Composition	English 100
One course in Psychology	Psychology 100
Once course of Sociology OR Anthropology	Sociology 100 OR Anthropology 120
Two courses in Medical Terminology	Health Science 150, plus 1 additional course
One course in Interpersonal Communication	Communications 110
One Language course (Spanish preferred)	Spanish 101B

CSULB Courses that fulfill admission requirements for [Stanford University](#):

Note: A minimum of 3,000 hours of direct patient care experience must be completed by the application deadline.

Pre-Physician Assistant Coursework	CSULB Courses
One course of General Chemistry	Chemistry 111A
One course of Human Anatomy with lab*	Biology 208

One course of Physiology with lab*	Biology 207 OR 342 w/ 342L
One course of Microbiology with lab*	Microbiology 200 OR 211
One course of College Algebra or Higher	Math 109 OR higher
One course of English Composition	English 100
One course of Psychology	Psychology 100
One course of Sociology or Anthropology	Sociology 100 OR Anthropology 120

*Must have a B or better

APPLICATION

In 2013 a total of 21,730 applicants applied to PA programs via the Central Application for Physician Assistants (CASPA) and 6,828 were offered admissions. CASPA is a centralized Web-based application service provided by the Physician Assistant Education Association (PAEA). CASPA allows you to apply to any number of participating schools by completing a single application. CA schools not participating in CASPA Stanford University, and Moreno Valley College. For more information regarding CASPA refer to their website: <http://www.caspaonline.org> or contact CASPA by phone at (617) 612-2080.

For more information about Physician Assistant Programs, visit www.paeonline.org and see your HPAO advisor for further information on the application process, application assistance, and a list of upcoming workshops and events.



Physician Assistant Education Association

Mission: The Physician Assistant Education Association (PAEA) is the only national organization in the United States representing physician assistant (PA) education programs. PAEA serves as a resource for individuals and organizations from various professional sectors interested in the educational aspects of the PA profession. The Association is the organization primarily responsible for collecting, publishing, and disseminating information on the PA programs. PAEA provides effective representation to affiliated organizations involved in health education, health care policy, and the national certification of PA graduates. PAEA works to ensure quality PA education through the development and distribution of educational services and products specifically geared toward meeting the emerging needs of PA programs, the PA profession, and the health care industry.

Size of Organization: PAEA has 22 employees

Number of Member Institutions: PAEA has 182 member programs

New Institutional Members in Last Two Years: 38 programs have joined PAEA as institutional members. Of these, 29 participate in CASPA as developing programs.

Total Number of Students: 6,828 (*CAS only*)

Admissions Update:

Contact Information and CAS Link:

CASPA: portal.caspaonline.org

Current Number of Participating Programs Versus Total Member Programs:

PAEA Member Programs: 182

CASPA Programs with Provisional or Continuing Accreditation: 165 - 91% of member programs participate in CASPA

CASPA Programs with Developing Status: 14

Total CASPA Participating Programs: 179

Open Period (launch date and last deadline): April 16, 2014-March 1, 2015

Submission Deadlines:

- June 15
- July 15
- August 1
- September 1
- October 1
- November 1
- December 1
- January 15
- March 1

Applicant Code of Conduct or Required Institutional Certification or Statement: [Click here](#) to view the CASPA professional code of conduct.

Fees: \$175/\$45. The first designation costs \$175 and it is \$45 for each application submitted after the first one.

Fee Waivers: Fee waivers are available to qualified applicants and covers the amount of the first application at \$175. [Click here](#) to apply to learn more about CASPA fee waivers.

Letters of Reference Delivery Method(s): CASPA only accepts three electronic letters. If a program requires more than three letters, additional letters must be sent directly to the program. PA programs do not prefer committee letters.

Background Check Services if Applicable: PAEA partners with CertifiedBackground to provide background checks to programs choosing to participate through the central application service. Programs must opt in and they order background checks on the applicants they require them from. Not all applicants through CASPA will be required to obtain a background check.

Fall 2013 Matriculants:

Number of Applicants, With Data on the Profile of the Pool Including Gender, Race/Ethnicity, Age, Etc Data includes ethnicity & race, GPAs, age, gender, military experience, citizenship, majors, healthcare experience, first learned of PA, most influenced, environmentally and economically disadvantaged, states of residency, and misc. cycle data. See ethnicities and gender data below:

CASPA: CASPA - Ethnicities and Races Report
 Applicants for 2013 Entering Class.
 The applicant pool for this report was generated using all applicants
 Report run on Apr 17, 2014 at 1:26 PM
 Showing applicants with decisions 'Matriculated'

Ethnicities and Races	Applicants to CASPA	
	Number of Applicants	% of Applicants to CASPA
American Indian	13	0.21%
Hispanic	455	7.35%
Asian	510	8.23%
Black or African American	175	2.83%
Hawaiian	5	0.08%
White	4656	75.17%
Other	0	0.00%
Multiple	172	2.78%
Did Not Report	208	3.36%
Total	6194	100.00%

CASPA: CASPA - Gender Report
 Applicants for 2013 Entering Class.
 The applicant pool for this report was generated using all applicants
 Report run on Apr 17, 2014 at 1:39 PM
 Showing applicants with decisions 'Matriculated'

Gender	Applicants to CASPA	
	Number of Applicants	% of Applicants to CASPA
Male	1704	27.51%
Female	4483	72.38%
Do Not Wish to Report	7	0.11%
Did Not Report	0	0.00%
Total	6194	100.00%

Profile of the Admitted Applicant Including GPA, Tests Score, Etc.: [click here](#) to access the 2013 matriculant reports

- Data includes academics including first heard, GPA, majors, most influenced, self-reported GRE and demographics including age, citizenship, environmentally and economically disadvantaged, ethnicity & race, gender, military experience, and states of residency

Report on Trends (bar graphs): Number of applicants, Age, Gender, Race/ethnicity
Not provided

Prerequisites:

Academic: Each PA program has different prerequisite requirements. It is best to review a program's website for all prerequisite requirements and substitutions because they vary. [Click here](#) to view a general list of prerequisites for each program in the PAEA Program Directory (*next update expected June 1, 2014*). Academic prerequisites can include but are not limited to:

- Science coursework
 - Anatomy
 - Physiology
 - Biology
 - Chemistry
 - Organic Chemistry
 - Biochemistry
 - Physics
 - Genetics
- Non-science coursework
 - English
 - Composition
 - Technical writing
 - Psychology
 - Sociology
 - Humanities

- College level algebra or math
- Statistics

Standardized Test(s): The types of standardized exams that a program can require can include, but is not limited to:

- ACT/SAT
- GRE
- TOEFL
- MAT
- Screening in certain subjects or topics

Note: Some programs will accept the MCAT in place of the GRE, but not all, so it is best to refer to the website or the PAEA Program Directory for this information.

Experience/Exposure: Most programs (but not all) can require shadowing, volunteer, paid, or any combination of hands-on, direct patient care experience. Hour requirements will vary by programs but can range from 0-4,000 hours.

- *Not all programs require shadowing but for those that do, shadowing should be used as an opportunity to become familiar with a profession, not as healthcare experience. Shadowing opportunities can be difficult to find because of students on clinical rotations in all health professions. In the case a student has difficulty locating a shadowing opportunity, they can also consider inviting a local PA to coffee for a sit down interview, which will also help give them insight into the profession.*
- *The programs that require healthcare experience will accept different experiences so it is best to check with the individual program for specifics, however, when requiring healthcare experience, programs want their applicants to have hands-on patient care, working with patients face to face in a healthcare setting.*

Letters of Recommendation: Most programs require three (3) letters of reference (very few require less or more than three). Some (but not all) programs require letters from specific authors, which can include, but is not limited to:

- Physician assistants (PAs) can do any of the following:

- Take medical histories, prescribe medication, diagnose and treat illness, order laboratory tests, assist in surgeries, educate and counsel patients
 - PAs can work in a number of healthcare settings. Wherever you can find a physician, a physician assistant can practice as well.
-
- Physician assistants should have the following traits:
 - Intelligence, sound judgment, and intellectual honesty
 - Ability to respond to emergencies in a calm and reasoned manner
 - Respect for yourself and others
 - Adherence to confidentiality in communicating with patients
 - Commitment to the patient's welfare
-
- While preparing to apply to the profession, students should be able to answer:
 - What distinguishes a PA from a physician or nurse practitioner?
 - Will the physician assistant profession meet my career goals?
 - Why do you think you will make an excellent health care provider? More specifically an excellent physician assistant?

Links/Other Resources for Advisors

PA Links:

- PA Program Directory: directory.paeonline.org
- PA Focus: pafocus.org
- PA Focus Facebook: www.facebook.com/PAFocus
- PA Focus Twitter: www.twitter.com/PA_Focus

The American Academy of Physician Assistants: www.aapa.org

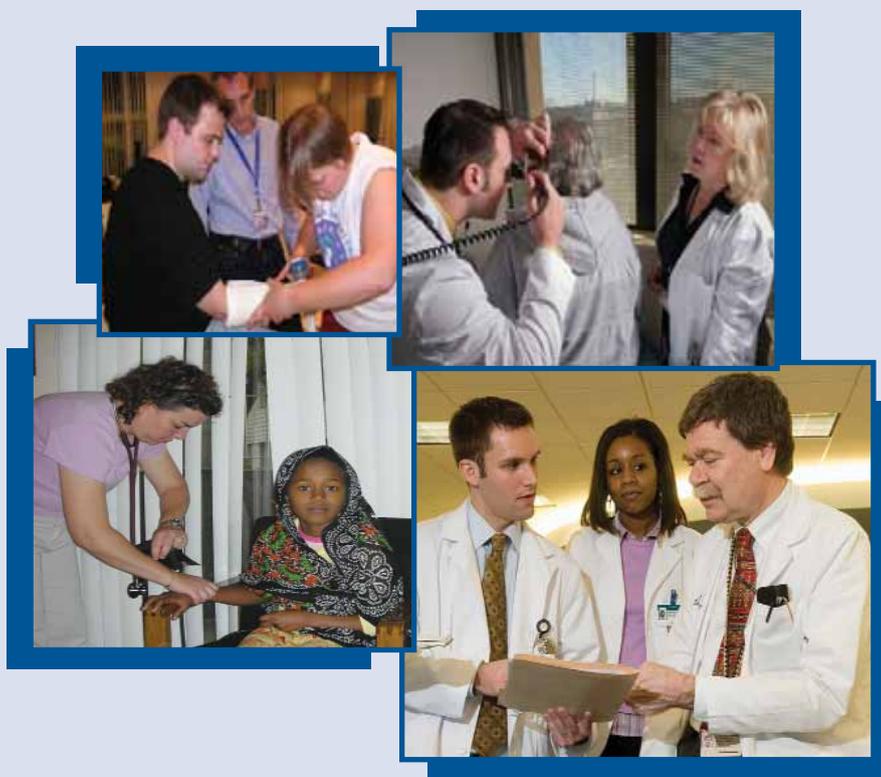
The National Commission of Certification of Physician Assistants: www.nccpa.net

The Accreditation Review Commission for Physician Assistants: www.arc-pa.org

Join One of the **Fastest** Growing Careers in America

Become a Physician Assistant

- **Make a difference in the lives of the patients you treat**
- **Receive quality medical education and earn national certification**
- **Enjoy high levels of job satisfaction**
- **Have the ability to change medical specialties without additional training**
- **Find opportunities in all areas of medicine**



The Physician Assistant Profession

Physician assistants (PAs) are licensed to practice medicine with physician supervision and are authorized to prescribe in all 50 states, the District of Columbia, the Commonwealth of the Northern Mariana Islands, and Guam. As part of their comprehensive responsibilities, PAs conduct physical exams, diagnose and treat illnesses, order and interpret tests, counsel on preventive health care, assist in surgery, and write prescriptions.

By choosing to become a physician assistant, you are entering one of the fastest growing and most highly regarded professions in the country. A recent *Money* magazine article ranked the PA profession one of the fastest growing of all the professions it considered and ranked it second overall on a broad range of criteria. The U. S. Bureau of Labor Statistics projects that the number of PA jobs will increase by 39 percent between 2008 and 2018. There were over 75,000 PAs in clinical practice in 2009 and 12,000 students in PA programs around the country.

Practice — PAs are educated in a generalist model of medicine, which gives them the flexibility to be employed in all areas of medicine. They practice in family medicine, internal medicine, pediatrics, and obstetrics and gynecology, as well as in any specialty fields such as cardiovascular surgery, orthopedics, and emergency medicine.

Income — Results of the 2009 American Academy of Physician Assistants' (AAPA) PA Census Survey indicate that the mean total income from primary employers for PAs who are not self-employed and who work at least 32 hours per week for their primary employer is \$93,105.

What PAs Say About Their Career Choice

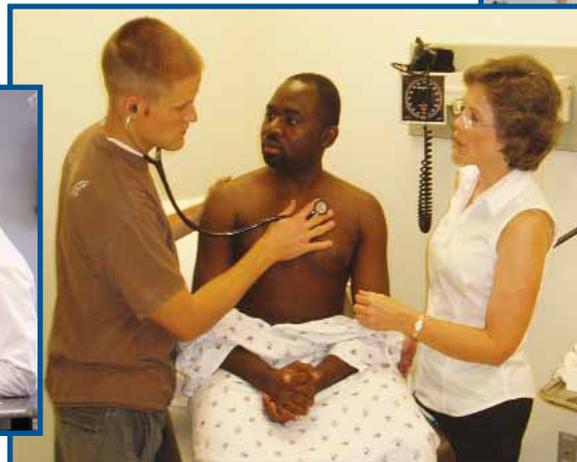
“I wanted to become a PA because I saw how other PAs enjoyed their profession.”

“It has everything I was looking for: patient contact, science and medical knowledge, hands-on work.”

“I’m here because PAs are some of the finest health care practitioners I’ve met. I want to be that ‘go-to-guy,’ the practitioner that provides primary care on a daily basis.”

“I want a career that has enough flexibility so that I can explore different areas of medicine — if I want to teach, do research, etc. I want to touch lives!”

“I want to become a PA because I will be able to enjoy a lifelong learning experience, work in a health care team setting, and be able to balance my life and family life with my career.”



Job Satisfaction

According to AAPA, 89 percent of practicing PAs would choose the profession again if they were choosing a career today. Contributing factors to PA job satisfaction are the ability to practice medicine while working with physicians, the relationships developed with other health care team members, and the flexibility to change specialties and work settings without additional training.

PA Education

There are currently almost 150 accredited PA programs in the United States. They are located at medical schools and academic health centers, two- and four-year colleges and universities, hospitals, and in the military.

PA programs offer a variety of credentials and entry pathways, though all have to meet the same accreditation standards, and all graduates must pass the same national certifying examination (PANCE) to be able to practice medicine.

Most PA programs are master's-level programs that typically require either a bachelor's degree or appropriate undergraduate credit, with a minimum GPA. A college degree is not always required; however, you will need to have taken some college-level courses before applying to a PA program. Programs offering bachelor's degrees typically require a minimum of two years of college credit. Most programs require health care experience prior to admission. Recently several insti-

tutions have also been developing a new model of program that is designed for high school graduates. In these programs, students complete core college requirements in a preprofessional phase and later move into the professional phase for training as a PA. Frequently, these programs award both bachelor's and master's degrees.

The structure of education programs for PA students is similar to that for medical students, although shorter in length. (The average medical school education is four years, plus residency; the average PA education program is 27 months.) Most PA programs take 24–27 months to complete, with about 12 months of classroom studies followed by 12–15 months of supervised clinical rotations. A small number of programs offer part-time education to allow students who are changing careers to attend classes and continue to work.

Completing the Application Process

Prospective students are advised to apply to several programs since admission is highly competitive and selection criteria may vary according to the individual institution's philosophy. Applicants should plan carefully to ensure that their previous education and employment experiences enhance their chances for admission. The large majority of PA programs accept applications only through the Central Application Service for Physician Assistants (CASPA), a web-based service of the Physician Assistant Education Association. See the next page for more information.

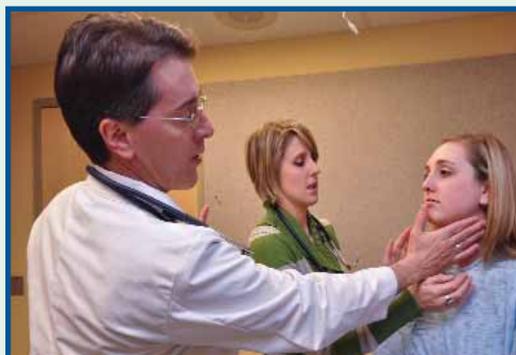


Photographs in this brochure were provided by Stony Brook University, the University of Colorado Denver, the University of Utah, and Wake Forest University.

PA Programs Directory

Choosing the best PA program for you

To obtain a detailed profile of each PA program, the best resource is the PA Programs Directory, available through the PAEA website at www.PAEAonline.org, for \$35 a year. This resource lists useful information, including contact information, admissions deadlines, entrance requirements, curriculum, tuition, and much more for each of the almost 150 accredited programs in the country. The directory's search function allows subscribers to search by tuition level, credential awarded, application deadline, CASPA participation, health experience requirement, and many other criteria. The directory is an essential tool for applicants, counselors, educators, and librarians.



A listing of PA programs and more information about PA education and the profession can be found on the PAEA website at www.PAEAonline.org under Applicants. For more information about PA practice, please visit the American Academy of Physician Assistants' website at www.aapa.org.



Central Application Service for Physician Assistants

Applying to programs has never been easier. You can apply to multiple programs online with one application through the Central Application Service for Physician Assistants (CASPA). Of the nearly 150 accredited PA programs in the country, more than 120 participate in CASPA.



CASPA provides the following benefits to applicants:

- An efficient way to apply to multiple PA programs with a single application
- The ability to enter all basic information just once, using a secure, online, state-of-the-art application
- An easy way to update contact information and program designations through dedicated portals
- Cost-effectiveness: Only a single set of transcripts and references is required
- 24-hour online access to verify and track the status of your application material
- A standard, comprehensive presentation of credentials for each program to which you apply



For more information, visit the CASPA website, www.caspaonline.org, or contact customer service at (617) 612-2080; caspainfo@caspaonline.org. Launched in 2001, CASPA is a web-based application service of the Physician Assistant Education Association (PAEA).

PA FACTS

What Is a PA?

A physician assistant is a graduate of an accredited PA educational program who is nationally certified and authorized by the state to practice medicine with the supervision of a licensed physician. PAs are invaluable members of the healthcare team and work in concert with physicians to ensure the highest quality of care for patients.

To Become a Physician Assistant

ATTEND AN ACCREDITED PA PROGRAM...

- The typical entering student has a bachelor's degree and approximately four years of healthcare experience.
- The average program takes 27 months to complete.

...WITH CLASS/LAB INSTRUCTION

PA students take more than 400 hours in basic sciences (with more than 75 hours in pharmacology) plus approximately 175 hours in behavioral sciences and nearly 580 hours of clinical medicine. Subjects include:

- | | |
|--------------------------------|--------------------------|
| ■ Anatomy | ■ Physical diagnosis |
| ■ Pathology | ■ Differential diagnosis |
| ■ Pharmacology | ■ Pathophysiology |
| ■ Biochemistry | ■ Medical ethics |
| ■ Clinical laboratory sciences | ■ Behavioral sciences |
| ■ Microbiology | ■ Physiology |

...AND CLINICAL ROTATIONS

PAs participate in more than 2,000 hours of clinical rotations, with an emphasis on primary care in ambulatory clinics, physicians' offices and acute/long-term care facilities. Rotations include:

- | | |
|-------------------|-------------------------|
| ■ Family medicine | ■ Emergency medicine |
| ■ General surgery | ■ Obstetrics/gynecology |
| ■ Pediatrics | ■ Internal medicine |
| ■ Psychiatry | |

To Practice as a Physician Assistant

INDIVIDUALS MUST

- Pass a national PA certification exam administered by the National Commission on Certification of Physician Assistants (for graduates of accredited PA programs only).
- Obtain a state license

To Maintain Certification

PA's MUST

- Complete 100 hours of continuing medical education over a two-year cycle.
- Pass a recertification exam every six years.



Where Do PAs Practice?

More than 90,000 certified physician assistants work in virtually every medical and surgical setting across the country. More than one-third (39.4 percent) practice in hospital settings and close to 40 percent work in a group practice or solo physician office. The remaining PAs work in a variety of settings, including community health centers, freestanding surgical facilities, nursing homes, school- or college-based facilities, industrial settings and correctional institutions.

What Can a PA Legally Do?

Physicians may delegate to PAs medical duties that are within the physician's scope of practice, the PA's training and experience and that are allowed by law.

These duties include performing physical examinations, diagnosing and treating illnesses, ordering and interpreting lab tests, assisting in surgery, providing patient education and counseling, and making rounds in nursing homes and hospitals. All states, the District of Columbia, the Commonwealth of the Northern Mariana Islands, and Guam and the U.S. Virgin Islands authorize physicians to delegate prescriptive privileges to the PAs they supervise.

Why Was the Profession Created?

Recognizing that some residents of North Carolina had limited access to quality medical care, the chair of the Department of Medicine at the Duke University Medical Center established a program in 1965 to educate ex-military corpsmen to practice medicine with physician supervision. The educational model for PAs was based in part on his experience with the fast-track training of doctors during World War II. These first students had received extensive healthcare training during their military careers.

What About Reimbursement for Services Provided by PAs?

PAs offer great value to their employers by providing high quality medical and surgical care to patients for which most public and private third party payers reimburse. Services provided by PAs are billed under the PA's name or under the name of the supervising physician, depending on the policies of the individual payer. Most federal and state healthcare reform initiatives recognize and include PAs as vital members of the healthcare team.

And the Quality of PA Care?

Numerous studies have found that the quality of care that PAs provide is comparable to that of physicians. The congressional Office of Technology Assessment studied healthcare services provided by PAs and determined that "physician assistants provide health care that is indistinguishable in quality from care provided by physicians." Additionally, according to a study published in *The American Surgeon* in 2004, PAs "are a valuable adjunct in improving quality of patient care." And PAs provide quality of care comparable to physicians according to a 2009 Rand Report that confirmed the conclusions of two reviews of published studies. A nationwide study published in 2005 also found that, regardless of provider, Medicare patients are generally satisfied with the quality of health care they receive.



PA WORK SETTINGS

Source: AAPA 2010 Annual PA Census

Specialty Physician Groups	29.2%
Solo Physician Practices	11%
Other	10.1%
Certified Rural Health Clinics	2.7%
Federally Qualified and Community Health Centers	5.2%

PAs WORK IN VIRTUALLY EVERY AREA OF MEDICINE AND SURGERY

Source: AAPA 2010 Annual PA Census

General Surgery & Surgical Subspecialties	25.9%
Family Medicine	24.3%
Other	15.7%
General Internal Medicine & IM Subspecialties	15.1%
Emergency Medicine	10.9%
General Pediatrics & Pediatric Subspecialties	3.7%
Ob/Gyn	2.0%
Occupational Medicine	1.9%



Physician Assistant Education



Since the first three PAs graduated from Duke University in 1967, the profession has grown dramatically. In 2009, there are 145 accredited PA programs in the United States, which together graduate more than 5,000 new PAs each year. Federal support has been critical to the development of the profession at several key points.

The continuing growth of the profession looks strong, with more than 20 new programs in the pipeline and a robust applicant pool that has grown by more than 10% each year. Challenges faced by PA programs include recruitment of qualified faculty, shortages of preceptors and clinical sites, and increasing the diversity of faculty and applicants.

PA EDUCATION AT A GLANCE

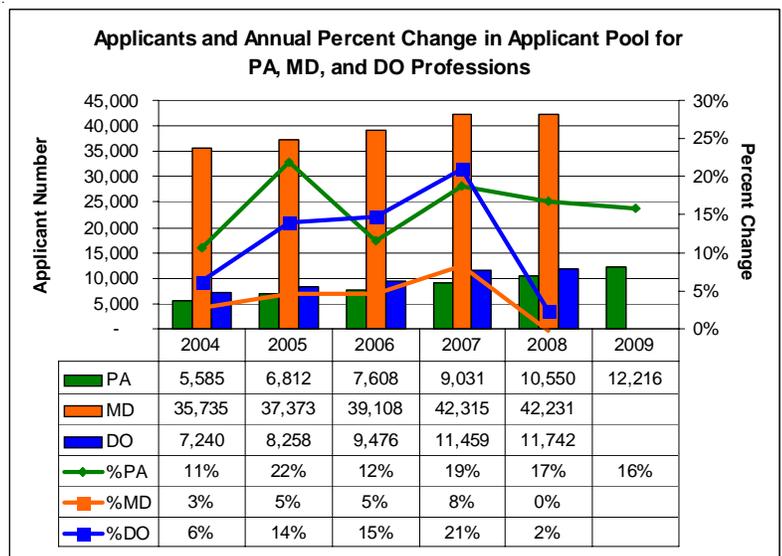
- PAs are educated as generalists in medicine; their flexibility allows them to practice in more than 60 medical and surgical specialties.
- The average PA program is 27 months long: one year of classroom study and 15 months of clinical rotations.
- Curriculum includes 400 hours of basic sciences and nearly 600 hours of clinical medicine
- More than 80% of programs award a master's degree.
- More than 80% of programs are housed at a university or college; 14% in academic health centers.

PA GRADUATES

- PAs are licensed health professionals who practice medicine as members of a team with their supervising physicians.
- PAs exercise autonomy in medical decision making and provide a broad range of medical and therapeutic services to diverse populations in rural and urban settings.
- More than one third of graduates practice in primary care.
- PAs practice in all 50 states and the District of Columbia, and in virtually all health care settings, including hospitals, physicians' offices, HMOs, nursing homes, public health agencies, and community clinics.

THE PA APPLICANT POOL

- Eighty percent of applicants have a baccalaureate degree, most commonly in biology
- Applicants average 3.7 years of health care experience
- Average overall undergraduate GPA is 3.25; average science GPA is 3.13
- Nearly one third of applicants are non-white (31%)
- Mean age of applicants is 26.9 years old
- Three quarters (74%) of applicants are female



The majority of applicants to PA programs apply through the Central Application Service for Physician Assistants (CASPA). Over the past five years, CASPA's applicant pool has grown by an average of more than 15% (see chart). The profession's rapid growth is expected to continue, driven by the projected shortage of physicians and other health care professionals, the growing demand for health care services from an aging population, and the continuing strong applicant pool. The Bureau of Labor Statistics projects a 27% increase in the number of PA jobs over the 10-year period, 2006-2016.

With its relatively short initial training time and the flexibility of generalist-trained PAs, the PA profession is well positioned to help fill projected shortages in the numbers of health care professionals.

PAYING FOR YOUR PHYSICIAN ASSISTANT EDUCATION

The cost of your physician assistant (PA) education varies based on which PA program you elect to attend. Evaluate the cost and start your financial aid research at the same time that you apply to a PA program, including the total expenses for completing the program, such as books, supplies, travel and lodging for rotations, exams, and tuition. You may request this information from the schools you are considering attending. Once you have that information, you need to think about how you will afford your education. PA school is demanding, and you will have limited time (if any) to work while you are attending school.

FUNDING SOURCES

Money from federal loan programs will probably form the foundation of your financial assistance package. Many states also offer financial aid funding. Additionally, there are specialized scholarships, traineeships, and loan programs available.

Remember — apply the resources from scholarships and grants before you accept loans. Then, only accept loans that you need. Work closely with your financial aid department. They will be able to inform you about special loans and scholarships for which you may be eligible.

FEDERAL AND STATE RESOURCES

- Numerous loans and grants guaranteed by the federal government are available to qualified students. Visit the website for [Federal Student Aid](#) sponsored by the U.S. Department of Education.
- State sources of financial assistance include an agency in each state that guarantees federal student loans. Also, some states offer their own educational assistance programs with loans or grants. Check with your financial aid office to locate the office(s) in your home state.
- [Sallie Mae](#)
- [Tax Credits](#) are another option to explore.

LOANS, REPAYMENT PROGRAMS, AND CONSOLIDATION SERVICES

- [Sallie Mae Tuition Pay Plans](#) provide quality, low-cost, innovative solutions to paying for education. Tuition Pay is an interest-free plan that lets you break down the large lump-sum payments due at the beginning of each semester into easy-to-manage installments.
- The [National Health Service Corps \(NHSC\) Loan Repayment Program](#) is available to PAs in primary care or current students who plan to become primary care providers after graduation. You must agree to provide primary care services in a priority health professional shortage area for a minimum of two years.

AAPA CONSTITUENT ORGANIZATIONS SCHOLARSHIPS

- The [Physician Assistant Foundation](#) offers competitive scholarships for PA students who are currently attending an accredited PA program, are in the professional phase of the program, and are student members of AAPA. Visit the Foundation website for a current application.
- [Association of Physician Assistants in Oncology](#) offers a \$2,500 award for PA students. The award consists of two parts: \$500 to help with travel to AAPA's Annual Conference to receive the award and \$2,000 (unrestricted). Apply by March 1st.
- [California Academy of Physician Assistants](#) offers three annual student scholarships for student members. Apply online by December 31.
- [Lesbian, Bisexual, and Gay Physician Assistant Caucus](#) offers \$1,000 grants for two PA students to attend AAPA's Annual Conference to help foster involvement and awareness of the caucus within the AAPA. Apply by January 15.
- [Pennsylvania Society of Physician Assistants](#) has six annual student leadership scholarships and three scholarships for students who choose to enter the writing competition. Apply online by June 30.
- [Physician Assistant Academy of Vermont](#) offers a scholarship of \$1,000 and free attendance at the annual PAAV Winter CME conference for PA students who are residents of Vermont. Apply by June 30.
- [Physician Assistants in Orthopaedic Surgery](#) offers one or two \$500 scholarships from the Susan Lindahl Memorial Scholarship Fund, established to encourage young PA students to enter the field of orthopedics. Apply by August 15.
- The [Society of Army Physician Assistants](#) honors the memory of Captain Sean P. Grimes, through the Captain Sean P. Grimes Physician Assistant Educational Scholarship Award. Apply by February 1st.
- The [AAPA Veterans Caucus Scholarship](#) seeks to recognize the achievements of an outstanding veteran of one of the seven branches of the Uniformed Services who is currently enrolled in a PA program.

SCHOLARSHIPS AND TRAINEESHIPS

- The [United States Navy Health Services Collegiate Program](#) is designed to provide financial incentives for college students in designated health care professions while completing baccalaureate degree requirements.
- The [Indian Health Service](#) scholarship program provides financial assistance for American Indian and Alaskan Native (federally recognized only) students enrolled in health professions and allied health professions programs.
- The [U.S. Army Health Care team](#) offers a three-year loan repayment program for any PA-C who wants to serve as an Army PA.
- [AMERICORPS](#) is a national network of hundreds of programs throughout the United States and is open to U.S. citizens, nationals, or lawful permanent residents aged 17 or older. This program helps pay for education in exchange for a year of service.
- [PAs for Latino Health \(PALH\)](#), a caucus of the AAPA, offers a \$500 scholarship to currently enrolled PA students each year.



Association of Schools and Programs of Public Health

Mission: ASPPH promotes the efforts of schools and programs of public health to improve the health of every person through education, research, and policy. Based upon the belief that “**you’re only as healthy as the world you live in,**” ASPPH works with stakeholders to develop solutions to the most pressing health concerns and provides access to the ongoing initiatives of the schools and programs of public health.

Size of Organization: 32 staff

Number of Member Institutions: 89 Full members and 4 Associate members

New Institutional Members in Last Two Years:

- A.T. Still University School of Health Management
- Brown University School of Public Health
- Claremont Graduate University Master of Public Health Program
- Dartmouth – Geisel School of Medicine MPH Program
- Eastern Virginia Medical School – Old Dominion University MPH Program
- Georgia Regents University MPH Program
- Georgia State University School of Public Health
- Icahn School of Medicine at Mount Sinai, Graduate Program in Public Health
- Indiana University Purdue University Indianapolis Fairbanks School of Public Health
- Indiana University School of Public Health-Bloomington
- Mercer University Master of Public Health Program
- New York Medical College, School of Health Sciences and Practice, and Institute of Public Health
- New York University Global Institute of Public Health
- Northwestern University Feinberg School of Medicine Programs in Public Health
- Oregon MPH Program – Oregon Health & Science University/Portland State University
- St. George's University MPH Program
- Stony Brook University Program in Public Health
- Temple University Department of Public Health
- Thomas Jefferson University, School of Population Health - MPH Program

- Touro University - California MPH Program
- Tufts University School of Medicine, Public Health Program
- Uniformed Services University of the Health Sciences Public Health Program
- Université de Montréal Programme en Santé Publique
- University of California, Davis MPH Program
- University of California, Irvine Program in Public Health
- University of Cincinnati College of Medicine MPH Program
- University of Hawaii, Manoa Public Health Program
- University of Kansas School of Medicine KU-MPH Program
- University of Miami Department of Public Health Sciences
- University of New England Graduate Programs in Public Health
- University of New Mexico Public Health Program
- University of Pennsylvania Master of Public Health Program
- University of Southern California MPH Program
- University of Tennessee Knoxville MPH Program
- University of Texas Medical Branch at Galveston Graduate Program in Public Health
- University of Virginia MPH Program
- Vanderbilt University Institute for Medicine and Public Health
- Washington University in St. Louis MPH Program
- West Virginia University School of Public Health

Total Number of Students: 28,443 in 2011

Total Number of First Year Students: 11,345 in 2011

Total Number of Graduates in Most Recent Academic Year: 9,717 in 2011

Data on Employment Rates of Recent Graduates: See legislative update

Admissions Update

Contact Information and CAS Link:

SOPHAS.org

Allison Foster

afoster@aspgh.org

www.sophas.org

Current Number of Participating Programs Versus Total Member Programs: 64 out of 93 members as of May 2014

Open Period (launch date and last deadline): Approximately September 5 – August 5 (eleven months)

Submission Deadlines: Vary by program but always on the 1st and 15th of every month

Fees: The cost for a SOPHAS application is \$120 for the first school or program you apply to. Any additional schools or programs you choose to apply to will cost \$45 per designation, even if you submit those schools or programs later in the application cycle.

Fee Waivers: SOPHAS grants fee waivers based on financial need. In addition, SOPHAS offers fee waivers to participants of the following programs: PeaceCorps, Americorps, Gates Millennium Scholars, McNair Scholars, Leadership Alliance.

Letters of Reference Delivery Method(s): Electronic entry only. No paper or uploads All Letters of Reference are submitted to [SOPHAS](#) electronically.

Background Check Services if Applicable: N/A

Fall 2013 Matriculates

Number of Applicants, With Data on the Profile of the Pool Including Gender, Race/Ethnicity, Age, Etc.:

In 2012-2013, SOPHAS had 13,733 completed applicants. The applicant pool remains diverse in terms of age, race and ethnicity.

The average SOPHAS applicant is a female, 28 years of age, and a U.S. citizen, though 26 percent of SOPHAS applicants are either permanent residents or foreign citizens. Slightly more than half of U.S. applicants are white; the remaining 46 percent are Asian, Black, American Indian/Alaskan Native, Pacific Islander, Native Hawaiian, Mixed Race or Unknown Race.

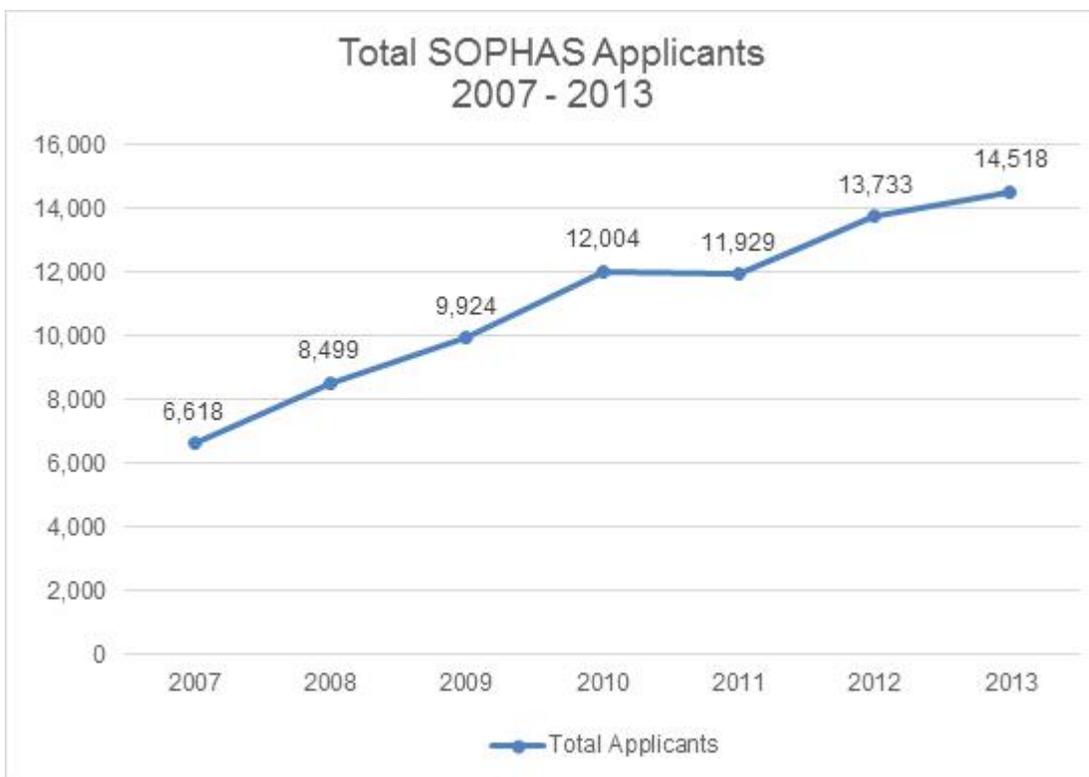
The highest degree earned at the time of application was a bachelor's degree for 73 percent of SOPHAS applicants, masters for 14 percent of applicants, and doctoral for 9 percent of applicants. The average time out of school at the point of applicant was 4 years.

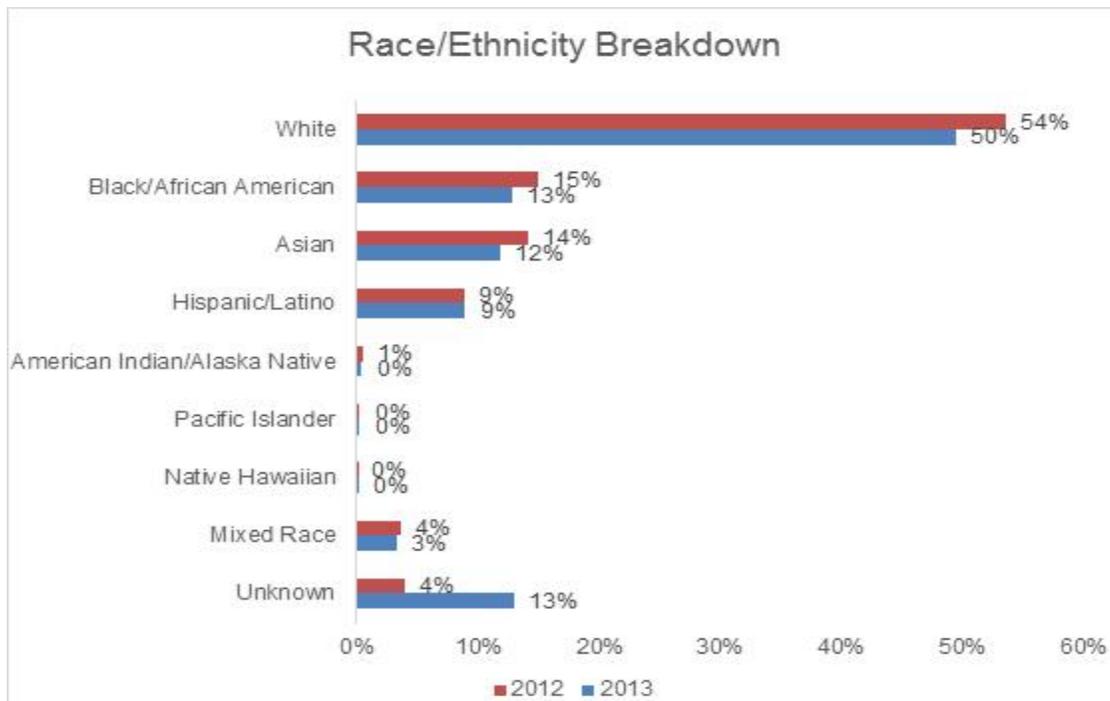
The top feeder schools in 2012-2013 were:

- | | |
|--------------------------------------------|---------------------------------------------|
| Boston University | Emory University |
| University Of Minnesota - Twin Cities | Johns Hopkins University |
| University Of Michigan - Ann Arbor | Columbia University In The City Of New York |
| University Of North Carolina - Chapel Hill | University Of Illinois - Chicago |
| Harvard University | Ohio State University |
| University Of California - Berkeley | George Washington University |
| University Of South Florida - Tampa | Tulane University |
| University Of California - Los Angeles | University Of Georgia |
| University Of Pittsburgh - Pittsburgh | University Of Texas - Austin |
| University Of Florida | New York University |

Profile of the Admitted Applicant Including GPA, Tests Score, Etc.:

In 2013, the average overall GPA for a SOPHAS applicant was 3.37.





Report on Trends (bar graphs): Number of applicants, Age, Gender, Race/ethnicity Not provided

Prerequisites

Academic: Not provided

Standardized Test(s): Not provided

Experience/Exposure: Not provided

Letters of Recommendation: Not provided

Links/Other Resources for Advisors

Public Health Advisor's Toolbox: www.aspph.org/public-health-advisors-toolbox/

Academic Program Finder: www.aspph.org/program-finder/



Common Areas of Study

A degree in public health allows students to concentrate in a variety of different academic and professional areas.

- Behavioral and Social Science
- Biostatistics and Informatics
- Community Health
- Epidemiology
- Environmental Health
- Global Health
- Health Policy and Management
- Health Promotion and Communication
- Maternal and Child Health
- Minority Health and Health Disparities

Degrees

Degrees in public health prepare graduates for the professional and academic challenges of the field, and equip them with the resources to solve and advance them. In addition to traditional in-person degree options, there are many schools and programs that offer nontraditional degree programs. These include certificate programs, online degree programs, executive programs, and summer institutes. The search for an academic program tool provides a complete list of options.

Undergraduate Degrees:

BS, BA, and BSPH

The Bachelor of Science (BS) or a Bachelor of Arts (BA) in public health provides the introductory foundations for a future career in public health. While the degree is offered only at

select public health schools and programs, it allows the undergraduate to receive early and broad training in the field in order to prepare for further study in public health. A BS, BA, and BSPH are not necessary prerequisites to apply for a graduate-level degree in public health.

Graduate Degrees:

MPH, MHA, MS, and MHS

The Master of Public Health (MPH) degree is the most common graduate-level degree awarded by CEPH-accredited schools and programs of public health. The degree is suited for students interested in pursuing a professional career in public health, and is not primarily geared toward teaching or research. Common work environments include hospitals, consulting firms, international agencies, state and federal agencies, health departments, managed care organizations, community-based organizations, among others. Other masters degrees include Master of Health Administration (MHA) which prepares students for careers in hospital administration, health policy, and health service management. As well, Master of Science (MS) and Master of Health Sciences (MHS), are academic degrees oriented toward students wishing to seek a career in teaching or conducting research at a college or university or other settings.

Doctoral Degrees:

PhD, ScD, and DrPH

The Doctor of Philosophy (PhD) degree in public health is designed to prepare the student for a profession in teaching and research. PhDs and Doctor of Science (ScD) in public health continue their careers teaching at a university, conducting research in a national laboratory, or doing field work with populations across the globe. The Doctor of Public Health (DrPH) degree is an advanced graduate-level degree that focuses, like the MPH, on the professional and practical elements of the field, rather than the academic.

Dual Degrees:

Graduate schools and programs offer dual degree programs to meet increasing student demand for specialized educational options. A dual degree program is one in which a student enrolls simultaneously in two graduate programs (usually within the same institution), and works towards two graduate degrees. Some graduate programs come together through a formal agreement to design a way for a student to earn the two degrees (one in each program) in an abbreviated period. At other schools and programs students may design their own joint-degree program. Examples of common dual degrees include:

MPH/MD

Graduates with an MPH/MD can apply their clinical skills with a public health perspective. They may work in a traditional clinical setting or may work in a public health setting whether they can apply their medical knowledge to complex public health issues.

MPH/JD

Graduates with a MPH/JD degree focus on health policy and public health law. They often look at how federal and local laws and regulations impact the public's health.

MPH/MSN (BSN, MS)

Public health nurses comprise the largest sector of the public health workforce. Graduates with a combined MPH/MSN degree work on the front-line of public health managing public health interventions and public health programs.

MPH/MBA

Graduates with an MPH/MBA combine their organizational management and leadership skills which are used in hospital settings, managing health care organizations and non-profits.

MPH/MSW

An MPH dual degree with a Masters of Social Work is geared towards individuals interested in the intersection of social work in the health care system. Often courses are designed to teach students a preventative approach to health and social issues with an emphasis on underserved populations.

MPH/PharmD

Graduates with an MPH/PharmD dual degree are equipped to have special expertise in pharmacology, health promotion, disease prevention, and population health. Students will have advanced knowledge in the treatment of disease, medication safety, and pharmacotherapy.

MPH/DPT

Students with an interest in Public Health and Physical Therapy can pursue a dual degree with an integrated approach to health care. Graduates are able to be more responsive to today's health care needs by training physical therapists to be leaders in prevention, health promotion, and population health.

MPH/MA

The MPH degree can be combined with countless Master of Arts or Master of Science degrees, as well as Master in Public Policy and Master in Program Management. Common MPH/MA

(MS) include International Development, Biomedical Studies, Latin American Studies, and Anthropology.

Continuing Education & Certificates:

Research & Learning Centers

ASPPH plays a leadership role in strengthening the capacity of the public health workforce through its management and support of several federally funded initiatives, including several centers funded by the CDC, including the Preparedness and Emergency Response Learning Centers, Preparedness and Emergency Response Research Centers, Prevention Research Centers, Education and Research Centers, as well as the HRSA-funded Public Health Training Centers.

Delta Omega

The Delta Omega Honors Society supports students and professionals of public health through a well-connected and highly respected community. Founded at Johns Hopkins University in 1924, Delta Omega has 80 chapters worldwide today comprising more than 15,000 members. Every year, Delta Omega inductees include top-achieving graduates and alumni of public health schools and programs.

Fellowships and Internships

Through our fellowship and internship programs, ASPPH has cultivated the professional development of more than 2,000 early-career public health professionals over the past 30 years. These programs offer practice-based, mentored training experiences for students and recent graduates of ASPPH member, CEPH-accredited schools and programs of public health.

Certified in Public Health

The Certified in Public Health (CPH) credential allows graduates and professionals to continue their training in public health and ensure mastery in the competencies of the field. The CPH credential is voluntary for public health professionals and establishes expertise in the most current topics in the field. The CPH credentialing process comprises the CPH exam and a subsequent bi-annual recertification process. The National Board of Public Health Examiners is the independent organization tasked with administering the CPH exam and ensuring the programs and students remain credentialed and properly accredited.

National Board of Public Health Examiners



10 Things to know before you apply

1. Public health is distinct from other clinical professions.

Clinical professions, such as medicine and nursing, primarily focus on treating individuals after they have become ill. Public health focuses on prevention, rather than treatment. By doing so, it has a great impact on the health of both individuals and populations. Understanding the differences between public health and the clinical health professions will be an important first step before deciding to embark on a public health education.

2. Students can begin their public health education as undergraduates.

Many CEPH-accredited schools and programs offer undergraduate degrees in public health. Studying public health as an undergraduate can prepare the student for further education and potential career growth in the field. If you are applying to college and are interested in public health, see our schools and programs database for a complete list of CEPH-accredited institutions that offer undergraduate public health education. An undergraduate public health degree is not necessary for graduate study in the field and students of public health come from a variety of educational backgrounds.

3. Many undergraduate degrees can translate into academic careers in public health.

Students of public health come from a variety of educational backgrounds. Some undergraduate degrees, however, may be beneficial when applying to a graduate school of public health. If you are interested in epidemiology or biostatistics, a math or science major may provide a strong foundation off which to build. For behavioral sciences or health education, consider sociology, anthropology, or psychology as majors. Other public health fields lend themselves to business and social science. All schools of public health, though, require competence in effective communication. Make sure your major allows you to hone your verbal and written skills.

4. CEPH-accredited schools and programs offer a wide variety of concentrations.

While all accredited public health schools and programs offer the five core areas of study, many offer additional concentrations. These concentrations vary across institutions, but the following are commonly offered: Community Health, Maternal and Child Health, Health Communication and Promotion, Minority Health and Health Disparities, and Global Health.

5. Public health schools and programs require a number of entrance requirements for application.

While schools and programs of public health look for high graduate entrance exam scores and GPA, other aspects of an applicant's record, such as a career achievement, professional experience and clarity of career goals, are equally important. Admissions decisions are based on an overall assessment of the ability of applicants to successfully complete the degree track area selected. Each program or track within a given department may set additional requirements for admission. Applicants should refer to the individual programs for details.

6. Public health academic programs offer off-campus and online programs—both non-degree and degree granting.

Schools and programs of public health offer a variety of programs via distance-based technology. ASPPH also houses a search feature for distance learning programs to help students find their ideal program. In addition, there are many schools and programs that offer non-traditional degree options such as:

- Executive programs: Designed for public health professionals already working in the field. With flexible timing and nighttime options, many professionals find executive programs a convenient and versatile way to advance their public health education.
- Certificate programs: A complementary component to public health education, these programs are often focused around specific topics in public health and are generally open to non-degree students interested in establishing competency in a specialized area of the field. They can usually be completed part time and require fewer credits than degree programs.
- Summer institutes: These institutes are highly focused programs that explore specific areas of public health. Some of these institutes offer academic credit, and most are centered around a relevant theme that is explored for at least a few weeks in the summer.

7. All institutions accept international students and students should be aware of language-related application components before applying.

International students are encouraged to confirm with individual schools to see if they require specific application materials, but almost all international public health applicants are required to submit the TOEFL, which measures English-language competency. While international applicants are encouraged to have somebody they trust review their essays and application, they must never have the person write the essay for them. SOPHAS provides useful guidelines on how to avoid plagiarism—or the act of using somebody else’s words, writing, or ideas as your own—in your application.

8. To learn more about public health, students are encouraged to get practical and professional public health experience before applying.

There are many options for individuals looking to get experience before applying to a school of public health.

- Working part-time or full-time at a hospital or health clinic.
- Volunteering for a non-profit direct services organization, such as a health clinic or a local chapter of the American Red Cross.
- Working for a non-profit organization that is directly involved in public health advocacy and policy.
- Working or volunteering for a local health department.
- Exploring options provided by public service organizations such as www.peacecorps.org, www.americorps.org, www.idealists.org, www.teachforamerica.org or Path Internship.

9. There are many ways you can familiarize yourself with the field and to network with practitioners.

The public health field holds hundreds of professional and academic conferences across the country, and many of those are open to undergraduate students. Before applying to a graduate program in public health, undergraduates are encouraged to visit one of these conferences where they can familiarize themselves with latest research in the field, network with accomplished public health professionals, and get a taste for how the field is evolving before deciding whether

or not to commit to advanced graduate education in public health. See our events calendar for related conferences of interest.

10. Graduates of CEPH-accredited schools and programs of public health have successful careers in a variety of fields.

Because public health is interdisciplinary and relates to a wide spectrum of health-related global challenges, graduates find work in a number of areas after they graduate. Many graduates will establish their careers in a hospital or health care provider setting, while others will work for federal and local governments, as well as university settings. In addition to these main places of employment, some public health graduates may work at a non-profit organization or at a pharmaceutical company. Within these job settings, public health graduates may be involved in research, policy advocacy, educational programming, or global disease prevention efforts.

Physical Therapy Occupational Therapy



American Physical Therapy Association

Mission: The mission of the American Physical Therapy Association (APTA), the principal membership organization representing and promoting the profession of physical therapy, is to further the profession's role in the prevention, diagnosis, and treatment of movement dysfunctions and the enhancement of the physical health and functional abilities of members of the public.

Vision: Transforming society by optimizing movement to improve the human experience.

Size of Organization:

- As of 2013, there are over 80,000 physical therapist (PT), physical therapist assistant (PTA), and student members. There are an estimated 175,000 PTs and 63,000 PTAs in the United States.
- APTA employs 185 staff across seven Units: Office of the CEO, Communications and Marketing, Education, Finance and Business Development, Governance and Administration, Member Relations, and Public Policy, Practice, and Professional Affairs.
- The Chief Executive Officer, Michael Bowers, has oversight responsibility for operations and personnel of APTA headquarters, including its subsidiary corporations. The CEO reports to the APTA Board of Directors and is responsible for providing leadership regarding the internal and external activities of the Association's staff.
- Under the leadership of President Paul Rockar, PT, DPT, MS, a 15-member elected Board of Directors is responsible for ensuring that the positions, policies, and guidelines of the APTA House of Delegates (governing body) consisting of elected members are implemented.

Number of Member Institutions: APTA does not have member institutions. The following new DPT programs have admitted at least one class of students and have been granted Candidate for Accreditation status by the Commission on Accreditation in Physical Therapy Education, as of

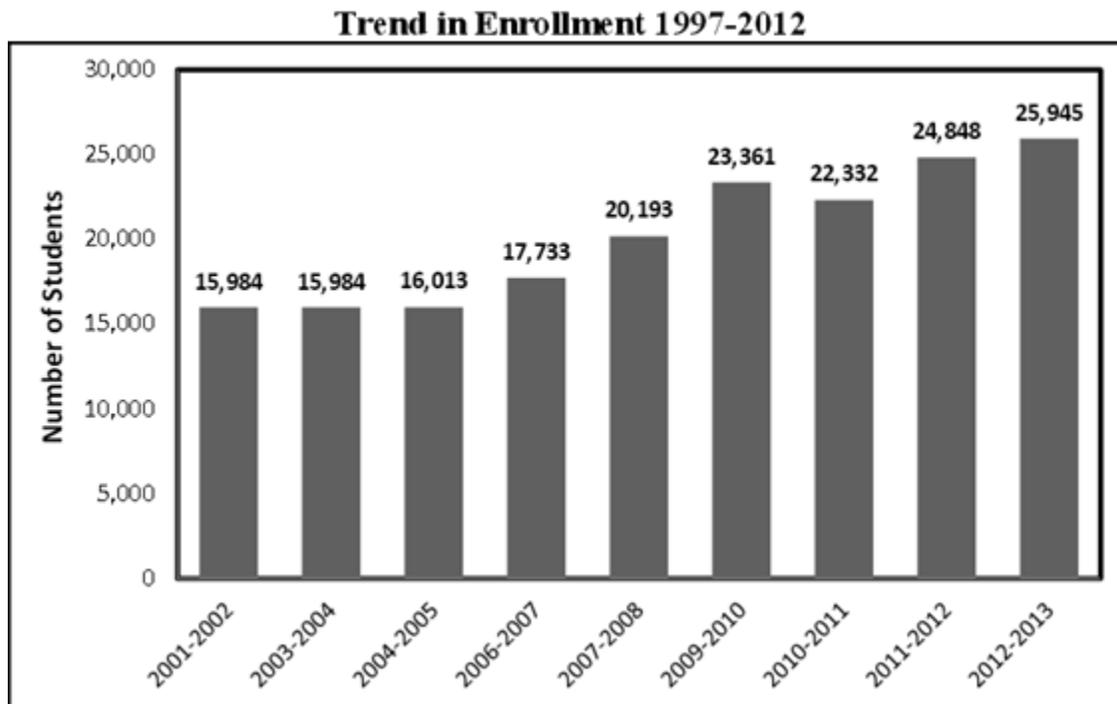
<http://naahp.org/MemberResources/HealthProfessionsUpdates/APTAHealthProfessionsUpdates.aspx#4889164-linksother-resources-for-advisors>

May 1, 2014. Candidacy status indicates that a program is making satisfactory progress toward compliance with accreditation criteria, but it does not assure that a program will achieve accreditation.

New Institutional Members in Last Two Years:

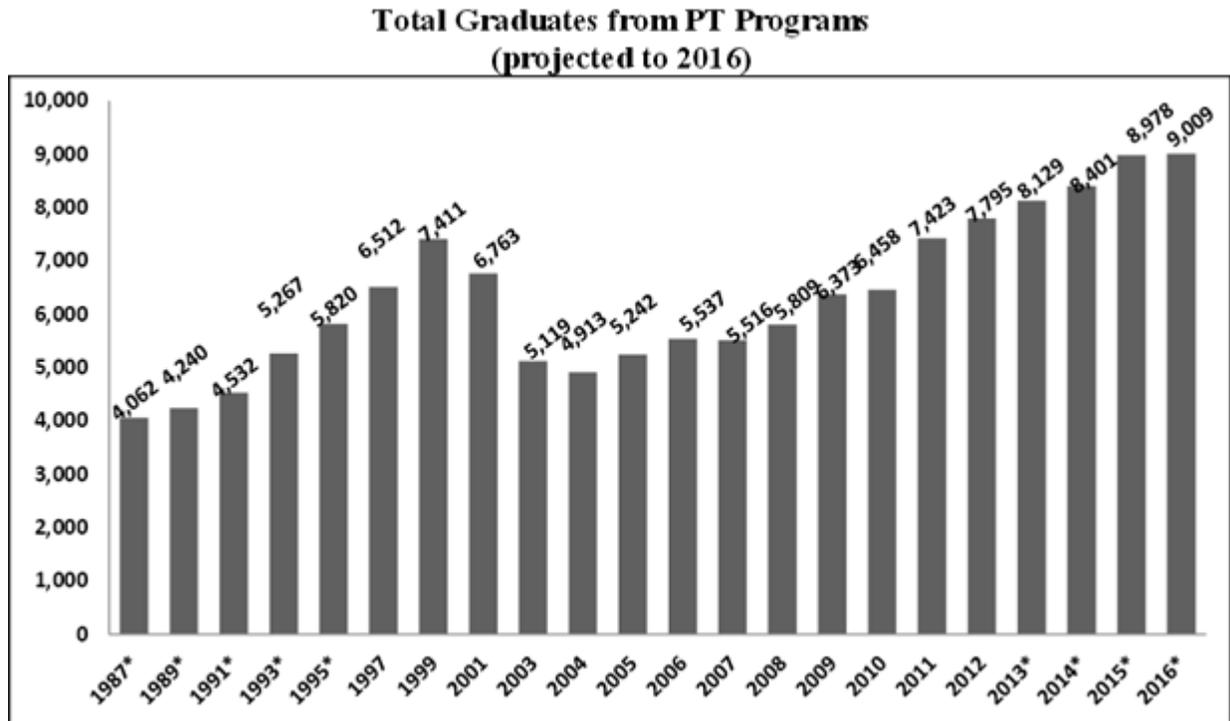
- George Fox University
- Harding University
- Marshall University
- Mary Baldwin College
- MCPHS University
- Radford University
- San Diego State University
- University of Jamestown
- University of Saint Mary
- University of the Incarnate Word
- West Coast University
- Western Kentucky University
- Wingate University

Total Number of Students:



Total Number of First Year Students: Not provided

Total Number of Graduates in Most Recent Academic Year:



Admissions Update:

Contact Information and CAS Link:

[PTCAS Contact Information](#)

Physical Therapist Centralized Application Service (PTCAS)

PO Box 9112

Watertown, MA 02471

ptcasinfo@ptcas.org

617-612-2040

www.ptcas.org

Advisor portal:

Members of the National Association of Advisors for the Health Professions (NAAHP) or individuals authorized by a DPT program participating in PTCAS can request an account for the online PTCAS Advisor Portal. The Portal allows advisors to view PTCAS application data for applicants who:

1. Marked the advisor’s institution as their primary college attended

<http://naahp.org/MemberResources/HealthProfessionsUpdates/APTAHealthProfessionsUpdates.aspx#4889164-linksother-resources-for-advisors>

2. Gave PTCAS permission to release this information to their advisors

Contact kowen@liaison-intl.com for more information.

- [Click here](#) for the 2013-14 PTCAS Advisor Portal
- [Click here](#) for the 2014-15 PTCAS Advisor Portal

Current Number of Participating Programs Versus Total Member Programs: 176 out of 218 DPT programs

Open Period (launch date and last deadline): July 1, 2014 – May 15, 2015

Submission Deadlines:

• October 1, 2014	• December 15, 2014	• March 16, 2015
• October 15, 2014	• January 15, 2015	• April 1, 2015
• November 3, 2014	• February 2, 2015	• April 15, 2015
• November 17, 2014	• February 16, 2015	• May 1, 2015
• December 1, 2014	• March 2, 2015	• May 15, 2015

Applicant Code of Conduct or Required Institutional Certification or Statement:

I certify, as required in the application, that I have read and understand all application instructions, including the provisions which note that I am responsible for monitoring and ensuring the progress of my application.

I certify that I have read and will abide by all program-specific instructions for my designated physical therapist programs.

I certify that all the information and statements I have provided in this application are current, correct, and complete to the best of my knowledge.

I certify that my personal essay and the information on my application represent my own work.

I understand that withholding information requested on the PTCAS application, or giving false information, may be grounds for denial of admission to a PT program participating in PTCAS or may be grounds for expulsion from the institution after I have been admitted.

I agree, understand and consent to PTCAS and the American Physical Therapy Association (APTA) releasing my de-identified application data that does not contain personally identifiable information, as set forth in the PTCAS privacy statement, and admission decisions submitted to

<http://naahp.org/MemberResources/HealthProfessionsUpdates/APTAHealthProfessionsUpdates.aspx#4889164-links-other-resources-for-advisors>

PTCAS by my designated PT programs to third party health and education organizations for educational research purposes (including surveys). Such educational research is conducted for the purpose of improving PT education and admissions.

I acknowledge and agree that my sole remedy in the event of any proven errors or omissions related to the handling or processing of my application by PTCAS is to obtain a refund of my PTCAS application fee.

Fees: \$140 to apply to one program, \$40 for each additional program

Fee Waivers: A limited number of PTCAS application fee waivers are available. Waivers are granted to financially disadvantaged applicants on a first-come, first-serve basis. PTCAS determines whether applicants qualify for a fee waiver based on their income, or parent's income, if they are claimed as a dependent, as reported on the most recent Federal Income Tax Return. No other documentation is accepted. If a fee waiver is granted, applicants may apply to one PT program in PTCAS for free and pay a fee of \$40 for each additional designation.

Letters of Reference Delivery Method(s): Beginning with the 2014-15 admissions cycle all references must be submitted electronically via PTCAS. PTCAS will not accept paper references or uploaded references in other formats, such as PDF. DPT programs can still choose to accept paper references directly from applicants, if needed. Not all DPT programs require references. Program-specific reference requirements are available on the PTCAS website at www.ptcas.org/ProgramPrereqs/

Background Check Services if Applicable:

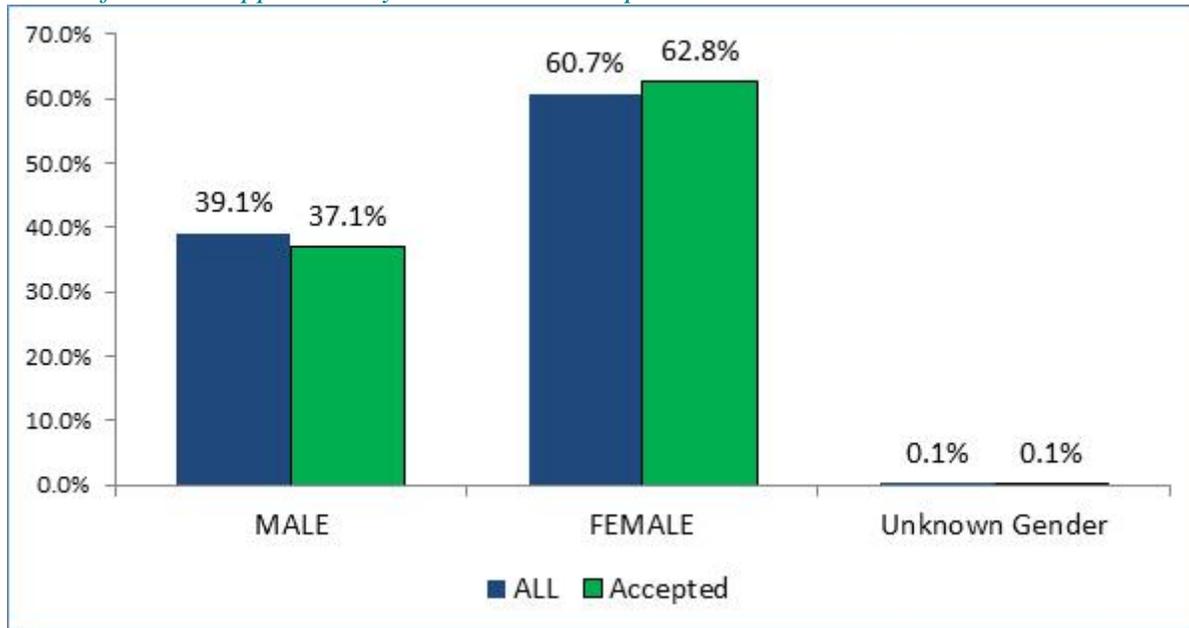
DPT programs can opt to use the PTCAS criminal background check process administered by Certiphi Screening. Applicants who accept offers of admissions from participating program will be prompted to complete the background check process and pay a flat \$72 fee. Information about the background check and list of participating PT programs is available on the PTCAS website.

Fall 2013 Matriculates

Number of Applicants, With Data on the Profile of the Pool Including Gender, Race/Ethnicity, Age, Etc.:

<http://naahp.org/MemberResources/HealthProfessionsUpdates/APTAHealthProfessionsUpdates.aspx#4889164-linksother-resources-for-advisors>

Percent of PTCAS Applicants by Gender and Acceptance Status

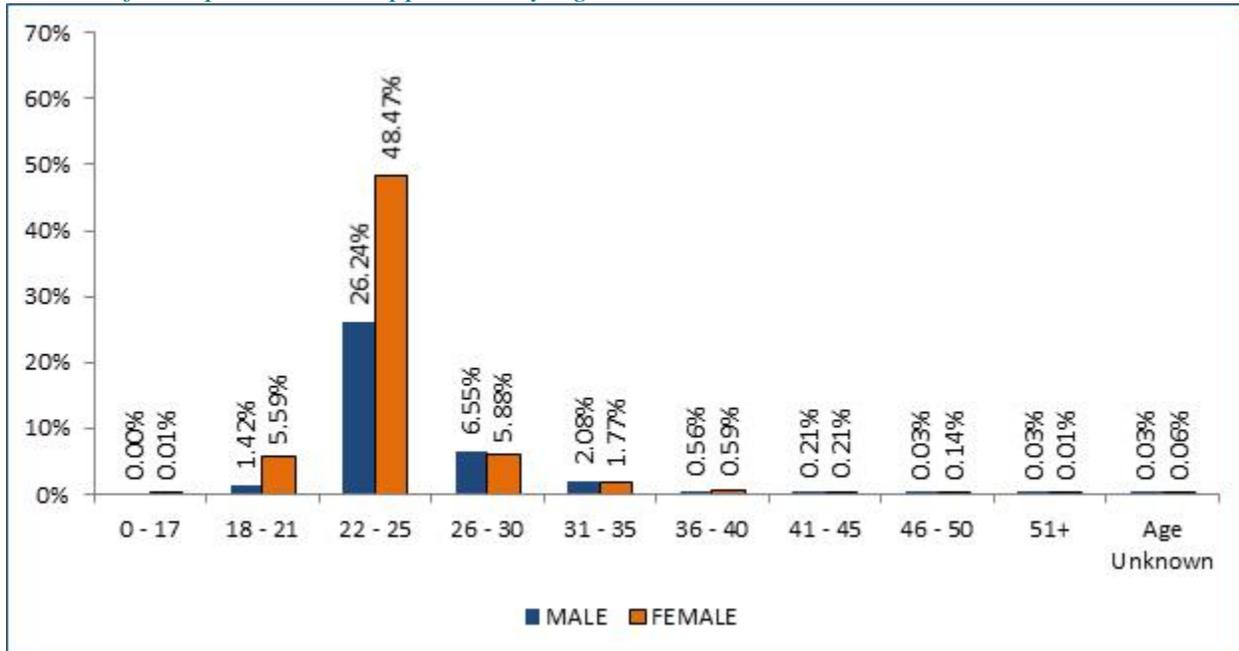


* The percentages in the graph above were calculated based on the total number of applicants in each pool (n=15,616 for all PTCAS applicants; n=7,177 for accepted PTCAS applicants). Applicants who declined to report gender on the PTCAS application are reported in the graph as “Gender Unknown”. The graph only reflects acceptances made by PTCAS programs.

PTCAS Applicants per Program

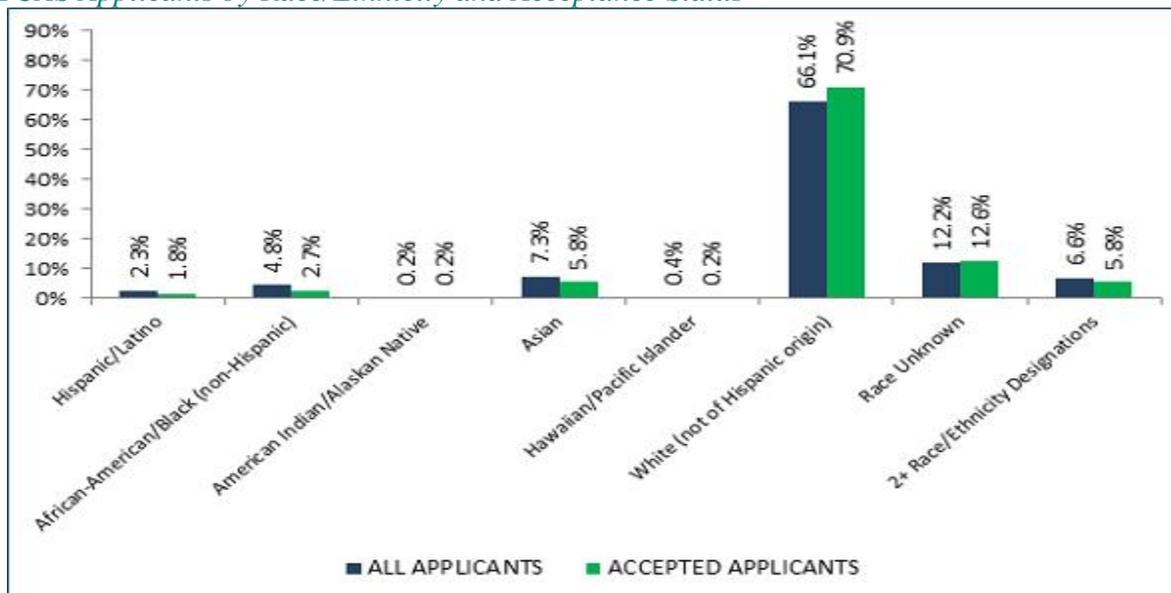
	# of PTCAS Applications Per Program: 2013-14 Cycle <i>(as of May 2, 2014)/</i>
MEAN	574
MEDIAN	502
RANGE	151 TO 1682

Percent of Accepted PTCAS Applicants by Age and Gender



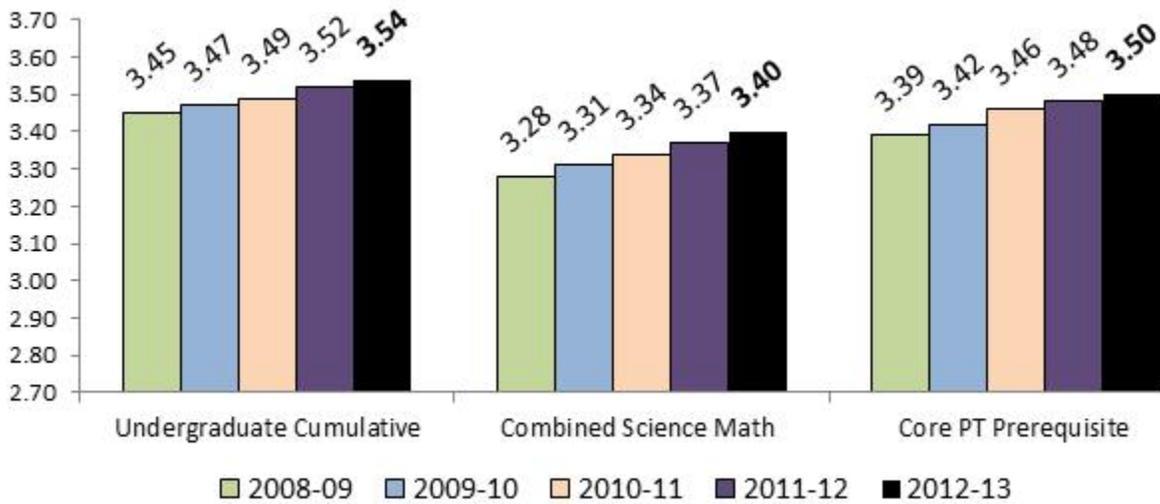
* The percentages in the graph above were calculated based on the total number of accepted applicants in the 2012-13 pool (n=7,177 accepted PTCAS applicants). Applicants who declined to report a date of birth on the PTCAS application are reported in the graph as “Age Unknown”. Applicants who declined to report a gender are not represented in this graph. The graph only reflects acceptances made by PTCAS programs.

PTCAS Applicants by Race/Ethnicity and Acceptance Status

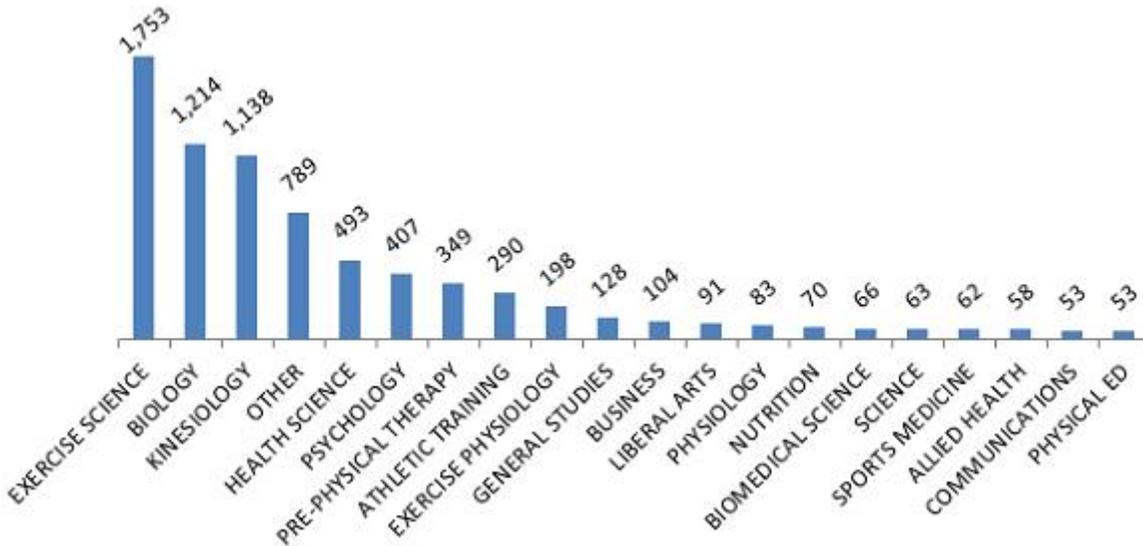


Profile of the Admitted Applicant Including GPA, Tests Score, Etc.:

Mean GPAs for ACCEPTED PTCAS Applicants by Cycle



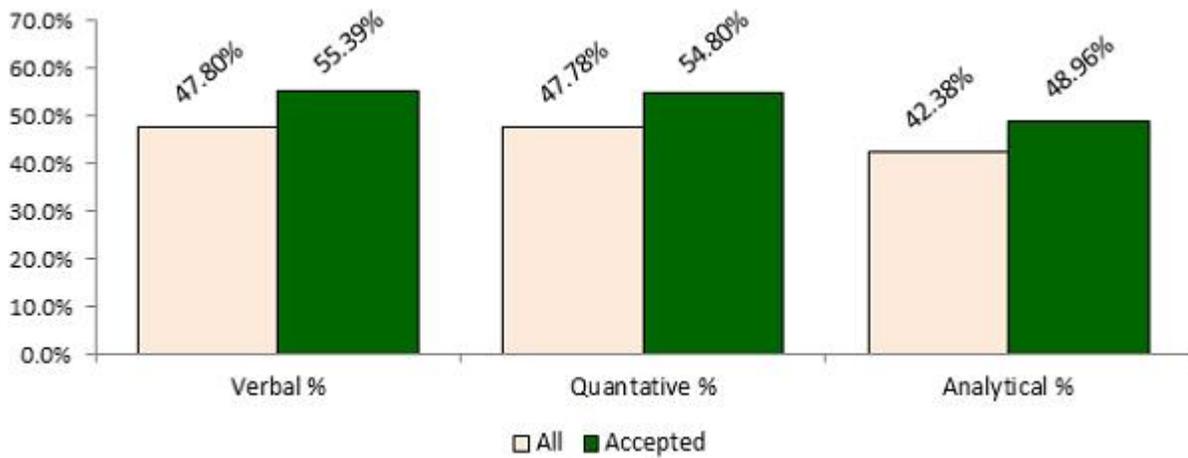
Most Identified Majors for Accepted PTCAS Applicants



Prerequisite Information

* Some applicants in PTCAS designated multiple majors or minors. Graph above includes information based on all majors designated. MAJOR categories are not mutually exclusive. If an applicant enters the same MAJOR for multiple colleges and/or degrees, the MAJOR will be counted as many times as it is listed.

Mean Unofficial GRE Scores for All and Accepted PTCAS Applicants



The graph above represents applicant-reported Graduate Record Examination (GRE®) percentile scores on the PTCAS application only and do not reflect official GRE score reports from the Educational Testing Service (ETS). The percentiles include unofficial percentile scores for both the GRE® General Test (available through July 2011) and the GRE® Revised General Test (released in August 2011). The mean percentiles reflect the scores for all GRE test-takers for all graduate programs across the U.S., as entered by PTCAS applicants from their personal score reports. If multiple unofficial GRE scores were entered by the applicant on the application, only the data for the most recent test date are included in the mean calculation. Applicants without unofficial GRE scores entered on the application are excluded from the table, regardless of whether official GRE scores were received by PTCAS. PTCAS does not verify that applicant-reported GRE scores are accurate or match official GRE scores from ETS.

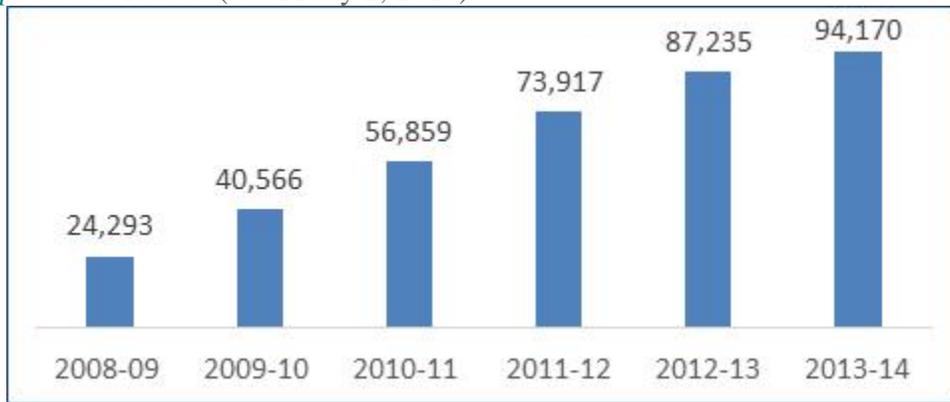
Report on Trends (bar graphs): Number of applicants, Age, Gender, Race/ethnicity

PTCAS Program, Applicant, and Application Trends

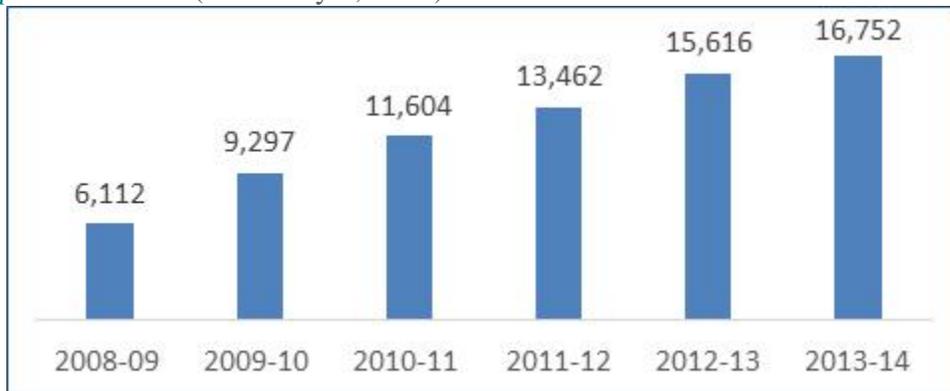
Cycle	# of Participating Programs	Total # of Mailed PTCAS Applications	Total # of Mailed PTCAS Applicants	Applications to Applicant Ratio
2008-09	72	24,293	6,112	4.0
2009-10	107	40,566	9,297	4.4
2010-11	128	56,859	11,604	4.9

2011-12	146	73,917	13,462	5.5
2012-13	160	87,235	15,616	5.6

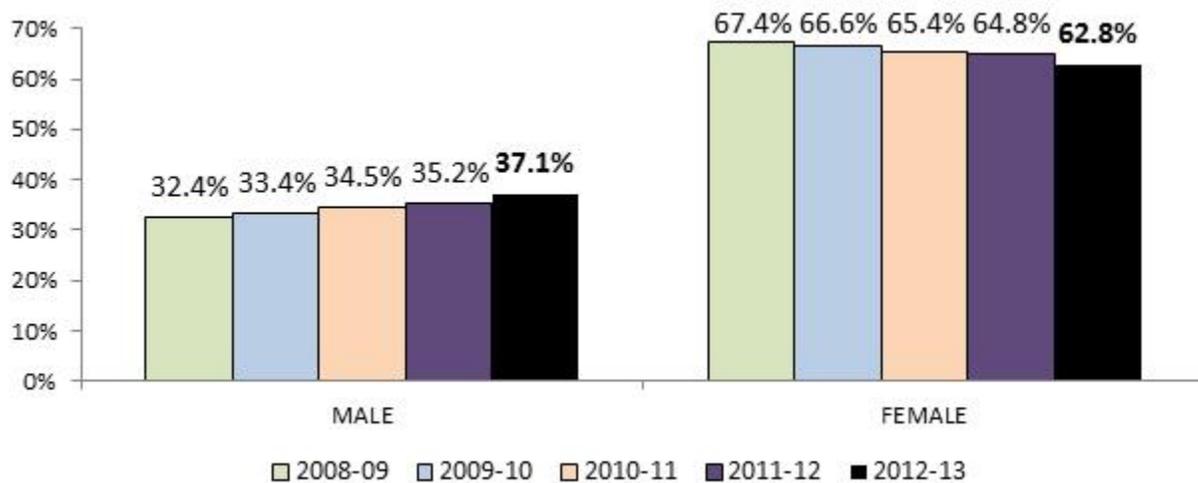
PTCAS Application Trends (as of May 2, 2014)



PTCAS Applicant Trends (as of May 2, 2014)



Percent of Accepted PTCAS Applicants by Gender per Cycle



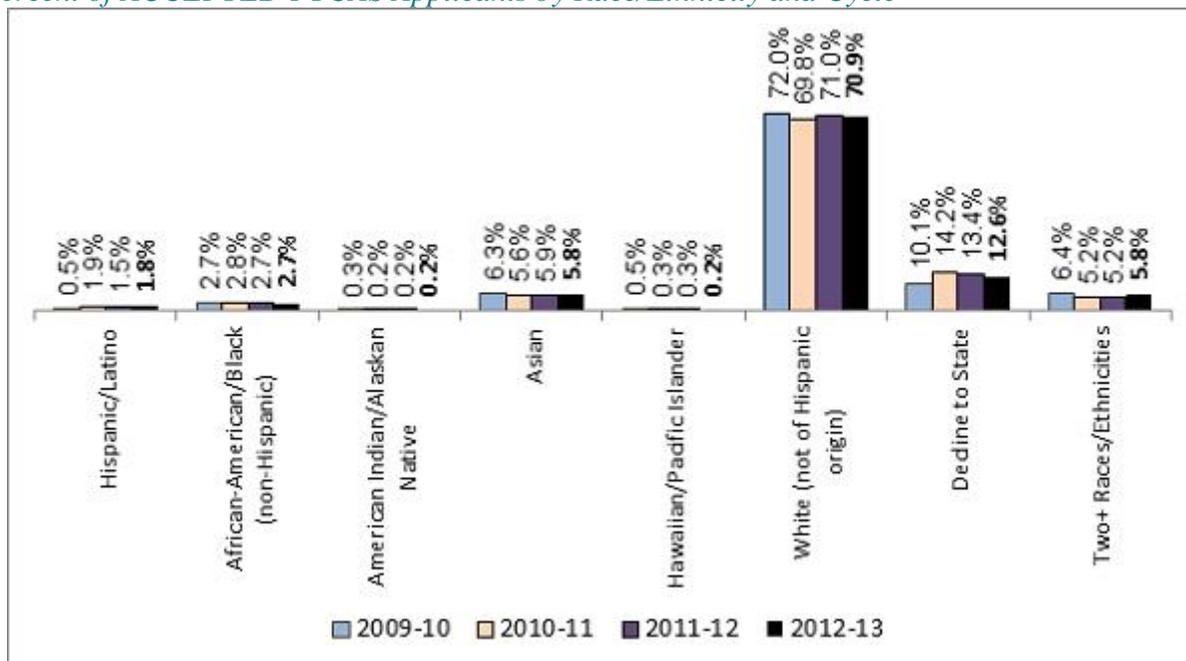
All applicants:

(n=6,112 in 2008-09; n=9,297 in 2009-10; n=11,691 in 2010-11; n=13,462 in 2011-12, n=15,616 in 2012-13).

Accepted applicants:

(n=3,197 in 2008-09; n=5,748 in 2009-10; n=5,943 in 2010-11; n=6,684 in 2011-12, n=7,177 in 2012-13).

Percent of ACCEPTED PTCAS Applicants by Race/Ethnicity and Cycle



* Percentages in the graph above were calculated based on the total number of ACCEPTED PTCAS applicants in the pool (n=5,748 in 2009-10, n=5,943 in 2010-11, n=6,684 in 2011-12, and n=7,177 in 2012-13). Each applicant is represented in only one category. The “other” racial and ethnic category is omitted because it was removed in the 2010-11 PTCAS cycle to comply with the reporting requirements of the U.S. Department of Education

Prerequisites

Academic: *Course Prerequisites:* The course prerequisites for admission vary significantly across DPT education programs. Visit the institutional website or the PTCAS directory to determine what courses are required by each institution. DPT programs may require science

courses to be completed in a 4-year university within 7-10 years prior to enrollment. The most commonly required course prerequisites are below:

- Anatomy / A&P 1 with lab*
- Physiology / A&P 2 with lab*
- Biology 1 (not botany or zoology)
- Biology 2 (not botany or zoology)
- General Chemistry 1 with lab
- General Chemistry 2 with lab
- General Physics 1 with lab
- General Physics 2 with lab
- Psychology
- Statistics

* Some PT programs only accept anatomy and/or physiology courses completed in a biology, neuroscience, anatomy, or integrated physiology department. DPT programs may not accept a combined anatomy and physiology (A&P) course or those completed in other departments, such as kinesiology. See also the PTCAS directory and the Course Prerequisites Summary table at www.ptcas.org/ProgramPrereqs/

Standardized Test(s): The majority of DPT education programs require the Graduate Record Examination (GRE) for admission. Applicants must use the correct GRE code for each designated program. The GRE code for the DPT program may differ from the one for the main university. Visit the TESTS section of the PTCAS website for more information and list of GRE codes. Go to www.ptcas.org/Tests/

Experience/Exposure: *Physical Therapy Volunteer Experiences:*

Many DPT programs require applicants to have a certain number of volunteer or paid physical therapy experiences working with patients under the supervision of a licensed physical therapist. The program may specify the settings and types of experiences required. Applicants may also be required to have a licensed physical therapist verify the hours. This experience may be an important factor in the admissions process. See also www.ptcas.org/PTHours/

Letters of Recommendation: Most programs require 2-3 letters of recommendation. Typically, one reference is required from a licensed physical therapist and a professor. Most programs do not have a policy regarding acceptance of committee or composite letters, also known as letter packets. Beginning in the 2014-15 cycle, PTCAS will no longer accept paper references. A summary of reference requirements are available on the PTCAS website at www.ptcas.org/References/

Technical Standards and Essential Functions: APTA has not adopted any policies or positions regarding the essential skills or technical standards necessary to practice or function as a physical therapist. However, individual DPT programs generally do have these types of policies in place. A program's technical standards and/or essential skills document may describe the physical, behavioral, and/or cognitive abilities needed to complete the physical therapist curriculum at that particular institution and to competently perform as a physical therapist upon graduation. Contact DPT programs directly regarding program-specific policies.

Resource

APTA Prospective Student Resources: www.apta.org/ProspectiveStudents/



Doctor of Physical Therapy (DPT) Program at CSULB

Applicants must, first meet the University's academic standards as well as:

1. Hold, or be eligible to hold, an acceptable Bachelor's Degree in any field.
2. Have attained an overall grade point average of at least 3.0 (A=4.0) with at least 2.5 in the last 60 semester (90quarter) units attempted.
3. Have successfully completed all prerequisites with at least a "C" in each course and an overall GPA of at least 3.0 by the end of the fall semester prior to the year of admission to the program.
4. A cumulative GPA of at least 3.0 and a prerequisite GPA of at least 3.0.
5. Only 2 classes may be in progress during the fall semester of application.
6. Have been in good academic, professional, and clinical standing at the last institution and if applicable in the last entry-level physical therapist educational program attended.
7. Complete and file an application to the program through ptcas.org which must include:
 - Official transcripts of all academic work attempted,
 - 3 letters of recommendation, attesting to your potential for success as a physical therapist and/or your scholarly potential. We recommend one from each of the following:
 1. a physical therapist with whom you have had a professional association,
 2. a professor for a prerequisite course which you completed,
 3. if previously employed, an employer,
 4. if not previously employed, a physical therapist with whom you have had a professional association.
 - A written statement of purpose reflecting your commitment to physical therapy.
 - Documentation of knowledge of physical therapy through a minimum of 100 documented experience hours of related paid/volunteer experience under the direct supervision of a licenced physical therapist. We strongly recommend that the hours should be in different areas of physical therapy. For example:
 - Rehabilitation
 - Geriatric
 - Pediatric
 - Acute or General Hospital

A minimum of 100 hours is required.

- Official scores from the General Aptitude Portion of the GRE taken within the last 5 years with an earned score of 4.0 or better on the Analytical Writing component.
- 8. Complete and file a university application for admission through csumentor.org.
- 9. Submit the signed [*Essential Functions*](#) document after acceptance into the physical therapy program.
 1. Physical therapy education requires that accumulation of scientific knowledge be accompanied by the simultaneous acquisition of skills, behaviors, and professional attitudes. In order to acquire the knowledge and skills for function in a broad variety of clinical situations, and to render a wide spectrum of patient care, students entering in the Physical Therapy Program must have abilities and skills in the following five areas:
 - observation
 - communication
 - kinesthetic/motor
 - cognitive/conceptual
 - behavioral/social.

Technological compensation can be made for some disabilities in some of these areas, but a candidate must be able to perform in a reasonably independent manner.

2. The [*Essential Functions*](#) document attests that you can perform the essential functions required of physical therapy education and clinical practice.

Technical literacy in using word processing, spreadsheets and slide presentation programs (e.g. powerpoint) is expected for all students accepted into the program.

Admission shall be granted on a competitive basis; meeting admission requirements qualifies an individual for, but does not guarantee, admission to the program.

Prerequisite Courses:

- Human Anatomy with lab (4 units)
- Human Physiology with lab (4 units)
 - Note: If human anatomy and physiology are combined, the coursework must be a 2 semester (8 units) sequence. 2 semesters of General Biology with lab (8 units)
- 2 semesters of General Chemistry with labs (8 units)
- 2 semesters of General Physics with lab (8 units)
- Statistics (3 units)
- General Psychology (3 units)



American Physical Therapy Association™

[Home](#) > [For Prospective Students](#) > [Admissions](#) > Physical Therapist (PT) Admissions Process

Physical Therapist (PT) Admissions Process

Getting Started

The [Physical Therapist Centralized Application Service \(PTCAS\)](#) allows PT applicants to use a single web-based application and one set of materials to apply to multiple PT education programs. PTCAS is a service of APTA and administered by Liaison International (LI), an education technology company in Watertown, Massachusetts. The purpose is to facilitate the admissions process for applicants and programs, promote the physical therapist profession and educational programs to a broad spectrum of applicants, and provide rich applicant data for institutional, regional, and national analysis.

A list of participating programs and instructions are available on the [PTCAS website](#). Not all professional PT education programs participate in PTCAS. Applicants who wish to apply to a NON-participating PTCAS program must apply directly to the institution using the PT program's local application.

Preparing for the Admissions Process

- [Research](#) PT programs to determine the ones that may best meet your educational needs.
- Determine if you are first required to have a bachelor's degree by filtering the [CAPTE directory](#) (use key code A4).
- Complete [course prerequisites](#) for your designated programs.
- Obtain [physical therapy experience](#) and have your hours verified by a PT, if required by your designated programs.
- Take the [Graduate Record Examination \(GRE\)](#) at least 6 weeks before the application deadline. (Freshmen-entry students may be required to submit SAT or ACT scores).
- Request [references](#) from appropriate individuals, if required by your designated programs.
- Arrange for official [transcripts](#) from every college/university attended to be sent to PTCAS or the institution, as required by the programs.
- Submit the completed application EARLY and before the program's [deadline](#) date. Some programs use a rolling admissions process.
- PTCAS applicants should also review the [PTCAS checklist](#).

College Major

You are not required to select a particular major in order to be eligible for admission to a PT program. The most common undergraduate majors among PT students include exercise science, biology, kinesiology, and psychology. In selecting a college major, consider how you will satisfactorily complete the prerequisite courses for your designated physical therapist programs in addition to the college/university's degree and major requirements. Work with your academic and/or prePT advisor to plan your course schedule. For additional information about college majors for the most recent applicant pool, review the [PTCAS Applicant Data Report](#).

College Course Prerequisites

The [course prerequisites](#) for admission vary significantly across PT education programs. Visit the institutional website or the PTCAS [directory](#) to determine what courses are required by each institution. PT programs may require preprofessional (pre-PT/undergraduate) science courses to be completed in a 4-year university/college within the 7-10 years prior to enrollment. Be prepared to identify what classes you have taken (or will take) to fulfill the program's [course requirements](#). The most commonly required course prerequisites are below:

- Anatomy and Physiology I / Anatomy *
- Anatomy and Physiology II / Physiology *
- Biology I and II
- Advanced Biology (eg, cell, embryology, genetics, histology, immunology, microbiology, molecular)
- Chemistry I and II
- Physics I and II
- Psychology
- Advanced Psychology (eg, abnormal, developmental, rehabilitation, sports)
- Statistics
- English Composition

* Some PT programs only accept anatomy and/or physiology courses completed in a biology, neuroscience, anatomy, or integrated physiology department. PT programs may not accept a combined anatomy and physiology (A&P) course or those completed in other departments, such as kinesiology. Visit the PTCAS [directory](#) to determine what type of anatomy and physiology courses are required for admission.

Other Admission Requirements

Visit each program's site, the [CAPTE](#) database of accredited programs, and the PTCAS [directory](#) for program-specific admission requirements.

Minimum GPA - Most PT programs have minimum grade point average (GPA) requirements. These minimum scores vary by institution and may be low as compared with the average GPA of applicants offered admission. The [average overall undergraduate GPA](#) for accepted PTCAS applicants in 2011-12 was 3.52.

GRE - Most PT programs require applicants to complete the Graduate Record Examination ([GRE](#)). Programs may have minimum acceptable scores and last acceptable test dates. Policies regarding the consideration of multiple sets of GRE scores vary by institution.

Physical Therapy Volunteer Experience - Many programs require applicants to have a certain number of volunteer or paid [PT experiences](#) working with patients under the supervision of a licensed physical therapist. The program may specify the settings and types of experiences required. Applicants may also be required to have a licensed physical therapist verify the hours. This experience may be an important factor in the admissions process. Respectfully contact physical therapy clinics, hospitals, long-term care facilities (eg, nursing homes), and other healthcare settings in your area to find observation opportunities. APTA cannot assist you in these efforts.

References - Many physical therapist programs require 1-4 letters of [reference](#) (also known as "letters of evaluation" or "recommendations") as part of the admissions process. You may need to submit references from a particular individual, such as a physical therapist, science professor, or academic advisor. If references are required, select individuals who meet the program's requirements; know you well; and can speak to your maturity, dependability, dedication, compassion, communication skills, leadership, and any hands-on experience in the field.

Interviews - PT programs may require competitive applicants to visit the campus for an interview. The interview format varies by institution. Applicants may be required to speak with a single faculty member, a student, a physical therapist, or a

panel of interviewers; or participate in an orientation program. If invited, dress in professional business attire. Applicants should be prepared to discuss why they have chosen to pursue a career in physical therapy and how they perceive the role of physical therapists in health care. Those who have researched and gained direct exposure to the profession will be better prepared to respond to the interview questions. During the interview, applicants may be rated on their oral communication skills, professional behaviors and attitudes, ability to interact in a group, knowledge of the profession, ability to solve problems, and motivation to pursue a career in physical therapy. The applicants' written communication skills may also be measured with an on-site essay.

State Residency Requirements - Some PT education programs give preference to in-state (resident) students. Out-of-state (non-resident) and foreign applicants may vie for a limited number of positions or may be ineligible for admission, depending on institutional and state policies. Private institutions may offer out-of-state and foreign applicants a greater number of positions within the program than state-supported, public institutions.

Criminal Background Checks - PT programs may ask applicants to disclose any previous felony or misdemeanor convictions as part of the application process. A [criminal record](#) will not necessarily prevent an applicant from enrolling in a PT program; however, failure to disclose any past or pending charges may be grounds for dismissal. PT programs may require [criminal background checks](#) and/or drug tests in order to verify an individual's suitability to participate in experiential education rotations, to confirm a student's eligibility for licensure, and to ensure patient safety. Contact your designated PT programs directly for specific policies.

Technical Standards and Essential Functions - APTA has not adopted any policies or positions regarding the essential skills or technical standards necessary to practice or function as a physical therapist. However, individual PT programs generally do have these types of policies in place. A program's technical standards and/or essential skills document may describe the physical, behavioral, and/or cognitive abilities needed to complete the physical therapist curriculum at that particular institution and to competently perform as a physical therapist upon graduation. Contact your designated PT programs directly regarding program-specific policies.

Does it Help to Be a Physical Therapist Assistant (PTA) First?

The physical therapist assistant (PTA) programs are NOT considered to be a stepping-stone to a professional physical therapist (PT) program. The PTA curriculum differs from that of the physical therapist and does NOT provide the needed prerequisites required for physical therapist education. Less than two percent of enrolled students were PTAs prior to enrolling in a PT education program.

Program and Applicant Data Reports

- [PTCAS Applicant Data Report](#)
- [Prerequisites for Non-PTCAS Programs](#)
- [Prerequisites for PTCAS Programs](#)

Last Updated: 3/28/2013

Contact: academicservices@apta.org



American Occupational Therapy Association, Inc.

Mission: The American Occupational Therapy Association advances the quality, availability, use, and support of occupational therapy through standard-setting, advocacy, education, and research on behalf of its members and the public.

Size of Organization: AOTA is the nationally recognized professional association of more than 50,000 occupational therapists, occupational therapy assistants, and students of occupational therapy.

Number of Member Institutions: As of April 2014, there were 411 entry-level, educational programs:

- 5 accredited doctoral entry-level occupational therapy (OT) programs
- 146 accredited master's entry-level occupational therapy (OT) programs
- 175 accredited associate occupational therapy assistant (OTA) programs
- 85 developing or applicant programs (14 doctorate, 20 master's & 51 associate)

New Institutional Members in Last Two Years: There has been an increase in the number of developing and applicant programs due to the increased demand for occupational therapy services. Since 2008 the number of graduate OT programs has increased by 22% (30 new programs) and the undergraduate OTA programs have grown by 49.6% (71 new programs).

- **Total Number of Students:** In 2013 there were 721 applicants to doctoral entry-level programs (640% increase over 2012); 34,699 applicants to master's degree level programs (20% increase over 2012) and 14,933 applicants to OTA programs (4% increase over 2012).
- **Total Number of First Year Students:** In 2013 there were 160 first year doctoral students, 6,611 first-year master's students and 6,726 first-year OTA students.
- **Total Number of Graduates in Most Recent Academic Year:** In 2013 there were...
 - 108 doctoral graduates (23% 5 year growth)
 - 5,439 master's graduates (38% 5 year growth)
 - 4,313 OTA graduates (83% 5 year growth)

Data on Employment Rates of Recent Graduates: Percent of graduates employed in OT/OTA position within 6 months of graduation.

	Doctoral OT	Master's OT	OTA
1-24%	0	0	8
25-49%	0	4	13
50-74%	0	5	43
75-100%	4	136	100
Missing	1	2	11

Admissions Update:

Contact Information and CAS Link: portal.otcas.org/advisors14/index.cgi

Current Number of Participating Programs Versus Total Member Programs:

- 97 of the 151 occupational therapy programs
- Full program listing is available at www.aota.org/en/Education-Careers/Find-School.aspx
 - **Open Period (launch date and last deadline):** July, 2014 – June, 2015
 - **Submission Deadlines:** Submission deadlines vary by program.
 - **Applicant Code of Conduct or Required Institutional Certification or Statement:** All applicants must sign a code of conduct
 - **Fees:** The OTCAS fee is \$125 to apply to one program and \$45 for each additional program. Your designated OT program may also require you to send a supplemental fee directly to the institution.
 - **Fee Waivers:** Not provided
 - **Letters of Reference Delivery Method(s):** References should come directly from the evaluator to OTCAS, unless otherwise instructed by your designated OT program. Evaluators can only submit References to OTCAS electronically.
 - **Background Check Services if Applicable:** Not provided

Fall 2013 Matriculants:

Number of Applicants, With Data on the Profile of the Pool Including Gender, Race/Ethnicity, Age, Etc.:

Race:

	Doctoral	Master's	OTA
American Indian or Alaska Native	0%	0%	0%
Asian	3%	6%	4%
Black or African American	11%	5%	4%
Native Hawaiian or Other Pacific Islander	1%	0%	0%
White	78%	82%	86%
Missing	7%	6%	5%

Ethnicity:

	Hispanic	Non-Hispanic
Doctoral	4%	96%
Master's	7%	93%
OTA	11%	89%

Gender:

	Hispanic	Non-Hispanic
Doctoral	10%	90%
Master's	11%	89%
OTA	15%	85%

Profile of the Admitted Applicant Including GPA, Tests Score, Etc.: Not Provided

Report on Trends (bar graphs): Number of applicants, Age, Gender, Race/ethnicity: Not provided

Prerequisites:

Academic: OT programs will determine whether an applicant is eligible for admission and will notify applicants directly regarding all admission decisions. OT programs may not take all OTCAS application fields into consideration in the admission decision process. Admission policies and prerequisites vary significantly by program and program delivery model. E.G. A 2.5 year masters graduate program will differ from the requirements for admission to a 3+3 masters format.

Standardized Test(s): Not provided

Experience/Exposure: Not provided

Letters of Recommendation: Not provided



Resources for students
from The American
Occupational Therapy Association

Your career in Occupational Therapy

Why I Chose Occupational Therapy

Current Students Share What Attracted Them to the Profession

■ Finding “a perfect fit” in health care

Melanie Barber, Occupational Therapy Student

Columbia University, New York, New York

When I was 16, my grandfather suffered a severe stroke and was sent to a rehabilitation center. At that time I had never heard of a profession called occupational therapy. Upon visiting my grandfather, I witnessed several health care professionals working to rehabilitate him. I have always wanted to pursue a profession in which I could help people, and I thought physical therapy would best complement my natural abilities. But then I met the occupational therapist. To this day I don't remember her name, but as I watched her work with my grandfather I realized that I had found what I was looking for. What I found was that occupational therapy addressed the vital importance of people's psychological and emotional well-being, as well as their physical needs. I was a psychology major in college, and I wanted to continue to use this knowledge. I wanted to be in a health care profession where I could spend quality time with my patients, and help them to improve their quality of life in all aspects. Occupational therapy was a perfect fit. I have found that occupational therapy is one of the most holistic health care professions, and I am proud to have chosen this as my career path. It is a profession that requires sensitivity, understanding, and compassion; all of the characteristics that I value tremendously. Occupational therapy is a career that is certain to contribute much to society and bring enormous self-fulfillment. A quote by Ralph Waldo Emerson expresses this perfectly: “To know even one life has breathed easier because you have lived; this is to have succeeded.”

■ Bridging education and medicine

Brandi Buchanan, Occupational Therapy Student

University of Southern California, Los Angeles, California

Although my first desired occupation was to become a librarian, I was quite young when I changed my mind and realized that I really wanted to be a teacher. And with a mother working in the medical field, I was also fascinated by medicine and opportunities to help others achieve optimum health. So through my mom, who was familiar with the profession of occupational therapy, I found a career that bridged education with medicine; a profession that could teach and educate others about the body as well as how to achieve health and wellness.

While completing several hundred volunteer hours in a variety of occupational therapy settings, including a leprosy hospital in South America, I came to the realization that becoming an occupational therapist was my calling.

Now, while nearing the completion of my clinical occupational therapy doctorate (OTD) in public policy and advocacy, and also working in a private pediatric clinic, the most difficult part of becoming a practicing occupational therapist is deciding which of the many avenues of occupational therapy that I want to pursue. I have already found the profession of occupational therapy to be fascinating, rewarding, and challenging, and filled with countless opportunities to serve one's community, one's country, and one's world.

■ Finding a path to a career along a friend's path to recovery

Erin Cokeh, Occupational Therapy Student

University of Southern California, Los Angeles, California

It seemed like any other regular day. I had come home from my part-time job as a physical therapist aide, and my teenage sister, Evadne, just came home from school. The phone rang, and I answered it. "Hello?" I said. The voice on the other side seemed to be a mixture of emotions—frightened, scared, disturbed. It was our next door neighbor, who went to the same high school as my sister. "Jennifer was hit by a car after school. We don't know if she's even alive. I just saw it happen and the ambulance took her away." Jennifer was Evadne's best friend, and a girl that I had been mentoring throughout her high school years. They were just about to finish their junior year. Because I am 5 years older than them, they often came to me for advice for just about everything. And now, Jennifer's life was held by just a string of hope.

Jennifer had been an honors student, pushed hard by her parents who wanted only the best for her. She was also a talented dancer who had taken classes since she was very young, and in high school, she was teaching younger children at a local dance studio. As I looked at her from the window of the intensive care unit, it was hard to believe that it was the same girl, now fighting for her life. Jennifer was in a very deep coma, and no one knew if she would ever come out of it. Her parents, relatives, and friends took turns around the clock, keeping watch over her in case she woke up. It was a miracle that she survived the accident at all; she had been walking across the street after school when a car did not stop for her at the crosswalk. At the impact Jennifer bounced off the windshield head first, but instead of landing on her head she landed on her backpack, which helped cushion her fall. Her hit to the head was from the secondary impact. Her parents had always wanted her to go to a good college and get a good job. Now, all they wanted for her was to survive and, if possible, have a normal life.

As an answer to many prayers, Jennifer woke up. She could barely talk or move because of an upper motor neuron injury as a result of her hitting her head against the pavement. Due to her brain surgery, the surgeons had to shave a portion of her long hair. What really impressed me was her family's determination for Jennifer to have as normal a life as possible, even if it meant bringing her trendy clothes for her to wear in the hospital, fixing her hair to make it look as though it was not shaved, and painting her fingernails, things that she would typically do before her accident.

I visited Jennifer often at the Children's Hospital in Los Angeles, and watched as the occupational therapist worked with her. They did such fun things to help her regain her motor skills, such as baking cookies, trying to walk her dog, who came to visit her at the hospital one day—things that she enjoyed. Working as a physical therapist's aide, I noticed a vast difference in motivation between the patients who had only physical therapy, who rarely did their exercises when told, and Jennifer, who enjoyed the activities that the occupational therapist planned for her. And Jennifer got better. Slowly, she regained her ability to walk and move in a functional way—initially not as well as she used to, but she was able to get around.

At this point in time, I had to be out of the country for 6 months, and when I came back Jennifer was walking normally again, and had started her senior year of high school. Despite all of this she was able to get into the University of California, Irvine, and is currently a full-time college student there. Her occupational therapist still guides her in activities that she keeps active in, and

dancing, an occupation that she had before she was injured, was a major part of her therapy and rehabilitation. It was something that she was motivated to do, and it helped her look forward to experimenting with different ways that she could move.

Seeing Jennifer go through this whole process, as painful as it was for herself and her family, made me more aware of how the role of an occupational therapist could be so important in one's life. Yes, Jennifer could not have survived the accident without the help of brain surgeons and good doctors, but it was the occupational therapist who helped her have a higher quality of life than anyone ever hoped for—one that is meaningful to her. This inspires me to know that I can make a difference in the lives of others, simply by caring for my patients and being aware of their needs and what is meaningful for them in their own lives.

■ Creativity, imagination, and “puzzle solving”

Stacy Landau, Occupational Therapy Student

Ithaca College, Ithaca, New York

I always knew that I wanted to have a career in a health-related profession, because I was extremely interested in medicine and I wanted to work in a profession that would enable me to work with other people on a daily basis. I decided to become an occupational therapist because I wanted to help people, and that is exactly what occupational therapists do: they assist people in becoming independent.

The profession of occupational therapy appealed to me because occupational therapists can work with clients of all ages and they can work in numerous settings, such as hospitals, schools, or private clinics. Occupational therapy also interested me because occupational therapists have the opportunity to be creative and imaginative in catering their therapeutic interventions to specific clients. I like to think of occupational therapists as puzzle solvers, because they assist clients in solving how to complete tasks that they may or may not have been able to do in the past.

My experiences in the field of occupational therapy, which include my education, fieldwork, and being an active member of the American Occupational Therapy Association, have been extremely rewarding, challenging, and enlightening, and I would definitely recommend the profession to anyone.

■ Direct involvement offers many rewards

Chrisha McGann, Occupational Therapy Student

University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma

I have always been attracted to the field of occupational therapy by the wide range of opportunities it encompasses. Through my work experience with adults with developmental disabilities, I have seen that occupational therapists can improve an individual's standard of living and allow one a greater level of independence and self worth. I have also seen and been a part of occupational therapists working with children with developmental disabilities by improving strength and functioning to achieve developmental milestones and their ability to just be kids. At the same time, the therapists are teaching parents ways to enhance their child's development and supporting them in their child's occupations.

Occupational therapy can also teach a person ways of adapting and being as independent as possible after a stroke, spinal cord injury, or traumatic brain injury, to name a few medical problems. In addition, I have seen persons with mental health issues and ineffective coping skills find the help they need through occupational therapy. Occupational therapy is a field that will allow me to help others learn how to help themselves through meaningful work and activity.

I like the direct involvement occupational therapists have with their clients, and I know that occupational therapy will offer me challenging and fulfilling work on a daily basis and throughout my career.

■ Therapy (and a career) with a difference

Lisa Griggs-Stapleton, Occupational Therapy Student

University of New Mexico, Albuquerque, New Mexico

While investigating careers in health care, I asked to observe an occupational therapy session. I was sold. I left the clinic thinking, “People get to have *fun* in therapy?!” The session wasn't like any other health care I had seen. I was used to the idea that most people don't like going to the therapist, but occupational therapy was different. People, especially children, enjoy the sessions and sometimes don't want to leave. Occupational therapists have the privilege of helping people learn or relearn how to connect with their environment and we get to have fun while we do it. I am grateful to be part of such a wonderful profession.

■ Family caregiving leads to professional inspiration

Jacquelyn Nichols, Occupational Therapy Assistant Student

Erie Community College, Williamsville, New York

Major inspiration for my becoming an occupational therapy assistant came from the interaction with many health care professionals. While caregiving for my dad, until his death, the networking of health care for daddy would leave my mouth hanging open at times. Having the knowledge of being able to affect the physical and mental well-being of a person, whether elderly or young, is truly special.

I made the choice that I wanted to have numerous opportunities to help people regain wellness and continue with a healthy and purposeful life. Occupational therapy treats the whole person and engages him or her in work, self-care, and play so that the deficit or disability can be at the best level possible. I have always liked the position of supporting and helping. The interaction of all the health care professionals that my father needed was absolutely special, and I want to be part of that network.

If you have specific questions about a career in occupational therapy, please contact educate@aota.org.

Visit www.aota.org for more information about the profession and the activities of the American Occupational Therapy Association.



The American Occupational Therapy Association



Resources for students
from The American
Occupational Therapy Association

Your career in Occupational Therapy

Consider Becoming an Occupational Therapist

Young or old, we all have a job to do—the job of living. Learning, growing, playing, working, managing our homes, and caring for our families are among the “occupations” of life.

Unfortunately, physical, emotional, or other challenges often prevent people from fully participating in the job of living. Disease, injury, depression, or developmental problems can make it difficult for people to do everyday tasks or be active and independent.

Occupational therapy—a vibrant, growing profession—makes it possible for people to achieve independence and to enjoy life to its fullest. By choosing a career in occupational therapy, you will make a difference! You will be able to improve the lives of people, from newborns to the very old.

Students today can look forward to dynamic careers working in multiple settings with people of all ages. And the employment outlook for occupational therapists is bright! Recent information published by the U.S. Department of Labor, Bureau of Labor Statistics (<http://stats.bls.gov/oco/ocos078.htm>) has projected that the job outlook for occupational therapists will improve substantially in the next several years and will continue to do so for the foreseeable future. Specifically, it states that “employment of occupational therapists is expected to increase much faster than the average for all occupations through 2014,” meaning that employment is expected to increase by 27% or more.

One of the greatest advantages of a career in occupational therapy is the wide variety of opportunities available to occupational therapy graduates. Many practitioners choose to help children thrive in the “occupations” of childhood, which include learning, playing, and growing. Therapists work in schools with students who have learning disabilities or behavioral problems. Others work with premature newborns at pediatric hospitals or children with cerebral palsy, Down syndrome, and other disabilities.

Occupational therapists also work with individuals in their homes, community centers, rehabilitation hospitals, businesses, and nursing homes. In these settings, occupational therapists help people with traumatic injuries, stroke, Alzheimer’s disease, or mental health problems, learn to live productive lives through the use of meaningful occupations.

Those who join the field today may choose other areas of practice that are increasingly important. These new specialties include training workers to use proper ergonomics on the job, helping people with low vision maintain their independence, making buildings and homes more accessible, older driver evaluation and training, and promoting health and wellness.

Occupational therapy is a career for individuals who care about people and have a desire to learn, achieve, and contribute their best to society and the profession!

If you have specific questions about a career in occupational therapy, please contact educate@aota.org.

Visit www.aota.org for more information about the profession and the activities of the American Occupational Therapy Association.



The American Occupational Therapy Association

Veterinary Medicine

PRE-VETERINARY: ACADEMIC AND CAREER INFORMATION



Health Professions Advising Office (HPAO) • Jensen Student Access to Science (SAS) and Mathematics Center
 • **Location:** Hall of Science Building – Room 164 • Phone: (562) 985-8061 • Website: www.csulb.edu/hpao

NATURE OF THE WORK, EARNING, AND OCCUPATIONAL OUTLOOK

Veterinarians help animals and people live longer, healthier lives and serve society by preventing and treating animal diseases, improving the quality of the environment ensuring the safety of food, controlling diseases transmitted from animals, and advancing medical knowledge. Prospective veterinarians must have good manual dexterity, an affinity for animals and the ability to get along with animal owners. Additionally, they should be able to quickly make decisions in emergencies. In 2013, there were 99,720 veterinarians practicing in the United States (American Veterinary Medical Association, 2015). The majority of veterinarians are in private practice, although significant numbers are involved in preventive medicine, regulatory veterinary medicine, military veterinary medicine, laboratory animal medicine, research and development in industry, and teaching and research in a variety of basic science and clinical disciplines (AVMA, 2015).

U.S. veterinary colleges/schools graduate an average of 2,900 students annually. Employment of veterinarians is expected to grow 12 percent from 2012 to 2022, about as fast as the average occupation. In 2012, the median annual earnings of veterinarians in practice was \$84,460 (Occupational Outlook Handbook, 2014- 2015). There is a geographic shortage of veterinarians in some mostly rural areas that varies by state (AAVMC, 2015).

VETERINARY MEDICINE

There are 30 medical colleges/schools accredited by the American Veterinary Medical Association in the U.S., 5 in Canada and 13 in other countries. Prospective veterinarians must graduate from a 4-year program at an accredited college of veterinary medicine and obtain a license to practice, which is controlled by each state or province.

Veterinary graduates who plan to work with specific types of animals or specialize in a clinical area, such as pathology, surgery, radiology, or laboratory animal medicine, usually complete a 1-year internship. Interns receive a small salary but usually find that their internship experience leads to a higher beginning salary, relative to other starting veterinarians. Veterinarians who seek board certification in a specialty must also complete a 2- to 3-year residency program that provides intensive training in specialties, such as Internal Medicine, Oncology, Radiology, Surgery, Dermatology, Anesthesiology, Neurology, Cardiology, Ophthalmology, and Exotic Small Animal Medicine.

PRE-VETERINARY PREPARATION (COLLEGE)

Most veterinary medical colleges will only consider applicants who have met a minimum grade point average (GPA). The required GPA varies by school, from a low of **2.5 to a high of 3.5**. Those who receive offers of admission usually have a **GPA of 3.59 or better** (NAAHP AAVMC Update). Any major is appropriate as long as applicants take the required pre-requisite courses. The prerequisites for admission vary by veterinary medical college. Many of these colleges do not require a bachelor's degree for admission. However, most of the students admitted have completed an undergraduate program. It is not necessary that a student complete a program specifically labeled "pre-veterinary" or "pre-vet." It is, however, necessary for applicants to complete all prerequisite requirements before enrolling in one of the 30 U.S. or 5 Canadian veterinary medical colleges/schools (Association of American Veterinary Medical Colleges)

TESTING REQUIREMENTS

Standardized test requirements also vary at each school. Applicants must submit test scores from the Graduate Record Examination (GRE-general and/or subject tests) or the Medical College Admissions Test (MCAT), depending on the preference of each college

CLINICAL EXPOSURE

Veterinary medical colleges weigh heavily a candidate's veterinary and animal experience in admissions decisions. Formal experience, such as work with veterinarians or scientists in clinics, agribusiness, research, or in some area of health science, is particularly advantageous. Less formal experience, such as working with animals on a farm or ranch or at a stable or animal shelter, is also helpful. Students must demonstrate ambition and an eagerness to work with animals. Many schools require experience in more than one type of animal setting.

COURSE REQUIREMENTS

Prerequisite requirements vary significantly from one institution to another. For a complete list of specific veterinary school/college prerequisites, please refer to the Veterinary Medical School Admissions Requirements in the United States and Canada (VMSAR), which is available for purchase on the **Association of American Veterinary Medical Colleges (AAVMC)** website: www.aavmc.org.

Students maintain responsibility for verifying course selection with individual veterinary programs. Listed below are the prerequisite admission requirements for the 2 Veterinary Colleges in California:

The University of California, Davis:

Minimum Undergraduate GPA: 2.50 (average accepted applicant’s GPA 3.71). Requires the GRE.

CSULB courses that fulfill admission requirements:

Pre-veterinary Coursework	CSULB Courses
One year of General Biology with lab	Biology 211 & 212 & 213
One year of General Chemistry with lab	Chemistry 111A & 111B
One year of Organic Chemistry with lab	Chemistry 220A & 220B + 320L (Chem/Biochem majors) or 220A w/ 223A & 220B w/ 223B (Bio/other majors)
One year of Physics	Physics 100A & 100B or 151 & 152
One semester of Biochemistry	Chemistry 441B or 448
One semester of Physiology	Biology 342 or 345
One semester of Genetics	Biology 370
One semester of Statistics	Biology 260 or HDEV 250I or Statistics 108
8 semester units of English	English 100 and two additional courses from the English department
8 semester units from the Humanities & Social Sciences	History, sociology, languages, music, art, psychology, Ethnic studies, anthropology.

*See the school’s website for more details. You can also check out www.assist.org for equivalent courses.

A minimum of 180 hours of practical experience working/volunteering with a veterinarian is required at the time of application. The majority of admitted applicants have an average of 2,000 hours of clinical veterinary experience at the time of application.

Western University of Health Sciences, College of Veterinary Medicine:

Minimum GPA, Overall, Science and Prerequisite: 2.75 (average accepted GPA 3.3). Requires the GRE or MCAT

CSULB courses that fulfill admission requirements:

Pre-veterinary Coursework	CSULB Courses
3 Units of Organic Chemistry with lab	Chemistry 220A w/ 223A (Chem majors check with the HPAO)
3 Units of Biochemistry	Chemistry 441A or 441B or 448
9 Units of Upper Division Biological & Life Sciences all with lab	Biology 304, 313, 316, 324, 332, 340 w/ 340L, 342 w/ 342L, 345 w/ 345L, 350, 353, 355 w/ 355L, 411, 421, 423, 425, 430 (no lab), 444 (no lab) , 453, 448 (Cannot double-count)
3 Units of Statistics	Biology 260 or STAT 108, HDEV 250
3 Units of Microbiology	Micro 200 or 211 or 452
3 Units of Genetics OR Molecular Biology	Biology 370 or 340
3 Units of Physiology	Biology 342 or 345
6 Units of General Physics with labs	Physics 100A & 100B
6 Units of English Composition	English 100, 101,102, 300
9 Units Humanities	Art, Foreign Language, Political Science, History etc.

Note: Please keep in-mind when planning to take these courses at CSULB, be sure to check out the prerequisites.

500 hours animal experience required (Animal medical environment, commercial animal production, regulatory animal control, or research environment).

APPLICATION INFORMATION

Students should ideally apply between July and September of the year preceding the academic year they wish to enter. The **Veterinary Medical College Application Service (VMCAS)** allows students to submit an application to participating colleges. The VMCAS application deadline is October 2nd. **Non-participating schools' deadlines range from October 1 – March 1. *It is wise to apply as early as possible.***

For more information, please refer to the **VMCAS** section in the AAVMC web site: www.aavmc.org. If you are applying to a non-VMCAS school, you need to contact that school directly and complete their application.



Association of American Veterinary Medical Colleges

Mission: AAVMC provides leadership for and promotes excellence in academic veterinary medicine to prepare the veterinary workforce with the scientific knowledge and skills required to meet societal needs through the protection of animal health, the relief of animal suffering, the conservation of animal resources, the promotion of public health, and the advancement of medical knowledge.

Size of Organization: Staff: 10FTE / 2PTE

Number of Member Institutions: Members: 50

New Institutional Members in Last Two Years:

- Lincoln Memorial University
- Midwestern University

Total Number of Students: 11,474 Total students enrolled in 2013

Total Number of First Year Students: 2,981

Total Number of Graduates in Most Recent Academic Year: 2,686 Total graduates in 2013

Data on Employment Rates of Recent Graduates: N/A

Admissions Update

Contact Information and CAS Link:

[Tony Wynne](#)

(202) 371-9195 x124

Director of Admissions & Recruitment Affairs

aavmc.org/Students-Applicants-and-Advisors.aspx

Current Number of Participating Programs Versus Total Member Programs:

- Total VMCAS Programs: 36 schools offering 39 programs
- Total AAVMC Members: 50

Open Period (launch date and last deadline): June 5th, 2014 – October 2, 2014

Submission Deadlines: VMCAS Closes: October 2, 2014 – Be sure to check with schools on supplemental and other possible deadlines.

Applicant Code of Conduct or Required Institutional Certification or Statement: Not provided

Fees: VMCAS 2015 Fee: aavmc.org/Applicant-Responsibilities/Fees.aspx

Fee Waivers: Fee Reimbursement program: aavmc.org/feereimbursement.aspx

Letters of Reference Delivery Method(s): Electronic Only. No Paper Accepted. See individual school's for their specific requirements.

Background Check Services if Applicable: N/A – Performed at local school level

Fall 2013 Matriculants Information:

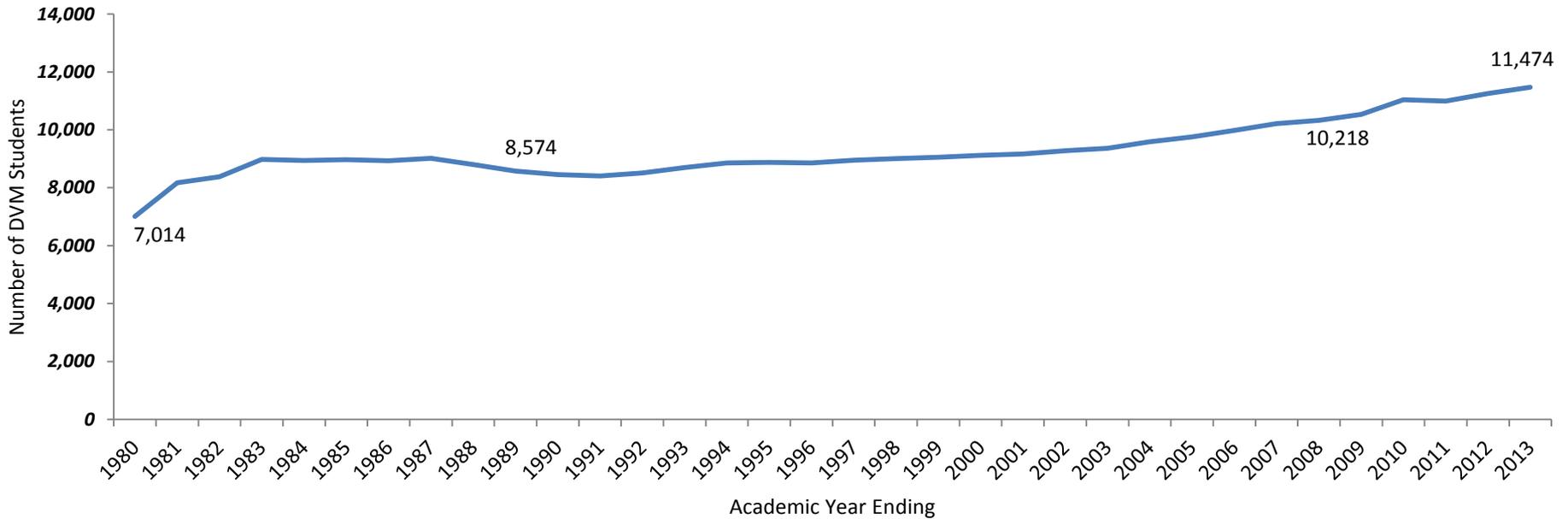


STUDENT RELATED DATA



Total DVM Student Enrollment at the US Colleges of Veterinary Medicine

AAVMC Internal Data Reports
1980 - 2013

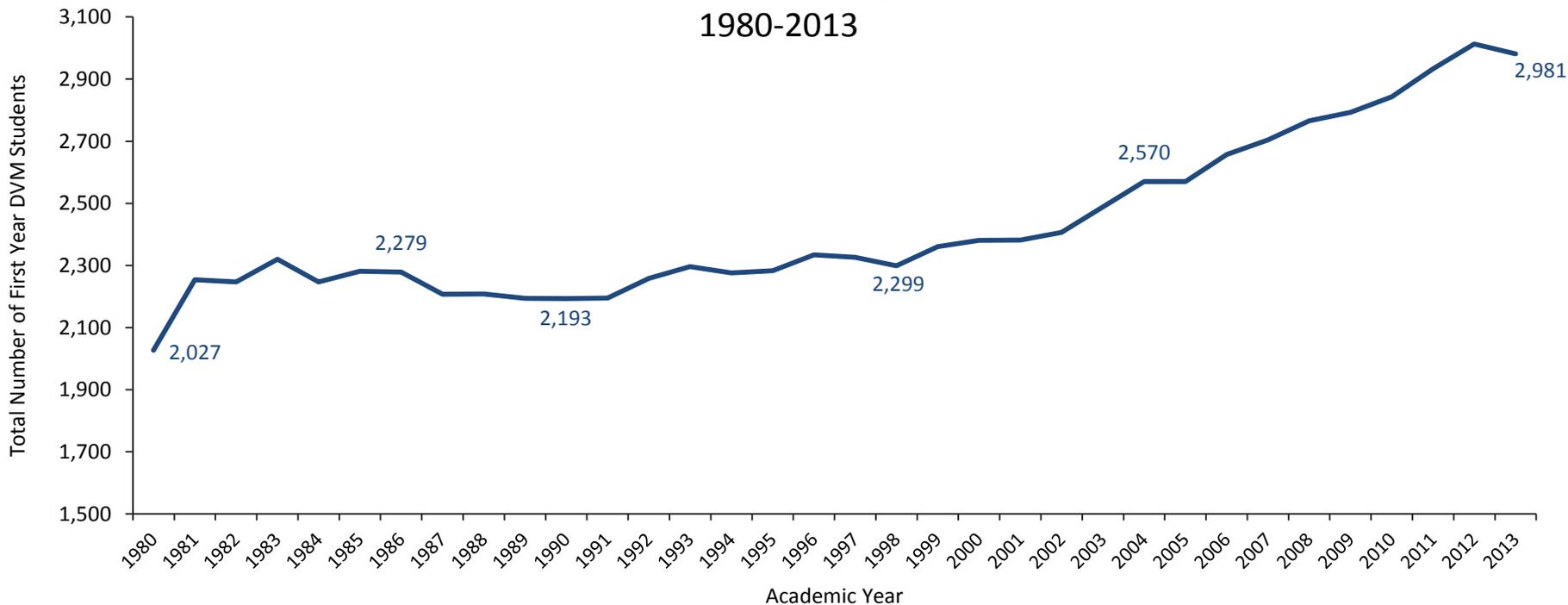


Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Enrollment	7,014	8,173	8,381	8,982	8,942	8,970	8,928	9,015	8,805	8,574	8,456	8,411	8,508	8,702	8,859	8,881	8,854
Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Enrollment	8,956	9,010	9,055	9,121	9,170	9,276	9,363	9,587	9,758	9,983	10,218	10,330	10,534	11,046	10,996	11,255	11,474



First Year DVM Student Enrollment at the US Colleges of Veterinary Medicine

AAVMC Internal Reports
1980-2013

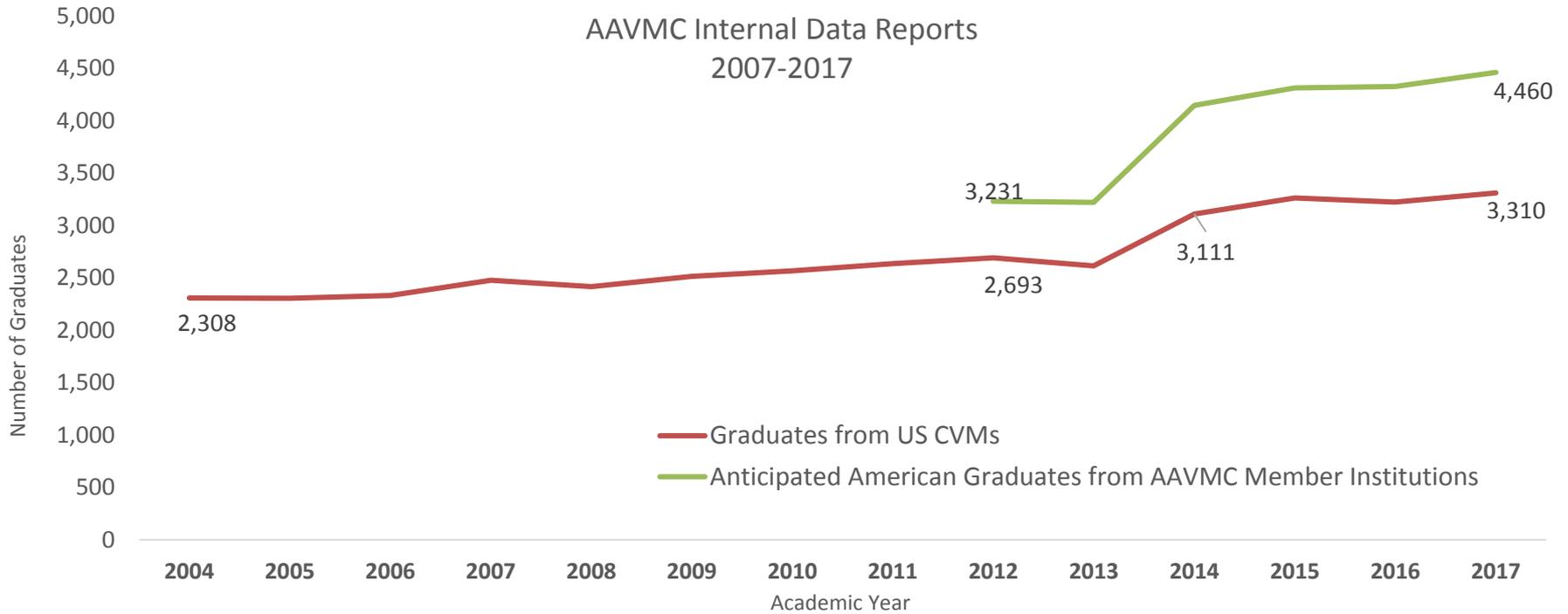


Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Enrollment	2,027	2,254	2,247	2,320	2,247	2,281	2,279	2,207	2,208	2,194	2,193	2,195	2,258	2,296	2,276	2,283	2,334
Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Enrollment	2,326	2,299	2,361	2,381	2,382	2,406	2,488	2,570	2,570	2,657	2,704	2,766	2,793	2,843	2,933	3,013	2,981



Total Number of Graduates from Reporting AAVMC Member Institutions*

AAVMC Internal Data Reports
2007-2017



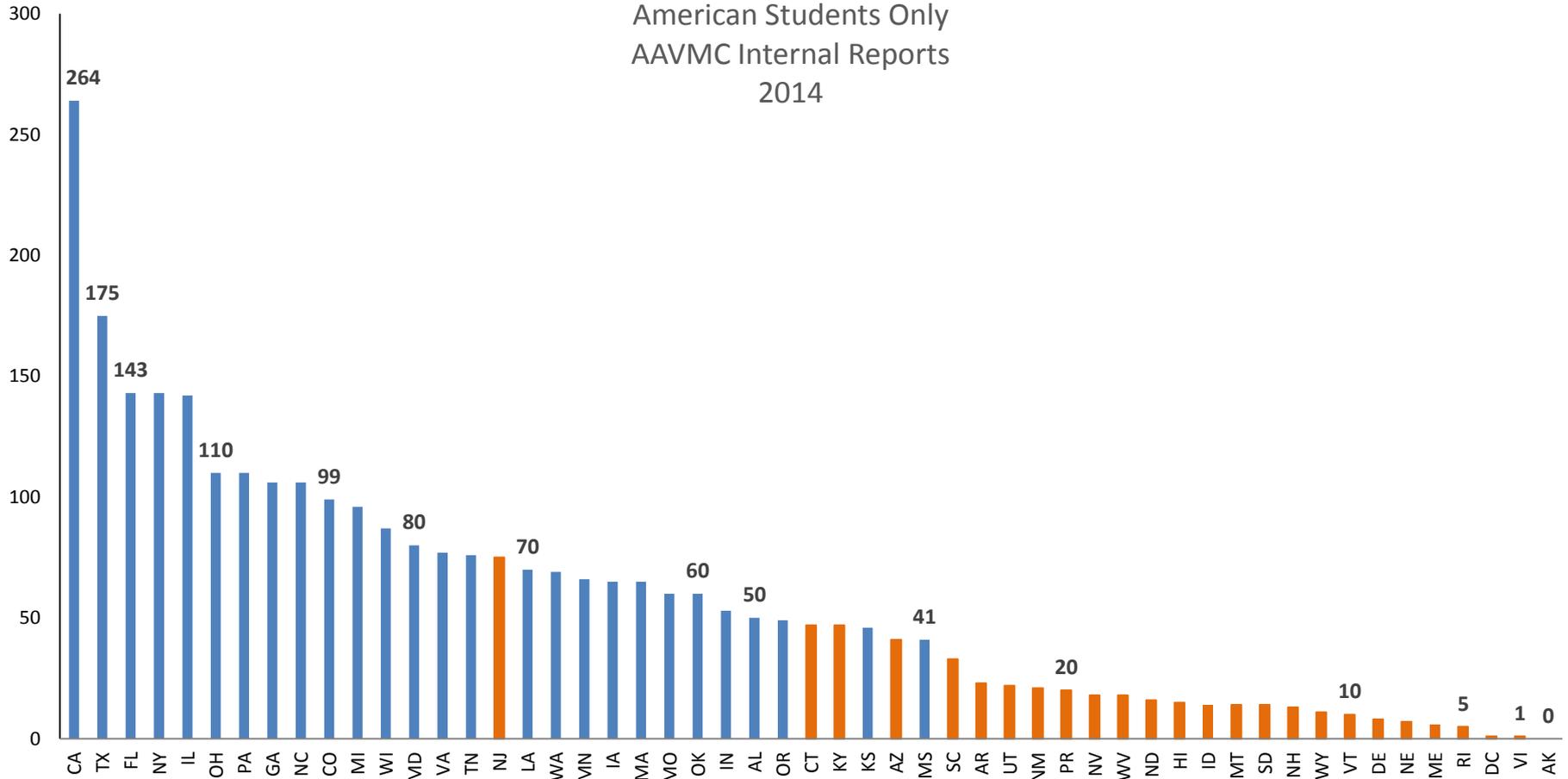
Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
US Graduates	1,746	1,931	1,969	2,011	2,138	2,151	2,103	2,219	2,220	2,139	2,117	2,166	2,212	2,074	2,065	2,126	2,130
Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
US Graduates	2,170	2,165	2,185	2,175	2,171	2,186	2,209	2,307	2,263	2,326	2,466	2,485	2,499	2,547	2,603	2,687	2686
US Citizen Graduates																538	606
Year	2014	2015	2016	2017													
US Graduates	3111	3264	3223	3310													
US Citizen Graduates	1035	1050	1103	1150													

*Includes graduates who are US citizens graduating from AAVMC's International Members.



Enrolled First Year Students by State*Residency at the Time of Application

American Students Only
AAVMC Internal Reports
2014

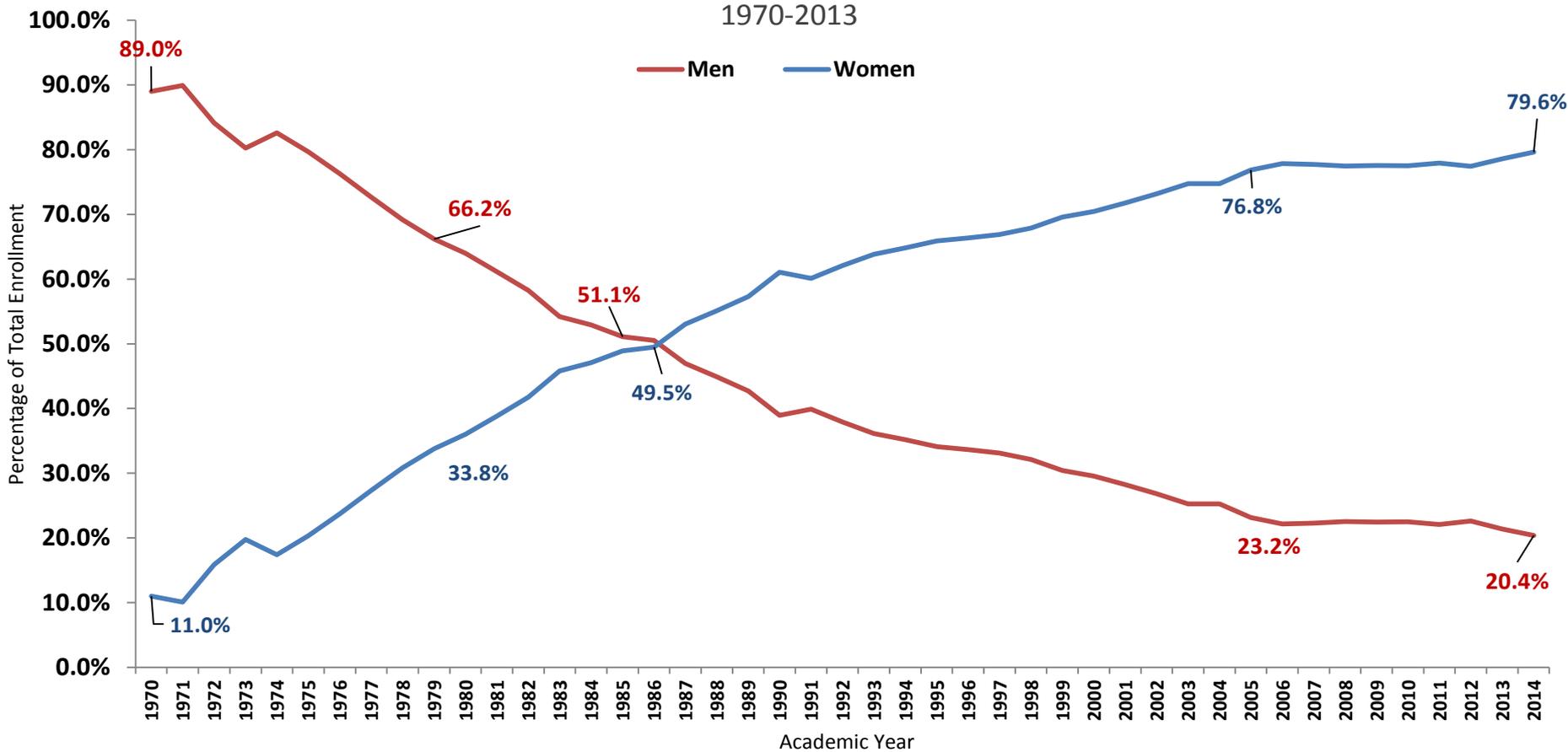


*Includes enrollees from US territories and the District of Columbia.



Enrollment in the US Veterinary Medical Colleges By Sex

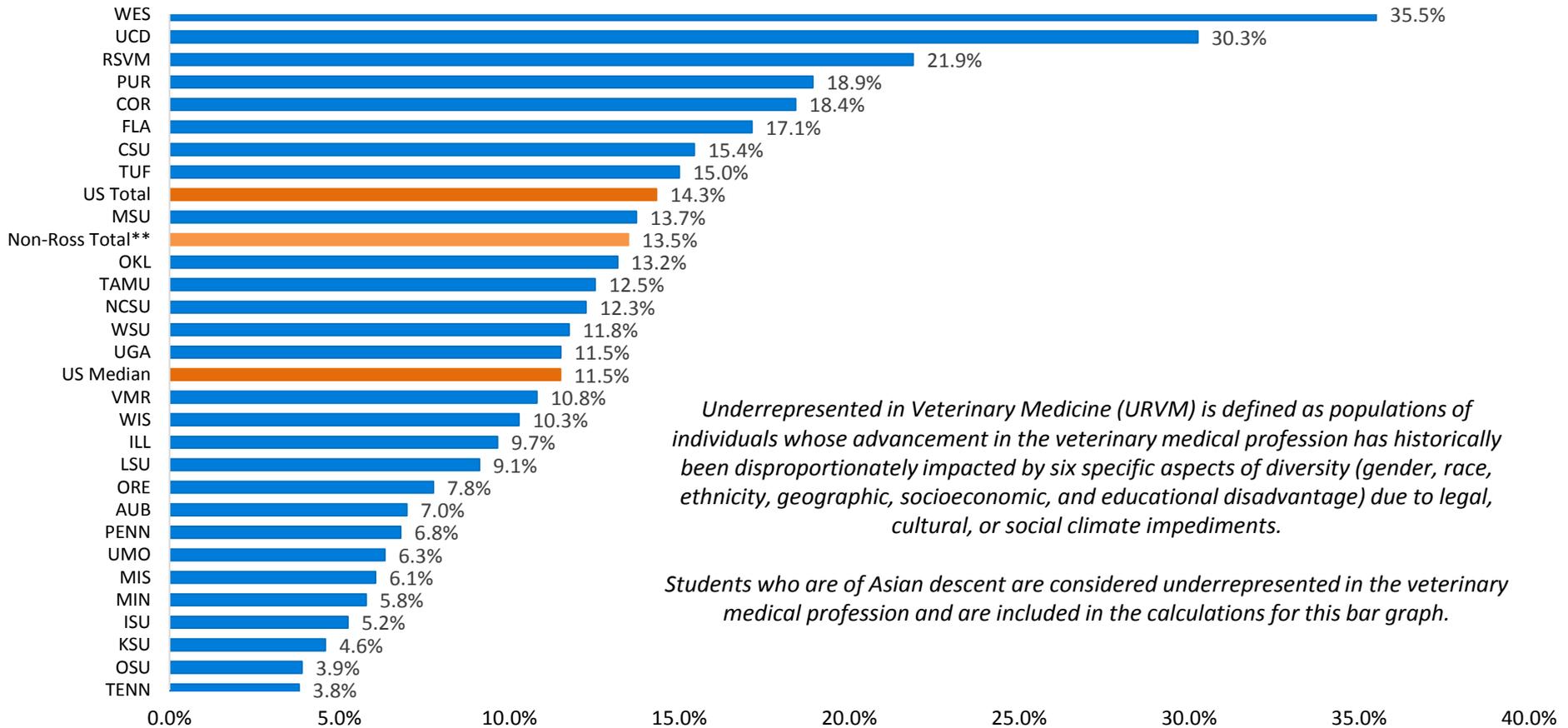
AAVMC Internal Reports
1970-2013





Presence of Racially and Ethnically Underrepresented Students at US Colleges of Veterinary Medicine*

AAVMC Internal Reports
2013



Underrepresented in Veterinary Medicine (URVM) is defined as populations of individuals whose advancement in the veterinary medical profession has historically been disproportionately impacted by six specific aspects of diversity (gender, race, ethnicity, geographic, socioeconomic, and educational disadvantage) due to legal, cultural, or social climate impediments.

Students who are of Asian descent are considered underrepresented in the veterinary medical profession and are included in the calculations for this bar graph.

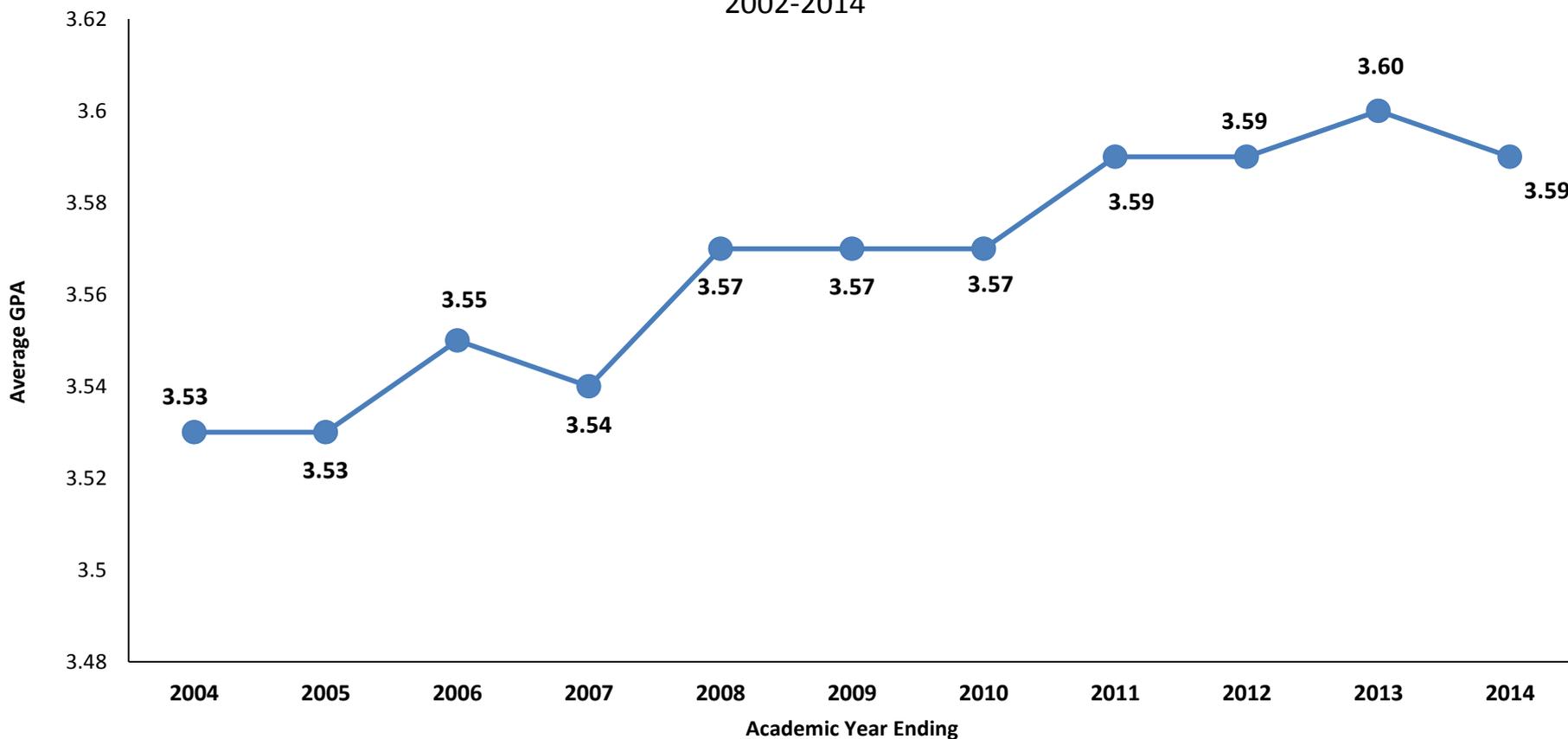
*This data set includes enrollment data from Ross University due to the high number of American students enrolled.

**This bar represents the US Total without Ross University.



1st Year Student Pre-Veterinary Grade Point Average 10 Year Trend

AAVMC Internal Data Reports
2002-2014





Additional Data

- **Attrition Rates:**
 - 2013 National Attrition Rate = .82%
 - Class of 2016 - First Year Attrition Rate = 1.8%
 - Class of 2013 (Recent Graduates) - Attrition Rate = 1.7%



APPLICANT DATA

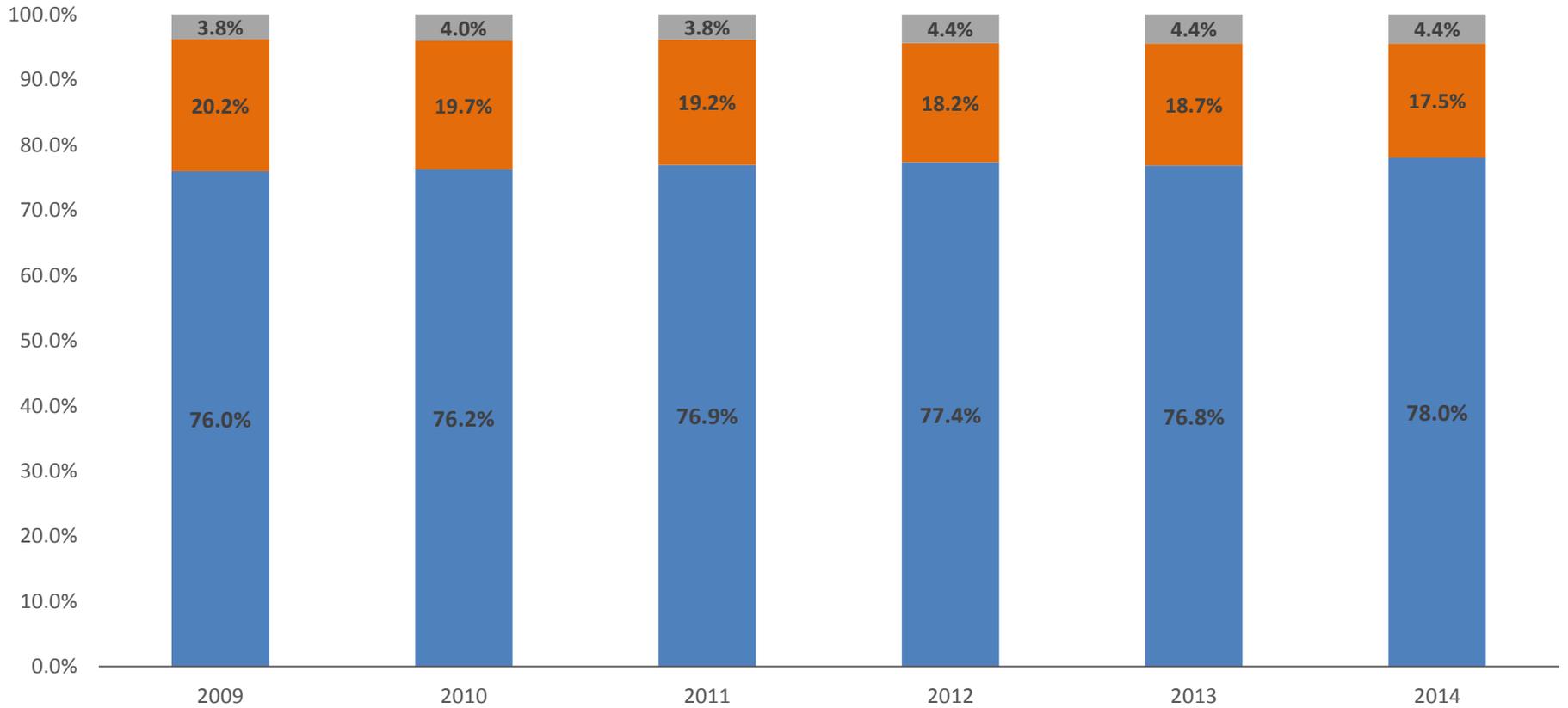


VMCAS Applicants by Sex

AAVMC Internal Data

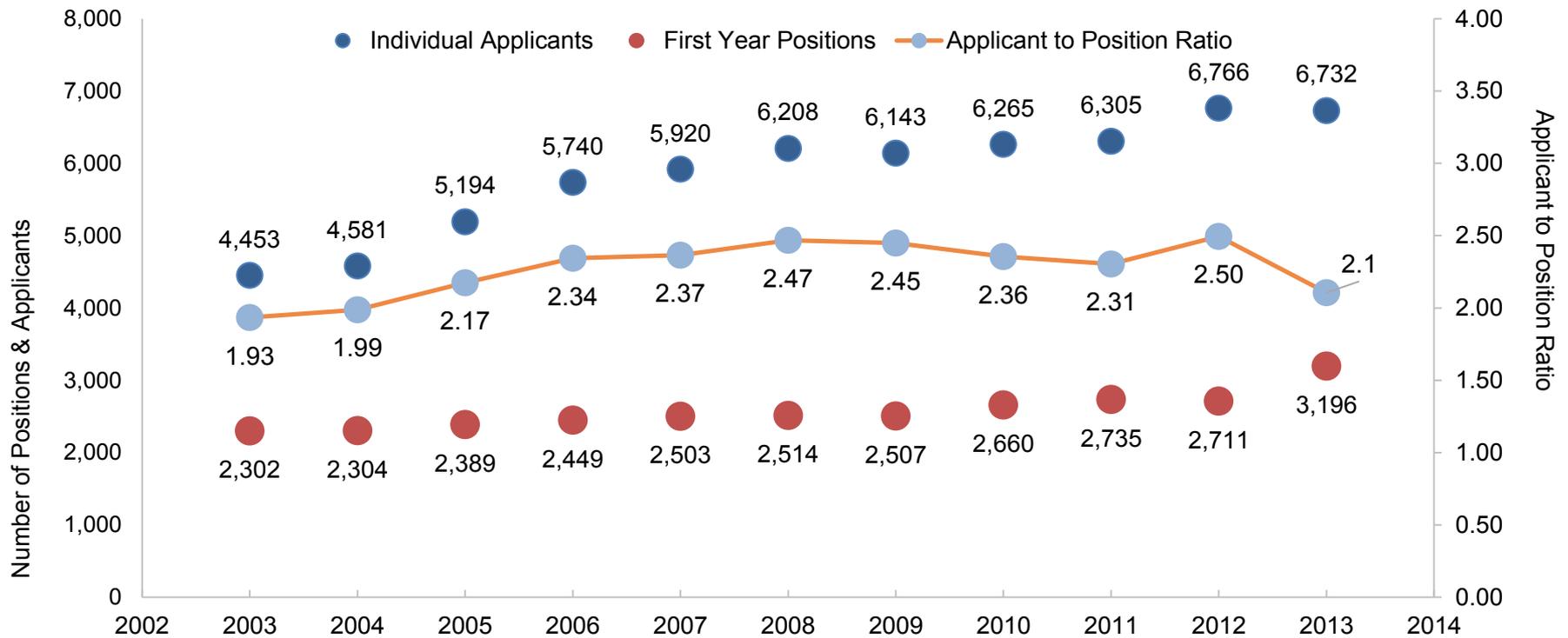
2009 - 2014

■ Women ■ Men ■ Unknown





Veterinary College Applicants and Available First Year Positions VMCAS Participating Institutions Only* AAVMC Internal Reports 2003-2013



*This data represents only VMCAS applicants. VMCAS currently seats 90.5% of first year seats at the US colleges of veterinary medicine. The Fall 2014 (Class of 2018) ratio is projected; it includes first year seats created by the recent additions of Colleges of Veterinary Medicine at Midwestern University and Lincoln Memorial University. This data includes available seats at all VMCAS participating institutions, including non-US colleges of veterinary medicine.



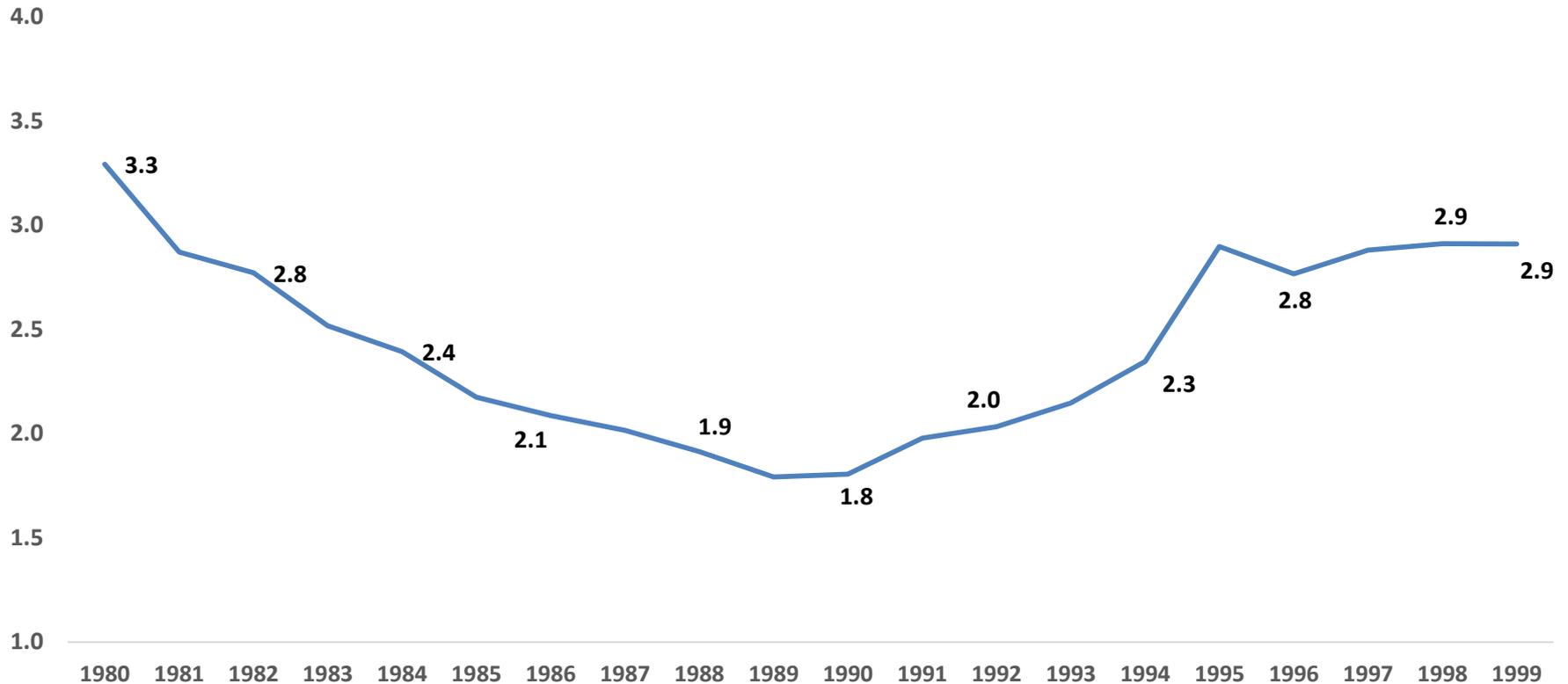
Veterinary Medical College Applicants to Available First Year Seats

(Presented as ratio figures)

AAVMC Internal Reports

Historical Data

1980 - 1999





Additional Applicant Information

- **Average Years of Pre-professional Preparation:**
 - 4.3 Years
- **GRE Scores – Class of 2017**
 - Average Verbal Percentile= 68
 - Average Quantitative Score = 61
- **Degree status of Class of 2017 at admission**
 - No Degree Completed = 10.4%
 - BS/BA Completed = 82.6%
 - MS/MA Completed = 5.6%
 - PhD Completed = 1.2%
- **Applicant Age**
 - 21-year-olds represent 28% of 2013 applicants
 - 22-year-olds represent 19% of 2013 applicants
 - 25-30 year olds represent over 16% of 2013 applicants



Vet School Admission 101

Give yourself the best chances of being admitted



We're sure you've already heard how competitive it is to get into veterinary school. Sure, it's competitive – but it's not impossible. If you've got good science and math skills and an interest in helping animals, follow your dream. Who better to help you than the people who've already been there?

Grades

Duh, you say. Of course you have to have good grades to be competitive. Although a 4.0 will certainly help you, it's not an absolute necessity.

Why are grades important? They can indicate your intelligence, your study habits, and your dedication and drive to succeed. Those are all qualities veterinary schools are looking for when they evaluate applicants. When a school sees an “A,” they think you studied hard, did well, and learned.

So, what if your grades are *good* but not *great*? Does that mean you've got no chance? No, it doesn't. Veterinary schools are looking for well-rounded students. They're looking for future leaders. You can make yourself a better candidate by getting good (or great) grades as well as experience and leadership skills.

Prerequisites

You could have a 4.0 GPA and still not get into veterinary school if you haven't completed the prerequisites required for admission. Make sure you know your prospective schools' requirements when you plan your undergraduate classes. Fortunately, most schools have similar requirements. For more information and links to U.S. veterinary colleges, visit the Association of American Veterinary Medical Colleges (AAVMC) website at www.aavmc.org.

That said, check out your school's undergraduate catalog for courses that aren't on the vet school prerequisite list but might be good courses to give you a “leg up” and better prepare you for the coursework you'll have in vet school. For example, consider taking upper-level anatomy & physiology, zoology, microbiology, animal science/animal production, nutrition, and histology courses, to name a few. It's possible that taking these courses as an undergrad can make the comparable vet school classes much less stressful for you because you've already got a good foundation in that subject.

Majors

You don't have to be a pre-vet major to get into vet school – you just need to get the prerequisite coursework completed and do well. We've seen vet students whose undergraduate majors were math, engineering, English, and many others. Once you're in vet school, the playing field is equal. It's important to enjoy your undergrad studies by picking a major that you are passionate about—not simply the “best one” for getting into vet school.

Experience

If you've been in 4-H, FFA or a similar group, that's great experience that should go on your veterinary school admission form. Similarly, working with animals in any way can be of value. For example, volunteering at shelters or rescues can provide animal handling experience that will help make you a better candidate.

It goes without saying that volunteering or working for a veterinarian is very important. Not only does it expose you to your potential career (so you know what you're getting into, so to speak), but it also might provide a good recommendation for you from the veterinarian.

Varied experience is also helpful. If you have the opportunity to work in a research lab or for veterinarians who work with different species, that's a bonus that can make you more appealing to a veterinary school admissions committee. Get as much experience as you can while you have the opportunity.

Leadership Skills

Leadership experience, such as holding an office in student government or other groups, is a big plus. Get involved in your pre-vet club, student government, fraternity/sorority, or other organization. If one of these doesn't exist, get some others together and start a club of your own!

Communication Skills

Because veterinarians' patients can't really talk and tell them what's wrong, people tend to think that communication skills are less important. That couldn't be more untrue. It's essential for veterinarians to have good communications skills so their clients can understand what's going on with their animals and do their parts to help resolve the problem. Coursework or extracurricular activities that improve your communication skills are definitely helpful...not to mention it can help you when it comes to the interview.

Most of us dread public speaking, but that's all the more reason to take a class or two. Becoming more comfortable speaking to larger audiences will come in handy later in life.

Letters of Recommendation

Get to know your professors. Sure, a professor can write a letter stating that you got an "A" in their class, but can they say anything else about you? A good letter of recommendation comes from a person who knows who you really are. You can get to know professors by attending office hours, volunteering in their research projects, or joining a club that they advise. Check with the vet schools you are applying to for their requirements of who they want the letters to come from—usually they want to hear not only from your professors, but also vets that you have worked with.

Standardized Tests

Standardized tests? Again? And you thought that was over when you finished high school! The Graduate Record Examination (GRE) is required by most veterinary schools, and some also require the Biology GRE. The Medical College Admission Test (MCAT) is also accepted by some schools in place of the GRE. Find out where you can take the exam and what preparation you need to succeed. For a listing of each accredited veterinary school's requirements, go to the AAVMC site at www.aavmc.org. More information can be found at <http://www.ets.org/gre/>.

Have fun!

All work and no play can actually make you a less desirable candidate. Not all of your courses and extracurricular activities should be 100% focused on meeting the admission requirements. Do the things you like, join the clubs you find fun, and enjoy your life.

What if you don't get in?

You're not alone, and it doesn't mean you don't have what it takes. Contact the admissions staff and request feedback on your application, then address the deficiencies and reapply next year.

[Main menu](#)



So, You Want to be a Veterinarian

Veterinarians are highly trained medical professionals who provide for the health and quality of life of all kinds of animals. They use problem-solving skills and in-depth knowledge of biological, physical and social science to diagnose, treat and prevent animal diseases and help to maintain the quality of our environment. Veterinarians collaborate with physicians and public health agencies to prevent and control diseases transmitted from animals to people. Additionally, they advance medical technology through education and research.

The profession becomes more complex as trade barriers fall, new zoonotic diseases emerge, human travel increases, and production and distribution of food products take place in more concentrated, large-scale operations.

Many veterinarians in the United States work in private practice, but others work in a wide range of fields. They also specialize in a particular breed of animal, like equine medicine or exotics or in a medical specialty, like ophthalmology, oncology, pathology or dermatology.

The American Veterinary Medical Association, AVMA, has a wonderful, informative website. Please visit, [Becoming a Veterinarian](#), [FAQ's](#), for general information on how to become a veterinarian.

Private Practice

Provide primary health care to livestock and companion animals on a case-by-case, fee-for-service basis. More than 70 percent of practices deal with small companion animals. Practitioners may specialize in one medical area, such as surgery or dermatology. Others emphasize a group or species, such as food animals, exotics, birds or horses. Whatever their interests, all DVM students learn to provide basic care to the general animal population and prevent disease and other health problems.

Public Health

Veterinarians may work for federal or regional agencies that watch over the health and welfare of domesticated animals or monitor populations of free-ranging wildlife. These experts diagnose diseases, inspect meat and poultry, oversee communicable disease programs (West Nile virus, rabies, BSE, avian flu, etc.) and conduct research. Specialists also handle fish, wildlife, laboratory animals and other animals regulated by federal law. Such careers can include working with the United States Fish and Wildlife Service, Centers for Disease Control and Prevention, Food and Drug Administration, United States Department of Agriculture, National Institutes of Health, Army or Air Force Veterinary Corps, and others.

Research

Research veterinarians investigate scientific problems and develop strategies and new technologies. They develop new diagnostic tests, vaccines and products that prevent human and animal disease and enhance food quality. For instance, veterinary pathologists and toxicologists working in public institutions or private companies test the safety and efficacy of new treatments, monitor environmental conditions and evaluate the effects of environmental pollutants.

Teaching

Veterinarians have excellent opportunities to teach at veterinary schools or colleges. Instructors teach courses that encourage professional-level students to develop the problem-solving skills and strategies that promote animal health. Faculty members also conduct basic and clinical research and provide various services to the public.

Preparing For a Career in Veterinary Medicine

Beyond the love for animals a veterinarian must possess:

- An inquiring mind as well as a strong aptitude and interest in the biological sciences.
- Good Communication skills, including the ability to work well with a variety of people, particularly when dealing with an owner's grief and loss of their pet.

- Excellent leadership and management skills for clinical practice and other structured work environments.

Start Early in High School

Because there are more qualified applicants than there are places in veterinary schools, entrance to veterinary school is highly competitive. Here's how you can get an early start:

- Study hard - lay the foundation in high school for academic success in college and veterinary school. Excellent grades and high SAT scores will ensure entrance into a good undergraduate institution which will prepare you for admittance to veterinary school.
- Challenge yourself - take biology and other science courses, math and English, and other college prep classes.
- Get involved in farm and science clubs as well as other leadership activities. Take opportunities to increase your appreciation for veterinary medicine.
- Volunteer at a kennel, animal shelter, farm or other setting where you can learn animal-handling skills. Begin to keep a record of your animal-related experience.
- Ask your high school counselor about applying to colleges that will best meet your goals.

Make College Count

- Attend a college where you will excel. You may attend a community college and transfer to a four-year college or university.
- Meet with your college advisor early to talk about your professional plans and veterinary school prerequisites.
- Turn to our website for specific courses that fulfill veterinary school requirements and for any updates in the admissions requirements.
- Earn good grades in the sciences and overall. Most students enter our program will have a cumulative college grade point average of 3.5 or higher.
- Choose any major that best fits your interest - as long as you fulfill the veterinary school prerequisites. Animal health or biological sciences is the most common undergraduate major among veterinary students.
- Gain substantial experience with veterinarians. Keep a record of your veterinary work or volunteer experience. Try to diversify your experience and expose yourself to more than one species or other animal/research related activities so that it broadens your understanding of the veterinary profession.

What Happens After You Finish Veterinary School

After completing four years of the veterinary program you receive the degree of doctor of veterinary medicine. Just like human medicine, students must pass a board certification exam to allow them to practice veterinary medicine. Some specialize in a particular field or you may decide to obtain a PhD to further your breadth of knowledge and skill set. You may also serve an internship or residency to acquire training to become board certified in your specialty.

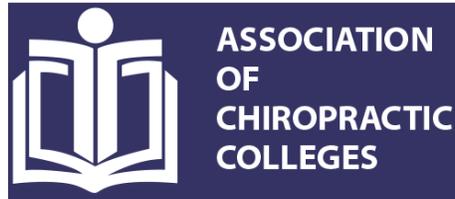
Preparing for a career in veterinary medicine - information about U.S. veterinary schools

www.aavmc.org

Career options for veterinarians

www.aavmc.org

**Chiropractic
Medicine
&
Naturopathic
Medicine**



Association of Chiropractic Colleges

Mission: The Association of Chiropractic Colleges primarily represents accredited chiropractic colleges in North America and seeks to advance chiropractic education, research and service. ACC values evidence-informed, quality, patient-centered care, by expert, ethical, inclusive professionals, and the improvement of health care systems through chiropractic education and research.

Size of Organization: Not provided

Number of Member Institutions: 22 member institutions/campuses

New Institutional Members in Last Two Years:

- New institutions are opening around the world.
- No new US institutions.

Total Number of Students: ~10,000 students in the United States

Total Number of First Year Students: approximately 2,500

Total Number of Graduates in Most Recent Academic Year: approximately 2,500

Data on Employment Rates of Recent Graduates: Not provided

Admissions Updates

Contact Information and CAS Link: ChiroCAS has not been widely adopted by the chiropractic colleges or widely used by students. Apply directly to individual Chiropractic Colleges.

Current Number of Participating Programs Versus Total Member Programs: There are currently 22 Doctor of Chiropractic (DC) programs, 18 in the USA and 4 in Canada, New

Zealand, and Korea: www.discoverchiropractic.org or
www.chirocolleges.org/members.html

Open Period (launch date and last deadline): Not provided

Submission Deadlines: Application cycles and deadlines vary by individual program. Several programs have rolling admissions and multiple start dates. It is recommended that students apply ~6 months before intended matriculation date.

Applicant Code of Conduct or Required Institutional Certification or Statement: Not provided

Fees: Not provided

Fee Waivers: Not provided

Letters of Reference Delivery Method(s): Not provided

Background Check Services if Applicable: Not provided

Fall 2013 Matriculants

Number of Applicants, With Data on the Profile of the Pool Including Gender, Race/Ethnicity, Age, Etc.: Chiropractic programs enrolled approximately 2,500 new students in the United States last year.

Profile of the Admitted Applicant Including GPA, Tests Score, Etc.: Not Provided

Report on Trends (bar graphs): Number of applicants, Age, Gender, Race/ethnicity

- Schools' minority students ratio ranged from 11% to 40 % at our institutions.
- Our gender ratios ranged from 50-50% to 65-35% male to female.

The rising number of minorities and the number of female students continues an increasing trend in chiropractic enrollment.

Prerequisites:

Academic: Admitted students must complete a minimum of 90 semester hours of undergraduate study at an accredited US institution(s) or an equivalent foreign agency with a GPA for these 90

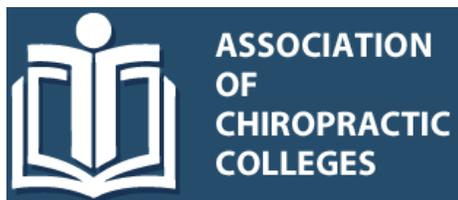
hours of not less than 3.0 on a 4.0 scale. However, it should be noted that some states require an earned Bachelor's degree to obtain licensure. The 90 hours must include a minimum of 24 semester hours in life and physical science courses. Individual chiropractic programs may establish more specific prerequisite course requirements which vary greatly from one college to another, so it is important to check individual program websites:

www.discoverchiropractic.org or www.chirocolleges.org/members.html

Standardized Test(s): None required

Experience/Exposure: Experience/exposure to health care settings, especially chiropractic is strongly recommended. Many chiropractic schools can help match pre-chiropractic students with one of their practicing alumni for shadowing experience upon request.

Letters of Recommendation: To be submitted directly to individual chiropractic colleges.

[Home](#)[Prospective Students](#)[News/Resources](#)[Links](#)[About ACC](#)[What is Chiropractic?](#)[Members](#)[Board of Directors](#)[Policies](#)[ACC/RAC Conference](#)

Prospective Students

We invite you to review our full list of member institutions.

- Canadian Memorial Chiropractic College
- Cleveland Chiropractic College, Kansas City Campus
- D'Youville College
- Life Chiropractic College West
- Life University
- Logan University
- National University of Health Sciences, Illinois Campus
- National University of Health Sciences, Florida Site
- New York Chiropractic College
- New Zealand College of Chiropractic
- Northwestern Health Sciences University
- Palmer College of Chiropractic, Davenport Campus
- Palmer College of Chiropractic, West Campus
- Palmer College of Chiropractic, Florida Campus
- Parker University
- Sherman College of Chiropractic
- Southern California University of Health Sciences
- Texas Chiropractic College
- Université du Québec à Trois-Rivières
- University of Bridgeport College of Chiropractic
- University of Western States, College of Chiropractic

College News

ACC at the WHO conference in Geneva [\[Watch Video\]](#)

Dr. Valerie Bennett, College Advisor on Health Careers [\[Watch Video\]](#)

NAAHP President Greet Chiropractic Colleges and others at 2014 National conference [\[Watch Video\]](#)

Dr. Brian McAulay Elected President of Association of Chiropractic Colleges [\[Read More\]](#)

HHS Secretary Kathleen Sebelius Talks Global Health Care Issues with ACC Executive Director David O'Bryon [\[Read More\]](#)

The Chiropractic Centralized Application Service (ChiroCAS)

The ChiroCAS is now open and subsequent enrollment periods for the participating schools listed.

Colleges participating in ChiroCAS are:

- Canadian Memorial Chiropractic College
- Cleveland Chiropractic College, Kansas City Campus
- D'Youville College
- Life University
- Life West College of Chiropractic
- Logan University
- New York Chiropractic College
- Northwestern Health Sciences University
- Palmer College of Chiropractic, Davenport (Davenport, Iowa)
- Palmer College of Chiropractic, Florida (Port Orange, Fla.)
- Palmer College of Chiropractic, West (San Jose, Calif.)
- Parker University
- Sherman College of Chiropractic
- Texas Chiropractic College
- University of Bridgeport College of Chiropractic
- University of Western States, College of Chiropractic

If you wish to apply to one or more of these programs please [click here](#).

* Keep checking back as more schools may be joining.

Academic Requirements

Most chiropractic programs require that applicants have at least 3 years of undergraduate education, and an increasing number require a bachelor's degree. In either case, your undergraduate studies must include a prescribed number of prerequisite courses, as defined by the field's accrediting body, the [Council on Chiropractic Education](#).

There are pre-admissions requirements. The following courses should be completed during one's undergraduate education:

D.C. Prerequisites

Candidates for admission must meet certain specific course/credit requirements in the sciences, social sciences and humanities.

Current entrance requirements for the Doctor of Chiropractic degree program are the following:

Effective January 2014, or earlier, at its discretion, the DCP admits students whose goals, abilities, and character are consistent with the DCP's mission, and who have

completed the equivalent of three academic years of undergraduate study (90 semester hours) at an institution(s) accredited by an agency recognized by the U.S. Department of Education or an equivalent foreign agency with a GPA for these 90 hours of not less than 3.0 on a 4.0 scale. The 90 hours will include a minimum of 24 semester hours in life and physical science courses. These science courses will provide an adequate background for success in the DCP, and at least half of these courses will have a substantive laboratory component. The student's undergraduate preparation also includes a well-rounded general education program in the humanities and social

sciences, and other coursework deemed relevant by the DCP for students to successfully complete the DCP curriculum.

In the past all matriculants would have to enter with the following course distribution as stated below. However because of the changes the following is offered only to provide some idea of the range of courses that may be needed. All applicants should check with the individual schools in which they have an interest.

SOCIAL SCIENCES AND HUMANITIES	Semester Hours	Quarter Hours
<u>English Communication and/or English Language Skills</u>	6	9
<u>Psychology</u>	3	4.5
<u>Social Sciences or Humanities</u>	15	22.5
SCIENCES		
<u>Biological Sciences with corresponding lab*</u>	6	9
<u>Chemistry with corresponding lab**</u>	12	18
<u>Physics with corresponding lab***</u>	6	9

In each of the six distribution areas, no grades below 2.00 on a 4.00 scale may be accepted.

In each of the six areas of coursework, if more than one course is taken to fulfill the requirement, the course contents must be unduplicated.

*The Biological Sciences requirement must include pertinent laboratory experiences.

** At least six semester hours of the chemistry courses must include a corresponding lab. The chemistry requirement may be met with the following:

- 3 semester hours must be General/Inorganic Chemistry
- 6 semester hours must be Organic and/or Biochemistry
- 3 semester hours of Chemistry elective

*** Physics with corresponding lab*

- Two unduplicated classes, with a corresponding lab -or-
- 3 semester hours in Physics, with corresponding lab and
- 3 semester hours in Biomechanics, Kinesiology, Statistics or Exercise Physiology. (Physics I and II with lab are required by certain states).

In the event an institution's transcript does not combine laboratory and lecture grades for a single course grade, the admitting institution may calculate a weighted average of those grades to establish the grade in that science course.

Accredited chiropractic programs last 4 years and lead to a Doctor of Chiropractic (D.C.) degree. The standard curriculum covers:

- anatomy
- biochemistry
- physiology
- microbiology
- pathology
- public health
- physical, clinical and laboratory diagnosis
- gynecology & obstetrics
- pediatrics
- geriatrics
- dermatology
- otolaryngology
- diagnostic imaging procedures
- psychology
- nutrition/dietetics
- biomechanics
- orthopedics
- neurology
- first aid and emergency procedures
- spinal analysis
- principles and practice of chiropractic
- clinical decision making
- adjustive techniques
- research methods and procedures
- professional practice ethics



Association of Accredited Naturopathic Medical Colleges

About AANMC: The Association of Accredited Naturopathic Medical Colleges (AANMC) is the nonprofit organization representing all accredited naturopathic programs in the United States and Canada. AANMC member institutions in the U.S. are accredited by one of the regional accrediting agencies approved by the U.S. Department of Education. In addition, all naturopathic medicine programs of the member schools have been accredited (or are candidates for accreditation) by the [Council on Naturopathic Medical Education \(CNME\)](#). The CNME is the recognized accreditation agency for naturopathic medical programs in North America. The AANMC works collaboratively toward the advancement and improvement of naturopathic medical education.

Vision: Naturopathic medical education will be an important, vital, and high-quality choice for individuals seeking health professional careers as physicians.

Mission: The mission of the AANMC is to enhance the individual and collective success of member organizations in delivering high quality, innovative, and accessible naturopathic medical education and research. The AANMC advocates for:

- **Outcomes-based**, challenging, humane, and holistic medical education experience
- **Public awareness** and support of Naturopathic Medical Education
- Naturopathic medicine **research** that improves the knowledge about and the teaching / practice of naturopathic medicine
- Provision of high quality clinical training through health services in the community

Size of Organization: Not provided

Number of Member Institutions: Not provided

New Institutional Members in Last Two Years: Not provided

Total Number of Students: Not provided

Total Number of First Year Students: Not provided

Total Number of Graduates in Most Recent Academic Year: Not provided

Data on Employment Rates of Recent Graduates: Not provided

Admissions Update

Contact Information and CAS Link: NDCAS Link: portal.ndcas.org/, contact information

Current Number of Participating Programs Versus Total Member Programs: There are 4 participating programs out of 7 total programs

Open Period (launch date and last deadline): September 2 to August 15

Submission Deadlines: Vary by school

Applicant Code of Conduct or Required Institutional Certification or Statement: This is required by schools upon admission.

Fees: \$115 for first designation; \$40 for each additional

Fee Waivers: Not provided

Letters of Reference Delivery Method(s): electronic only

Background Check Services if Applicable: Some schools may require a background check upon admission

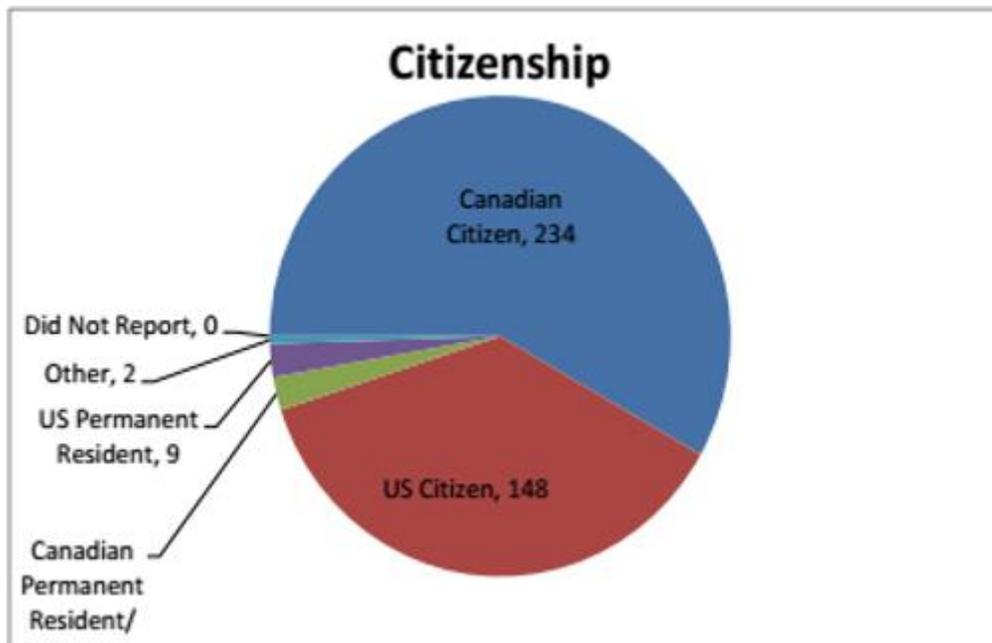
Fall 2013 Matriculants

Number of Applicants, With Data on the Profile of the Pool Including Gender, Race/Ethnicity, Age, Etc.: Not Provided

Profile of the Admitted Applicant Including GPA, Tests Score, Etc.:
NDCAS - Citizenship Status Report

Applicants for 2013 Entering Class

Citizenship Status	# of Applicants	% of NDCAS
Canadian Citizen	234	58.21%
US Citizen	148	36.82%
Canadian Permanent Resident	9	2.24%
US Permanent Resident	9	2.24%
Other	2	0.50%
Did Not Report	0	0.00%
Total	402	100.00%

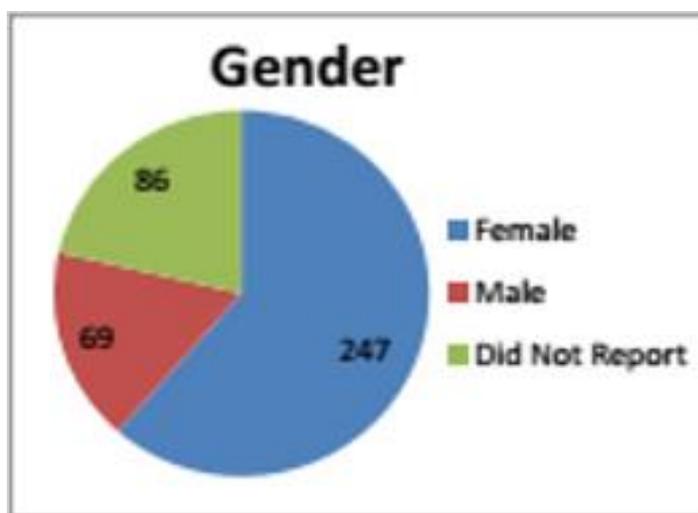


Report on Trends (bar graphs): Number of applicants, Age, Gender, Race/ethnicity

NDCAS - Gender Report

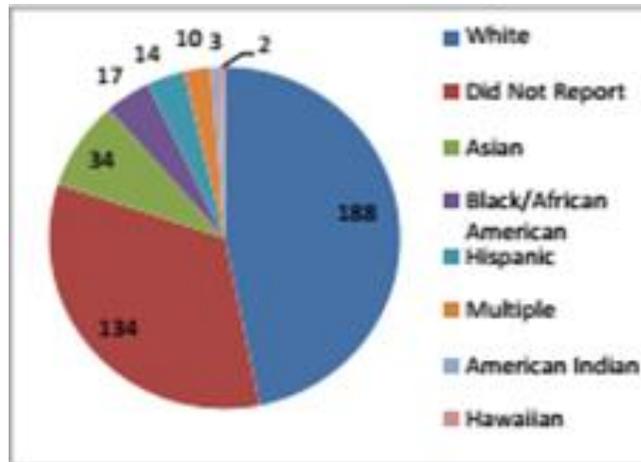
Applicants for 2013 Entering Class

Gender	# of Applicants	% of NDCAS
Female	247	61.44%
Male	69	17.16%
Did Not Report	86	21.39%
Total	402	100.00%



NDCAS - Ethnicities and Races Report

Ethnicities and Races	# of Applicants	% of NDCAS
White	188	46.77%
Did Not Report	134	33.33%
Asian	34	8.46%
Black/African American	17	4.23%
Hispanic	14	3.48%
Multiple	10	2.49%
American Indian	3	0.75%
Hawaiian	2	0.50%
Total	402	100.00%



Prerequisites

In general, a common core of Pre-med Health Sciences, Biology, General and Organic chemistry is required. Students are accepted from any major as long as GPA and prerequisite requirements are met.

Academic: Academic Prerequisites vary by school; please check with admissions to confirm prerequisites of the school(s) your student is interested in.

Standardized Test(s): No standardized test is required for admission.

Experience/Exposure: Naturopathic students are encouraged to speak with or shadow a naturopathic physician prior to application. Pertinent life experience related to naturopathic medicine is also considered.

Letters of Recommendation: Information on LOR can be found at portal.ndcas.org/ndcasHelpPages/instructions-faqs/references/index.html and vary by school.



Naturopathic Physicians: Natural Medicine. Real Solutions.

Definition of Naturopathic Medicine

Naturopathic medicine is a distinct primary health care profession, emphasizing prevention, treatment, and optimal health through the use of therapeutic methods and substances that encourage individuals' inherent self-healing process. The practice of naturopathic medicine includes modern and traditional, scientific, and empirical methods.

The following principles are the foundation of naturopathic medical practice:

- **The Healing Power of Nature (Vis Medicatrix Naturae)**: Naturopathic medicine recognizes an inherent self-healing process in people that is ordered and intelligent. Naturopathic physicians act to identify and remove obstacles to healing and recovery, and to facilitate and augment this inherent self-healing process.
- **Identify and Treat the Causes (Tolle Causam)**: The naturopathic physician seeks to identify and remove the underlying causes of illness rather than to merely eliminate or suppress symptoms.
- **First Do No Harm (Primum Non Nocere)**: Naturopathic physicians follow three guidelines to avoid harming the patient:
 - Utilize methods and medicinal substances which minimize the risk of harmful side effects, using the least force necessary to diagnose and treat;
 - Avoid when possible the harmful suppression of symptoms; and
 - Acknowledge, respect, and work with individuals' self-healing process.
- **Doctor as Teacher (Docere)**: Naturopathic physicians educate their patients and encourage self-responsibility for health. They also recognize and employ the therapeutic potential of the doctor-patient relationship.
- **Treat the Whole Person**: Naturopathic physicians treat each patient by taking into account individual physical, mental, emotional, genetic, environmental, social, and other factors. Since total health also includes spiritual health, naturopathic physicians encourage individuals to pursue their personal spiritual development.
- **Prevention**: Naturopathic physicians emphasize the prevention of disease by assessing risk factors, heredity and susceptibility to disease, and by making appropriate interventions in partnership with their patients to prevent illness.

NATUROPATHIC PRACTICE

Naturopathic practice includes the following diagnostic and therapeutic modalities: clinical and laboratory diagnostic testing, nutritional medicine, botanical medicine, naturopathic physical medicine (including naturopathic manipulative therapy), public health measures, hygiene, counseling, minor surgery, homeopathy, acupuncture, prescription medication, intravenous and injection therapy, and naturopathic obstetrics (natural childbirth).

What is a Naturopathic Doctor?

Naturopathic physicians combine the wisdom of nature with the rigors of modern science. Steeped in traditional healing methods, principles and practices, naturopathic medicine focuses on holistic, proactive prevention and comprehensive diagnosis and treatment. By using protocols that minimize the risk of harm, naturopathic physicians help facilitate the body's inherent ability to restore and maintain optimal health. It is the naturopathic physician's role to identify and remove barriers to good health by helping to create a healing internal and external environment.

Naturopathic physicians work in private practices, hospitals, clinics and community health centers. NDs practice throughout the United States and Canada. Qualified naturopathic physicians undergo rigorous training before they become licensed health-care practitioners. Visit our Professional Education page to learn about naturopathic education.

NDs treat all medical conditions and can provide both individual and family health care. Among the most common ailments they treat are allergies, chronic pain, digestive issues, hormonal imbalances, obesity, respiratory conditions, heart disease, fertility problems, menopause, adrenal fatigue, cancer, fibromyalgia and chronic fatigue syndrome. NDs can perform minor surgeries, such as removing cysts or stitching up superficial wounds. However, they do not practice major surgery. NDs are trained to utilize prescription drugs, although the emphasis of naturopathic medicine is the use of natural healing agents.

YOUR FIRST VISIT

A naturopathic physician will take time with you. During your first appointment, your doctor will take your health history, find out about your diet, stress levels, use of tobacco and alcohol, and discuss why you're there. He or she may perform an examination and order diagnostic tests. Naturopathic physicians keep themselves up-to-date on the latest scientific research and incorporate this evidence into their treatments. The naturopathic physician will work with you to set up a customized health management strategy. If necessary, your doctor will refer you to other health-care practitioners.

A first visit with a patient may last one to two hours and follow-up visits range from 30 to 60 minutes, although this varies depending on the ND. Naturopathic physicians need sufficient time to ask questions and understand the patient's health goals. NDs also need time to gather information, do an appropriate examination and teach his or her patients about managing their condition and improving their health. An ND may also use diagnostic tests to fully understand their patient's health status. Besides taking the time to carefully and fully assess a patient's root problem, NDs speak and understand the language of conventional medicine. They can diagnose the way MDs do—yet, they bring to the patient a whole new arsenal of treatments and insights. Instead of waiting for a disease to emerge, NDs work to head it off before it happens.

Health Professions Resources



TOP 10 ADVISOR RESOURCES

Health Professions Advising Office (HPAO) • Jensen Student Access to Science (SAS) and Mathematics Center • Location: Hall of Science Building – Room 164 • Phone: (562) 985-8061

1. EXPLORE HEALTH CAREERS

Explore Health Careers - www.explorehealthcareers.org is a free, multi-disciplinary, interactive health careers website designed to explain the array of health professions and provide easy access to students seeking information about health careers. This website is a joint initiative involving national foundations, professional associations, health career advisors, educational institutions, and college students.

2. HEALTH CARE CAREER DIRECTORY

Health Care Career Directory (*ISBN 978-1-60359-005-1*) - published by the American Medical Association. The latest edition of a downloadable version of this e-book is now available! Gain lifetime access and download to six electronic devices. The Health Care Careers Directory, published by the American Medical Association (AMA) annually, provides detailed information on more than 8,600 educational programs at 2,800 institutions encompassing 82 different health care occupations. An essential reference for researching and planning a career in health care, this resource provides indispensable information on accredited educational programs in all 50 U.S. states, Puerto Rico, Canadian provinces, and other countries. Each career description includes:

- history of profession
- general duties of the profession
- employment demand outlook
- educational program descriptions
- information on licensure, certification and registration

3. AMERICAN MEDICAL ASSOCIATION

American Medical Association - www.ama-assn.org - Education & Careers section. Click “Careers in Health Care, then Health Care Career Directory for a list of information about 82 careers health care.

4. NATIONAL ASSOCIATION FOR ADVISORS FOR THE HEALTH PROFESSIONS

National Association of Advisors for the Health Professions (NAAHP) - www.naahp.org The National Association of Advisors for the Health Professions serves as a resource for the professional development of health professions advisors. It is a representative voice with health professions schools and their professional associations, undergraduate institutions, and other health professions organizations. The “Advisor Resources” section, reserved for members, has helpful articles and links including a standardized test facts sheet, information on advising international students, foreign medical schools and more.

5. ASSOCIATIONS SUPPORTING STUDENTS OF DIVERSITY

National Association of Advisors for the Health Professions (NAAHP) - Diversity in the Health Professions - <http://www.naahp.org/Diversity/SupportingDiversity.aspx> - has a list of associations that support students from

all backgrounds with the goal of diversifying the health professions. Also, see the links below:

- www.snma.org Student National Medical Association
- www.lmsa.net Latino Medical Student Association
- www.aaip.org Association of American Indian Physicians
- www.amwa-doc.org American Medical Women's Association
- www.apamsa.org Asian Pacific American Medical Student Association
- www.anamstudents.org Assoc. of Native American Medical Students
- www.amsa.org/AMSA/Homepage/About/Committees/GenderandSexuality.aspx LGBT committee in AMSA
- www.amsa.org/AMSA/Homepage/About/Committees/REACH.aspx Minority Health committee in AMSA
- <http://lmsa.net/> National Network of Latin American Medical Students
- www.nammenational.org National Association of Minority Medical Educators
- www.thesaidonline.org Society for American Indian Dentists

You can also search for other associations at the following sites:

- www.minorityhealth.hhs.gov Office of Minority Health (Federal site)
- www.healthfinder.gov Health and Human Services searchable database of organizations nationwide
- <http://www.minorityhealth.org/> Association of Minority Health Professions Schools (by their Foundation)

6. SUMMER MEDICAL AND DENTAL EDUCATION PROGRAM

Summer and Medical and Dental Education Program (SMDEP) – www.smdep.org is a FREE (full tuition, housing, and meals) six-week summer academic enrichment program that offers freshmen and sophomore college students intensive and personalized medical and dental school preparation.

7. STUDENTDOCTOR.NET – INTERVIEW FEEDBACK SECTION

StudentDoctor.Net - Interview Feedback Section - www.studentdoctor.net/interview-feedback is an interview feedback forum for students to write and share their experience and read about others' experiences at health professions interviews. Feedback provided for a variety of health professional programs, such as medical school, dental, optometry, pharmacy, podiatry, and veterinary medicine. *Caution that this student driven website may not always provide accurate information, but can be helpful for students who are anxious about the interview experience.*

8. ASPIRING DOCS

Aspiring Docs - www.aspiringdocs.org is part of an Association of American Medical Colleges (AAMC) campaign to raise awareness about the need for more diversity in medicine and to connect students to key resources, including podcasts, online community, and other helpful links.

9. OFFICIAL GUIDES

Official Guides - are annual profession specific publications that highlight preparation, application process, selection procedures, and individual school profiles.

- Allopathic Medical School Admission Requirements (MSAR) - www.aamc.org
- American Association of Colleges of Osteopathic Medicine College Information Book - www.aacom.org

- Physician Assistant Education Association - www.paeaonline.org, click on “Member Programs” for a directory of Physician Assistant Training programs
- American Dental Education Association Official Guide to Dental Schools - www.adea.org
- Pharmacy School Admission Requirements (PSAR) - www.aacp.org
- Schools and Colleges of Optometry - Admission Requirements - www.opted.org, click on “About Optometric Education” then “Student and Advisor Information” then, “Admission Requirements Handbook”
- Veterinary Medical School Admission Requirements (VMSAR) - www.aavmc.org/vmcas/vmcas.htm
- American Physical Therapy Association guide to accredited programs - www.apta.org, click “Education Programs,” “Student Resources,” then “PT/PTA programs”
- American Association of Colleges of Podiatric Medicine – www.aacpm.org, click on “Applying to Colleges”

10. LOCAL HEALTH PROFESSIONS PROGRAMS

Local Health Professions Programs - Go directly to the source! The local health professions programs are happy to speak with counselors and advisors regarding their admissions requirements, articulation, and programs. Many host “Information Days” or an “Open House” that spotlight programs and often provide the opportunity to take a tour, meet current students, and connect with admissions personnel and faculty.



How Do I... Partner with My Advisor?

How do I find an advisor?

Carol Baffi-Dugan, Director for Health Professions Advising at Tufts University and Director of Communications for the NAAHP, suggests finding out who the premed or health professions advisor is at your school. S/he may be in the Academic Dean's office, a science professor, or a counselor in the Career Services office. Some colleges have a separate pre-professional advising office that includes advising services for premed students, those interested in other health careers, and perhaps even pre-law students. Most premed advisors also maintain websites that can help you contact them or the advising office, so search your school's website. Even if there is no specifically designated premed advisor, try to meet with someone in one of the departments mentioned above. If no one at your school is available to help, visit the National Association of Advisors to the Health Professions (**NAAHP**) [website](#) and click on Advisor Resources, then, Find An Advisor.

When should I contact an advisor?

Contact your premed advisor as soon as you think you're interested in a medical career. There's a lot of planning and preparing that has to be done before you'll be ready to apply to medical school, so the earlier, the better. See if you can make an individual appointment with your advisor, go to drop-in hours, or attend a workshop. Be sure to register to receive any emailed updates, or newsletters. Also check to see if there's a Facebook page or Twitter feed you can follow.

What can they help with?

Your advisor can help you learn about the medical profession and help you ask the right questions to decide if it's the right career for you. Then, you can work together to develop a plan to get to you where you want to go.

FOR MORE INFORMATION PLEASE VISIT:

NAAHP: www.naahp.org

Medical School Directory:

<https://services.aamc.org/30/msar/home>

MSAR Online: www.aamc.org/msar

What questions should I be asking?

Ask your advisor which courses are required for medical school and how to best sequence them at your school. You can ask about ways to gain health-related experiences, internships and lab experiences. You can learn about the MCAT, discuss when you're best prepared to take the exam, and learn if the school offers any prep courses. It's also a good idea to ask detailed questions about the timeline for applying to medical school.

What is my responsibility?

You should actively seek out your advisor and follow up on the advice and suggestions s/he gives you. While your advisor may be very supportive of your goals, s/he will also challenge you to do your best work and objectively evaluate your objectives. Your advisor cannot earn the good grades and participate in the health-related experiences you'll need to be a competitive applicant. That is up to you.

What if I've been out of school for many years?

There is no age limitation on applicants or when it comes to who will make a good doctor. Many individuals decide later that this is the path they want to pursue. Others were not as successful as they wanted to be in their early experience, but with renewed motivation and effort can become competitive applicants. Premed advisors know all this and work with students of all ages as they prepare for medical school. You should go back to your home institution (alma mater) to find out what services they offer alumni. Many premed advisors will work with their alums in planning for and applying to medical careers.

What if I am in high school and I'm looking at BS/MD programs? Is there still a pre-health advisor that I can work with?

If you are in high school and are considering BS/MD programs your best resources are the premed advisors at those programs. Typically the admissions offices at those colleges and universities provide information on the structure of the programs, the support services, and the policies and procedures. Check out the AAMC's **Medical School Directory** for basic information, including website and contact information for numerous combined Baccalaureate/MD programs. More detailed information about these programs and medical schools can be found in the **MSAR Online**.

What's It Like to... Participate in Summer Medical and Dental Education Program?

The Summer Medical and Dental Education Program (SMDEP) is a FREE (full tuition, housing, and meals), six-week summer academic enrichment program for freshman and sophomore college students interested in careers in medicine and dentistry.

What's an average day like?

Natacha: "An SMDEP day starts early with scheduled lectures (Physics, Chemistry, Anatomy lab, Microbiology, etc.) to refresh your science knowledge to prepare for the MCAT or DAT. There's a lunch break, then from noon until 5:00 p.m., you attend workshops on health care policies, cultural competency, school financial planning, or you might shadow a dentist or doctor from a nearby hospital. After 5:00 p.m., you're given free time to explore the town with other students."

Nicole: "The day can be challenging, but it's also engaging and fun at the same time. While it is hard work, you're greatly increasing your knowledge and sharing the experience with others who have similar interests and goals, so it makes the work more fun."

What was the best clinical experience you had in the program?

Michael: "I shadowed an attending emergency medicine physician in a medical center where I was able to participate on a stroke and motor vehicle trauma case. I also had the ability to assist at a free community clinic staffed by medical students."

Netosha: "My most profound clinical experience took place while making rounds with an emergency physician. I saw the importance of the knowledge a physician must have to make a quick, proper diagnosis in a life threatening situation, and the responsibility they have to the well-being of each patient. This clinical experience humbled me."

Fitz: "Although I want to go to dental school, I was very intrigued with the emergency room simulation. I also enjoyed shadowing a fourth-year dental student, taking impressions, and molding teeth with wax."

For you, what was the biggest benefit of SMDEP?

Nicole: "SMDEP gave me a greater focus on my goal. Afterward, I knew exactly how and what I needed to do to attend medical school, and I am willing to work harder because I know it's possible."



Michael: "The biggest benefits of the program are networking and academic preparation. I had the ability to connect with medical students, faculty, and administrators, which opened doors to more opportunities like mentorship and research. The science coursework made my following semester much easier and helped with MCAT review."

Netosha: "The biggest benefit of SMDEP was the confidence I gained from working in a rigorous academic setting. Nothing compares to the self-efficacy the program provided."

How did this experience help you to prepare for medical school?

Natacha: "Working with cadavers in the cadaver lab for Anatomy and Physiology definitely helped me prepare for medical school. I had never been near a cadaver, and attending lab weekly helped to prepare me for the exposure I'll have in medical school."

Michael: "The science coursework at SMDEP made classes at my home university much easier and gave me a leg-up on MCAT review. Through networking, I secured a mentor that allowed me to participate on a research project with the medical school after the program. I also made very good friends with whom I stay in contact regularly."

Erick: "I believe it has helped me through giving me inspiration. The focus on health disparities at Case really opened my eyes to a new side of medicine. I no longer see medicine the same; I see it for the better bigger picture."

Fitz: "SMDEP definitely helped me prepare for dental

ASPIRING DOCS



school. The program put me on track to graduate from undergrad on-time and get into dental school."

Would you recommend SMDEP to other pre-meds?

Natacha: "I would definitely recommend SMDEP to other pre-meds. This program gives you an inside look as to what you are getting yourself into both educationally and personally."

Nicole: "YES! For six weeks I lived as if I was a medical school student. All the experiences I had combined with the friendships I established – I can't wait to go to medical school in the future."

Michael: "Yes. SMDEP is an invaluable experience for any interested pre-medical student, especially for those from underrepresented and disadvantaged backgrounds."

Christian: "Yes, and apply early to the program! That is KEY."



FOR MORE INFORMATION, INCLUDING HOW TO APPLY, VISIT WWW.SMDEP.ORG, OR EMAIL AT SMDEP@AAMC.ORG.

BIO INFORMATION

Name: Natacha Rivera
SMDEP Site: Houston 2011

Name: Nicole Fossas
SMDEP Site: Houston 2011

Name: Michael Anthony McClurkin
SMDEP Site: Yale 2011

Name: Erick Marigi
SMDEP Site: Case Western 2011

Name: Christian Tilley
SMDEP Site: Nebraska 2011

Name: Netosha Kenneson
SMDEP Site: Duke 2011

Name: Fitz J. Brooks
SMDEP Site: Louisville 2011


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[MEETINGS](#)

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Media Specialist

What is NAAHP?

The National Association of Advisors for the Health Professions is an organization of over 1400 health professions advisors at colleges and universities throughout the United States, and abroad.

NAAHP was established in 1974 to coordinate the activities and efforts of four independent regional associations, so that health professions advisors across the nation could function together and speak with one voice. It has grown steadily from that beginning into an effective national clearing house for opinions of advisors and news from allopathic and osteopathic medicine, chiropractic, dental, nursing, optometry, pharmacy, physical therapy, physician assistant, podiatric medical, public health, speech-language-hearing, and veterinary medical schools. In addition, NAAHP has established partnerships with health professions schools and their organizations through advisor liaisons and an Advisory Council comprised of representatives from these organizations.

The success of NAAHP is directly dependent upon its four regional associations — Central (CAAHP), Northeast (NEAHP), Southeast (SAHP) and West (WAAHP) — from which it derives its strength and its membership. NAAHP encourages each regional group and each member to share more fully their experiences and information with other regions and advisors, and has given all advisors a nationally recognized forum in which to state their views and share their research studies through its publication, *The Advisor*.

Mission of NAAHP

The National Association of Advisors for the Health Professions serves as a resource for the professional development of health professions advisors.

It is a representative voice with health professions schools and their professional associations, undergraduate institutions, and other health professions organizations. The Association promotes high standards for health professions advising at universities and colleges. It assists advisors in fostering the intellectual, personal,

send mail to the National Office
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Marian Rodgers

Secretary

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Pamela Smith

Bookkeeper

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and humanistic development of students as they prepare for careers in health professions.

Vision Statement

The vision of NAAHP is to become the premier organization educating and supporting health professions advisors. To achieve this vision, NAAHP will strengthen services by:

- Providing a representative voice
- Enhancing technological resources
- Increasing awareness of diversity issues
- Promoting excellence and integrity in the delivery of health professions advising

What makes NAAHP worthwhile?

Through its services, NAAHP gathers, sifts, and disseminates helpful information in a far more effective way than any individual advisor could do independently.

Through a unified voice, advisors can have an impact with health professions schools, associations, and application services by communicating the needs of advisors and their students.

Governmental Structure

All activities of NAAHP are coordinated with and through the regional associations. Management and control of corporation affairs are vested in the fourteen-member Board of Directors. Each regional association selects two representatives to serve on the Board. The Executive Director serves as an ex-officio member of the Board and is appointed for a three-year term. The Director of Communications, Historian and Program Chair also serve as ex-officio members. Other Board members serve two-year terms. The Executive Director supervises daily affairs of NAAHP. The Executive Committee, composed of the President-Elect, Past-President, President, Secretary, Treasurer and Assistant Treasurer, is elected by the Board of Directors at its annual meeting. The NAAHP by-laws, which provide more detailed information on governance, are available to members on request.

Centralized Application Services Information



AADSAS

PharmCAS
Pharmacy College Application Service

AACOMAS®

OptomCAS



AMCAS

CASPA™

NDCAS

AMCAS

American Medical College Application Service

Association	Association of American Medical Colleges www.aamc.org
Number of Schools	Most medical schools participate in AMCAS. The only exception is Texas Tech University Health Sciences Center, El Paso, Paul L. Foster School of Medicine. 6 Texas schools use AMCAS only for M.D.-Ph.D. application.
Contact Information	Applicant Contact: amcas@aamc.org (202) 828-0600
Opening Date(s)*	May 1
Submission Date(s)**	June 4
Deadline(s)	The Early Decision deadline including transcript deadline is August 1. Regular M.D. and all other program deadlines range August- December.
Letters of Recommendation	Most medical schools receive letters through AMCAS (5 schools/programs do not participate). Evaluators submit letters electronically directly to AMCAS through the AMCAS Letter Writer Application, VirtualEvals, Interfolio or through U.S. Mail.
Standardized Test Scores	MCAT Scores are automatically sent to AMCAS for distribution to applied participating schools once the applicant scores are available.
Transcripts	Send transcripts directly to AMCAS attached to an AMCAS Transcript Request Form.
Social Media	Facebook

Notes:

* Opening refers to the opening date of the application for this cycle

** Submission refers to the first date that applicants may submit the application for this cycle.



American Association of Colleges of Osteopathic Medicine Application Service

Association	American Association of Colleges of Osteopathic Medicine www.aacom.org
Number of Schools	34 schools participate in AACOMAS
Contact Information	301-968-4190 aacomas@aacom.org
Opening Date(s)*	May
Submission Date(s)**	June
Deadline(s)	Range from December - April depending on the school
Letters of Recommendation	Letters of recommendation sent directly to colleges following the processes outlined by each college.
Standardized Test Scores	Test scores must be sent directly to AACOMAS. To do so, students should log on to the MCAT Testing History system and select AACOMAS as a score recipient. Make sure to accurately enter the 8 digit MCAT/AAMC number.
Transcripts	Send official transcripts directly to AACOMAS, any received before May 7, 2014 cannot be used for 2015 application.
Social Media	Facebook Twitter

Notes:

* Opening refers to the opening date of the application for this cycle

** Submission refers to the first date that applicants may submit the application for this cycle.



American Association of Colleges of Podiatric Medicine Application Service

Association	American Association of Colleges of Podiatric Medicine http://www.aacpm.org/
Number of Schools	All 9 schools and colleges participate in AACPMAS
Contact Information	617-612-2900 aacpmasinfo@aacpmas.org
Opening Date(s)*	August
Submission Date(s)**	August
Deadline(s)	Deadline for priority consideration is April 1, afterwards applications accepted on rolling basis until June 30.
Letters of Recommendation	Should be sent directly to colleges or brought to interviews. 9 schools accepted electronic letters of recommendation in 2013-14 cycle. See list under FAQ on https://portal.aacpmas.org/ .
Standardized Test Scores	Send MCAT and DAT scores directly to AACPMAS. AAMC ID Number and DENTPIN Number required.
Transcripts	Send official transcripts directly to AACPMAS.
Social Media	NA

Notes:

* Opening refers to the opening date of the application for this cycle

** Submission refers to the first date that applicants may submit the application for this cycle.



Naturopathic Doctor Centralized Application Service

Association	Association of Accredited Naturopathic Medical Schools www.aanmc.org
Number of Schools	4 Naturopathic schools participate in NDCAS
Contact Information	617-612-2950 ndcasinfo@ndcas.org
Opening Date(s)*	September
Submission Date(s)**	August
Deadline(s)	Deadlines vary by program
Letters of Recommendation	3 e-letters of recommendation are required and submitted directly to NDCAS. Only electronic submission accepted. If a school requires more than 5, submit additional letters directly to school. Committee and composite letters are accepted.
Standardized Test Scores	None required (TOEFL is required in some cases but those results are sent directly to schools)
Transcripts	Official transcripts should be sent directly to NDCAS
Social Media	Facebook Twitter

Notes:

* Opening refers to the opening date of the application for this cycle

** Submission refers to the first date that applicants may submit the application for this cycle.



Veterinary Medical College Application Service

Association	Association of American Veterinary Medical Colleges http://aavmc.org/
Number of Schools	36 schools offering 39
Contact Information	617-612-2884 www.aavmc.org/Contact-Us
Opening Date(s)*	June 5, 2014
Submission Date(s)**	September 2, 2014
Deadline(s)	October 2, 2014 - Check with schools on possible deadlines.
Letters of Recommendation	Accepted electronically (eLOR), no paper letters are accepted.
Standardized Test Scores	Test scores must be sent directly to the school(s) you are applying to, do NOT send to VMCAS.
Transcripts	Transcripts must be sent directly from the registrar's office to VMCAS, NOT your veterinary programs.
Social Media	Facebook

Notes:

* Opening refers to the opening date of the application for this cycle

** Submission refers to the first date that applicants may submit the application for this cycle.



Central Application Service for Physicians Assistants

Association	Physician Assistant Education Association www.paeaonline.org
Number of Schools	179 participating schools, 14 developing programs during the 2015 application cycle.
Contact Information	(617) 612-2080 caspainfo@caspaonline.org
Opening Date(s)*	April 16, 2014
Submission Date(s)**	March 1, 2015
Deadline(s)	Each PA program categorizes its deadline into one of the categories below and reports their selection to CASPA at the beginning of each cycle. You can view each PA program's deadline category on our Participating Programs page.
Letters of Recommendation	Three letters of reference submitted electronically to CASPA are required for the application. Check PA program requirements regarding references prior to listing any references on CASPA as they cannot be removed or replaced. Committee letters are not preferred.
Standardized Test Scores	Submit official scores electronically to CASPA using PA program-specific CASPA GRE code which differs from the school's regular code. If your PA program does not have a CASPA GRE Code (List - found under FAQ sections) then send scores directly to CASPA using CASPA code. Official TOEFL Scores should be mailed to CASPA.
Transcripts	Send all official transcripts from institutions at which you earned college level credit by mail to CASPA.
Social Media	

Notes:

* Opening refers to the opening date of the application for this cycle

** Submission refers to the first date that applicants may submit the application for this cycle.



Pharmacy College Application Service

Association	American Association of Colleges of Pharmacy www.aacp.org
Number of Schools	111 pharmacy programs participate in PharmCAS
Contact Information	617-612-2050 TTY: 617-612-2060 info@pharmcas.org
Opening Date(s)*	July 14, 2014
Submission Date(s)**	June
Deadline(s)	Ranges by program from November 2014 - March 2015
Letters of Recommendation	Send up to four references to PharmCAS which will disseminate to colleges. Letters must be sent directly to PharmCAS by evaluator, either electronically or hard copy, or to the program, if required.
Standardized Test Scores	TSend PCAT, TOEFL, & TSE scores to PharmCAS, if required. (PCAT not required by all pharmacy schools).
Transcripts	Send official transcripts to PharmCAS. Policies for Int'l transcripts vary.
Social Media	Facebook and Twitter

Notes:

* Opening refers to the opening date of the application for this cycle

** Submission refers to the first date that applicants may submit the application for this cycle.



Optometry Centralized Application Service

Association	Association of Schools and Colleges of Optometry www.opted.org
Number of Schools	21 schools and colleges participate in OptomCAS
Contact Information	Applicant Contact: 617-612-2888 optomcasinfo@optomcas.org
Opening Date(s)*	July 1
Submission Date(s)**	July 1
Deadline(s)	Deadlines vary by school and range from December 2014-May 2015
Letters of Recommendation	Recommendation letters must be sent directly to OptomCAS by the evaluator electronically.
Standardized Test Scores	Official OAT scores must be sent to optometry schools and colleges when the exam is taken. Applicants are asked to self-report OAT scores on the OptomCAS application.
Transcripts	Send official transcripts directly to OptomCAS by the school or college's deadline.
Social Media	

Notes:

* Opening refers to the opening date of the application for this cycle

** Submission refers to the first date that applicants may submit the application for this cycle.

AADSAS

Associated American Dental Schools Application Service

Association	American Dental Education Association www.adea.org
Number of Schools	66 schools participate in AADSAS (65 US dental schools) Texas applicants applying to Texas Dental Schools are required to utilize Texas Medical Dental Application Service for schools outside of Texas use AADSAS.
Contact Information	617-612-2045 and aadsasinfo@aadsaweb.org
Opening Date(s)*	June
Submission Date(s)**	June
Deadline(s)	Different according to each school
Letters of Recommendation	Up to four individual letters of evaluation or one Committee Report plus one individual letter of evaluation. Most dental schools strongly prefer that letters are submitted to AADSAS as either an online electronic document or as a paper letter that is mailed to AADSAS with a LOE Matching Form.
Standardized Test Scores	Official DAT scores are sent to ADEA AADSAS. Indicate at least one ADEA AADSAS participating schools as one of your score recipient selections to ensure that ADEA AADSAS receives your DAT scores. You are encouraged to indicate every school you would like your scores to be sent to when you register for DAT.
Transcripts	Send official transcripts directly to ADEA AADSAS with Transcript Matching Form. Do not send transcripts before application opens.
Social Media	Facebook and Twitter

Notes:

* Opening refers to the opening date of the application for this cycle

** Submission refers to the first date that applicants may submit the application for this cycle.

**Minority Student
Opportunities
&
Other Resources**

OPPORTUNITIES AND RESOURCES FOR MINORITY STUDENTS



Health Professions Advising Office (HPAO) • Jensen Student Access to Science (SAS) and Mathematics Center
 • Location: Hall of Science Building – Room 164 • Phone: (562) 985-8061 • Website: www.csulb.edu/hpao

OPPORTUNITIES

1. Summer and Medical and Dental Education Program (SMDEP) – www.smdep.org
2. Kaiser Permanente INROADS Program – www.inroads.org
https://epf.kp.org/wps/portal/hr/kpme/career/jobs?WCM_GLOBAL_CONTEXT=/myhr/EPFSite/HR/KPMe/CareerAndDevelopment/Jobs/Inroads_SCAL_NCAL&bookmarkRegion=Northern%20California#section1
3. Summer Opportunities for Minority Undergraduate Students –
<http://www.gdnet.ucla.edu/asis/srp/srpintro.htm>
4. Minority Access to Research Careers (MARC)
<http://www.benefits.gov/benefits/benefit-details/695>
5. Minority Opportunities in Research (MORE) - <http://web.calstatela.edu/centers/moreprograms/>
6. CDC Minority Health & Health Disparities -
<http://www.cdc.gov/minorityhealth/internships/opportunities.html>

CLINICS AND MINORITY HEALTH RESOURCES

1. Free Clinics in Southern California – www.harp.org/clinics.htm
2. Health Resources and Services Administration – www.hrsa.gov
3. Kaiser Family Foundation – Minority Health – <http://www.kff.org/minorityhealth/index.cfm>
4. Office of Minority Health Resource Center - <http://www.minorityhealth.hhs.gov/>
5. U.S. Department of Health & Human Services, Office of Minority Health -
<http://minorityhealth.hhs.gov/>

STUDENT AND PROFESSIONAL ASSOCIATIONS

1. Pre-Professional Organizations
 - a. Student National Medical Association (SNMA) - <http://www.snma.org/>
 - b. American Medical Student Association (AMSA) - <http://www.amsa.org/AMSA/Homepage.aspx>
 - c. Latino Medical Student Association (LMSA) - www.lmsa.net
 - d. American Indian Science & Engineering Society (AISES) - <http://www.aises.org>
 - e. Society for Advancement of Chicano and Native Americans in Science (SACNAS) -
<http://www.sacnas.org/>
2. Association of American Medical Colleges (AAMC) information and services for minority students:
 - a. Diversity and affirmative action - www.aamc.org/diversity
 - b. Enrichment Programs - <http://services.aamc.org/summerprograms>
 - c. Minorities in Medicine - www.aamc.org/students/minorities
 - d. Minority Medical Applicant Registry - <https://www.aamc.org/students/minorities/med-mar/>
 - e. AspiringDocs - www.AspiringDocs.org

Summer Opportunities for Disadvantaged and Minority Students

An excellent website for minority students interested in health careers, internship opportunities, scholarships, and more is www.explorehealthcareers.org.

Pre-Medical

University of Miami

Health Careers Motivation Program

- 7 week Summer enrichment program for minority students
- Participation is limited to Florida residents
- Provides participants with challenging curriculum composed of several pre-clinical medical school courses (biochemistry, histology, gross anatomy and microbiology)
- Each participating student receives a stipend

MCAT program

- 14 weekday and Saturday sessions during the summer
- Designed so participants receive no lower than 8 on the 3 major sections of the exam.

For more information contact:
Office of Minority Affairs (R-128)
University of Miami School of Medicine
PO Box 016960
Miami, FL 33101
305-243-5998
amack@mednet.med.miami.edu

University of Florida

Short term summer research training for minority students

- Designed to increase the number of ethnic minority students entering research and academic careers.
- Fifteen slots are available annually Students will be compensated with a stipend, housing and travel allowance.

For more information contact:
University of Florida
College of Medicine, Office of Diversity &
Health Equity
Minority Affairs P.O. Box 100202
Gainesville, FL 32610
(352) 273-6656
oma@dean.med.ufl.edu

Summer Medical and Dental Education Program (SMDEP): Rolling admissions
www.smdep.org/start.htm

- Case Western Reserve University Schools of Medicine & Dental Medicine
- Columbia University College of Physicians and Surgeons and School of Dental and Oral Surgery
- David Geffen Schools of Medicine and Dentistry at UCLA
- Duke University School of Medicine
- Howard University Colleges of Arts & Sciences, Dentistry and Medicine
- The University of Texas Dental Branch and Medical School at Houston
- UMDNJ- New Jersey Medical and New Jersey Dental Schools
- University of Louisville Schools of Medicine and Dentistry
- University of Nebraska Medical Center, Colleges of Medicine and Dentistry
- University of Virginia School of Medicine
- University of Washington Schools of Medicine and Dentistry
- Yale University

Brandeis University: McNair Scholars Program <http://www.brandeis.edu/acserv/sssp/aboutsssp/trioprograms.html>

Caltech Pasadena- Minority Undergraduate Research Fellowships (MURF)
www.its.caltech.edu/~murf/

Cornell Graduate School Minority Program Internship for Under-Represented Minority College Students biomedsci.cornell.edu/graduate_school/html/14805.cfm

Cornell-Travelers Fellowship for Minorities (Premedical Summer Research Program)
www.med.cornell.edu/education/programs/tra_sum_res.html?name1=Travelers+Summer+Research+Fellowship+Program&type1=2Active

Harvard University: Project Success: Opening the Door to Biomedical Careers (College Program)
<https://mfdp.med.harvard.edu/dcp-programs/k-12/high-school-programs/project-success>

Howard University Advanced Health Careers Enrichment Program:
<http://www.founders.howard.edu/preprof/enrichmentprog.htm>

Massachusetts General Hospital: Summer Research Trainee Program (SRTP)
<http://www.massgeneral.org/mao/education/internship.aspx?id=5>

Medical College of Wisconsin: Summer Research Training Program http://www1.mcw.edu/graduateschool/programsSPUR.htm#.VNIDFi6_Z1A

Ohio College of Podiatric Medicine: Pre-Professional Internship Program
<http://www.studentaffairs.columbia.edu/preprofessional/opportunities/clinical/6096>

Ohio University College of Osteopathic Medicine: Summer scholars program
www.oucom.ohiou.edu/SummerScholars

Rutgers University: Project Learn www.ihhpar.rutgers.edu/projectlearn/

Stanford University School of Medicine- Health Careers Opportunity Program (SSHCOP):
<http://coe.stanford.edu/pre-med/sshcop.html/>

UCLA Premedical Enrichment Program (UCLA PREP)
<http://www.medstudent.ucla.edu/offices/aeo/prep.cfm>

UC Los Angeles (RAP) <http://www.medstudent.ucla.edu/offices/aeo/rap.cfm>

University of California, San Francisco: Summer Research Training Program (SRTP) for Undergraduate Minority Students student.ucsf.edu/summerprogram/applicants/

University of California, Berkeley: Summer Research Opportunities Program (SROP) www.grad.berkeley.edu/diversity/srop.shtml

University of Cincinnati College of Medicine- Summer Premedical Enrichment Program (SPEP)
<http://med.uc.edu/studentaffairs>

University of Illinois at Urbana Champaign: The Hughes Undergraduate Research Fellows (HURF) Program www.life.uiuc.edu/hughes/hurf/

University of Kansas Medical Center Health Careers Pathways Program
www2.kumc.edu/oced/hcpp.htm

University of Massachusetts Medical School- Summer Enrichment Program (SEP): Applications taken online from November 13 - March 15th. www.umassmed.edu/outreach/sep.aspx.

University of New Hampshire- McNair Summer Fellowship: deadline is February 15
www.unh.edu/mcnair

UNC-Chapel Hill: The North Carolina Health Careers Access Program (NC-HCAP) <http://nchcap.unc.edu/>

UNC-CH School of Medicine: The Medical Education Development (MED) Program
<http://www.med.unc.edu/medprogram>

University of Pittsburgh- Summer Premedical Academic Enrichment Program (SPAEP) deadline: March 1 of each year www.medschool.pitt.edu/future/future_03_office.asp

Wesleyan University: Health Professions Partnership Initiative Clinical Program
www.wesleyan.edu/hppi/frames.html

Research

Albert Einstein College of Medicine- Summer Research Fellowship Program
www.aecom.yu.edu/home/community_programs.asp
 Email: soto@aecom.yu.edu

Baylor College of Medicine/Rice University- Honors Premedical Academy
 (See Baylor College Located in Pre-Professional Section)

Boston University- Summer Undergraduate Research Fellowship:
<http://www.bc.edu/schools/cas/services/faculty/facforms/researchfellows.html>

Caltech Pasadena- Minority Undergraduate Research Fellowships (MURF)
 (See Caltech Pasadena in Pre-Professional Section)

Case Western Reserve- National Institutes of Health/ National Heart, Lung and Blood Institute
 Summer Research Program for Minorities
www.nhlbi.nih.gov/funding/training/redbook/brtpug.htm

Creighton University- Summer Research Training Program
www.creighton.edu/hsmaca/summer_research_training.htm

Cornell University- The Travelers Summer Research Fellowship Program for Premedical
 Minority Students
www.med.cornell.edu/education/programs/tra_sum_res.html?name1=Travelers+Summer+Research+Fellowship+Program&type1=2Active
 (See Cornell Located in Pre-Professional Section)

Weill Cornell/Rockefeller/Sloan-Kettering: Tri-Institutional MD-PhD Program- Summer
 Program, Gateways to the Laboratory www.med.cornell.edu/mdphd/summerprogram

Dana-Farber Cancer Institute: CURE Program www.dfhcc.org
 or call Karen Burns White at (617) 632-3244

Dartmouth Medical School: Immunology Summer Research Internships
 Phone: (603) 650-4522

Harvard Medical School- Summer Honors Undergraduate Research Program
<http://www.hms.harvard.edu/dms/diversity/shurp/>

Joslin Summer Research Program: Joslin Diabetes Center
www.joslinresearch.org/HomeDir/summer_research_program.asp

MIT Summer Research Program (MSRP): deadline December 15
due-web.ugs.uci.edu/urop/off_campus/off_campus_web_list.asp

Mount Sinai School of Medicine- Summer Research Fellowship Program (SRFP): deadline April
 30
www.mssm.edu/gradschool/surp/index.shtml

National Institutes of Health

- Undergraduate Scholarship Program for Individuals from Disadvantaged Backgrounds (UGSP)
<https://www.training.nih.gov/programs/ugsp>
- Minority Access to Research Careers <http://www.benefits.gov/benefits/benefit-details/695>
- Minority International Research Training Program (MIRT)
<http://www.soph.uab.edu/mhirt/introduction>

New York University Minority Internship Program
www.med.nyu.edu/sackler/programs/summer.html

The Ohio State University College of Optometry IDOL Program (Improving Diversity of Optometric Learners) optometry.osu.edu/IDOL

Sackler School of Graduate Biomedical Sciences- Tufts University- Summer Research Program for Undergraduate Minority Students:
<http://sackler.tufts.edu/Academics/Non-Degree-Programs/Summer-Research>

SUNY- Downstate- Summer Research Program:
http://sfs.downstate.edu/minority_affairs/prospective_students/programs.html

The Leadership Alliance Summer Research-Early Identification Program
<http://www.theleadershipalliance.org/Programs/SummerResearch/ViewResearchSites/ProgramStructure/tabid/242/Default.aspx>

UCSF- Summer Research Training Program
 (See UCSF Located in Pre-Professional Section)

UMDNJ- Robert Wood Johnson Medical School- Summer Research/Study Program- Biomedical Careers Program (BCP)
http://rwjms.umdnj.edu/education/gsbs/prospective/summer_research.html

UNCF- MERCK Undergraduate Science Research Awards
<http://umsi.uncf.org/sif>

University of Cincinnati College of Medicine- Summer Research Scholars Program (SRS)
http://www.uc.edu/mcnair/summer_programs.html

University of Iowa- Committee on Institutional Cooperation Summer Research Opportunities Program (SROP):
<http://ogi.grad.uiowa.edu/srop/>

University of Minnesota: 2004 Life Sciences Summer Undergraduate Research Programs (LSSURP)
<http://www.cbs.umn.edu/explore/departments/btl/outreach/life-sciences-summer-undergraduate-research-programs>

University of North Carolina at Chapel Hill- Summer Pre-Graduate Research Experience (SPGRE) <http://www.unc.edu/agep/SPGRE/>

UNC-CH School of Medicine: The Medical Education Development (MED) Program
www.med.unc.edu/medprogram
 (See UNC-CH Located in Pre-Professional Section)

University of Pittsburgh Carnegie- Mellon MD/PhD Program- Summer Undergraduate Research Program for Minority Students (SURPMS): deadline February 1
www.mdphd.pitt.edu/sprogram_brochure.asp

Yale University School of Medicine: Bio STEP (Biomedical Science Training and Enrichment Program)
info.med.yale.edu/omca/programs/biostep.htm

Other Health Professions

Community Based Dental Education: Summer Programs at various locations

www.dentalpipeline.org/au_aboutus.html

- Boston University Goldman School of Dental Medicine: Joint medical/ dental enrichment programs
- Howard University College of Dental Medicine
- Loma Linda University School of Dentistry
- Meharry Medical College School of Dentistry
- Temple University School of Dentistry
- The University of North Carolina School of Dentistry at Chapel Hill
- The Ohio State University College of Dentistry
- University of Connecticut Health Center School of Dental Medicine
- University of California at Los Angeles School of Dentistry
- University of California at San Francisco School of Dentistry
- University of Illinois at Chicago College of Dentistry
- University of the Pacific School of Dentistry
- University of Southern California School of Dentistry
- University of Washington School of Dentistry
- West Virginia University School of Dentistry

Cornell University: ACCESS Advancing Cornell Career Experiences for Science Students

biomedsci.cornell.edu/graduate_school/html/14805.cfm

Harvard University- Summer Program in Biostatistics & Summer Research Internships in Public Health

<http://www.hsph.harvard.edu/diversity/summer-internship-opportunities/>

Howard University- Barbara Jordan Health Policy Scholars Program:

<http://kff.org/about-the-barbara-jordan-health-policy-scholars-program/>

Public Health Fellowship for Minority Students (Undergraduate juniors and seniors and recent graduates within 6 months)

Designed to encourage and prepare fellows to pursue graduate education and careers in public health during an intensive 8-week summer internship

Contact: Tina Rasheed, Program Director, 404-752-1924

UNC-Chapel Hill: The North Carolina Health Careers Access Program (NC-HCAP) <http://nchcap.unc.edu/>

University of Wisconsin-Madison- Summer Research Program in Biostatistics (SIBS)

<https://www.biostat.wisc.edu/content/summer-programs>

Comprehensive sites:

http://casadvising.syr.edu/pre_health/our_services.html/

<http://www.swarthmore.edu/health-sciences-office/summer-opportunities>

www.sciencenet.emory.edu/undergrad/summer_research.html

<http://www.cic.net/students/srop/srop-program---old-main-page/home>

www.smdep.org/

www.everettinternships.org/search/internships.cfm

www.AspiringDocs.org



How Do I...Make the Most of my Gap Year?

A “gap year” is the period of time between the end of your undergraduate education and the start of medical school. In fact, a gap year might be a year or more depending on each person’s particular circumstances. Frequently, the reasons for a gap year center on an applicant’s need for more time to participate in medically-related volunteer and lab experiences, strengthen GPA or MCAT scores, pay down debt, work on becoming a stronger candidate, or simply need a break. Some applicants must take a gap year if they are not accepted into medical school.

What should I focus on accomplishing during my gap year?

A gap year is a good time to get your academic and financial house in order. But don’t make the mistake of trying to “pad” your application. Admissions committees are easily able to spot this and it could end up hurting, rather than helping you.

- **Strengthen your GPA by taking extra and/or high-level coursework.** Academically, this time can be extremely beneficial whether you already have a strong GPA or not. There may be a course you didn’t have time to take that will prove your ability to master upper-level science coursework.
- **Study for the MCAT Exam.** Without a full course load competing for your time (depending upon your work schedule of course), you’ll have more time to devote to MCAT preparation. Be sure to check out the [MCAT resources](#) on the AAMC’s website.
- **Pay down your existing debt as much as possible.** Even if you’re fortunate enough not to have any undergraduate debt, start saving money so that you’ll have a cushion when you begin medical school. If you’re able to take out fewer loans, you’ll not only have less to repay, but you’ll help reduce the additional stress associated with worrying about repaying your educational debt.
- **Take time for reflection and rejuvenation.** This time can be extremely beneficial for mental recovery or personal reflection. The road to medical school can be rigorous and demanding; you may want to use this time to work on a personal project, travel, rest, and get ready for the road ahead.

What kinds of experiences during a gap year will help me become a better physician?

Look for experiences that will help you improve your areas of weakness. Speak to the pre-health advisor at your school, or an admissions dean or director at a medical school to help identify areas that you need to expand or strengthen.

- **Volunteer in a medically-related field.** Meaningful and sustained experiences working with patients or in a medically-related environment is not only beneficial in helping you to solidify your choice to pursue medicine, it also makes you a stronger and more knowledgeable candidate. These experiences will also help you during the interview stage.
- **Shadow physicians.** Shadowing or following a physician can provide you with patient experience and a realistic view of what various specialties and working environments are really like. It can sometimes be difficult to arrange a shadowing experience if you don’t have a personal relationship with a physician. For tips on how to get this type of experience, read the [“How Do I... Shadow a Doctor?”](#) fact sheet.
- **Participate in a scholarly activity.** Real and meaningful experience in a lab or research facility provides for more in-depth knowledge about medicine, and helps you to have a better understanding of the different research processes. Whether you’re conducting your own research or assisting on a project, this sustained scholarly activity is very attractive to medical schools. For tips on how to get this type of experience, read the [“How Do I ...Get Lab Experience?”](#) fact sheet.
- **Keep track of coursework requirements.** Be sure to check the premedical coursework requirements for each school that you may be interested in applying to. It’s possible that some medical schools may make changes to their requirements during this interim period, requiring you to complete additional coursework. Review the school’s website, or keep track with the [Medical School Admission Requirements](#) website.

ASPIRING DOCS



How should I discuss my gap year during interviews?

It's not uncommon to see many applicants with a gap year between graduating college and applying to medical school. When speaking about this period of time during an interview, avoid phrases like "time off" or "glide." Talk about how you used this opportunity to strengthen your knowledge and improve the skills that will make you a better physician. Be honest; share what you've learned, or how you've grown. Medical school admission deans are looking for a candidate who has demonstrated that they are trying to better themselves as a person and physician, not just trying to make themselves look good to get into medical school.

What do I do with my loans during my gap year?

During a gap year you will need to make decisions about how to manage your student loans. First, get organized. Compile the contact information for each of your loan servicers. This information can be found in your federal student loans account information from **NSLDS**.

When you finish your undergraduate program, your federal student loans will enter into a grace period (typically 6-9 months long). During this time no payments are required. But after the period ends during a gap year, you will either want to continue postponing payments or select a repayment plan. You can speak to the servicer(s) of the loans about these options.

If you choose to postpone payments, you will have to obtain a deferment or a forbearance status on the loans. A deferment is preferential because no payments are required and the subsidized debt will not accrue interest. But the strict eligibility requirements make them hard to get. Alternatively, a forbearance is granted by the servicer and is up to their discretion. Reach out to each servicer to discuss your options – seeking first deferment, then forbearance.

If you're not postponing payments, you'll need to select a repayment plan. There are numerous options, so work with your servicer to determine which one is best for your

situation. Selecting a repayment plan is something that must be communicated to each servicer individually. Just keep in mind, the options discussed above are specifically for federal student loans, and may not be available for private loans. Check with the private loan lenders to find out if grace, deferment, forbearance or other repayment options are available.

During your gap year, be sure to be proactive and stay in touch with all of your servicers. Federal loans will automatically go into deferment while enrolled in medical school, but remember to contact the private loan lenders to determine the options on these loans while you are a medical student.

MORE INFORMATION

MCAT resources:

www.aamc.org/students/applying/mcat/

Medical School Admission Requirements:

www.aamc.org/msar

How do I... Shadow a Doctor?

www.aamc.org/students/aspiring/experience/280582/shadow-doctor.html

How do I ... Get Lab Experience?

www.aamc.org/students/aspiring/experience/280610/lab-experience.html

Financial Aid Fact Sheets for Applicants:

www.aamc.org/services/first/first_factsheets/249340/applicantsandstudents.html

NSLDS:

www.nsls.ed.gov/

What's It Like to... Participate in Multiple Mini Interviews (MMIs)?

What is a Multiple Mini Interview or MMI?

The Multiple Mini Interview (MMI), developed by McMaster University, is an interview format that gauges an applicant's potential to successfully interact with patients and colleagues. The MMI is designed to measure communication skills, specifically verbal and nonverbal skills that cannot be measured using standardized written exams or by reviewing coursework transcripts. The MMI typically consists of six to 10 very short interviews that revolve around a specific scenario. *(See examples of possible scenarios on next page.)*

Why are admissions committees moving towards this format?

Based on the research, schools using the MMI format believe it produces a more reliable assessment of a candidate and limits interview biases due to the number of interactions. Because students interact with multiple interviewers in multiple assessments over the course of the MMI, opinions of a single interviewer are not over-emphasized. The MMI allows applicants multiple opportunities to showcase their skills throughout the interview, unlike the traditional one-on-one interview.

What is the format? How long does it take?

Typically, a series of six to 10 "mini" interviews is conducted over a period of nearly two hours. Each mini interview includes a two-minute prep period before engaging in a conversation that lasts between five to eight minutes. "The MMI benefits students in many ways that perhaps other formats do not. Not only does the student know the topic that will be discussed, but also has time to prepare a response before walking into the room, unlike other formats wherein questions can be asked on the spot from any subject area. Additionally, the student has the unique opportunity to make multiple first-time impressions. If one question is tough and the student does not feel he/she performed well, the next room is a new chance to do better without any previous bias," says Tara K. Cunningham, Ed.D., assistant dean of admissions and recruitment at the University of Arizona (UA) College of Medicine – Phoenix. An applicant who completed the MMI at the College of Medicine echoed Dr. Cunningham's belief saying, "I can definitely see the benefit of this format, as I feel some of my stations went very well and others did not, and it was nice to get a fresh start at each station."



What kind of topics are covered in the MMI?

As with any interview, the MMI is designed to assess communication skills as well as provide additional information that is helpful in assessing a student's readiness for medicine. According to Stephen Manual, Ph.D., assistant dean of admissions at the University of Cincinnati College of Medicine, "The MMI scenarios also are developed to assess a candidate's skill and proficiency in areas such as problem solving, logical thinking, interpersonal skills, and ethical judgment. For example, one scenario may ask a candidate to describe what they would do if they learned that a physician was giving patients placebos instead of actual medications. There are also scenarios that involve teamwork and assess the ability to work with a partner to solve a problem. Communication skills also can be assessed through scenarios where actors pose as patients." An applicant at the UA College of Medicine – Phoenix said, "I felt like the MMI allowed me to act for the first time in an interview as a genuine person. Not only does this format allow for such a wide range of skills to be assessed (communication, problem solving, etc.), it does it in such a way to make the entire process informal enough to personally interact with the interviewers. It gave me a chance to work with other applicants to solve ridiculous tasks. I truly enjoyed myself because I know that I was able to give every interviewer a glimpse of my personality as to the type of doctor I will be."



What is the best way to prepare for the MMI?

The MMI does not test specific knowledge. The format is designed to allow candidates to showcase their communication, interpersonal, and critical thinking skills. The best way to prepare is to practice expressing yourself articulately and logically in a timed environment.

According to an applicant who completed the MMI during the 2013 admissions season at UA College of Medicine, "I felt like the MMI allowed the interviewers to get responses that couldn't be so easily prepared for in advance, thus giving them a very realistic picture of the applicant and enabling them to make better decisions. I felt prepared to show who I am in everyday life!"

Possible interview scenarios:

- Scenarios involving interactions with an actor
- An essay writing station; this station may be take longer than the others
- A standard interview station
- A teamwork station where candidates must work together to complete a task
- An ethical scenario involving questions about social and policy implications
- A "rest" station to help students catch their breath and relax

Explore HEALTH Careers.org

Studying Science: The Six Keys to Success

Studying Science: The Six Keys to Success

Studying science is not like studying other subjects so students often don't know how to study science successfully. We asked the experts for advice, and they gave us these six practical keys to success. This how-to article may not make you a science whiz overnight, but it will help you get on top of all that studying!

[Key 1: Manage Your Time](#)

[Key 2: Create A Study Space](#)

[Key 3: Master the Textbook](#)

[Key 4: Take Notes](#)

[Key 5: Join \(or Organize\) A Study Group](#)

[Key 6: Don't Cram For Exams](#)

Dr. Stefan Bosworth, author of several MCAT preparation books, as well as books and articles on learning skills for the sciences, and Lolita Wood-Hill, Director of Pre-Health Advisement at Yeshiva University, contributed to this article.



Key 1: Manage Your Time

New students often don't know how much time it really takes to study science. You'll need to make the most of every minute.

Step 1: Do a time inventory. Keep track of your time, hour by hour, for one week. Be honest or it won't help you. Include everything: dressing, getting to class, studying, watching TV, working out, surfing the Web, etc.

Step 2: Create a new schedule. After a week of keeping track of time, look closely at your hourly and daily schedule and develop a new schedule that allows plenty of time to study. Different people have different energy cycles, so don't rely on someone else's timeframe for studying.

As you create a new time plan, keep in mind that some of your courses may require a lot of study time outside of class. For instance, you might need to spend 16 hours (or more) per week on chemistry. Biology may take another 15 study hours per week, and math may require nine to 12 hours weekly.

When allotting time, be as specific as you can. For example, rather than simply planning to "study chemistry," specify how much time you spend on solving problems, studying for an exam, etc.

Be sure to include non-academic activities in your schedule, too, such as working or managing personal responsibilities. Don't shirk on amount of time you need for sleep and make time for meals.

Step 3: Try out the new schedule for a week. Decide what works and what doesn't, and revise your schedule accordingly. A good time management schedule is not written in stone. You should re-evaluate it regularly (once a week is good), and adapt it to suit your current study needs.

Step 4: Stick to it. This is the most important part. It won't work if you don't.

Key 2: Create A Study Space

People study most effectively when they are alert and undistracted. That's why it's so important to create a dedicated study space. Your space should enable you to focus solely on the subject and concentrate for long periods of time. It might be a whole room, part of a room, or a study cubicle in the library.

Whatever and wherever it is, your study space should be private space that you use only for studying. If you need to do anything else—sleep, talk, play a video game—do it somewhere else.

Part of what makes a study space effective is that your brain comes to associate it exclusively with studying. As soon as you enter that you click into study mode and get right to work, which saves time and will contribute to your academic success and your ability to pursue your career dreams.

Stock It Up

Once you've created a study space, stock it up with all the essentials, such as:

- ▶ Work table and/or desk
- ▶ Lamp or other good lighting
- ▶ Ergonomically designed chair
- ▶ Computer
- ▶ Access to printer
- ▶ Paper
- ▶ Pens, sharpened pencils and erasers
- ▶ Calculator
- ▶ Ruler
- ▶ Bookcase (and the right books for it)
- ▶ File rack or cabinet
- ▶ File folders and labels

Keep It Out

Keep out anything that will distract you. Possible distractions include:

- ▶ Friends
- ▶ iPod
- ▶ TV
- ▶ Phone

As we all know, the computer itself offers plenty of distraction. If possible, keep yourself disconnected from the Internet/WiFi while you study. Only use it if you have to.

If you know you are the type of learner who needs background sound, use whatever you need to help you study and stick with it.

Key 3: Master the Textbook

Are you intimidated by your science textbook? If so, you're not alone.

Developing an in-depth understanding of complex scientific principles can take an enormous amount of time and effort. Tackling a difficult text can be daunting, even for the most intelligent student. So daunting, in fact, you may be tempted to put off your assigned reading until the last possible moment.

Don't do it. Why? Procrastination = Stress. Late nights and caffeine add up to an incomplete understanding of the concepts you need to know.

So What Should You Do?

Read the assigned reading before the class in which it is discussed. This will enable you to ask the teacher/professor to clarify anything you may have found unclear in the text. S/he also can explain any differences between the way a topic is covered in the text and the way that material is presented in the lecture.

Before reading the assigned text, read:

- ▶ The summary at the beginning of the chapter
- ▶ The questions and problems at the end of the chapter

This will give you clues about what the author wants you to gain from the reading.

Read for understanding. Science textbooks follow an outline format - which you can tell by looking at the way the material is laid out page: the larger the heading, the broader the topic; the smaller the heading, the more specific the topic.

Scrutinize each paragraph carefully in order to extract important details, formulas, charts, graphs and inter-related concepts. As you read out the facts, you need to keep in mind how they can be integrated with the material from your class. It also is helpful to notice what study support the book itself provides: detailed indexes, glossaries, appendices, website links, etc.

Allow yourself enough time to read each chapter more than once. Unless you're a genius, it will take you several readings to fully grasp and absorb the material. Don't start taking notes until your second reading - and when you do, follow the same format that the author uses using the chapter's basic structure as a guide.

Then turn the headings and sub-headings into questions and see if you can answer them through either the class notes or your own knowledge of the topic. If you can't, go back and review that section of the chapter.

Make sure you read and understand the sample problems highlighted in your textbook. Why? Because they emphasize important concepts in the chapter. Make sure you can solve each problem without referring back to the text. Ask yourself the following questions:

- ▶ What principle(s) is the problem demonstrating?
- ▶ What part of the problem suggests that this principle is involved?
- ▶ Why was a particular formula used in this chapter, as opposed to other formulas?
- ▶ Why was each calculation performed?

Try to make associations between the system or process described in the problem and the scientific principles that are being applied. If you begin to see the same principles recurring.

Figure out the formulas. They are an important component of the problem-solving process. They are concise, mathematical statements that describe and make sense of some system or process in the real world. If you have only a superficial understanding of the meaning of a formula, you will use it inappropriately. To gain a thorough understanding of this relationship, ask yourself:

- ▶ What system or process in the world does the formula describe?
- ▶ What does it say about the system or process?
- ▶ What can it be used to find?

Think of ways to apply a given formula to your own experience. After you have calculated an answer, make sure that your answer has addressed the problem's underlying question.

Finally, review all the problems you have completed - not only to check for mistakes, but also to be sure that you understand the principles, concepts and formulas that are explained in the reading.

Extra Credit

Try thumbing through scientific journals. They often have valuable information that can help you better understand your coursework. (It also can be a great resource when you're trying to make a decision about your health career.)

Many students avoid reading science journals, because they are put off by the terminology, tables, graphs and diagrams. Don't let that stop you! A good journal article can make a complex scientific topic come alive.

Key 4: Take Notes

In order to succeed at science (as well as other subjects), you must know how to listen effectively and take good notes.

Effective Listening

- ▶ Read the assignment before class so you know what to listen for in class.
- ▶ Make a list of questions you have to make sure they get answered either in class or by asking your teacher/professor after class.
- ▶ Take notes during the class so that you are listening carefully and don't let your focus drift.

Effective Note-taking

Taking good notes means you will have what you need to study later. It's also a good way to take in the material so that you understand it. These are the basics:

- ▶ **Before class, review your notes** from the previous lecture so you understand how what you will hear relates to what came before.
- ▶ **Take what you need to class:** a pen or pencil and a notebook. You can use a highlighter to highlight questions you have about the material the teacher/professor is covering.
- ▶ **Find a format of note-taking that works best for you** and stick with it. For instance, use the main portion of your page for lecture and the margins for additional facts and insights (i.e., textbook page citations, URLs or recommended outside reading).
- ▶ **Get to class early** enough to sit in the front and really focus on the lecturer: maintain as much eye contact as possible and notice his/her gestures and expressions. Body language can speak volumes about which part of the lecture is most important.
- ▶ **Listen for the teacher's/professor's goal.** What is s/he trying to convey to the class? Understanding the main point will help you listen more effectively and take better notes. You don't need to write down every word of a lecture. Make sure you take notes about concepts that are not covered in your textbook.
- ▶ **Write down the most important points** and anything that clarifies questions you have.

- ▶ **Write down whatever the teacher/professor writes on the blackboard.** If the teacher/professor thinks it's important enough to write down, so should you.
- ▶ **Re-read your notes as soon as possible after class** (ideally, within 24 hours); as you re-read your notes, highlight them and add explanatory information, as needed. Why? Because re-reading and highlighting can:
 - ▶ Improve your comprehension of the topic
 - ▶ Increase your retention of what you've learned
 - ▶ Make studying for exams much easier later on

Key 5: Join (or Organize) A Study Group

The best students - like the best health professionals - don't work in isolation. The friends you study with become allies in learning: You help each other on, brainstorm together, divvy up topics and help each other study for exams.

- ▶ What are the benefits of a study group?
- ▶ Help in preparing for exams
- ▶ The ability to share information, which helps everyone in the group to clarify what they do (and do not) know
- ▶ A place to ask questions and get clarification
- ▶ Scheduled time for study
- ▶ A much better sense of what you still need to learn

Tips for Organizing a Successful Study Group

- ▶ **Keep the group small** - generally, a good size is three to five students.
- ▶ **Choose students who are committed to succeeding.** Do not choose your group based on friendship; base it on commitment and similarity in study styles. Someone who is a night owl may not work well with an early morning riser, although they may both be diligent and committed individuals.
- ▶ **Meet on a weekly basis**, ideally for about two hours a week per class, and longer as exam time approaches. Generally, it is a good idea to meet toward the end of the week, because study groups are best used for reviewing material.
- ▶ **Assign clear responsibilities to each member** to cover specific material. This reduces the chances that somebody will come to the group unprepared. Take action if a member of the study group comes to the meeting unprepared on a regular basis. Give the person a chance to start doing his or her share. If the person doesn't, ask her or him to leave. Study groups fall apart when some members feel others are not doing their fair share.
- ▶ **As exams approach, expand the time that your study group meets.** Discuss concepts you're not clear on and quiz other members of the group. The more practice you have answering questions, the more successful you will be on the exam.

Key 6: Don't Cram For Exams

Why not cram? Because it won't help you on the exam or to truly comprehend the subject matter. And comprehension matters...for more advanced classes later in your high school or college career and for your professional life.

To give yourself the best chance to succeed, begin studying well in advance.

Step 1: Find out exactly what will be covered on the upcoming exam.

Step 2: Put all of your materials - lecture notes, textbook notes, handouts, problems, etc. - into a coherent and logical order. In organizing your materials, remember to look for the relationships between and among different concepts. This will enable you to more easily comprehend and review all of the relevant material.

Step 3: Develop a study schedule for studying.

Step 4: Make sure you prepare for the subjects that will be covered AND the type of exam you will be taking. Science exams fall into two formats:

- ▶ Essay exams involve (as you might suspect) writing an essay. They also require you to solve problems, usually in the form of mathematical essays (which explain a concept mathematically, as in solving a problem for X).
- ▶ Objective exams consist of short-answer questions, true/false, fill-in-the-blank, matching, multiple choice and/or multiple-choice questions called "K"-type questions, which ask: "If A is thus and B is this, then K is what?"

If the course is problem-based, do as many problems as possible that illustrate formulas and equations that were covered in class and in the textbook. You may want to purchase a solutions manual for the course, if it is available. If the exam will be more concept-based, make sure you understand not just the facts themselves but also the relevant principles.

Step 5: Use study groups to review course concepts, formulas and equations - as well as to review the problems you already have solved.

Step 6: The night before the exam, try to limit last minute studying. Spend the evening relaxing in whatever way works best for you - go for a walk, run or swim, listen to music, eat a good meal. Most importantly, get a good night's rest. You will need to be alert in the morning.

Step 7: At the exam, take enough time to read the instructions and questions carefully. It's easy to misread something when you're under pressure, so take a deep breath and bring your full attention to each question. For multiple-choice questions, make sure you read all the possible answers before you choose one.

Step 8: During the exam, pace yourself. Don't spend too much time on any one question. If you find yourself struggling with a question, mark it and move on. You can always come back to it later, when you've finished the rest of the exam.

Step 9: When the exam is returned to you, review your errors and be sure to resolve any misunderstandings that you had.

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2015 Speaker Presentations

Guiding the Health Professions Student: A Workshop for Counselors

Friday, February 20, 2015

- 8:00 a.m. – 8:25 a.m. **Check-in and Refreshments**
- 8:30 a.m. – 9:15 a.m. **Welcome**
Henry Fung, Ph.D., Associate Dean
California State University, Long Beach; College of Natural Science and Mathematics
- CSULB Health Professions Updates and Trends**
Lyndsey McKinley, M.S., Health Professions Advisor
California State University, Long Beach; College of Natural Science and Mathematics
- 9:15a.m. – 10:00a.m. **Advising the Prospective Applicant for Medical School**
Neal Schiller, Ph.D., Sr. Associate Dean, Student Affairs
University of California Riverside; School of Medicine
- 10:00 a.m. – 10:45 a.m. **The World of Pharmacy**
Lawrence M. Brown, Ph.D., PharmD., Associate Dean of Student Affairs
Chapman University; School of Pharmacy
- 10:45 a.m. – 11:00 a.m. **Break**
- 11:00 a.m. – 11:45 a.m. **The Summer Medical and Dental Education Program (SMDEP): Preparing Aspiring Dentists and Physicians to Reach their Full Potential**
Sayaka Weis, Medical Student
University of California, Los Angeles
- 11:45 p.m. – 12:15 p.m. **Health Professions: Physician Assistant**
Kelley Williford, Assistant Director of University Recruitment
Western University of Health Sciences
- 12:15 p.m. – 12:50 p.m. **“I Got In!” Accepted Student Panel**
Danny Ta, Dentistry
Joseph Vega, Osteopathic Medicine
Matthew Downey, Physical Therapy
Michelle Lising, Optometry
- 12:50 p.m. – 1:00 p.m. **Closing Remarks**
- 1:00 p.m. – 1:30 p.m. **Resource Fair (Optional)**
CSULB Nursing Department Representative
CSULB Doctor of Physical Therapy Program Representative
CSULB Outreach Office
College of Natural Science and Mathematics Academic Advising Center
HSI – STEM Services
Western University of Health Science

Guiding the Health Professions Student: A Workshop for Community College Counselors



*Overview of Health
Professions Admissions
Process and Statistics*

Lyndsey McKinley
Health Professions Advisor

California State University, Long Beach

Myths and Questions!

- I need to major in a Science
 - Passionate
- Am I at a disadvantage because I'm a CSULB student?
 - Do well!
- Does it look bad on my application if I don't graduate in 4-years?
 - Everyone has a unique path

Myth
BUSTED

What Interests you about Health Professions?

Interests

- Experiences
- Like Science
- Help People
- Research Shows...
 - 30.8% of applicants knew they wanted to be a doctor during high school or before college
 - T.V.

Motivation

- What other Factors have motivated you:
 - Parents/Community Influence?
 - Prestige?
 - Money?

What is Pre-Health at CSULB?

- Anyone seeking admission to a health professional program once they complete their baccalaureate degree (B.A., B.S., etc.)
- We do not have a pre-health major here at CSULB. **Any major is applicable** to go into a health profession, as long as you finish the program's pre-reqs.
- As a pre-health student, students *actively* seek out in and out of the classroom experiences to develop into a well rounded applicant

What is Pre-Health Con't...

- Health Educator
- Chiropractor
- Kinesiotherapist
- Medical Social Worker
- Nurse
- Art Therapist
- Dental Hygienist
- Occupational Therapist
- Optometrist
- Pharmacist
- Physical Therapist
- Physician
- Physician Assistant
- Podiatrist
- Public Health Educator
- Athletic Trainer
- Respiratory Therapist
- Speech Language Pathologist
- Veterinarian

****Options****

- www.explorehealthcareers.org
- www.futuredoctor.net
- Your Community



What do Professional Schools look for...





Aptitude

- Reflective narrative on your journey to decide your health profession
- Show not tell...

- Love of Science
- Rigor of curriculum
- GPA/Test Scores

Personal Statement

- Choose writers who can speak to your abilities as it relates to medicine as well as your personal character/qualities
- Can confirm what you are saying...
- Known you over a period of time



Student

Demonstration/ Evidence

- Clinical Exposure
- Volunteer/
Community Service
- Involvement
- Understanding of the profession
- Research
- Work Experience

Letters of Rec

Common Health Professional School Requirements

- Bachelor's Degree or 3+ years of undergraduate courses
 - Pre-requisite science and non-science courses
- Letters of Recommendation
 - Most schools will ask for 3-5 letters:
 - 2 from science faculty, 1 from non-science faculty
 - Additional letters from relevant volunteer, work, research and/or other involvement
- Entrance Exam (MCAT, DAT, OAT, PCAT, and GRE)
- Personal Statement/Essay
- Interview



Academics and Stats

“Do *more* Now, so you don’t have to do *more* Later...”



Academics

- **High GPA/high Test Scores are what get you looked at...**
- **Academic Preparedness: Can this applicant make it through our program?**
 - Science GPA (BCMP), Cumulative GPA, Rigor of program, Trends in academic record, Entrance exam scores

Note: Academic Considerations

- All attempted college courses are considered for most programs
- Academic Renewal/Repeat Delete - often **NOT** Honored
- AP/IB- **NOT** Accepted by many schools (check schools)
- CR/NC, Incompletes, Withdraw
- *Start preparing for your Test Prep early (MCAT, DAT, etc...)*

Academics: Core Pre-Requisite Courses

- 1 year General Chemistry w/ lab
- 1 year Organic Chemistry w/ lab
- 1 year Biology w/ lab
- 1 year Physics w/ lab
- 1 year college level Mathematics
- 1 year English
- 1 course in Biochemistry (MCAT 2015)
- Sociology 100 and Psychology 100 (MCAT 2015)

****Always check with the schools
for their specific requirements****

Academics: Other Pre-requisite Courses

- *Check with the schools for their specific requirements:*
 - Human Anatomy w/ lab
 - Human Physiology w/ lab
 - Microbiology w/ lab
 - Chemistry (varies by program)
 - General Biology (varies by program)
 - Social Sciences
 - College Math (algebra, statistics, calculus- varies)

Remember - **Excellence is needed (take advantage of tutoring, learning assistance, etc...)

Assist.org!

The screenshot shows the ASSIST.org website. On the left is a navigation menu with sections: 'Home', 'About ASSIST', 'FAQs', 'Help Topics', 'Articulation Agreements', 'Related Information', and 'ASSIST Information Center'. The main content area features a list of institutions, with 'UC Davis School of Veterinary Medicine' highlighted in blue. A red arrow points from a text box at the bottom right to this highlighted item. Below the list is an 'Explore Majors' button. The right side of the page contains a 'More Information' section and a search area.

For UC Health Professions Schools

Allopathic Medical School 2013 Entering Class Profile

Total Applications	First-Year Matriculants
48,014	20,055

Matriculants			
Science GPA (BCPM)	3.63	MCAT Verbal	10
Non-Science GPA	3.76	MCAT Physical Science	10.6
Total GPA	3.68	MCAT Biological Science	10.8
		MCAT Total	31.3

ACCEPTANCE RATE BY GPA AND MCAT

MCAT TOTAL								
GPA Total	21-23	24-26	27-29	30-32	33-35	36-38	39-45	ALL
3.80-4.00	25% 330/1,301	42% 1,370/3,282	67% 3,915/5,818	82% 5,975/7,258	86% 4,884/5,678	90% 2,894/3,225	92% 1,128/1,233	72% 20,598/28,530
3.60-3.79	18% 409/2,217	29% 1,313/4,490	52% 3,753/7,283	72% 5,485/7,610	80% 3,702/4,625	86% 359/420	86% 359/420	56% 16,794/30,090
3.40-3.59	17% 440/2,534	23% 1,060/4,522	36% 2,417/6,657	56% 3,540/6,376	67% 2,127/3,176	80% 174/219	80% 174/219	40% 10,749/26,626
3.20-3.39	13% 280/2,084	18% 597/3,324	26% 1,109/4,282	39% 1,490/3,850	51% 904/1,762	62% 58/93	62% 58/93	27% 2,119/17,970
3.00-3.19	11% 168/1,479	16% 326/2,026	23% 566/2,417	30% 522/1,758	42% 339/817	42% 100/236	44% 19/43	20% 2,119/10,683
2.80-2.99	11% 94/838	15% 156/1,049	16% 166/1,038	24% 177/744	33% 93/281	28% 25/90	57% 8/14	14% 754/5,442
2.60-2.79	7% 35/475	11% 56/520	15% 67/450	18% 53/294	21% 29/141	17% 6/36	8% 1/12	9% 269/2,868
All	16% 1,768/11,273	25% 4,904/19,543	43% 12,014/28,208	62% 17,264/28,063	73% 12,097/16,559	81% 5,841/7,235	86% 1,747/2,036	45% 56,255/124,503

Medical Schools

Applied and Matriculated (2013 Class)

School	Applied	Matriculated
Loma Linda	5,677	168
USC	7,752	184
Stanford	7,341	102
UC Davis	5,901	104
UC Irvine	5,901	104
UC Riverside	2,373	50
UC San Diego	6,693	125
UC San Francisco	7,366	165
UCLA Geffen	8,107	151

15% of all students attending medical school want to work in CA after medical school. The next State with the highest percentage was New York at 8%

CA Medical Schools (2014 Accepted Applicants)

School	Overall	Science GPA	Volunteer/ Com. Svc.	Med. Rel. wk.	Research
USC	3.8	3.7	70%	92%	91%
Loma Linda	3.8	3.8	79%	81%	67%
Stanford	3.9	3.9	69%	91%	97%
UC Davis	3.7	3.6	74%	93%	92%
UC Irvine	3.8	3.8	73%	95%	97%
UC Los Angeles	3.8	3.8	70%	90%	94%
UC Riverside	3.7	3.7	81%	94%	94%
UC San Diego	3.8	3.8	66%	91%	93%
UC San Francisco	3.9	3.9	71%	90%	96%



Demonstration/Evidence



What Do Professional Schools Look For: Demonstration/Evidence

What kind of health professional will this applicant be?

- Character, Maturity, Stability, Motivation
 - Critical Thinking, Knowledge of Science
 - Desire to Help Others
 - Communication Skills
 - Knowledge of the Profession
 - Potential for Leadership
 - Understanding of the Health Care System
- **For Pre-Medical: Look into the 15 Core Competencies**

“The numbers (GPA/Test Scores) get you **looked at**; the **rest** sets you apart!”

Demonstrated by...

A. **Community Service/Volunteer Work** (2013: 83% of matriculates)

- Students should demonstrate desire to “help people”
- Need not be health related
- **Driven by personal interest**
- How? Campus orgs., church, city, county, non-profit organizations, schools

B. **Clinical Exposure/Health Related** (2013: 91% of matriculates)

- Explore profession, lifestyle & *confirm fit*
- Gain knowledge of industry, issues, policies
- Internships and Shadowing

Demonstrated by (cont)...

C. Research Experience (2013: 60% of matriculates)

- Undergraduate research experience can help a student demonstrate
 - ❖ Scholarly potential
 - ❖ Understanding/ appreciation of evidence-based medicine
 - ❖ Inclination for lifelong learning
- Summer research programs provide excellent exposure

D. Other: Campus Involvement, Work Experience, etc...

E. Letters of Recommendation

How do Students get Clinical Exposure?

- **Formal Volunteer Programs:**
 - Clinical Care Extender Program (CCE):
www.copehealthsolutions.org
 - Santa Monica-UCLA Care Extender Program:
www.uclahealth.org/body.cfm?id=74
 - LAC+USC Healthcare Network:
<http://www.lacusc.org/Services/Volunteer/Default.aspx>
- **Hospital Volunteer Office**
 - Southern CA Hospitals - www.hasc.org/hospitals.cfm
- **Community Clinics** - www.harp.org/clinics.htm
- **Hospice, nursing home, private practices**
- **Paid employment:** Certified EMT, C.N.A., M.A., Phlebotomy, Scribe, etc...

Other Recommendations for Community College Students

- **Summer Medical and Dental Education Program (SMDEP)**
 - FREE (full tuition, housing, and meals)
 - Six-week summer academic enrichment program
 - For freshman and sophomore college students
 - Academic enrichment in the basic sciences and math, clinical experiences, career development activities, learning and study skills seminars, financial planning
- **Summer Enrichment Programs**
 - AAMC database: <http://services.aamc.org/summerprograms/>
- **Summer Undergraduate Research programs**
 - AAMC database:
https://www.aamc.org/members/great/61052/great_summerlinks.html

Demonstrating Commitment

Show Up

- Varsity Sports

Show Up A Lot

- For 3 years

Leadership Role

- Team Captain

Advocacy

- Mentored Youth

Innovation

- Designed racing wheelchair

Legacy

- Developed a system for others to design their own

Courtesy of Gabriel Garcia, MD Dean of Admissions,
Stanford University School of Medicine



Wrap Up

Support and Highlights



Selecting a 4-Year School

The *BEST* School is the One Where the Student Can Do Well!

- Location
- Fit
 - Academic- choice of majors
 - Financial
 - School-life balance
- Support Services
- Opportunities for volunteer, community service and extracurricular involvements
- Research opportunities

Final Tips for Community College Students

- Start foundational science classes at the community college, but also take science courses at the 4-year
- Get academic support early
- Get involved with student organizations, community service, clinical exposure, etc.
- Attend local pre-health conferences
- Keep in touch with professors!
- Be prepared for the cost- save your \$\$
- After transferring, find pre-health advisor and other resources on campus
- Apply Early!!

HPAO Services: Preparation Stage

- **Website: www.csulb.edu/hpao**
 - Career Planning Handouts
- Workshop Series (attend early-on in prep career)
- Fall Walk-in Hours Tues: 9-11am & Wed: 1:30-3:30pm
- Advising Services:
 - Prerequisite Course Planning
 - Involvement/Volunteer Experiences: Email List
- Student Organizations



HPAO Services: Application Stage

- Application timeline and assistance
 - Personal Statement feedback
 - Mock Interviews
 - Application Review
- Letter of Recommendation Forwarding Service
- Test Preparation Award (depending on funding)



Selected Health Professional Acceptances for CSULB students

MD programs

- Duke
- UC Irvine
- University of Chicago
- UCSF
- Loma Linda
- UC Davis
- Michigan State

Optometry

- Ohio State University
- Southern California
College of Optometry

Pharmacy

- Howard University
- University of Massachusetts
- UC San Diego
- CA Northstate University

Dentistry

- University of the Pacific
- New York University

Physician Assistant (PA)

- USC
- Tuoro University

Accepted Student Profiles:

UCSF SCHOOL OF MEDICINE

Caroline Opene

- **Major:** Cell and Molecular Biology
- **Minor:** Biological Sciences
- **Aspiration:** Physician
- **School Attending:** UCSF (San Francisco)
- **Schools accepted to:** UCI, UCSD, Duke University, UCSF, USC, Stanford



Accepted Student Profiles:



CALIFORNIA NORTHSTATE UNIVERSITY

Sandy Dela

- **Major:** Biological Sciences
- **Minor:** Chemistry
- **Career Aspiration:** Pharmacist
- **School Attending:** California Northstate University College of Pharmacy in Sacramento CA



Accepted Student Profiles:

A. T. STILL UNIVERSITY

Joe Shortall

- **Major:** Business Management and Post baccalaureate Program
- **Aspiration:** Doctor in Osteopathic Medicine
- **School Attending:** A.T. Still School of Osteopathic Medicine, Arizona



Questions and Contact Information

Health Professions Advisor:



Lyndsey McKinley
lyndsey.mckinley@csulb.edu
562-985-8061

www.csulb.edu/hpao



Additional Health Professions Stats for your Records



PHARMCAS Schools: Admissions Update (2011)

Accepted PharmCAS Applicants

Science GPA	3.29
Non-Science GPA	3.58
Math GPA	3.36
Total GPA	3.40

Source: AACP Admissions Update Data 2012

Underrepresented in Medicine Applicants

Table 19: MCAT Scores and GPAs for Applicants and Matriculants to U.S. Medical Schools by Race/Ethnicity, 2014



The table below displays the MCAT scores, GPAs, and self-identified racial and ethnic characteristics of applicants and matriculants to U.S. medical schools in 2014.* Please email us at datasrequest@aamc.org if you need further assistance or have additional inquiries.

Applicants, 2014		American Indian or Alaska Native	Asian	Black or African American	Hispanic, Latino, or of Spanish Origin	Native Hawaiian or Other Pacific Islander	White	Other	Multiple Race/Ethnicity	Unknown Race/Ethnicity	Non-U.S. Citizen and Non-Permanent Resident	Total
MCAT VR	Mean	8.4	9.2	7.2	7.9	8.6	9.6	8.7	9.1	9.8	8.8	9.2
	SD**	2.3	2.1	2.4	2.4	1.8	1.8	2.2	2.1	1.8	2.2	2.1
MCAT PS	Mean	8.4	10.3	7.4	8.1	8.9	9.6	9.4	9.2	10.0	10.3	9.5
	SD	2.3	2.2	2.1	2.2	2.1	2.1	2.2	2.2	2.1	2.3	2.3
MCAT BS	Mean	9	10.3	7.8	8.8	9.4	10.1	9.8	9.7	10.4	10.4	9.9
	SD	2.5	2.0	2.3	2.2	2.0	1.9	2.0	2.1	1.9	2.2	2.1
Total MCAT	Mean	25.7	29.8	22.5	24.7	26.9	29.3	27.9	28.0	30.2	29.5	28.6
	SD	5.8	5.3	5.7	5.8	4.8	4.7	5.3	5.4	4.7	5.7	5.5
MCAT WS	Median	Q	Q	O	O	O	P	P	P	Q	Q	P
GPA Science	Mean	3.28	3.48	3.08	3.27	3.31	3.52	3.39	3.38	3.47	3.55	3.45
	SD	0.48	0.40	0.50	0.47	0.46	0.37	0.44	0.44	0.40	0.42	0.42
GPA Non-Science	Mean	3.58	3.69	3.49	3.59	3.60	3.71	3.65	3.64	3.67	3.70	3.67
	SD	0.36	0.28	0.36	0.33	0.26	0.28	0.31	0.32	0.30	0.29	0.30
GPA Total	Mean	3.42	3.57	3.27	3.41	3.43	3.60	3.50	3.49	3.56	3.61	3.55
	SD	0.39	0.32	0.39	0.37	0.33	0.30	0.35	0.35	0.32	0.33	0.34
Total Applicants		117	9,208	3,537	2,911	60	24,055	1,636	3,357	2,698	1,901	49,480

Matriculants, 2014		American Indian or Alaska Native	Asian	Black or African American	Hispanic, Latino, or of Spanish Origin	Native Hawaiian or Other Pacific Islander	White	Other	Multiple Race/Ethnicity	Unknown Race/Ethnicity	Non-U.S. Citizen and Non-Permanent Resident	Total
MCAT VR	Mean	9.1	10.1	8.7	8.9	8.9	10.2	9.7	10.0	10.4	9.9	10.0
	SD**	2.2	1.5	1.8	1.9	1.8	1.5	1.7	1.6	1.4	1.6	1.6
MCAT PS	Mean	9.5	11.4	9.0	9.2	9.6	10.5	10.8	10.2	11.0	11.6	10.6
	SD	2	1.7	1.8	1.9	1.8	1.8	1.7	1.9	1.8	1.9	1.9
MCAT BS	Mean	10	11.4	9.6	10.0	10.2	10.9	10.9	10.7	11.2	11.6	10.9
	SD	2	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.7	1.6
Total MCAT	Mean	28.6	32.8	27.3	28.1	28.7	31.7	31.5	30.9	32.6	33.2	31.4
	SD	5.1	3.5	3.7	4.2	3.8	3.5	3.6	3.9	3.5	4.0	3.9
MCAT WS	Median	P	Q	O	O	O	Q	Q	P	Q	Q	Q
GPA Science	Mean	3.48	3.68	3.33	3.49	3.52	3.67	3.62	3.59	3.65	3.76	3.63
	SD	0.43	0.26	0.40	0.36	0.28	0.28	0.32	0.32	0.28	0.25	0.31
GPA Non-Science	Mean	3.70	3.79	3.61	3.68	3.67	3.79	3.77	3.74	3.77	3.82	3.77
	SD	0.27	0.20	0.31	0.29	0.21	0.22	0.25	0.24	0.23	0.19	0.24
GPA Total	Mean	3.58	3.73	3.46	3.57	3.57	3.72	3.68	3.66	3.70	3.78	3.69
	SD	0.34	0.21	0.32	0.30	0.22	0.23	0.27	0.25	0.23	0.21	0.25
Total Matriculants		53	3,816	1,227	1,230	27	10,609	523	1,406	1,152	300	20,343

* In 2013, the methodology for acquiring race/ethnicity information was updated. Rather than one question asking an applicant's Hispanic origin and a second question asking the applicant's race, the Hispanic origin and race response options are now listed together under a single question about how applicants self-identify. Applicants could select multiple response options.

** SD = Standard Deviation

Osteopathic Medical School 2014 Entering Class Profile

Total Applications	First-Year Matriculants	Total Enrollment
17,944	6,465	23,071

Matriculants GPA		Matriculants MCAT Scores	
Science GPA (BCP & Other Science)	3.46	Verbal Reasoning	8.90
Non-Science GPA	3.62	Biological Sciences	9.51
Overall	3.53	Physical Sciences	8.80

Colleges of Podiatric Medicine 2011 Entering Class Profile

Total Enrollment

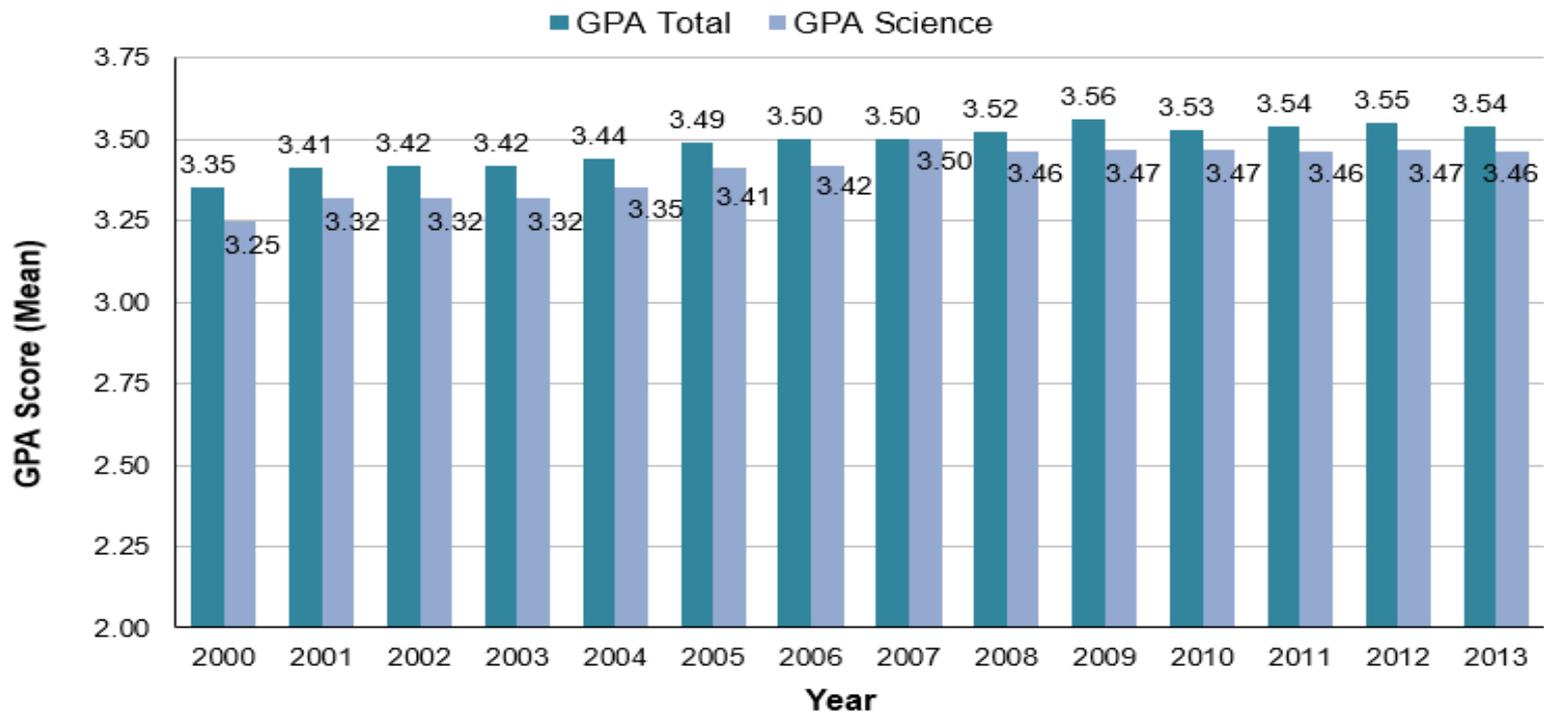
613

Matriculants GPA		Matriculants MCAT Scores	
Science GPA (BCP & Other Science)	3.1	Verbal Reasoning	6.7
Non-Science GPA	3.5	Biological Sciences	7.2
Overall	3.3	Physical Sciences	6.8



Dental School Stats: GPA

Grade Point Averages of Dental School Enrollees, 2000 to 2013



Source: American Dental Education Association, U.S. Dental School Applicants and Enrollees, 2013 Entering Class.

OPTOMETRY 2014 ENTERING CLASS PROFILE

Total Applications	Gender	
2,604 applied with a total of 13,164 applications	Men = 31%	Women = 69%

Matriculants	
Average GPA (highest)	3.6
Average GPA (lowest)	3.08

PTCAS Admissions Update 2014

Entering Class Profile

Total Applicants	Total Applications	Accepted
16,828	30,685	7,722

Matriculants GPA	
Undergraduate Cumulative GPA	3.57
Combined Science and Math GPA	3.42
Core PT Prerequisite GPA	3.0

Academic Renewal/ Repeat to Delete Policies

Profession	NOT Honored	Honored	Varies by school
Medicine	✓		
Osteopathic Medicine		✓	
Dentistry	✓		
Pharmacy	✓		Some will recalculate ✓
Veterinary	✓		
Optometry			✓
Physician Assistant	✓		Some will recalculate ✓

UCR

Advising the Prospective Applicant for Medical School

Neal L. Schiller, Ph.D.

Senior Associate Dean, Student Affairs

UCR Distinguished Teaching Professor

Salma Haider Endowed Chair in Biomedical Sciences

UC Riverside School of Medicine

UNIVERSITY OF CALIFORNIA, RIVERSIDE

3 Questions

Admissions Committees Must Answer

- Can s/he successfully complete all the requirements of medical training?

[this means more than academic ability]

- Does s/he have the character traits needed to be a good doctor?

[character is typically forged before med sch]

- Is s/he “mission fit”?

[this is medical school specific]

Medical School Pre-Requisites

Required Courses [UCR]

- › Mathematics (12 quarter units) to include introductory calculus and statistics
- › English (12 quarter units) to include the study of English composition
- › General college physics with laboratory (12 quarter units)
- › College chemistry with laboratory to include inorganic and organic chemistry (24 quarter units)
- › General biology with laboratory (12 quarter units)

Recommended Courses [UCR – but likely to be required in future]

- › A one-quarter course in biochemistry

Subscribe to Medical School Admissions Requirements (MSAR) from AAMC

Academic Ability

National Data 2014	All Applicants	Matriculants
MCAT total (Mean \pm SD)	28.6 \pm 5.5	31.4 \pm 3.9
Sci GPA (Mean \pm SD)	3.45 \pm 0.42	3.63 \pm 0.31
Non-Sci GPA (Mean \pm SD)	3.67 \pm 0.30	3.77 \pm 0.24
Total GPA (Mean \pm SD)	3.55 \pm 0.34	3.69 \pm 0.25

- Med Schools expect strong performance in science classes – esp. upper division classes – typically science cum GPA ≥ 3.30
- MCAT is the national exam which compares all applicants [note: 31.4 = 78-83 percentile]

MCAT 2015

Section	# ? s	# min	Score	Topics
Chemical & physical foundations of biological systems	59	95	118-132	General chemistry, general physics
Critical analysis & reasoning skills	53	90	118-132	Social sciences & humanities*
Biological & biochemical foundations of living systems	59	95	118-132	General biology, biochemistry
Psychological, social, and biological foundations of behavior	59	95	118-132	Psychology, sociology, biology research methods

*Critical analysis passages are taken from the humanities, social sciences & natural sciences

Graduation Competencies (*UCR)

- › Medical Knowledge
- › Patient Care
- › Interpersonal and Communication Skills
- › Professionalism
- › Practice-Based Learning & Improvement
- › System-Based Practice
- › *Scholarship
- › *Community & Population Health

Core Personal Competencies*

- › Integrity & Ethics
- › Reliability & Dependability



Core values

- › Capacity for Improvement
- › Resilience & Adaptability



**Keys to success in
medical school**

- › Service Orientation
- › Social & Interpersonal Skills
- › Cultural Competence
- › Oral Communication
- › Teamwork



**Competencies needed
to be an effective MD**

*endorsed by AAMC Group on Admissions 11/29/2011

Extracurricular Activities

- › Clinical Experiences
- › Community Service
- › Leadership
- › Professional Development
- › Employment

Clinical Experiences

- An absolute MUST!
- Should be a significant experience – get involved [more than shadow an MD, be at the bedside, be involved with patients – work closely with nursing staff, be a scribe, work for a community clinic, work at nursing home, hospice, etc.]
- Ensure enough time invested for it to count! A letter of recommendation would be important if possible

Community Service

- Should be a meaningful activity – major involvement of time, leadership, etc.
- Choose 1 or 2 with personal investment rather than more activities with minimal time/effort spent
- Choose an activity consistent with your values and career aspirations
- Build both leadership and teamwork skills
- Obtaining a letter of recommendation extolling your virtues here would be very helpful

Professional Development

- Attend seminars or conferences to learn more about the medical profession
- Read articles related to health care, medical trends, major diseases, etc.
- Appreciate the disparities which certain groups experience related to health care
- Improve time management, networking and communication skills

Medical School Interview

Purpose of the interview is to assess:

- a) Communication skills**
- b) Problem-solving skills**
- c) Professionalism**
- d) Leadership**
- e) Medical School “mission fit”**

Missions of UC Riverside School of Medicine

- **Expand and diversify the physician workforce in Inland Southern California**
- **Produce doctors trained for the future**
[more preventive care, public health, health education]
- **Create residency programs to train physicians in areas identified as in short supply** [family med, internal med, pediatrics, Ob/Gyn, general surgery, psychiatry]
- **Improve the health of the community we serve**

How can your students get significant experience in community service, develop leadership skills, learn more about the health professions and participate in physician shadowing?

**Join Future Physicians Leader
(FPL) program**

Future Physician Leader (FPL) Program

The FPL program is a lifelong mentorship program for pre-med students from the Coachella Valley, Riverside – San Bernardino, and Temecula regions. For seven weeks in the summer, students participate in:

- 1. lecture series**
- 2. community service project**
- 3. physician shadowing (for a group of more senior FPL students)**

Our Mission

- To develop more “home-grown” high quality physician leaders who serve the community with social responsibility in order to achieve optimal community health, wellness, and healthcare access for all residents in the Inland Empire
- We value *Excellence* through personal responsibility and *Service* with social responsibility



Our Students

- From the Coachella Valley, Riverside, San Bernardino and Temecula regions
- High School
- Community College
- University
- Medical School
- 180 Students and Growing



We Develop Future Leaders who Dream to Serve



Our students are the solution

-

Didactics

Summer Shadowing Rotations

Community Service & Leadership

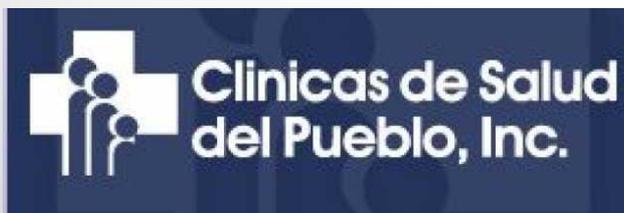
Leadership Lecture Series 2014

- Professionalism and Leadership
- Health Disparities in the Inland Empire
- The Role of Community Healthcare Providers
- Community Advocacy and Empowerment
- The Physician's Roadmap
- Professional Development – Skills Workshop



A Public Entity

Inland Empire Health Plan



Summer Shadow Rotations

See Yourself as a Physician

“I can do that”



Summer Shadow Rotations

Coachella Valley Sites

- Borrego Community Health Foundation
- Clinicas De Salud Del Pueblo
- Desert Regional Medical Center
- Eisenhower Medical Center
- Planned Parenthood
- UCR Health
- Volunteers In Medicine

Riverside / San Bernardino & Temecula

- Arrowhead Regional Medical Center
- Planned Parenthood
- Riverside County Regional Medical Center
- Temecula Valley Hospital
- UCAP Health



Community Service & Leadership Through Community Health Projects

Learn Service Leadership by Doing



Community Health Projects (CHP)

- **27 Student Teams**
- **1,932 People Served**
- **Health Topics**
 - HIV/AIDS Education & Awareness
 - Oral Hygiene and Dental Care
 - Stress Management
 - Music as Medicine
 - Diabetes Prevention
 - Post-Partum Depression
- **Workshop Curriculum**
 - Community Health Project Components
 - Ethical Issues When Conducting Research
 - Developing a Project Budget
 - Administering Pre & Post Evaluations
 - Dissemination of Results



Community Service & Leadership



Future Physician Leaders

UCR Home > Future Physician Leaders Program

Home

[A to Z Listing](#) | [Campus Map](#) | [Find People](#)

Search for:

Home

About FPL

[General](#) | [Components](#) | [Gallery](#)

Events

Staff and Student Profiles

Partners

Application



The mission of the FPL is to develop more "home grown" high quality physician leaders who serve the community with social responsibility in order to achieve optimal community health, wellness, and healthcare access for all residents in the Coachella Valley and in the Riverside/ San Bernardino region.

Application Information

[Apply Now](#)



News & Events

Application Opens:

February 10, 2012

Application Deadline:

April 27, 2012

Notification of Acceptance:

May 21, 2012

Program Start Date:

June 21, 2012

Program End Date:

August 3, 2012



Program Components

Leadership Lecture Series

Summer Shadow Rotation

Community Service and Research

The FPL is a long term mentorship program for students to fulfill a mission to serve the community. During the summer there is a six week shadow rotation held at one of two sites for the program: Coachella Valley based out of the UCR Palm Desert campus and Riverside-San Bernardino based out of the UC Riverside School of Medicine campus.

As a member you are asked to attend our summer leadership lecture series, participate in our community service and research project, and attend two annual networking dinners with physicians and healthcare leaders. Anyone interested in becoming a physician leader and serving their community is welcome to apply. There are no requirements to participate in the summer leadership lecture series and community service and research component other than a willingness to serve the community and a commitment to attend all mandatory meetings and lectures. There are, however, requirements to apply for one of twenty spots for the summer shadowing rotations bot in the Coachella Valley site and in the Riverside - San Bernardino site. A list of requirements is listed on the Summer Shadowing tab at the end of the application.



[Visit FPLs Facebook page](#)



[Visit FPLs Twitter page](#)



[Visit FPLs Youtube page](#)

Online Application Open NOW

Deadline is April 12, 2015

www.fpl.ucr.edu

FPL

FUTURE PHYSICIAN LEADERS

The Thomas Haider Program at the UCR School of Medicine

- will continue the tradition of providing a unique pathway into medical school for UCR students
- up to 24 seats reserved in our new SOM for UCR students who complete at least 6 consecutive quarters of instruction and complete their bachelor's degree at UCR
- these applicants will be provided a thorough and holistic review by a special Admissions subcommittee of the new SOM.

The Medical Scholars Program

Mission Statement: The goal of the UC Riverside Medical Scholars Program (MSP) is to increase the diversity of UC Riverside students who succeed in their BS or BA training and achieve their goal of entering medical school, allied health disciplines, or biomedical research careers.

MSP is a community of students who support each other in all their activities

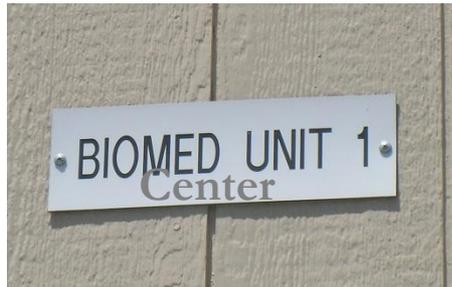


The Medical Scholars Program

- **Academic Support program – special classes, workshops, study groups, need-based scholarships, etc.**
- **Academic/career/personal counseling by faculty and staff and peer mentors**
- **Academic and summer research internships as well as clinical internship experiences**
- **Career development activities – career planning and leadership training**
- **Social/community development activities**

This program is made possible due to generous funding support from Kaiser Permanente, Howard Hughes Medical Institute, The California Endowment, The California Wellness Foundation, private sponsors, and UC Riverside School of Medicine

IT'S ALL ABOUT COMMUNITY!



- ☺ Study place for students
- ☺ A home away from home
- ☺ A place to meet other students
- ☺ A small library with textbooks and study guides
- ☺ Computers and printers

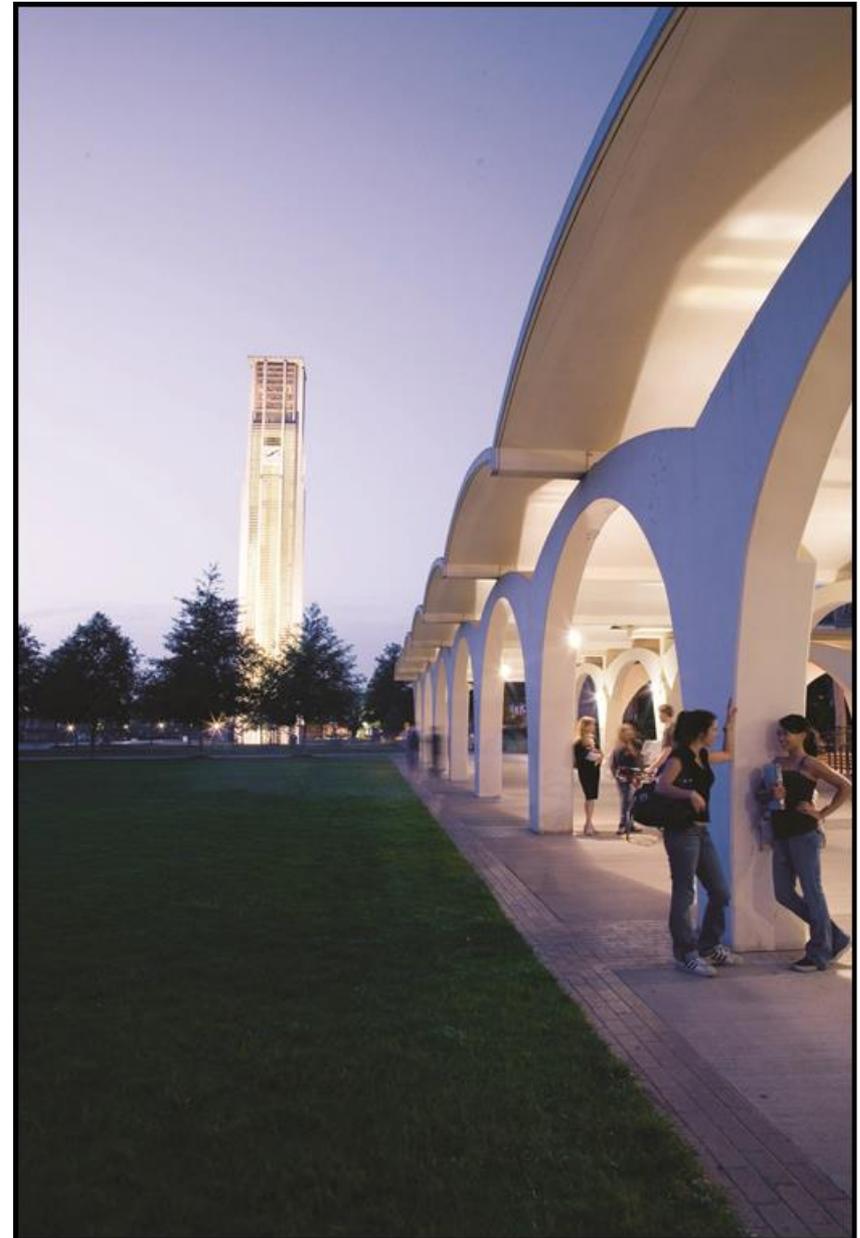
Impact of MSP on Student Success

- Of the **412 MSP alumni**, **295 (71.6%)** graduated with **science degrees**, including **166** under-represented in medicine (**URiM**) students who graduated with a science **degree**.
- **174 of our alumni** have been admitted into postgraduate health related careers, including **79 in M.D.** medical schools and **12 in D.O.** medical schools.

MSP Alumni Data - January 8, 2014												
Alumni Report	MD	DO	PhD	MD/PhD	PharmD/O D DDS/DPM	JD	PA	Nurse/ NP	Postbac	MS	MPH	Total
Total MSP	79	12	4	2	11	1	4	7	19	25	10	174
URiM Students	33	2	2	2	3	1	1	4	16	16	5	85
Women	32	4	1	1	4	1	3	7	10	19	7	89

Questions?

Neal.Schiller@ucr.edu
951-827-4535





CHAPMAN
UNIVERSITY

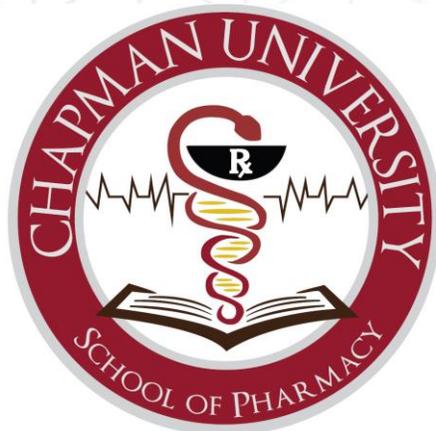
SCHOOL OF PHARMACY

The World of Pharmacy

Lawrence “LB” Brown, PharmD, PhD, FAPhA

Associate Dean of Student Affairs

Email: LBBROWN@CHAPMAN.EDU



CSU Long Beach

Feb 20, 2015



Two-Person Team Question Challenge #1

- 1. Pair up with the person next to you and spend 1 minute working together to answer the “Challenge” question**
- 2. Write your Team’s answers to the question on a sheet of paper**

(Don’t worry, it won’t be graded)

What 3 things come to your mind when you hear the word Pharmacists?

What did your team come up with?

Challenge Question #2

You have 2 minutes
for this question

Where do pharmacists work and what do they do there?

What did your team come up with?

Answer: Pharmacists work in several practice settings

- **Chain, Independent, grocery store, and mass merchandise pharmacies**
- **Hospital pharmacies**
- **Compounding pharmacies**
- **Doctor's Offices**
- **Health Insurance Companies**
- **Federal Government (FDA, AHRQ, Center for Disease Control)**
- **Nuclear Pharmacies**
- **State and National Pharmacy Associations**
- **Academia**

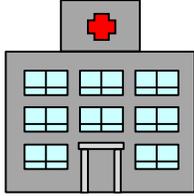
A Pharmacy degree can lead to about 180 different career choices based on a 1998 analysis of URI alumni jobs.

Distribution roles

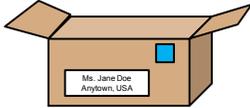
Community retail pharmacy



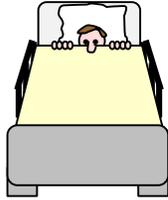
Hospital pharmacy



Mail-order pharmacy



Long-term care



Non-distribution roles

Management in health care orgs

Supply chain	Legal
Clinical	Strategy
Purchasing	Store Ops

Pharmaceutical sales

Doctor's office 



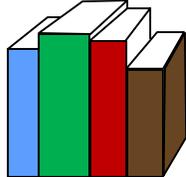
Managed care



Government health org



Academia and Research





**Less
emphasis
on this**

More on This



emerging roles for pharmacists

Pharmacists are being recognized for their knowledge and skills regarding the provision of medication management and other services for the purpose of improving care and decreasing costs

- Embedded as members of a Medical Group**
- Accountable Care Organizations**
- Care Transition Organizations**
- Patient Centered Medical Homes**
- Travel Medicine Clinics**
- Advanced Practice Pharmacists (In California)**

CALIFORNIA PROVIDER STATUS LAW- Senate Bill 493

- **Administer drugs and biological products that have been ordered by a prescriber**
- **Provide consultation, training, and education about drug therapy, disease management and disease prevention.**
- **Participate in multidisciplinary review of patient progress, including appropriate access to medical records.**
- **Perform other functions, including, among other things, to furnish self-administered hormonal contraceptives, nicotine replacement products, and prescription medications not requiring a diagnosis that are recommended for international travelers**
- **Order and interpret tests for the purpose of monitoring and managing the efficacy and toxicity of drug therapies, and to independently initiate and administer routine vaccinations, as specified.**
- **The above authorizations are for ANY licensed pharmacist in California**

SB493-ADVANCED PRACTICE PHARMACIST

- Perform patient assessments.
- Order and interpret drug therapy-related tests in coordination with the patient's primary care provider or diagnosing prescriber.
- Refer patients to other healthcare providers.
- Initiate, adjust, and discontinue drug therapy pursuant to an order by a patient's treating prescriber and in accordance with established protocols.
- Participate in the evaluation and management of diseases and health conditions in collaboration with other healthcare providers.

What does it take to get into Pharmacy School

- **Minimum**
 - **3.0 GPA**
 - **50 Percentile on the PCAT**
 - **Complete 65 – 70 pre-requisite credit hours**
 - **Do well on Interview**
- **To have a really good chance of getting accepted**
 - **3.4 or greater GPA**
 - **70 percentile or higher on the PCAT**
 - **Bachelor's of Science Degree**
 - **Do extremely well on Interview**

Additional items taken into consideration for Interview and Admission

- **Work/Volunteer experience**
- **Shadowing of various types of pharmacists**
- **Interviews of various types of pharmacists**
- **Extracurricular activities**
- **Leadership experience**
- **PTCB Certification**
- **Communication skills**
- **Teamwork skills**
- **Critical thinking skills**

Specific Advice for Community College Students

- **Many pharmacy schools give less weight to courses that were taken at a community college, because they feel the courses are not as rigorous as those taken at a four-year institution.**
- **It is very important for community college students to try to get A's in their coursework. Especially the science courses.**

Thank You

Dr. Lawrence M. Brown
LBBROWN@chapman.edu

Questions?



Robert Wood Johnson
Foundation

SMDEP: Preparing aspiring dentists and physicians to reach their full potential

Bridgette Waldron, MPA

Communications & Alumni Relations Specialist

Summer Medical and Dental Education Program

SMDEP is a national program funded by the Robert Wood Johnson Foundation with direction and technical assistance provided by the Association of American Medical Colleges and the American Dental Education Association.



Overview

- **FREE** six-week residential summer academic enrichment program, supported by the Robert Wood Johnson Foundation
- Targeted for college freshmen and sophomore students interested in a career in medicine or dentistry
- Twelve sites across the US



What happens during the 6 weeks?

- Courses in organic chemistry, physics, biology, pre-calculus, and quantitative topics
- Career development activities, including learning about the admissions process, and mock interviews
- Learning and study skills workshops
- Exposure to clinical settings (5% of program time)
- Workshops in Financial Planning and Health Policy



Student Eligibility

- Freshmen or sophomores, at 4-year or community college, with US citizenship or permanent residency
- Overall minimum 2.5 GPA
- From disadvantaged background, or
- From racial and ethnic groups that have been historically underrepresented in medicine and dentistry—African American, Hispanic/Latino, and American Indian
- Interest in medicine or dentistry



SMDEP By The Numbers

- Since 1989, over 21,000 students have participated in the program
- Over 4,600 participants have graduated from medical school
- Over 2,300 are currently enrolled in dental and medical school, or other health professions schools





Participating SMDEP Sites

- Case Western Reserve University Schools of Medicine and Dental Medicine
- Columbia University College of Physicians and Surgeons and College of Dental Medicine
- David Geffen School of Medicine at UCLA and UCLA School of Dentistry
- Duke University School of Medicine
- Howard University Colleges of Arts & Sciences, Dentistry, and Medicine
- The University of Texas Dental Branch and Medical School at Houston
- UMDNJ New Jersey Medical and New Jersey Dental Schools
- University of Louisville Schools of Medicine and Dentistry
- University of Nebraska Medical Center, Colleges of Medicine and Dentistry
- University of Virginia School of Medicine
- University of Washington Schools of Medicine and Dentistry
- Yale University School of Medicine





SMDEP students also know how to have fun!





Application Process

- ✓ Application opens November 1, and closes March 1
- ✓ Letters of Recommendation from:
 - a science professor, pre-health advisor or another professor that can speak to your abilities, internships and volunteer activities
 - Freshmen may have high school teachers write a letter of recommendation
- ✓ 2 essay questions
- ✓ Select 3 sites
- ✓ College transcripts (freshmen: apply early and submit your transcripts right after fall grades are posted)



Is there a dentist in the house?





What former participants say...

“This was a wonderful opportunity and a great experience! This program confirmed my choice of dentistry over medicine. I truly believe that because of those classes, I received an A in Organic Chemistry II. I got a 100 on my first exam because I had already seen most of the material.

I enjoyed talking to the doctors and dentists and I still keep in touch with med students who mentored us. I met some awesome people from all around the country (all of my suitemates were from different places) and are still close to them. Awesome program!! =)”

Deveney Mason
SMDEP '09, UMDNJ



What former participants say...

“I went to Duke Program in 2009. It was an incredible experience and certainly one of my most significant experiences that determined my wish to pursue medicine. I am now attending Drexel College of Medicine and in four years the dream will be achieved! I loved Dr. Armstrong and Dr. Cullins, they were wonderful teachers! They really do show what you can expect in medical school to the par!”

Gabriela Victoria Graterol
SMDEP '09, Duke

Things to Remember



- Apply early!
- Submit all your paperwork (letters of recommendations and transcripts)
- Two admission decision release dates: February 15 and April 1



Questions?

- Ask your school SMDEP Ambassador
- Call the SMDEP National Program Office at 1-866-587-6337
- Email questions to smdep@aamc.org

SMDEP is a national program with collaborative direction and technical assistance provided by the Association of American Medical Colleges (AAMC) and the American Dental Education Association (ADEA).



Western
University
OF HEALTH SCIENCES

College of Allied
Health Professions

Health Professions: Physician Assistant



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Assistant Director

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Health Professions: Physician Assistant



- ▶ PA Requirements
- ▶ PA Application Process
- ▶ How to be a competitive applicant

PA Application Requirements

- Bachelor's Degree
- Successful completion of prerequisites (science courses may expire)
- Direct Patient Care (number of hours required may vary)
- Community Service (number of hours required may vary)



PA Application Requirements



- Entrance exam (GRE or MCAT)
- Letters of Recommendation
 - PA, College Professor, Physician

Each school is different and requirements may not all be the same

WesternU's Prerequisite Requirements

Courses	Semester Units	Quarter Units
Human Anatomy w/lab	3	4
Human Physiology w/lab	3	4
Microbiology w/lab	3	4
Genetics	3	4
General or Inorganic Chemistry w/lab	6	12
Psychology	3	4
Sociology	3	4
Introductory Statistics	3	4
College Algebra	3	4
College English	6	8
Humanities	9	12
* SPANISH Highly Recommended		



Do your courses meet specific requirements?

- Most institutions have a comprehensive list of courses accepted.
- WesternU offers a Prerequisite Database to search prerequisites by institution
- Always contact the school to confirm if a course will be accepted

WesternU's Prerequisite Requirements

Browse Colleges	
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z All	
College: <input type="text" value="C"/>	<input type="button" value="Search"/>
College: California State University, Long Beach - CA	Department: PA
Course Name	Prerequisite
Algebra	MATH 112
Anatomy	A/P 202, 208, BIO 208, 332
Chemistry	CHEM 111A & 111B
English	ENG 100, 101, 102, 180, 181, 184, 200, 205, 300, 317, 320; ASAM 100, 170, B/ST 100, 170, MEXA 104B; CHLS 104
Genetics	BIO 370
Microbiology	MICRO 100, 200, 210, 211
Physiology	A/P 207, 209; BIO 207, 342/342L
Psychology	PSY 100
Sociology	SOC 100
Statistics	BIO 260, C/LA 250, EDP 419, HDEV 250, HSC 403, KPE 590, MATH 180, 380, PSY 110, STAT 108
<i>Listed prerequisites are subject to change without prior notice</i>	



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Application Process

- ▶ **Primary Application**
 - Centralized Application Service for Physician Assistants (CASPA)
 - Available: April
 - Deadline: Depends on school
 - **Read Instructions and FAQ's carefully before you begin the application**
- ▶ **Secondary Application**
 - Contains essay questions specific to school
 - PA contact
 - Additional material may be needed

WesternU Competitive Statistics 2014 Entering Class

Number of Apps Received	2,135	Average Overall GPA	3.52
Number of Interviews Granted	425	Average Prerequisite GPA	3.60
Number of Enrolled Students	98	Average Science GPA	3.53

What Makes a Competitive Applicant

- ▶ Knowledge of the profession
 - American Academy of Physician Assistant (AAPA)
 - Aapa.org
 - Physician Assistant Education Association (PAEA)
 - Paeaonline.org
 - California Academy of Physician Assistants (CAPA)
 - Capanet.org

- ▶ Contacting a PA about the field
 - Shadowing
 - Interview

What Makes a Competitive Applicant (cont.)

- ▶ Continued commitment to the community
 - Medically unrelated
 - Applicants with no volunteer/community service will not be considered for interview
- ▶ Pre-PA Clubs and Organizations
 - Join or create Pre-PA club at your school
 - Hold leadership positions
- ▶ Retake courses to strengthen GPA or take more upper division courses in the science

What Makes a Competitive Applicant (cont.)

- ▶ Visit Campus
 - Preview Day
 - General Campus Tour
 - Online Information Session

- ▶ Classroom Observation
 - Observe 1st year PA class
 - Available September through late November
 - *contact me for details*

Questions





Assembled by:

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