

PHARMACY (PHARM.D.)

ACADEMIC AND CAREER INFORMATION

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 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. Advanced training for such programs usually requires a fellowship or residency after completion of the Pharm.D. degree. The median annual of wage-and-salary pharmacists in May 2016 was \$122,230. 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. 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 from 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.

ACADEMIC 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. 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.

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

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

Students maintain responsibility for verifying course selection with individual programs.

Coursework	CSULB Courses
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 (Biol & other majors)
One year of Calculus	Math 122 & 123 OR Math 119A
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.

ADDITIONAL RESOURCES

- [Pharmacy Careers](#)
- [Pharmacy is Right for Me](#)
- [Pharmacy School Admissions Requirements](#)
- [Pharmacy College Admission Test \(PCAT\)](#)
- [Pharmacy College Application Service \(PharmCAS\)](#)

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.