



# Postgraduate Education Frequently Asked Questions: Residencies and Research Fellowships

## What is a residency or fellowship and why consider one?

If you desire to increase your clinical skills and knowledge or to become further specialized, or if you are looking for professional advancement and diverse pharmacy opportunities, a post-PharmD residency and/or fellowship might be right for you. Residency and fellowship programs require additional years of practice, study, and research; however, completion of one or more of these programs provides unique career opportunities that may be unavailable to those with only an entry-level professional degree. Both residencies and fellowships enhance your skills and knowledge in a particular area; however, residencies typically focus on developing clinical skills, while fellowships focus on improving research skills.

## In what areas of pharmacy are residencies and fellowships available?

There are many kinds of residencies available. Typically, a first-year residency (PGY1 – Postgraduate Year 1) is general in scope as well as clinically based. It is designed to enhance the knowledge, skills, and abilities acquired during the pharmacy program. Often, a second-year residency (PGY2 – Postgraduate Year 2) continues to build upon the PGY1 residency, allowing a student to specialize and focus on a particular therapeutic area. PGY2 residencies also may have an option to complete a master's degree during the training period. Areas covered by residency training may include community practice, therapeutic specialties, organizational/administration, leadership, public policy, research or academia. Fellowships—research-intensive training programs—are available in as many diverse areas as those offered by residencies and can be tailored to individual or preceptor research interests.

## What is expected of a typical applicant?

Residents are typically required to have a PharmD (or other appropriate pharmacy degree) as well as pharmacy licensure in the state where the residency is located. Residents are selected based on their interest areas, academic performance, and involvement during pharmacy school.

Responsibilities of residents may include managing patient medications, being on call, rounding with the healthcare team, serving on committees, staffing in the pharmacy, teaching, presenting continuing education (CE) programs, and completing research projects.

Fellowship training typically requires at least one year of residency experience prior to initiation. Many of the skills acquired during fellowship training are similar to the skills developed during graduate school. These include in-depth knowledge of a topic area, methodology and research implementation, and scientific writing skills.



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## How are residents and fellows supported?

Residents and fellows typically receive financial support from the institution or company for which they are working. Salary will depend on the program. Salaries are typically less than a full-time practicing pharmacist, but many residents and fellows supplement their income working as a pharmacist during nights and weekends.

## What careers will be available after postgraduate training?

Regardless of your area of focus, a diverse number of career opportunities will exist following graduation. Some of the available career opportunities include clinical specialist, clinical pharmacist associated with academic centers, pharmacy manager, and medical science liaison. Careers are available in many other areas as well. Advanced postgraduate training will put you in a position for greater responsibility, thereby creating a more stimulating work environment.

## How do I decide which postgraduate program is for me?

Find a mentor, pharmacist colleague, or professor whose career path interests you. This mentor can show you what qualifications are needed for that type of a position. Passion for a particular issue or topic area can serve as the best guidance for what type of program to choose.

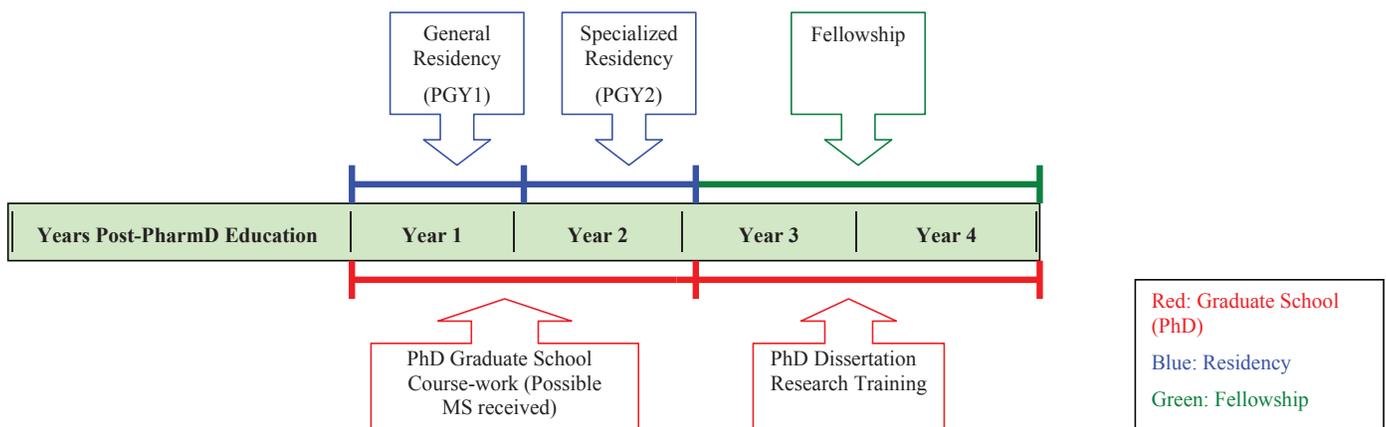
**Residency:** You are interested in clinical aspects and want to remain dedicated to the care of patients, although some nonpatient care and administration-based residencies do exist.

**Fellowship:** You want further research training specialization with additional research experiences, most often after completion of a residency.

**Graduate School:** You want in-depth research training or additional preparation for a career in the pharmaceutical industry or academia and want research to be a component of your career.

## How much time will it take to complete postgraduate education?

# Postgraduate Timeline Comparison\*



\* Represents an "in general" timeline for most students. Maybe take more or less time depending on program requirements and research project.



# Postgraduate Education Frequently Asked Questions: Graduate School In Pharmaceutical Research & Science

## Why should I consider a postgraduate program in the Pharmaceutical Sciences?

Graduate education may be a great match if you enjoy science and research, are looking for professional advancement, want more career opportunities, or wish to be intellectually challenged through advanced coursework. Completing a graduate degree provides unique opportunities for challenging and exciting careers and offers various professional and personal rewards, including expanded income-earning potential.

## What disciplines are included in Pharmaceutical Sciences?

Pharmaceutical Sciences encompass the discovery, development, administration, and utilization of medications and devices, as well as research about the profession. Traditional graduate degrees are available in the areas of Economic, Social, and Administrative Sciences; Basic Sciences; and Clinical/ Translational Sciences.

Economics, Social, and Administrative Sciences: Programs are available in Pharmacoeconomics, Pharmacy Administration, Public Health, Pharmacy Practice, Pharmacoepidemiology, Public Policy, and in social and behavioral aspects related to pharmacy.

Basic, Clinical, and Translational Sciences: Programs are available in Pharmaceutics, Medicinal Chemistry, Pharmacology, Toxicology, Pharmacokinetics/Pharmacodynamics, Pharmacogenetics/ Pharmacogenomics, Pharmacognosy/Natural Products, and Clinical and Experimental Pharmacology.

## What qualifications are expected of a graduate school applicant?

Expected work characteristics include individuality, creativity, commitment, motivation, communication, and organizational skills. Additionally, a pharmacy degree is highly desirable and could be required for certain programs. The broad range of knowledge that pharmacists have in areas such as biology, chemistry, clinical practice, and pharmacoeconomics places them in a unique position to integrate the information they gain in graduate school into pharmacy, health care, and research arenas. Applicants to programs are usually asked to submit an application along with their undergraduate transcripts and letters of recommendation. GRE, GMAT, and language proficiency scores may also be required, and a GPA (grade point average) of at least 3.0 is typically preferred.



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## What is graduate school like?

Approximately two years of coursework provide advanced didactic instruction in the academic area of study. Often, courses are small in size, which provides for greater discussion of ideas and an in-depth examination of topics. Some graduate programs include the opportunity to complete a master's degree during the first two years of graduate school, which requires the completion of a research project and thesis. Following completion of this coursework, you will usually take a "Preliminary" or "Advancement-to-Candidacy" Examination. The most important component of the PhD degree is the completion of a research project and final dissertation. The dissertation defense is the final project in the PhD degree.

Dissertation research is diverse, depending on your discipline and topic under investigation. Often, your research in graduate school will depend on the school, the strengths of the individual program, and/or the expertise or ongoing projects of your major advisor. Most important, your dissertation should be a topic that interests you.

## How are graduate students supported?

Graduate students in the pharmaceutical sciences typically receive financial support from the institution in the form of stipends, assistantships (teaching or research), fellowships, and tuition waivers. Financial aid in the form of loans, grants, and scholarships based on need and academic accomplishment is also available from government and private resources. Salary will vary from program to program. However, graduate students who have pharmacy licensure have an opportunity to work outside of their educational training, which may supplement their stipend or income.

## What careers will be available to me after I complete my postgraduate education?

Regardless of your area of study, a diverse number of career opportunities exist following graduation. Most PhD graduates are employed in academia, industry, and government.

A PhD allows for larger leadership roles in conducting and facilitating research from initial project development to data analysis as well as the opportunity for advancement in managerial and administrative roles. Your PhD has the potential to open doors that are not available to someone with a PharmD.

## How do I find out about postgraduate opportunities?

Ask professors in your pharmacy school. Search the Internet for graduate programs and other educational opportunities. Talk with pharmaceutical scientists, faculty, and graduate students to learn more about graduate school and career opportunities; they have already faced decisions similar to your own.

If you are in school, working on a research project related to pharmaceutical research will also help you determine if graduate school is for you. Student pharmacists can obtain research experience by working with professors during the school year or summer, at a pharmaceutical company, or in government during summers. Some schools may also offer rotations in research, giving you the opportunity to obtain research experience.

Additional resources can be found at [www.pharmacist.com/scientists](http://www.pharmacist.com/scientists).