Pharmacy Clerkship

PROGRAM DESCRIPTION
Pharmacy students who successfully complete 10 to 15 weeks of clerkship rotations will further develop their skills to provide pharmaceutical care to a variety of patients. While interacting with health-care professionals, residents, students, patients and their caregivers to optimize drug therapy outcomes, you will learn to communicate effectively and demonstrate excellent interpersonal skills.

The Pharmacy Clerkship Program includes all the elements that create an exceptional education experience:

• A challenging, high-quality curriculum
• State-of-the-art diagnostic, therapeutic and research facilities
• A diverse patient population
• A favorable faculty ratio
• An environment based on teamwork and mutual support

ACCREDITATION
Mayo Foundation is accredited by the North Central Association of Colleges and Schools Higher Learning Commission.

Higher Learning Commission
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FACILITIES
The Mayo Clinic campus in Rochester is comprised of an extensive outpatient complex, Saint Marys Hospital, Rochester Methodist Hospital, as well as multiple research and education facilities. It is among the largest, most advanced medical centers in the world.

PHARMACY SERVICES
Mayo Clinic’s Pharmacy Services Department employs about 300 people, including approximately 130 pharmacists. The pharmacies operate 24 hours per day and provide pharmaceutical services, including:

• Central pharmacy distribution
• Sterile and non-sterile compounding
• Computerized intravenous admixture and unit dose dispensing
• Investigational drug studies
• Skilled nursing facility dispensing and consulting
• Decentralized pharmacist practice
• Pharmacokinetic monitoring
• Patient education programs
• Clinical pharmacy specialty practices
• Drug information programs
• In-service education
• Pharmacy, therapeutics and formulary committee support
• Physician newsletters

Mayo Clinic uses a computer-based pharmaceutical care (P-Care) monitoring system. P-Care integrates data from disparate computer systems, including pharmacy, admissions, laboratory and microbiology. Computerized algorithms utilize this data to alert pharmacists to potential situations where therapy, safety or costs can be improved. Performing daily pharmaceutical care duties, P-Care is used to:

• Provide patient demographic data, laboratory data, microbiology data, medications, parenteral nutrition information and drug levels while on team rounds, during order processing and during medication profile review.
• Identify patients whose medication therapy requires a pharmacist’s daily review.
• Identify and review treatments that are inconsistent with established medication rule-based algorithms.
• Document pharmacist-performed clinical activities, interventions and monitoring notes.
• Provide a forum for pharmacists, pharmacy residents and pharmacy students to communicate pertinent patient-specific, medication-related issues.

HOURS

For the majority of the clerkship experience, your learning schedule will include eight-hour days, five days per week.

POSITIONS

Mayo School of Health Sciences admits six to eight students each year based on affiliation agreements with the University of Minnesota,
North Dakota State University and South Dakota State University. The program also admits students who have previously completed a pharmacy internship at Mayo Clinic in Rochester. Applicants must be pre-approved by Mayo Clinic Pharmacy Services Department.

**Curriculum**

**CLINICAL TRAINING**

As a clerkship student, you will devote much of your time to comprehensive clinical training in direct patient care services.

**DIRECT PATIENT CARE SERVICES**

Throughout your clerkship rotations, you will be an integral member of a multidisciplinary patient care team in one of Mayo Clinic’s patient care areas. You will provide patient-specific pharmaceutical care services, and will develop individualized pharmacotherapeutic care plans for these patients. You will enhance your skills in:

- Developing problem lists.
- Defining therapeutic goals.
- Developing therapeutic plans.
- Monitoring drug therapy outcomes.
- Providing drug information and education.
- Assessing and practicing evidence-based medicine.

**EVALUATION**

Core standards for student performance have been established to provide clear expectations. Also, the evaluation tool required by the individual college of pharmacy will be used by the rotation preceptors.

**Faculty**

**TEACHING FACULTY**

The clerkship program draws its faculty from clinical staff throughout Mayo Clinic. They are chosen for their commitment to teaching as well as clinical practice and/or research. Many have published and lectured extensively and are highly regarded in their field.

You will have access to these individuals throughout your training - with the opportunity to learn directly from some of today’s best practitioners in pharmacy.
VISITING PROFESSORS/LECTURERS

A hallmark of higher education excellence is the breadth and depth of information and experience provided residents by the faculty and visiting experts. Many prominent professors visit Mayo Clinic to lecture on their areas of medical and scientific expertise each year. As a participant in the Pharmacy Clerkship program, you are encouraged to attend all conferences, lectures and seminars prepared for students, residents, fellows and consulting staff.

Admissions

PREREQUISITES

To be eligible for the Mayo Clinic Pharmacy Clerkship Program, you must be:

- A pharmacy student at the University of Minnesota, North Dakota State University, or South Dakota State University; OR have completed a pharmacy internship at Mayo Clinic in Rochester.
- Licensed as a pharmacy intern in Minnesota.
- Pre-approved by the Pharmacy Services Department at Mayo Clinic in Rochester.

STUDENT RESPONSIBILITIES

Clerkship program students are required to exhibit professional and ethical conduct at all times.

TECHNICAL STANDARDS

Mayo School of Health Sciences accepts students who are highly qualified for its programs. To be considered for admittance you should exhibit strong qualifications for the program you wish to pursue. Applicants to programs must possess the following general qualities:

- Critical thinking skills
- Sound judgment
- Emotional stability and maturity
- Empathy for others
- Physical and mental stamina
- Ability to learn and function in a variety of settings

You must be able to perform the essential functions of the profession and meet the standards of the program. Students seeking exceptions to these standards or reasonable accommodations should initiate their request with the program’s director.
Application Process

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PRE-APPROVAL PROCESS

Students must provide to their college of pharmacy experiential program director a request for a clerkship rotation at Mayo Clinic in Rochester. Your experiential program director will contact Mayo Clinic for approval of your request. If approved, you will be contacted by the Mayo Clinic Pharmacy Services Department and instructed to complete the online application process.

APPLY

Students who have been pre-approved for the pharmacy clerkship are required to submit:

- A completed online Mayo School of Health Sciences application form
  - Complete the sections titled: Personal Data, Program of Interest, Education Information, Citizenship/Visa Notice and Additional Information.
  - You may complete the section on voluntary information.
  - Do not complete the sections titled: Employment Information, Standardized Testing, Professional Licensing and Registration, Essay Questions and Recommendations.

- A curriculum vitae

- Your application and all supporting documentation must be received within two weeks of notification that you are pre-approved for a clerkship rotation.

- Mayo School of Health Sciences upholds all federal and state laws that preclude discrimination on the basis of race, sex, age, religion, national origin, marital status, sexual orientation, disabilities or veteran’s status.

- Mayo School of Health Sciences is committed to developing and maintaining the very best education programs. Changes may be made to the curriculum and other aspects of this program as necessary to assure the highest-quality training.
Tuition & Accommodations

PROGRAM COSTS

There are no tuition or program costs for participating in pharmacy clerkship rotations at Mayo Clinic. No stipend is provided for clerkship rotations.

ACCOMMODATIONS

The University of Minnesota has made arrangement with Mayo School of Health Sciences to make housing available for its students while in Rochester. Other students are responsible for providing their living accommodations.

Pharmacy Career Overview

FIELD DESCRIPTION

Pharmacists are experts on the properties and proper use of medicines. They consult with physicians and other health-care practitioners on drug selection, dosage, interactions and potential side effects. Pharmacists are licensed to dispense prescribed medicines, and they advise patients on how to correctly use and benefit from their medications.

Pharmacists are trained in the composition of drugs and, when necessary, may compound medicines, mixing chemical ingredients to form powders, tablets, capsules, ointments or solutions.

Pharmacists are responsible for the accuracy of every prescription that is filled, often relying upon pharmacy technicians and pharmacy aides to assist them. Thus, the pharmacist may delegate prescription-filling and administrative tasks and supervise their completion.

Most pharmacists work in a community setting, such as a retail drug store, or in a hospital or clinic. Pharmacists in hospitals and clinics dispense medications and advise medical staff. They assess, plan and monitor drug regimens, and counsel patients on how to take their medications when they are discharged from the hospital. Pharmacists also may evaluate drug therapy patterns and outcomes for patients.

Pharmacists in community or retail pharmacies counsel patients, answering questions about prescription drug reactions and interactions. They provide information and recommendations on over-the-counter drugs, durable medical equipment and home health-care
supplies. Those who own or manage community pharmacies may sell nonmedical merchandise, hire and supervise personnel, and oversee the business operations.

Some community pharmacists help patients manage conditions, such as diabetes, asthma, smoking cessation or high blood pressure. Pharmacists may specialize in specific drug therapy areas, such as intravenous nutrition support, oncology (cancer) and pharmacotherapy (the treatment of disorders with medicines).

CAREER OPPORTUNITIES

Across the United States, pharmacists held about 217,000 jobs in 2000. About six out of 10 worked in community pharmacies, either independently owned or part of a drugstore chain, grocery store, department store or mass merchandiser. Most community pharmacists were salaried employees, but some were self-employed owners. About 21 percent of salaried pharmacists worked in hospitals, and others worked in clinics, mail-order pharmacies, pharmaceutical wholesalers, home health-care agencies or the federal government.

Employment of pharmacists is expected to grow faster than the average for all occupations through the year 2010, due to the increased pharmaceutical needs of a larger and older population and greater use of medications. The growing numbers of middle-aged and elderly people - who, on average, use more prescription drugs than do younger people - will continue to spur demand for pharmacists in all practice settings. Other factors likely to increase the demand for pharmacists include medical and scientific advances that will make more drugs available, new developments in genomic research and medication distribution systems, and increasingly sophisticated consumers seeking more information about drugs.

EARNING POTENTIAL

The annual earnings of pharmacists in 2000 ranged from $52,000 to $89,000 a year. Median earnings in the industries employing the largest numbers of pharmacists in 2000 were as follows:

Department stores ..................................................$73,730
Grocery stores ......................................................$72,440
Drug stores and proprietary stores .........................$72,110
Hospitals .........................................................$68,760

In addition to traditional benefits, such as health-care insurance and paid vacations and holidays, many pharmacists receive compensation through bonuses, overtime and profit sharing.
PROFESSIONAL ORGANIZATIONS

Visit the following Web sites to learn more about pharmacy:

- American Association of Colleges of Pharmacy (www.aacp.org)
- National Association of Boards of Pharmacy (www.nabp.net)
- National Association of Chain Drug Stores (www.nacds.org)

Program Contacts

For more information about pharmacy clerkship rotations at Mayo Clinic in Rochester, please contact:

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Or

**Kate Ray, Enrollment and Student Services Director**
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E-mail: mshsenrollment@mayo.edu

**Mayo Clinic College of Medicine**
Mayo School of Health Sciences
Siebens Medical Education Building 11
200 First Street SW
Rochester, MN 55905

You can also request more information on education programs offered by Mayo School of Health Sciences.
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