

## **Area of Concentration in Pharmacotherapy Scholars (ARCO-PT) in the Doctor of Pharmacy (PharmD) Program**

### **Purpose**

The purpose of the Area of Concentration in Pharmacotherapy Scholars (ARCO-PT) is to prepare pharmacy students to become highly proficient patient care providers and for a successful transition into competitive post-graduate residency training programs.

### **Description**

The demand for highly skilled pharmacy clinicians has increased in parallel to the expectation for high quality care and the growing complexity of pharmacotherapy. Post-graduate residency training programs provide the requisite experience needed to meet the entry level expectations of pharmacists in direct patient care roles. However, successful placement in these programs is highly competitive.

The Pharmacotherapy Scholars Program is an innovative training program that supports the advancement of student professionals as medication experts and patient care advocates. Students will engage as stakeholders in the medication use process and will be responsible for patient outcomes under the direction of pharmacist mentors.

The ARCO-Pharmacotherapy is available only to P3 and P4 students enrolled in the PharmD curriculum. It does require the completion of two courses in the Spring term of the P3 year (described below).

Students who successfully complete the Pharmacotherapy Scholars Program will be awarded a certificate of completion delivered with their other degree(s) at the time of full commencement in April each year.

*Skills that students will acquire include the following:*

### **Program Learning Domains and Goals**

#### **PT-1 Direct Patient Care**

- 1.1 Assume responsibility for providing pharmaceutical care to service patients in collaboration with the preceptor.

#### **PT-2 Drug Information**

- 2.1 Provide accurate, timely, and clear responses to drug-information requests from the service.
- 2.2 Formulate a search strategy, recover and assess primary and/or secondary literature for its applicability to the patient/question, and deliver a response to the preceptor and subsequently to the requestor.
- 2.3 Evaluate the usefulness of biomedical literature gathered pertaining to questions related to the care of service patients (e.g., literature review, case conference, etc.).
- 2.4 Evaluate the usefulness of biomedical literature gathered pertaining to enhanced knowledge in the field (e.g., journal review, journal club, etc.).
- 2.5 Develop a library of materials, individually or as assigned.

#### **PT-3 Patient Communication and Education**

- 3.1 Prepare for and attend daily multidisciplinary patient care rounds.
- 3.2 Provide pharmaceutical care to service patients, and in doing so, be recognized as the source of quality drug information and pharmaceutical recommendations.
- 3.3 Establish a patient-centered relationship between the pharmacist and patient and/or caregiver.
- 3.4 Provide relevant medication education to service patients including addressing the importance of adherence, indication, and adverse-effects.

#### PT-4 Patient Assessment and Medication Therapy Management

- 4.1 Collect accurately the patient's medications and ascertain the degree to which the patient has been adherent to their regimen.
- 4.2 Determine the presence of medication therapy problems in a patient's current medication regimen.
- 4.3 Assess the adequacy of individual patients' pharmacotherapy daily and formulate patient-centered recommendations related to the rational use of pharmaceuticals which may include, but not be limited to, regimen optimization (addition, modification, or deletion), cost-containment, access to medications, patient understanding and competency, and adherence.
- 4.4 Utilize pharmacokinetic and dynamic principles when formulating the aforementioned recommendations to dose and monitor drug therapy.
- 4.5 Revisit previously formulated recommendations and plans, assess their continued validity, and augment as needed to achieve patient-centered therapeutic goals.
- 4.6 Utilize an organizational mechanism that is simple, comfortable to the learner, repeatable, and produces accurate transcription of information.

#### PT-5 Professional Communication and Documentation

- 5.1 Document patient care activities in accordance with UPMC pharmacy policies and procedures and forward notes for co-signature by the preceptor.
- 5.2 Interface with unit-based and centralized pharmacy personnel to ensure accurate and timely care and provision of critical information necessary for patient care.
- 5.3 Provide both a verbal and written signout synopsis of service patients and responsibilities to the oncoming Scholar in the rotation.

#### PT-6 Knowledge and Teaching

- 6.1 Deliver knowledge to other pharmacy-based learners, such as unit-based pharmacists and other P4 clerkship students, and other medicine-based learners, such as nurses, nurse practitioners, physician assistants, and physicians.

#### PT-7 Research and Quality Improvement

- 7.1 Design and implement quality improvement changes to the institution's medication-use system.
- 7.2 Conduct a practice-related project using effective project management skills.
- 7.3 Design, execute, and report results of investigations of pharmacy practice-related issues.

## **Academic Requirements**

The ARCO-Pharmacotherapy consists of six credits of approved elective classroom-based courses, two Advanced Pharmacy Practice Experiences (APPEs), and an approved project conducted under the guidance of an advisor. A minimum of 16 credit hours of coursework and rotations in the ARCO-GPC are required.

## **Coursework**

The ARCO-Pharmacotherapy consists of six credits of classroom-based courses (Spring term, P3 year) and a structured APPE schedule (P4 year) comprised of eight (8) rotations, with the option to choose an additional elective rotation. The rotation is

described in further detail below. There is also a required research project which is introduced within the prerequisite course and continued longitudinally throughout the P4 year.

### **PHARM 5813 Acute Care Pharmacotherapy Simulation**

- Purpose: Reinforce direct patient care activities
- Course Coordinators: Pamela Smithburger, PharmD, MS, BCPS, BCCCP, FCCP, FCCM and Amanda Korenoski, PharmD
- 3 credits

### **PHARM 5830 Discovering Scientific Inquiry**

- Purpose: Reinforce study design and methodology, prepare research proposal and IRB submission
- Course Coordinators: James Coons, PharmD, FCCP, BCCP and Carlo Iasella, PharmD, MPH, BCPS
- 3 credits

## **Experiential Rotations**

APPEs are selected to provide comprehensive exposure to advanced pharmacy practice in both the acute care and ambulatory care environments, and reflect the variety of direct patient care experiences that a PGY-1 resident will complete during training. Core APPEs include: institutional (hospital/health-system), acute care – internal medicine, acute care - critical care/cardiology, ambulatory care, community practice, and a sub-specialty acute care experiences (i.e., transplant, oncology, emergency medicine, etc.)

Students have two electives of their choice within any of the above categories, typically choosing additional direct patient care experiences, or can choose a “pure” elective (e.g., international, research). Elective rotations may be completed on-site or off-site, but need to be approved by the Experiential Learning Office as well as the Pharmacotherapy Scholars Program Co-Directors. Offsite electives are defined as sites not affiliated with UPMC. In order for the Scholar to complete the elective, they must fulfill all of the requirements of the training site, such as application requirements, be selected by the site, and complete the rotation based on the specific site’s criteria.

## **Project**

### Overview

Completion of the research project is designed to teach the Scholar about basic pharmacy practice research and to facilitate development of a feasible and clinically relevant project. Pharmacy practice research may include: evaluation of a new or existing pharmacy service, retrospective or prospective clinical studies, pharmacokinetic or pharmacodynamic studies, or outcomes studies. The Pharmacotherapy Scholars Program provides a structure to facilitate collaboration among Scholars and preceptors on research endeavors over the course of the Program. The Scholar will ultimately be responsible for committing sufficient time and effort to complete the project in a scholarly and timely manner. The Scholars will work collaboratively in small groups on a large data set to answer specific sets of questions.

### Goals

1. Identify the key components needed to successfully carry out a research project, from conceptualization to final manuscript preparation
2. Develop research problem-solving skills through research discussions and faculty mentoring
3. Enhance verbal and written communication skills through formal and informal presentations and scientific writing
4. Develop a fundamental practice-based research skill set which will translate to successful placement into competitive post-graduate residency training.

It is an expectation that Scholars will present the results of their project at the ASHP Midyear Clinical Meeting. Furthermore, completion of a research manuscript by the conclusion of the Program is also required. Research meetings will be held throughout the course of the Program to ensure adequate progress and to facilitate effective research learning and conduct.

# Student Application Process

## Entry Criteria

Students in the third professional year (P3) of the University of Pittsburgh may be considered for application into the Pharmacotherapy Scholars Program. To be considered for entry into the Pharmacotherapy Scholars Program, applicants must meet the following criteria:

1. GPA  $\geq$  3.0 in the professional pharmacy curriculum (P1-2 years)
2. Committed to entering pharmacy residency training after P4 year

## Application

P3 students seeking admittance to the Pharmacotherapy Scholars Program must compile the following application materials and submit them via email to the program administrative coordinator by **September 30 each year**. Candidates should confirm receipt of all application materials with the coordinator prior to this deadline. The written portions of the application should be single-spaced with 1-inch margins and 11 point font. Selected candidates will be offered faculty interviews in late September each year.

1. Letter of intent / interest (not to exceed 1 page). See: Paloucek FP. Better letter of intent for pharmacy residency applications. Am J Health Syst Pharm 2011;68:2218.
2. Two (2) recommendation reference forms. At least one (1) must be from a Pitt faculty member. Forms can be obtained from Ms. Parnell. These reference forms are to be emailed directly to Ms. Parnell by the recommender, not by the candidate.
3. Current curriculum vitae (CV), which must, at minimum, include the following categories (if applicable): IPPE rotations, work experience, presentations, publications, research experience, and professional association involvement.
4. Current academic transcript.

## Interview

Scholars will be interviewed for program entry by a panel including one of the program directors, three (3) of the program faculty members, and one (1) of the current Scholars. The interview will last approximately 2 hours and consist of the below items. Selected candidates will be offered program positions in mid-October each year.

1. Program introduction by one of the directors (15 minutes)
2. Case review and completion (45 minutes)
3. Panel interview of 4 scholar candidates (30 minutes)
4. Individual faculty case review (30 minutes)

The ARCO-Pharmacotherapy currently has capacity for a maximum of 20 students. Consequently, entry to the Program is competitive. Interested students are required to apply to the Program in accordance with the process described above. Members of the ARCO-Pharmacotherapy leadership team are available to answer questions and discuss the Program. Contact information is provided below.

## **ARCO-PT Leadership Team**

### Program Directors

Neal Benedict, PharmD  
Associate Professor, Pharmacy and Therapeutics

James C. Coons, PharmD, BCPS-CV  
Associate Professor, Pharmacy and Therapeutics

### Administrative Leadership

Amy L. Seybert, PharmD, FCCP, FASHP  
Associate Professor, Pharmacy and Therapeutics  
Chair, Department of Pharmacy and Therapeutics

### Experiential Education

James J. Pschirer, PharmD  
Assistant Professor, Pharmacy and Therapeutics  
Associate Director of Experiential Learning

Susan J. Skledar, RPh, MPH, FASHP  
Professor, Pharmacy and Therapeutics  
Director of Experiential Learning

### Program Support

Susan M. Parnell  
Education Support Specialist