



Promoting Student Research in a Three-Year Pharmacy Program

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BACKGROUND

Opportunities for students to gain significant research experience can be a particular challenge with time and scheduling demands of a three-year, accelerated pharmacy program. The *Concentration in Pharmaceutical Sciences and Pharmacy Research (CPSPR)* at South College School of Pharmacy was developed to offer motivated pharmacy students an opportunity to pursue research interests, gain hands-on research experience, and earn recognition for excellence in research which could be a competitive advantage for future career and post-graduate educational opportunities. Student participation in the CPSPR provides the qualified student, research experience to a depth and breadth not generally available to all students in the Pharm.D. program.

Prerequisites for Admission to the Concentration in Pharmaceutical Sciences & Pharmacy Research (CPSPR)

Pharmacy students with an interest in applying for acceptance to the *Concentration in Pharmaceutical Sciences and Pharmacy Research (CPSPR)* must enroll in PSC6201 *Introduction to Pharmaceutical Sciences Research* offered in the second quarter of the P1 year of the Doctor of Pharmacy Program. This one credit hour elective course provides an introductory overview of pharmaceutical sciences and pharmacy practice research, research support capabilities available in the South College School of Pharmacy, and the research interests and activities of science and practice faculty that are open to student participation. Successful completion of the course is required in order to apply to the CPSPR.

Enrollment in this introductory elective is limited to P1 pharmacy students who earn a first quarter GPA of 3.0 or better with no individual first-quarter course grade less than a B.

Admission to the CPSPR

P1 students enrolled in PSC6201 *Introduction to Pharmaceutical Sciences Research* that determine that they want to participate in the CPSPR must identify and consult with a faculty research mentor and complete an application for acceptance into the CPSPR. The application must be submitted to the CPSPR program coordinator's office not later than the last day of class of their second quarter. The application requires the signature of the student, the designated faculty research mentor, the research mentor's department chair, and the approval signature of the CPSPR program coordinator.

Applicants are accepted into the CPSPR based upon consideration of their first and 2nd Quarter GPA (3.0 minimum), as well as grades earned in individual courses in the first and second quarter of the Doctor of Pharmacy program (B minimum). The student and their selected research mentor will be notified of successful acceptance into the program, pending posting of 2nd Quarter grades, by December 15 of each year. Successful applicants are prioritized and accepted to the CPSPR contingent upon current availability of research mentors and adequacy of school of pharmacy resources.

Individualized Course of Study

The Concentration in Pharmaceutical Sciences & Pharmacy Research requires successful completion of a minimum of 18 credit hours of approved research, and research-related electives including the APPE course, PPR6932 *Pharmaceutical Sciences Research*, for which the student must prepare and submit a research manuscript to an appropriate journal for publication (acceptance for publication is not required) to successfully complete the CPSPR. The minimum credit hour requirement for the Concentration includes a minimum of eleven (11) additional research-related elective credit hours above the elective requirements of the Pharm.D. curriculum.

As part of the application for acceptance to the CPSPR, each student's faculty research mentor develops an individualized course sequence that will meet the requirements for completion of the CPSPR and best support the student researcher's proposed line of investigation.

Requirements of the CPSPR vs the Pharm.D. Curriculum

	Pharm.D. Curriculum	CPSPR
Elective Credit Hours Required	7	14
APPE Research Elective	not required	4
Total Required Electives	7	18
Availability of non-APPE Electives	Quarters 6-8 (P2 year)	Quarters 2-8 (P1-P2 year)
Research Manuscript Required	No	Yes

Example Course Sequence for a Pharmaceutical Sciences Concentration		Credit Hours
Quarter 2:		
PSC6201 <i>Introduction to Pharmaceutical Sciences Research</i>		1
Accepted into the CPSPR.		
Quarter 3:		
PSC6306 <i>Special Projects in Pharmaceutical Sciences Research</i>		1
Quarter 4:		
PSC6406 <i>Special Projects in Pharmaceutical Sciences Research</i>		1
Quarter 5:		
PSC6506 <i>Special Projects in Pharmaceutical Sciences Research</i>		1
PSC6012 <i>Independent Study in Pharmaceutical Sciences</i> (or other PSC or PPR elective TBD)		2-3
Quarter 6:		
PSC6606 <i>Special Projects in Pharmaceutical Sciences Research</i>		1
PSC6013 <i>Independent Study in Pharmaceutical Sciences</i> (or other PSC or PPR elective TBD)*		2-3
Quarter 7:		
PSC6706 <i>Special Projects in Pharmaceutical Sciences Research</i>		1
PSC or PPR elective (TBD)		2-3
Quarter 8:		
PSC6002 <i>Independent Research</i>		2
Quarter 9 or 10:		
PPR6932 APPE – <i>Pharmaceutical Sciences Research</i>		4
Total Credit Hours		18-21

Performance Expectations

Students accepted into the CPSPR must maintain a GPA of 3.0 in the Doctor of Pharmacy program in every quarter, and earn not less than a B in any course taken as a component of the CPSPR. Failure to maintain this standard will require that the student withdraw from the CPSPR.

Students may voluntarily withdraw from the CPSPR at the completion of any quarter, for any reason, without penalty.

CPSPR Program Assessment Targets

Concentration in Pharmaceutical Sciences & Pharmacy Research objectives identified for annual assessment include:

- Minimum of five (5) qualified students will enroll in PSC 6201 *Introduction to Pharmaceutical Sciences Research* in the 2nd Quarter of the P1 year
- 50% of students completing PSC 6201 will apply for, and be accepted into the CPSPR
- 50% of students entering the CPSPR will successfully complete requirements of the Concentration and be formally recognized by the school for research excellence
- Faculty availability and resources will enable the CPSPR to accommodate a maximum of 10 students per year
- CPSPR student publications / presentations
- CPSPR vs non-CPSPR student success rate in securing post-graduate opportunities (beginning 2020)

CPSPR Implementation To-Date

The *Concentration in Pharmaceutical Sciences & Pharmacy Research* was implemented beginning with the Class of 2020 in the 2nd Quarter (Fall) of their P1 year.

- October, 2017 - Five students were enrolled in PSC6201 *Introduction to Pharmaceutical Sciences Research*
- December, 2017 - At the end of the 2nd Quarter, four of these students met the academic requirements, applied, and were accepted into the Concentration.
 - Two Concentration students elected to work with faculty in the Department of Pharmaceutical Sciences conducting laboratory-based research.
 - Two Concentration students elected to work with faculty from the Department of Pharmacy Practice in clinical research.
- July, 2018 – Three of the four entering students (now in their P2 year) remain active and on-track for completion of the Research Concentration