

**New Program Proposal
Doctor of Pharmacy (PharmD)
University of South Carolina**

Summary

The University of South Carolina (USC) requests approval to offer a program leading to the Doctor of Pharmacy (PharmD) to be implemented in Spring 2017. The proposed program is to be offered through traditional instruction. The following chart outlines the stages of approval for the proposal; the Advisory Committee on Academic Programs (ACAP) voted to recommend approval of the proposal. The full program proposal and support documents are attached.

Background

Upon notification from USC and the Medical University of South Carolina (MUSC) of the intent to offer Doctor of Pharmacy degrees (PharmD) separately, as offered prior to 2006, Commission staff initiated a series of meetings and teleconferences with administrators from the institutions and with the program accreditor, the Accreditation Council for Pharmacy Education (ACPE). The purpose was to determine the following: 1) the rationale for the proposed change; 2) program accreditation requirements; 3) transition planning, including adequate faculty resources and infrastructure for effective program delivery at both sites; 4) implications for students, including scholarships; and 5) the most appropriate path for Commission consideration. Assurance that students are not disadvantaged by the proposed change has been the guiding principle.

Timeline

- Commission approval of separate PharmD programs: MUSC 1973, USC 1984
- Commission approval of the joint PharmD and the South Carolina College of Pharmacy: 2005-06
- Notification to the Commission to offer separate PharmD degrees: 2016

Commission support in 2005-06 for the joint PharmD as a model of institutional collaboration, and program accreditation from ACPE of the program as a joint degree, are the primary reasons staff determined that full Commission consideration was the best path for the institutions to pursue for approval. Approval will result in the re-establishment of separate Doctor of Pharmacy degrees offered by each institution, separate ACPE program accreditation, and the dissolution of the South Carolina College of Pharmacy.

Stages of Consideration	Date	Comments
Program Proposal Received	8/5/16	Not Applicable
ACAP Consideration	9/29/16	ACAP considered the USC and MUSC PharmD proposals concurrently. The representative from USC explained the need for the proposed programs and discussed the collaboration between the two institutions in offering the program jointly, and the reasons for amicably separating the program because of the ineffectiveness of offering the program jointly. She stated

Stages of Consideration	Date	Comments
		<p>that the two institutions have different administrative structures (e.g., reporting structures, faculty tenure and promotion policies, and payroll and student information systems). She also noted the separation would allow the institutions to better meet the requirements of the ACPE. Representatives from MUSC and USC also discussed the ways in which the institutions plan to continue collaborating.</p> <p>ACAP members voted to approve the program proposal.</p>
Comments and suggestions from CHE staff sent to the institution	10/12/16	Staff requested the proposal be revised to explain how the tuition funding was calculated and reformat the layout of course descriptions.
Revised Program Proposal Received	10/20/16	The revised proposal satisfactorily addressed the requested revisions.

Recommendation

The staff recommends that the Committee on Academic Affairs and Licensing approve the program leading to the Doctor of Pharmacy to be implemented in Spring 2017.

Name of Institution: University of South Carolina

Name of Program (include concentrations, options, and tracks)
Doctor of Pharmacy (Pharm.D.)

Program Designation

- Associate's Degree Master's Degree
 Bachelor's Degree: 4 Year Specialist
 Bachelor's Degree: 5 Year
 Doctoral Degree: Research/Scholarship (e.g., Ph.D. and DMA)
 Doctoral Degree: Professional Practice (e.g., Ed.D., D.N.P., J.D., Pharm.D., and M.D.)

Does the program qualify for supplemental Palmetto Fellows and LIFE Scholarship awards?

- Yes
 No

Proposed Date of Implementation
Spring of 2017

CIP Code: 51.2001

Delivery Site(s): University of South Carolina, Columbia, SC

Delivery Mode

- Traditional/face-to-face* Distance Education
*select if less than 50% online 100% online
 Blended (more than 50% online)
 Other distance education

Program Contact Information (name, title, telephone number, and email address)

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Institutional Approvals and Dates of Approval

College of Pharmacy, Curriculum Committee - November 3, 2015
College of Pharmacy, Faculty – December 16, 2015
Provost – August 5, 2015
President – August 6, 2015
Board of Trustees – August 7, 2015

Background Information

State the nature and purpose of the proposed program, including target audience and centrality to institutional mission. (1500 characters)

The University of South Carolina (USC) proposes to re-institute its Doctor of Pharmacy (Pharm.D.) degree as an independent program. This program is consistent with USC's mission as a comprehensive research institution focused on the education of the state's citizens through teaching, research, creative activity, and community engagement.

The Commission approved USC to offer a Pharm.D. in 1984. Later, the South Carolina College of Pharmacy (SCCP) formed in 2005 through the merger of the Medical University of South Carolina (MUSC) and the University of South Carolina (USC) Colleges of Pharmacy. As a result of this merger, MUSC and USC offered a joint Pharm.D. program instead of independent programs. The SCCP graduated its first Pharm.D. graduates in 2010. Over the last 10 years the SCCP has been successful in educating and training student pharmacists and fulfilling the vision and mission of the college. In 2013, after the resignation of the Executive Dean, and at the request of each institution's provost, the MUSC and USC Campus Deans initiated an overall evaluation of the SCCP. An overriding tenet of our evaluation was that no student should be harmed or disadvantaged by our organization and that faculty must be treated fairly with consistency across campuses.

Our review indicated that while there has been much success, the SCCP continues to face some significant challenges that were not anticipated with the original merger, including no clear path to a unified tenure and promotion process for all faculty; nonintegrated standalone financial systems, students identifying primarily with their campus institutions (MUSC and USC, as opposed to SCCP), and differing university/contrasting policies and plans, among others. In the final analysis, the multiplicity of complications encountered in the merger between our universities/campuses ultimately precluded the achievement of the ultimate goal of the merger: to function effectively and fiscally responsibly as one College of Pharmacy.

Prior to the SCCP, the USC and MUSC Colleges of Pharmacy were independent and their Pharm.D. programs had been fully accredited by Accreditation Council for Pharmacy Education (ACPE) for many years. USC has provided pharmacy education for 150 years and has produced thousands of pharmacists. During the last 10 years, when SCCP has been operational, MUSC and USC redistributed some of the faculty and staff efforts toward research or clinical service. As we transition back into the independent program, we will re-allocate faculty and staff effort accordingly to ensure the best educational experience for our students. Therefore, the USC College of Pharmacy is in excellent position to fulfill all of the needs and expectations of students entering the Pharm.D. program and meet all of the ACPE standards to be a fully accredited program. The separation of the SCCP back into its component legacy Pharm.D. programs at USC and MUSC is being undertaken with the full support of the faculty & administration on both campuses. ACPE reinstated USC COP's accredited status pending approval by the South Carolina Commission on Higher Education at the June 23-25, 2016 Board meeting.

Both universities have pledged to support the teach-out plan for the SCCP and teach-in plan for the MUSC and USC Pharm.D. programs as outlined under the ACPE standards. Each university will continue to commit all of the resources provided to SCCP to the MUSC and USC Colleges of Pharmacy. In addition, any resources required for pharmacy education and those needed to fulfill all of the requirements for a fully ACPE accredited Doctor of Pharmacy program

will be provided. Our top priority is to offer all students the highest quality education and ensure no students will be disadvantaged during this transition. The transition plan is listed below:

Colleges Transition Teaching Plan by Academic Years				
2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019	2019 - 2020
SCCP P1, P2, P3, P4	SCCP P2, P3, P4	SCCP P3, P4	SCCP P4	
	MUSC P1	MUSC P1, P2	MUSC P1, P2, P3	MUSC P1, P2, P3, P4
	USC P1	USC P1, P2	USC P1, P2, P3	USC P1, P2, P3, P4

SCCP: South Carolina College of Pharmacy
 MUSC: Medical University of South Carolina
 USC: University of South Carolina
 P1: 1st Professional Year, P2: 2nd Professional Year, P3: 3rd Professional Year, P4: 4th Professional Year

We expect the professional program curriculum taught in the SCCP will undergo limited changes until the last class graduates in 2019. The proposed MUSC and USC classes entering in the Fall of 2016 will essentially adopt the same curriculum taught to SCCP students (no change in credit hours). Maintaining a similar curriculum across colleges will facilitate graduation of any SCCP student who encounters progression problems and supports our tenet that no student will be disadvantaged/ hurt by the transition from SCCP to MUSC/USC. In addition, since the faculty has taught this curriculum previously and the outcome measures meet the expectations of stakeholders, the faculty believes significant changes to the curriculum are unnecessary. Instead, the focus will be on transitioning to a more active learning process that diminishes the reliance on synchronous distance education between campuses.

We, the MUSC and USC Colleges of Pharmacy, will continue to collaborate in the following areas (1) experiential education, (2) preceptor development, (3) research & graduate education, and (4) continuing education. Both MUSC and USC will continue to collaborate on experiential education. We will share a common experiential calendar, common scheduling process, common syllabi templates, common evaluation forms, and common practice sites for both introductory pharmacy practice experiences (IPPEs) & advanced pharmacy practice experiences (APPEs) to ensure our students receive high quality experiences. All students will continue to have access and placement at all sites used by SCCP. Both the USC and MUSC will cooperate and support preceptor development to maintain ACPE accreditation. USC and MUSC will offer, where appropriate, cross-campus appointments for faculty to facilitate/grow research and service collaborations. These appointments will allow faculty to maintain access to research cores and centers and to improve research competitiveness for federal and industry grant funding. Where appropriate, faculty should be appointed across campuses for Doctor of Philosophy advisory committees and continue joint campus graduate student education and research opportunities. We will continue to collaborate on continuing education to offer programming to all alumni (MUSC, USC, and SCCP) and other interested parties.

This is a full-time Pharm.D. degree program requiring four academic years, which includes introductory pharmacy practice experiences and advanced pharmacy practice experiences that must be completed during the summer semesters. A total of 214 hours (66 hours of pre-pharmacy and 148 hours of professional program courses) are required for completion of the Pharm.D. degree. In compliance with (ACPE) professional accreditation standards, the curriculum includes core courses (relevant for all Pharm.D. degrees) and elective courses to enhance the learning experiences for Pharm.D. candidates.

List the program objectives. (2000 characters)

Domain 1 – Foundational Knowledge

1.1. *Learner (Learner)* - Develop, integrate, and apply knowledge from the foundational sciences (i.e., pharmaceutical, social/behavioral/administrative, and clinical sciences) to evaluate the scientific literature, explain drug action, and solve therapeutic problems, and advance population health and patient-centered care.

Domain 2 – Essentials for Practice and Care

2.1. *Patient-centered care (Caregiver)* - Provide *patient-centered care* as the medication expert (collect and interpret evidence, prioritize, formulate assessments and recommendations, implement, monitor and adjust plans, and document activities).

2.2. *Medication use systems management (Manager)* - Manage patient healthcare needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication use systems.

2.3. *Health and wellness (Promoter)* - Design prevention, intervention, and educational strategies for individuals and communities to manage chronic disease and improve health and wellness.

2.4. *Population-based care (Provider)* - Describe how population-based care influences patient-centered care and influences the development of practice guidelines and evidence-based best practices.

Domain 3 - Approach to Practice and Care

3.1. *Problem Solving (Problem Solver)* – Identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution.

3.2. *Educator (Educator)* – Educate all audiences by determining the most effective and enduring ways to impart information and assess understanding.

3.3. *Patient Advocacy (Advocate)* - Assure that patients' best interests are represented.

3.4. *Interprofessional collaboration (Collaborator)* – Actively participate and engage as a healthcare team member by demonstrating mutual respect, understanding, and values to meet patient care needs.

3.5. *Cultural sensitivity (Includer)* - Recognize social determinants of health to diminish disparities and inequities in access to quality care.

3.6. *Communication (Communicator)* – Effectively communicate verbally and nonverbally when interacting with an individual, group, or organization.

Domain 4 – Personal and Professional Development

4.1. *Self-awareness (Self-aware)* – Examine and reflect on personal knowledge, skills, abilities, beliefs, biases, motivation, and emotions that could enhance or limit personal and professional growth.

4.2. *Leadership (Leader)* - Demonstrate responsibility for creating and achieving shared goals, regardless of position.

4.3. *Innovation and Entrepreneurship (Innovator)* - Engage in innovative activities by using creative thinking to envision better ways of accomplishing professional goals.

4.4. *Professionalism (Professional)* - Exhibit behaviors and values that are consistent with the trust given to the profession by patients, other healthcare providers, and society.

Assessment of Need

Provide an assessment of the need for the program for the institution, the state, the region, and beyond, if applicable. (1500 characters)

Pharmacists fulfill critical healthcare and economic needs within the state of South Carolina. In 2011, pharmacists in South Carolina dispensed more than fifty-three million prescriptions worth nearly four billion dollars in retail sales. South Carolina expects its number of seniors over 65 to increase by 100% between 2010 and 2030, and this growth will result in increased demand on the pharmacy workforce in our state.

Recent trends show that the role of pharmacists is evolving from compounding and dispensing medications to ever more direct involvement in patient care. Pharmacists are increasingly contributing directly to the management of some of the state's most prevalent chronic health conditions, including diabetes and hypertension. In addition, pharmacists are increasingly fulfilling roles in patient care, such as directly administering immunizations. As these roles evolve, it is critical that South Carolina provide the training future pharmacists will need to assume more complex roles within their profession. Newly licensed pharmacists in South Carolina will be responsible for all the roles of their predecessors, plus many more. The University of South Carolina's College of Pharmacy is meeting the need for up-to-date training through our Pharm.D. degree, which is the nationally recognized terminal degree for pharmacists.

Ref:

The Pharmacist Workforce in South Carolina, February 2014 produced by the Office for Healthcare Workforce Analysis and Planning (SC AHEC). Available at:

<http://www.officeforhealthcareworkforce.org/docs/Pharmacist%20Report%20final%20web%20version.pdf>

Employment Opportunities

Is specific employment/workforce data available to support the proposed program?

Yes

No

If yes, complete the table and the component that follows the table on page 4. If no, complete the single narrative response component on page 5 beginning with “Provide supporting evidence.”

Employment Opportunities			
Occupation	Expected Number of Jobs	Employment Projection	Data Source
Pharmacist – US	9,100 (2014-2024)	N/A	US News & World Report http://money.usnews.com/careers/best-jobs/rankings/best-healthcare-jobs
Pharmacist – South Carolina	745 new jobs (2012-2022)	2012: 5093 2022: 5838 (15% increase)	<i>Employment Forecast for the Pharmacy Workforce in South Carolina, August 2015</i> Produced by the Office for Healthcare Workforce Analysis & Planning (SC AHEC) http://www.officeforhealthcareworkforce.org/docs/Pharmacy%20jobs%202012-2022.pdf

Provide additional information regarding anticipated employment opportunities for graduates.
(1000 characters)

US News & World Report projects that the United States will need 9,100 new pharmacists over the next 10 years in order to meet patient/consumer demands. The same report predicts an unemployment rate of only 1.6% over the same period of time. Projections for South Carolina align with national projections. The Office for Healthcare Workforce Analysis & Planning anticipates that South Carolina will add 745 *new* pharmacist jobs between 2012 and 2022. These new positions reflect an industry growth of approximately 15%. The *total* number of pharmacist positions that will open each year is estimated at 200. Thus, USC's contribution of approximately 100 -110 Pharm.D. graduates annually is critical to fulfilling the needs of the state.

Research shows that one quarter of South Carolina pharmacists are approaching or beyond retirement age. Although there were fewer retirements during the economic downturn of 2008–2011 (and thus, slower *new* job creation during those years), the likelihood of larger-than-typical retirement numbers in the near future may require more newly licensed pharmacists than anticipated. Thus, the need for new pharmacists in South Carolina may be even greater than the projections above.

The average salary range for new pharmacists in the United States (those with 0-5 years of experience) is \$106,000 to \$124,000.

The USC College of Pharmacy has relationships with employers within the state and throughout the country. Opportunities for students to obtain employment opportunities within the state and throughout the country include, but are not limited to: an annual career fair with employers throughout the state and country, paid internships with employers (hours of experience is a requirement for pharmacist licensure), and 11 – 12 externships required in the Doctor of Pharmacy curriculum that may lead to employment with the specific locations/institutions. For many years, students graduating from the pharmacy program located in Columbia, SC have experienced between a 95-100% employment rate within 6 months of graduation.

Sources:

1. *The Pharmacist Workforce in South Carolina, February 2014* produced by the Office for Healthcare Workforce Analysis and Planning (SC AHEC). Available at: <http://www.officeforhealthcareworkforce.org/docs/Pharmacist%20Report%20final%20web%20Version.pdf>
2. *Pharmacy Times* 2016 Pharmacy Salary Guide (based on PayScale.com survey). Available at: <http://www.pharmacytimes.com/contributor/alex-barker-Pharm.D./2016/04/2016-pharmacist-salary-guide/>
3. Bureau of Labor Statistics for a Pharmacist. Available at (<http://www.bls.gov/ooh/healthcare/pharmacists.htm>)

Provide supporting evidence of anticipated employment opportunities for graduates, including a statement that clearly articulates what the program prepares graduates to do, any documented citations that suggests a correlation between this program and future employment, and other relevant information. Please cite specific resources, as appropriate. (3000 characters)

Note: Only complete this if the Employment Opportunities table and the section that follows the table on page 4 have not previously been completed.

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Will the proposed program impact any existing degree programs and services at the institution (e.g., course offerings or enrollment)?

Yes

No

If yes, explain. (500 characters)

List of Similar Programs in South Carolina

Program Name	Institution	Similarities	Differences
Doctor of Pharmacy	South University, Columbia, SC	<ul style="list-style-type: none"> • Accredited by Accreditation Council for Pharmacy Education (ACPE) • Utilizes national PharmCAS system for applications • Opportunity for students to pursue a Master of Business Administration degree with the Doctor of Pharmacy degree 	<ul style="list-style-type: none"> • Offers accelerated program consisting of 12 quarter schedule completed in 3 continuous years • 80-90% of education is received via distance education from Savannah, GA Campus Faculty • Approximately only 45 – 55 graduates per year • Lower percentage of graduates employed in the field of pharmacy (90.6% versus 99%) • Lower percentage North American Pharmacist Licensure Examination (NAPLEX) pass rate (87.2% versus 94.97%) • Lower graduation rate in planned years of program (80% versus 90.5%) • Didactic curriculum content differences • Program begins annually in the month of June • National standardized exam, PCAT, is not required for admission • Total estimated tuition costs are ~\$40,000 higher than proposed program

Program Name	Institution	Similarities	Differences
Doctor of Pharmacy	Presbyterian College School of Pharmacy, <i>Clinton, SC</i>	<ul style="list-style-type: none"> • Accredited by Accreditation Council for Pharmacy Education (ACPE) • Utilizes national PharmCAS system for applications • Offers traditional four-year program • Traditional face-to-face curriculum delivery mode • Nine advanced pharmacy practice experiences 	<ul style="list-style-type: none"> • Lower percentage North American Pharmacist Licensure Examination (NAPLEX) pass rate (79.45% versus 94.97%) • Lower SC Multi-state Pharmacy Jurisprudence Exam (MPJE) pass rate (89.86% versus 95.92%) • Lower percentage of graduates employed in the field of pharmacy (85.33% versus 99%) • Lower Post-Graduate Residency Match rate (57.69% versus 75%) • Total estimated tuition costs are ~\$40,000 higher than proposed program • Higher graduation rate (92.1% versus 90.5%) • Graduates 70 – 80 students per year • Didactic curriculum content differences • Does not offer Pharm.D. / MBA or other dual degree options • Partners with schools outside of Presbyterian College for interprofessional opportunities (while the proposed program offers interprofessional activities with other health professions on campus)

Description of the Program

Projected Enrollment						
Year	Fall		Spring		Summer	
	Headcount	Credit Hours	Headcount	Credit Hours	Headcount	Credit Hours
2016	110	1,980	110	1,870	110	440
2017	220	3,960	220	3,740	220	880
2018	330	5,830	330	5,500	330	1320
2019	440	7,645	440	7,315	330	1320
2020	440	7,645	440	7,315	330	1320

Besides the general institutional admission requirements, are there any separate or additional admission requirements for the proposed program?

Yes

No

If yes, explain. (1000 characters)

USC's admissions requirements vary by degree program. Admission to the Pharm.D. program at USC is based on the applicant's completion of Pre-Pharmacy requirements, GPA, academic record, letters of recommendation, interview evaluations, Pharmacy College Admissions Test (PCAT) scores, honors/awards, extracurricular activities, pharmacy exposure, student personal statement concerning their goals for a career in pharmacy, and diversity statement. Applicants must complete the PCAT and have official scores reported to PharmCAS (Pharmacy College Application Service) prior to the end of the application period, on or before the application deadline published on the USC website in the year of anticipated admission. Applicants will apply through the PharmCAS system (national pharmacy school application service) and complete the supplemental application for the University of South Carolina College of Pharmacy through Banner/Self Service Carolina.

Applicants must provide an official copy of all college transcripts to PharmCAS by the application deadline. Additional transcripts are required to be submitted to PharmCAS upon receipt of final summer and fall semester grades. Subsequent transcripts are required to be submitted, for accepted students, directly to USC as indicated in the supplemental application upon receipt of final spring and summer grades. As a state-supported institution, preference will be given to in-state applicants. In-state students are defined as South Carolina residents, and any non-resident attending a S.C. college or university. In-state status as defined here only applies to the admission process. The University Office of Legal Residency will determine

residency for the purpose of tuition. All accepted students will be required to submit to a criminal background check prior to matriculation.

Pre-Pharmacy Course Requirements

General Chemistry (with labs)	8 hours
Organic Chemistry (with labs)	8 hours
Physics	3 hours
Microbiology	3 hours
Calculus	3 hours
Statistics	3 hours
General Biology (with labs)	8 hours
English Composition	3 hours
English Lit/Composition	3 hours
Verbal Skills/Public Speaking	3 hours
Economics	3 hours
Psychology	3 hours
Liberal Arts Electives	9 hours
Human Anatomy/Physiology	6 hours
Total	66 hours

*All pre-pharmacy course requirements must be successfully completed prior to the Fall semester of professional year one.

Are there any special articulation agreements for the proposed program?

Yes

No

If yes, identify. (1000 characters)

Our top priority is to offer all students the highest quality education and ensure no students will be disadvantaged during this transition. Therefore, students in the SCCP who experience academic issues or non-academic leaves of absence can transition into either the MUSC or USC Pharm.D. programs if needed. The students in the SCCP Class of 2019 are the most likely to fall back into the MUSC or USC programs. By leaving the MUSC and USC curriculum's very similar to the SCCP curriculum, students experiencing academic issues will have a plan to remediate these academic issues. Additionally with the MUSC and USC curriculum's very similar to the SCCP curriculum, students needing a non-academic leave of absence will have a clear path toward their Pharm.D. degree. Academic policies and student services for the SCCP, MUSC, and USC will essentially remain the same. This would allow the faculty, administration, and our scholastic standing committees to work under the same policies and procedures as the SCCP and thereby provide consistency across all professional years. For our current SCCP articulation agreements (i.e. Francis Marion University), we are working with the respective universities to re-sign these agreements for the USC Pharm.D. program. Also, the SCCP-USC Campus currently coordinates with the University of South Carolina undergraduate programs to offer a B.S. in Pharmaceutical Sciences degree to qualifying pharmacy students who complete the first two years of the professional Pharm.D. curriculum; we plan to transition this agreement from the SCCP-USC Campus to the USC College of Pharmacy.

Curriculum

Select one of the following charts to complete: Curriculum by Year **or** Curriculum by Category

Curriculum by Year					
Course Name	Credit Hours	Course Name	Credit Hours	Course Name	Credit Hours
Year 1					
Fall		Spring		Summer	
Foundations of Pathophysiology and Pharmacology I	2	Foundations of Pathophysiology & Pharmacology II	3	Introductory Pharmacy Practice Experience - Community	4
Foundations of Pharmaceutical Chemistry & Pharmacogenomics I	3	Foundations of Pharmaceutical Chemistry & Pharmacogenomics II	4		
Dosage Forms and Drug Delivery Systems	4	Pharmaceutical Biotechnology	2		
Pharmaceutical Biochemistry	3	Self-Care and Complementary Medicines	4		
Introduction to Pharmacy Practice	2	Transforming Health Care	2		
Pharmacy Calculations	1	Clinical Applications II	1		
Medical Terminology	1	Introduction to Community Pharmacy Lab I	1		
Introduction to Drug Information	1				
Compounding & Applied Pharmaceutics Lab	1				
Total Semester Hours	18	Total Semester Hours	17	Total Semester Hours	4
Year 2					
Fall		Spring		Summer	
Pathophysiology & Pharmacology I	3	Pathophysiology & Pharmacology II	3	Introductory Pharmacy Practice Experience - Hospital	4
Pharmacotherapy I	4	Pharmacotherapy II	4		
Microbiology & Immunology	4	Clinical Pharmacokinetics	3		
Biopharmaceutics and Pharmacokinetics	3	Outcomes Design and Assessment	3		

Curriculum by Year					
Course Name	Credit Hours	Course Name	Credit Hours	Course Name	Credit Hours
Introduction to Health Systems Lab	1	Applied Health Systems Lab	1		
Clinical Applications III	1	Clinical Applications IV	1		
Elective	1-3	Elective	1-3		
Total Semester Hours	17-19	Total Semester Hours	16-18	Total Semester Hours	4
Year 3					
Fall		Spring		Summer	
Pathophysiology & Pharmacology III	3	Pathophysiology & Pharmacology IV	2	Advanced Pharmacy Practice Experience	4
Pharmacotherapy I	4	Pharmacotherapy IV	5		
Health Care Systems and Management	4	Pharmacy Law and Ethics	3		
Advanced Drug Information	2	Clinical Assessment	3		
Clinical Applications V	1	Clinical Applications VI	1		
Applied Community Pharmacy Lab	1	Elective	1-3		
Elective	1-3				
Total Semester Hours	16-18	Total Semester Hours	15-17	Total Semester Hours	4
Year 4					
Fall		Spring		Summer	
Advanced Pharmacy Practice Experience	4	Advanced Pharmacy Practice Experience	4		
Advanced Pharmacy Practice Experience	4	Advanced Pharmacy Practice Experience	4		
Advanced Pharmacy Practice Experience	4	Advanced Pharmacy Practice Experience	4		
Advanced Pharmacy Practice Experience	4	Advanced Pharmacy Practice Experience	4		
Seminar	0.5	Seminar	0.5		
Total Semester Hours	16.5	Total Semester Hours	16.5	Total Semester Hours	

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* Add category titles to the table (e.g., major, core, general education, concentration, electives, etc.)

Total Credit Hours Required

Minimum total hours for professional program: 148
(Minimum total hours including pre-pharmacy requirements: 214)

Course Descriptions for New Courses

Note: The courses below will be implemented over the next four years as outlined in the curriculum on pages 14 & 15. These courses were developed in our curriculum revision (completed in 2015) in the SCCP Pharm.D. program; therefore, the faculty will have taught many of these courses in the SCCP Pharm.D. curriculum. These are not new (as they were part of the SCCP) but are new to the USC catalog. The exception to this is Microbiology & Immunology (4 credit hours) that will be taught in the 2nd year of the USC Pharm.D. curriculum.

Course Name	Description
Foundations of Pathophysiology and Pharmacology I	An introduction to the basic principles and concepts of physiology, pathophysiology, and pharmacology. Course Format: Lecture format, 2 credit hours. <i>Prerequisite: first year professional standing.</i>
Introduction to Pharmacy Practice	Introduction to the professional issues relevant to the practice of pharmacy. Course Format: Lecture format, 2 credit hours. <i>Prerequisite: first professional year standing.</i>
Dosage Forms and Drug Delivery Systems	A study of the physiochemical principles of the formulation, preparation, properties, and performance of the pharmaceutical dosage forms Clinical application of the various dosage forms in patient care will be discussed. Course Format: Lecture format, 4 credit hours. <i>Prerequisite: first professional year standing.</i>
Pharmaceutical Chemistry and Pharmacogenomics I	This course includes an introduction to the basic principles and concepts of pharmaceutical chemistry and pharmacogenomics including the relationships of molecular structure to drug absorption, distribution, metabolism and excretion. The chemical rationale for drug therapeutic actions and side effects as well as the pharmacogenomics basis for individualized drug therapy is discussed. Course Format: Lecture format, 3 credit hours. <i>Prerequisite: first professional year standing.</i>
Pharmaceutical Biochemistry	The course covers the molecular and biochemical basis of human biology and physiology. The properties and functions of biological molecules and biochemical pathways are covered. Emphasis is placed on the molecular basis of human physiology, causes of human diseases, and how drugs produce biological effects. Course Format: Lecture format, 3 credit hours. <i>Prerequisite: first professional year standing.</i>
Introduction to Drug Information	Basic principles of access and utilization of drug information resources. Course Format: Lecture/online format, 1 credit hour. <i>Prerequisite: first professional year standing.</i>
Pharmacy Calculations	This course develops the mathematic skills and knowledge required in various pharmacy practice settings. Problem solving skills will be developed as students become proficient in basic math skills used to solve pharmacy calculations based word problems which are commonly seen in a

	variety of practice settings, including community, compounding, hospital, and nuclear pharmacy. Course Format: Lecture and recitation format, 1 credit hour. <i>Prerequisite: first professional year standing.</i>
Medical Terminology	A thorough knowledge of medical terminology is an essential building block in pharmacy education. This web-based course will aid the student in learning the language and terminology used in other pharmacy courses and all areas of pharmacy practice. Course Format: Self-study requirement, 1 credit hour. <i>Prerequisite: first professional year standing.</i>
Pharmacy Skills Lab I: Compounding and Applied Pharmaceutics	The art, science, and technology of pharmacy compounding. Course Format: Laboratory format, 1 credit hour. <i>Prerequisite: first professional year standing.</i>
Pharmaceutical Chemistry and Pharmacogenomics II	This is the second of the two course series addressing the pharmaceutical chemistry and pharmacogenomics of drugs. Emphasis is placed on the molecular basis of pharmacotherapeutic actions. The chemical mechanisms of drug therapeutic actions and side effects as well as the pharmacogenomic basis of individualized drug therapy are discussed. Course Format: Lecture format, 4 credit hours. <i>Prerequisites: first professional year standing.</i>
Foundations of Pathophysiology and Pharmacology II	This is the second course in the series addressing the basic principles and concepts of physiology, pathophysiology and pharmacology. Course Format: Lecture format, 3 credit hours. <i>Prerequisites: first professional year standing.</i>
Pharmaceutical Biotechnology	The course focuses on nucleic acids as the core theme and examines the pathways used for transmission and expression of genetic information. Topics also include the cell cycle (mitosis) and gametogenesis (meiosis). Recombinant DNA technology is covered as applied to the study of human health such as personalized medicine, genetic testing, stem cell therapy, gene therapy, RNA silencing, and production of biopharmaceuticals. Antibodies are discussed from the perspective of their use in diagnostic testing, as well as the utilization of antibodies as therapeutics. Course Format: Lecture format, 2 credit hours. <i>Prerequisites: first professional year standing.</i>
Self-Care and Complementary Medicines	A review of indications, contraindications, and cautions involved with the recommendation and dispensing of nonprescription (OTC) drug items and complementary medicines. Course Format: Team-based format, 4 credit hours. <i>Prerequisite: first professional year standing.</i>
Clinical Applications II	Case-based discussions that integrate and demonstrate applicability of other course material. Course Format: Recitation format, 1 credit hour. <i>Prerequisite: first professional year standing.</i>
Pharmacy Skill Lab II: Introduction to Community Pharmacy	Interactive laboratory session designed to provide students with a thorough understanding of community pharmacy practice skills, to include the knowledge of prescription and drug order processing necessary to function in community pharmacy practice at a basic level. Course Format: 1 credit hour. Laboratory format in three-hour session. <i>Prerequisite: first professional year</i>

	<i>standing.</i>
Transforming Healthcare for the Future	The course goal is to lay the foundations for beginning health professions students to understand the complexities of the health care system and the role of interprofessional collaboration to improve the system. Through an interprofessional context, students will explore the art and science of teamwork and communication skills, cultural competency, ethical issues, healthcare disparities and social determinants of health, as well as develop ways to improve healthcare systems and patient safety. Course Format: Blended course primarily online with several live sessions to facilitate interactive student engagement, 2 credit hours. Taught as a Pass/Fail. <i>Prerequisite: first professional year standing.</i>
Introductory Pharmacy Practice Experience - Community	Introduction to the practice of the pharmacy in the community pharmacy setting. Forty hours of directed experience per week for four weeks. Course Format: Practice experience, 4 credit hours. Pass/Fail. <i>Prerequisite: first professional year standing.</i>
Pharmacotherapy I	This course is the first in a 4-semester sequence of courses providing an organ-based approach to pharmaceutical care and disease management. Students will learn about disease prevention and health promotion, as well as the drug and non-drug therapy of acute and chronic diseases seen in both hospitalized and ambulatory patients. Emphasis is placed on solving patient problems. This course is coordinated with Pathophysiology and Pharmacology I. Course Format: Lecture format, 4 credit hours. <i>Prerequisite: second professional year standing.</i>
Microbiology/Immunology	Introduction to pathogenic organisms and the role of immunology in human disease. Course Format: Lecture format, 4 credit hours. <i>Prerequisite: second professional year standing.</i>
Biopharmaceutics and Pharmacokinetics	Study of the pharmacokinetics of drug absorption, distribution, and elimination (metabolism and excretion). Introductory application of pharmacokinetics to drug interactions and dosage regimen design and adjustment, selected disease states, and special populations. Course Format: Lecture format, 3 credit hours. <i>Prerequisites: second professional year standing.</i>
Pharmacy Skills Lab III: Introduction to Health-Systems Pharmacy	Exposes students to the practice of pharmacy while also illustrating how theoretical concepts from the basic pharmaceutical sciences relate to daily pharmacy practice, especially in institutional settings. This lab focuses on understanding of medical chart evaluation with emphasis on drug therapy monitoring and developing skills in different aspects of hospital pharmacy (sterile product preparation, unit dose, prepackaging and compounding, order entry, and cart-fill). Course Format: Laboratory format, 1 credit hour. <i>Prerequisite: second professional year standing.</i>
Pathophysiology & Pharmacology I	The first course in a series that applies pathophysiology and pharmacology principles introduced in the foundations courses in the first year in an organ-based approach. The course is designed to integrate organ system pathophysiology and pharmacology with pharmacotherapy. Course Format: Lecture format, 3 credit hours. <i>Prerequisite: second professional year standing.</i>

Clinical Applications III	Case-based discussions that integrate and demonstrate applicability of other course material in patient care. Course Format: Recitation format, 1 credit hour. <i>Prerequisite: second professional year standing.</i>
Pathophysiology & Pharmacology II	The second course in a series that applies pathophysiology and pharmacology concepts introduced in the foundations courses in the first year in an organ-based approach. The course is designed to integrate organ system pathophysiology and pharmacology with pharmacotherapy. Course Format: Lecture format, 3 credit hours. <i>Prerequisites: second professional year standing.</i>
Pharmacotherapy II	This course builds upon coursework in the basic sciences; particularly anatomy, physiology, pathophysiology, pharmacology, microbiology, medical terminology, and pharmacokinetics as well as Pharmacotherapy I. Knowledge will be integrated, utilized and applied in a parallel sequence of courses in Pharmacotherapy using an organ-system based approach emphasizing pharmaceutical care and disease management. Students will learn about disease prevention and health promotion, as well as the drug and non-drug therapy of acute and chronic diseases seen in both hospitalized and ambulatory patients. Emphasis is placed on solving patient problems. This course is coordinated with Pathophysiology and Pharmacology II. Course Format: Lecture format, 4 credit hours. <i>Prerequisites: second professional year standing.</i>
Clinical Pharmacokinetics	Clinical application of basic pharmacokinetic principles to safe and effective patient management with emphasis on design of dosage regimens, therapeutic monitoring, and adjustment of therapy. Application illustrated and practiced through discussions and case examples. Course Format: Lecture format, 3 credit hours. <i>Prerequisites: second professional year standing.</i>
Outcomes Design and Assessment	Common statistical methods and study designs used in pharmacoepidemiology and outcomes research, as well as to issues related to the measurement, analysis, and interpretation of results of clinical trials and outcomes studies. Course Format: Lecture format, 3 credit hours. <i>Prerequisite: second professional year standing.</i>
Pharmacy Skills Lab IV: Applied Health-Systems Pharmacy	Exposes students to the practice of pharmacy while also illustrating how theoretical concepts from the basic pharmaceutical sciences relate to daily pharmacy practice, especially in the institutional setting. Students must successfully complete media fill IV preparation. Course Format: Laboratory format, 1 credit hour. <i>Prerequisites: second professional year standing.</i>
Clinical Applications IV	Case-based discussions that integrate and demonstrate applicability of other course material in patient care. Course Format: 1 credit hour. Recitation format in 2-hour session. <i>Prerequisite: second professional year standing.</i>
Introductory Pharmacy Practice Experience - Hospital	Introduction to the practice of the pharmacy in the institutional setting. Forty hours of directed experience per week for four weeks. Course Format: Practice experience, 4 credit hours. Pass/Fail. <i>Prerequisite: second professional year standing.</i>
Health Care Systems and Management	This course provides insight and understanding of the U.S. health care system and pharmacy's role within that system. Managerial skills and concepts are taught to allow pharmacists to maximize their contribution to this health care system and to the patients it serves. Course Format:

	Lecture format, 4 credit hours. <i>Prerequisite: third professional year standing.</i>
Pathophysiology & Pharmacology III	This is the third in a 4-semester sequence of courses aimed at integrating the discussion of specific disease states and the mechanism of action of the pharmacologic agents used to treat those disease states. This knowledge will be integrated, utilized and applied in a parallel sequence of courses in Pharmacotherapy using an organ-system based approach emphasizing pharmaceutical care and disease management. Course Format: Lecture format, 3 credit hours. <i>Prerequisites: third year professional standing.</i>
Pharmacotherapy III	This course is the third in a 4-semester sequence of courses providing a systems-based approach to pharmaceutical care and disease management. Students will learn about disease prevention and health promotion, as well as the drug and non-drug therapy of acute and chronic diseases seen in both hospitalized and ambulatory patients. Emphasis is placed on preventing, identifying, and solving drug-related problems. This course is linked with Pathophysiology and Pharmacology III. Course Format: Lecture format, 4 credit hours. <i>Prerequisites: third professional year standing.</i>
Advanced Drug Information	This course is designed to provide students with advanced drug information practice and critical literature evaluation skills. This course provides students with the requisite skills to facilitate life-long learning. Course Format: Lecture format, 2 credit hours. <i>Prerequisites: third professional year standing.</i>
Pharmacy Skills Lab V: Applied Community Pharmacy	Provide students with an advanced knowledge of prescription and drug order processing, and assist them in the development of appropriate skills necessary for provision of pharmaceutical care to patients in the community setting, through the use of medication profiles, patient counseling, personal interviews, and appropriate prescription and non-prescription drug information. Course Format: Laboratory, 1 credit hour. <i>Prerequisites: third professional year standing.</i>
Clinical Applications V	Case-based discussions that integrate and demonstrate applicability of other course material in patient care. Course Format: Recitation format, 1 credit hour. <i>Prerequisite: third professional year standing.</i>
Pharmacy Law and Ethics	Federal and state laws and regulations governing the practice of pharmacy and introduction to the professional and ethical issues relevant to the practice of pharmacy. Course Format: Lecture and case study format, 3 credit hours. <i>Prerequisite: third professional year standing.</i>
Pathophysiology & Pharmacology IV	This is the fourth in a 4-semester sequence of courses aimed at integrating the discussion of specific disease states and the mechanism of action of the pharmacologic agents used to treat those disease states. This knowledge will be integrated, utilized and applied in a parallel sequence of courses in Pharmacotherapy using an organ-system based approach emphasizing pharmaceutical care and disease management. Course Format: Lecture format, 2 credit hours. <i>Prerequisites: third year professional standing.</i>

Pharmacotherapy IV	This course is the fourth in a 4-semester sequence of courses providing a systems-based approach to pharmaceutical care and disease management. Students will learn about disease prevention and health promotion, as well as the drug and non-drug therapy of acute and chronic diseases seen in both hospitalized and ambulatory patients. Emphasis is placed on preventing, identifying, and solving drug-related problems. This course is linked with Pathophysiology and Pharmacology IV. Course Format: Lecture format, 5 credit hours. Prerequisites: third professional year standing.
Clinical Assessment	Development of clinical assessment skills necessary in the provision of pharmaceutical care to patients with a variety of disease states. Course Format: Lecture and laboratory format, 3 credit hours. <i>Prerequisite: third professional year standing.</i>
Clinical Applications VI	A capstone course, where case studies of complex patients and additional application exercises will bring together concepts learned throughout the previous semesters in the professional program. Course Format: Recitation format, 1 credit hour. <i>Prerequisite: third professional year standing.</i>
Acute/General Medicine Pharmacy Practice Experience I	This required advanced pharmacy practice experience (APPE) provides clinical pharmacy activity on a variety of adult and pediatric medicine inpatient services including cardiology, critical care, emergency medicine, geriatrics, gastrointestinal, infectious disease, nephrology, OB-GYN, oncology, psychiatry, pulmonary and transplant. The APPE provides an exposure to a variety of disease states that allows the student to gain experience monitoring drug therapy and to participate in the therapeutic decision making process. Additional competencies to be achieved during this APPE include: (1) how to develop a problem list, (2) how to present a patient, (3) how to develop and implement a monitoring plan, (4) how to take a medication history, (5) how to respond to a drug information request, and (6) review the policies and procedures at the institution. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i>
Acute/General Medicine Pharmacy Practice Experience II	This required advanced pharmacy practice experience (APPE) provides clinical pharmacy activity on a variety of adult and pediatric medicine inpatient services including cardiology, critical care, emergency medicine, geriatrics, gastrointestinal, infectious disease, nephrology, OB-GYN, oncology, psychiatry, pulmonary and transplant. The APPE provides an exposure to a variety of disease states that allows the student to gain experience monitoring drug therapy and to participate in the therapeutic decision making process. Additional competencies to be achieved during this APPE include: (1) how to develop a problem list, (2) how to present a patient, (3) how to develop and implement a monitoring plan, (4) how to take a medication history, (5) how to respond to a drug information request, and (6) review the policies and procedures at the institution. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i>

Acute/General Medicine Pharmacy Practice Experience III	<p>This advanced pharmacy practice experience (APPE) provides additional clinical pharmacy activity on a variety of adult and pediatric medicine inpatient services including cardiology, critical care, emergency medicine, geriatrics, gastrointestinal, infectious disease, nephrology, OB-GYN, oncology, psychiatry, pulmonary and transplant. The APPE provides an exposure to a variety of disease states that allows the student to gain experience monitoring drug therapy and to participate in the therapeutic decision making process. Additional competencies to be achieved during this APPE include: (1) how to develop a problem list, (2) how to present a patient, (3) how to develop and implement a monitoring plan, (4) how to take a medication history, (5) how to respond to a drug information request, and (6) review the policies and procedures at the institution. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i></p>
Acute/General Medicine Pharmacy Practice Experience IV	<p>This advanced pharmacy practice experience (APPE) provides additional clinical pharmacy activity on a variety of adult and pediatric medicine inpatient services including cardiology, critical care, emergency medicine, geriatrics, gastrointestinal, infectious disease, nephrology, OB-GYN, oncology, psychiatry, pulmonary and transplant. The APPE provides an exposure to a variety of disease states that allows the student to gain experience monitoring drug therapy and to participate in the therapeutic decision making process. Additional competencies to be achieved during this APPE include: (1) how to develop a problem list, (2) how to present a patient, (3) how to develop and implement a monitoring plan, (4) how to take a medication history, (5) how to respond to a drug information request, and (6) review the policies and procedures at the institution. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i></p>
Acute/General Medicine Pharmacy Practice Experience V	<p>This advanced pharmacy practice experience (APPE) provides additional clinical pharmacy activity on a variety of adult and pediatric medicine inpatient services including cardiology, critical care, emergency medicine, geriatrics, gastrointestinal, infectious disease, nephrology, OB-GYN, oncology, psychiatry, pulmonary and transplant. The APPE provides an exposure to a variety of disease states that allows the student to gain experience monitoring drug therapy and to participate in the therapeutic decision making process. Additional competencies to be achieved during this APPE include: (1) how to develop a problem list, (2) how to present a patient, (3) how to develop and implement a monitoring plan, (4) how to take a medication history, (5) how to respond to a drug information request, and (6) review the policies and procedures at the institution. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i></p>
Acute/General Medicine Pharmacy Practice Experience VI	<p>This advanced pharmacy practice experience (APPE) provides additional clinical pharmacy activity on a variety of adult and pediatric medicine inpatient services including cardiology, critical care, emergency medicine, geriatrics, gastrointestinal, infectious disease, nephrology, OB-GYN, oncology, psychiatry, pulmonary and transplant. The APPE provides an exposure to a variety of</p>

	<p>disease states that allows the student to gain experience monitoring drug therapy and to participate in the therapeutic decision making process. Additional competencies to be achieved during this APPE include: (1) how to develop a problem list, (2) how to present a patient, (3) how to develop and implement a monitoring plan, (4) how to take a medication history, (5) how to respond to a drug information request, and (6) review the policies and procedures at the institution. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i></p>
<p>Acute/General Medicine Pharmacy Practice Experience VII</p>	<p>This advanced pharmacy practice experience (APPE) provides additional clinical pharmacy activity on a variety of adult and pediatric medicine inpatient services including cardiology, critical care, emergency medicine, geriatrics, gastrointestinal, infectious disease, nephrology, OB-GYN, oncology, psychiatry, pulmonary and transplant. The APPE provides an exposure to a variety of disease states that allows the student to gain experience monitoring drug therapy and to participate in the therapeutic decision making process. Additional competencies to be achieved during this APPE include: (1) how to develop a problem list, (2) how to present a patient, (3) how to develop and implement a monitoring plan, (4) how to take a medication history, (5) how to respond to a drug information request, and (6) review the policies and procedures at the institution. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i></p>
<p>Ambulatory Care Pharmacy Practice Experience I</p>	<p>This required advanced pharmacy practice experience (APPE) involves the student in the daily provision of clinical pharmacy services in the ambulatory care setting including anticoagulation, geriatrics, HIV, Indian Health Services, oncology, pain management, and primary care. Responsibilities include providing drug therapy for disease states commonly encountered in the outpatient setting, providing drug regimen reviews, physical assessment and interviewing patients to elicit drug histories, health status, and adherence to therapy. A significant aspect of this rotation pertains to the long-term management of chronically ill patients. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i></p>
<p>Ambulatory Care Pharmacy Practice Experience II</p>	<p>This advanced pharmacy practice experience (APPE) involves the student in the daily provision of clinical pharmacy services in the ambulatory care setting including anticoagulation, geriatrics, HIV, Indian Health Services, oncology, pain management, and primary care. Responsibilities include providing drug therapy for disease states commonly encountered in the outpatient setting, providing drug regimen reviews, physical assessment and interviewing patients to elicit drug histories, health status, and adherence to therapy. A significant aspect of this rotation pertains to the long-term management of chronically ill patients. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i></p>

<p>Ambulatory Care Pharmacy Practice Experience III</p>	<p>This advanced pharmacy practice experience (APPE) involves the student in the daily provision of clinical pharmacy services in the ambulatory care setting including anticoagulation, geriatrics, HIV, Indian Health Services, oncology, pain management, and primary care. Responsibilities include providing drug therapy for disease states commonly encountered in the outpatient setting, providing drug regimen reviews, physical assessment and interviewing patients to elicit drug histories, health status, and adherence to therapy. A significant aspect of this rotation pertains to the long-term management of chronically ill patients. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i></p>
<p>Ambulatory Care Pharmacy Practice Experience IV</p>	<p>This advanced pharmacy practice experience (APPE) involves the student in the daily provision of clinical pharmacy services in the ambulatory care setting including anticoagulation, geriatrics, HIV, Indian Health Services, oncology, pain management, and primary care. Responsibilities include providing drug therapy for disease states commonly encountered in the outpatient setting, providing drug regimen reviews, physical assessment and interviewing patients to elicit drug histories, health status, and adherence to therapy. A significant aspect of this rotation pertains to the long-term management of chronically ill patients. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i></p>
<p>Ambulatory Care Pharmacy Practice Experience V</p>	<p>This advanced pharmacy practice experience (APPE) involves the student in the daily provision of clinical pharmacy services in the ambulatory care setting including anticoagulation, geriatrics, HIV, Indian Health Services, oncology, pain management, and primary care. Responsibilities include providing drug therapy for disease states commonly encountered in the outpatient setting, providing drug regimen reviews, physical assessment and interviewing patients to elicit drug histories, health status, and adherence to therapy. A significant aspect of this rotation pertains to the long-term management of chronically ill patients. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. Prerequisite: fourth professional year standing.</p>
<p>Ambulatory Care Pharmacy Practice Experience VI</p>	<p>This advanced pharmacy practice experience (APPE) involves the student in the daily provision of clinical pharmacy services in the ambulatory care setting including anticoagulation, geriatrics, HIV, Indian Health Services, oncology, pain management, and primary care. Responsibilities include providing drug therapy for disease states commonly encountered in the outpatient setting, providing drug regimen reviews, physical assessment and interviewing patients to elicit drug histories, health status, and adherence to therapy. A significant aspect of this rotation pertains to the long-term management of chronically ill patients. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i></p>

Community Pharmacy Practice I	This advanced pharmacy practice experience (APPE) builds upon the introductory pharmacy practice experience in community pharmacy. This APPE provides pharmacy experience in a variety of community settings including chain, clinic, compounding and independent. The emphasis is placed on patient counseling, immunizations, medication therapy management, and/or compounding. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i>
Community Pharmacy Practice II	This advanced pharmacy practice experience (APPE) builds upon the introductory pharmacy practice experience in community pharmacy. This APPE provides additional pharmacy experience in a variety of community settings including chain, clinic, compounding and independent. The emphasis is placed on patient counseling, immunizations, medication therapy management, and/or compounding. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i>
Community Pharmacy Practice III	This advanced pharmacy practice experience (APPE) builds upon the introductory pharmacy practice experience in community pharmacy. This APPE provides additional pharmacy experience in a variety of community settings including chain, clinic, compounding and independent. The emphasis is placed on patient counseling, immunizations, medication therapy management, and/or compounding. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i>
Community Pharmacy Practice IV	This advanced pharmacy practice experience (APPE) builds upon the introductory pharmacy practice experience in community pharmacy. This APPE provides additional pharmacy experience in a variety of community settings including chain, clinic, compounding and independent. The emphasis is placed on patient counseling, immunizations, medication therapy management, and/or compounding. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i>
Hospital/Health System Pharmacy Practice Experience I	This required advanced pharmacy practice experience (APPE) builds upon the introductory pharmacy practice experience in a hospital/health system setting. This APPE provides pharmacy experience in a variety of hospital/health system practice areas including regulatory compliance, human resources, patient care, informatics, and drug distribution process. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i>
Hospital/Health System Pharmacy Practice Experience II	This advanced pharmacy practice experience (APPE) builds upon the introductory pharmacy practice experience in a hospital/health system setting. This additional APPE provides pharmacy experience in a variety of hospital/health system practice areas including regulatory compliance, human resources, patient care, informatics, and drug distribution process. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i>

Hospital/Health System Pharmacy Practice Experience III	<p>This advanced pharmacy practice experience (APPE) builds upon the introductory pharmacy practice experience in a hospital/health system setting. This APPE provides pharmacy experience in a variety of hospital/health system practice areas including regulatory compliance, human resources, patient care, informatics, and drug distribution process. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i></p>
Elective Pharmacy Practice Experience I	<p>Elective pharmacy practice experiences provide students with the opportunity to explore a variety of pharmacy practice settings outside of the four core curricular categories (acute/general medicine, ambulatory care, community, and hospital/health system). These elective experiences are typically in non-traditional pharmacy settings and include, but are not limited to, academia, administration, drug information, industry, informatics, international, investigational drug services, long term care, mail order, managed care, nuclear, poison center, research and veterinary medicine. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i></p>
Elective Pharmacy Practice Experience II	<p>Elective pharmacy practice experiences provide students with the opportunity to explore a variety of pharmacy practice settings outside of the four core curricular categories (acute/general medicine, ambulatory care, community, and hospital/health system). These elective experiences are typically in non-traditional pharmacy settings and include, but are not limited to, academia, administration, drug information, industry, informatics, international, investigational drug services, long term care, mail order, managed care, nuclear, poison center, research and veterinary medicine. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i></p>
Elective Pharmacy Practice Experience III	<p>Elective pharmacy practice experiences provide students with the opportunity to explore a variety of pharmacy practice settings outside of the four core curricular categories (acute/general medicine, ambulatory care, community, and hospital/health system). These elective experiences are typically in non-traditional pharmacy settings and include, but are not limited to, academia, administration, drug information, industry, informatics, international, investigational drug services, long term care, mail order, managed care, nuclear, poison center, research and veterinary medicine. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i></p>
Elective Pharmacy Practice Experience IV	<p>Elective pharmacy practice experiences provide students with the opportunity to explore a variety of pharmacy practice settings outside of the four core curricular categories (acute/general medicine, ambulatory care, community, and hospital/health system). These elective experiences are typically in non-traditional pharmacy settings and include, but are not limited to, academia, administration, drug information, industry, informatics, international, investigational drug services, long term care, mail order, managed care, nuclear, poison center, research and veterinary medicine. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice</p>

	for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i>
Elective Pharmacy Practice Experience V	Elective pharmacy practice experiences provide students with the opportunity to explore a variety of pharmacy practice settings outside of the four core curricular categories (acute/general medicine, ambulatory care, community, and hospital/health system). These elective experiences are typically in non-traditional pharmacy settings and include, but are not limited to, academia, administration, drug information, industry, informatics, international, investigational drug services, long term care, mail order, managed care, nuclear, poison center, research and veterinary medicine. Course Format: 4 credit hours; one month of supervised advanced pharmacy practice for at least 40 hours per week. <i>Prerequisite: fourth professional year standing.</i>
Seminar	Regularly scheduled, formal, oral presentations with audiovisuals on controversial or new areas of pharmacotherapeutics, pharmacoeconomics, pharmaceuticals, medicinal chemistry or pharmacy practice. A follow-up question and answer period examines the students ability to substantiate his/her conclusions. Content and presentation technique will be critiqued. Course Format: 1 credit hour; seminar presentations. <i>Prerequisite: fourth professional year standing.</i>
Elective Course Options: Students must complete minimum of 8 hours of electives	
Special Project, Dept. of Pharmaceutical & Biomedical Sciences	An individualized program of study or research arranged by consultation between student and faculty member. Credit is variable and the course may be repeated for credit. Course Format: 1-4 credit hours. Independent study format. <i>Prerequisite: second or third professional year standing.</i> Fall or Spring semester.
Cancer: Causes, Treatment, and Prevention	An overview of basic concepts in cancer epidemiology, genetics, and biology, and the therapeutic approaches utilized in the prevention and treatment of cancer. Course Format: 2 credit hours. Lecture format. <i>Prerequisite: second or third professional year standing.</i>
Clinical Immunology/Transplant	The course will build upon principles of immunology covered in microbiology/immunology to include monitoring the immune system, hypersensitivity reactions, and the principles of solid organ transplantation and role of a pharmacist in transplantation. Course Format: 2 credit hours. Lecture format. <i>Prerequisite: second or third professional year standing.</i>
Special Project, Dept. of Pharmacy and Outcome Sciences	An individualized program of study or research arranged by consultation between student and faculty member. Credit is variable and the course may be repeated for credit. Course Format: 1-4 credit hours. Independent study format. <i>Prerequisite: second or third professional year standing.</i> Fall or Spring semester.

Creating Pharmacy Leaders	This course is designed to teach students the leadership skills needed to influence people and organizations in an effort to create positive change within the practice of pharmacy. Course Format: 2 credit hours. Lecture format. <i>Prerequisite: second or third professional year standing.</i> Pass/Fail.
Introduction to Pharmacy Pathways and Careers	The course will emphasize aspects of pharmacy career development, to include understanding of the role of professional, strategies in dealing with various types of patients, development of professional presentations, and familiarity with career pathways in pharmacy. Course Format: 3 credit hours. Lecture format. <i>Prerequisite: second or third professional year standing.</i>
Personal Finance	This course is designed to provide the health care practitioner with the knowledge and skills to manage their personal finances in an effective manner. After successfully completing this course, the student will be able to understand the process for making personal financial decisions; establish personal financial goals; evaluate the factors that influence personal financial planning; and apply strategies for attaining personal financial goals. Course Format: 3 credit hours. Lecture format. <i>Prerequisite: second or third professional year standing.</i>
Alternative Medicine	This course is designed to expose the student to a wide variety of herbal medicines and dietary supplements. Discussions will also include regulation of herbal supplements, evaluation of the alternative medicine literature, and disease-directed discussions with case studies. Course Format: 2 credit hours. Online format. <i>Prerequisite: second or third professional year standing.</i>
Pharmacy Political Advocacy	This class will focus on enabling students to become advocates for the pharmacy profession through review of current legislation that affects pharmacists and healthcare, as well as determining the impact of legislation on the profession. Students will learn how to affect legislation through contact with their representatives and through collaboration with pharmacy organizations. Concepts for providing to their representatives a concise review of the effect of legislation will also be reviewed. Course Format: 2 credit hours. Lecture format. <i>Prerequisite: second or third professional year standing.</i>
Developing a Medication Therapy Management Service	This course will prepare students to develop and implement a pharmaceutical care service into a community pharmacy setting. The focus will be on designing a Medication Therapy Management service; however other clinical pharmacy services will be discussed. Students will apply basic principles of small business administration and development to the creation of a pharmacy service. Students will participate in interactive lectures, written assignments, and formal presentations. Course Format: 2 credit hours. Lecture format. <i>Prerequisite: third professional year standing.</i>
Advanced Self-Care	This elective focuses on developing critical thinking, problem solving, and communication skills by incorporating principles of self-management covered in Self-care and Complementary Medicines into evidence-based case discussions and presentations. Course Format: 2 credit hours. Lecture format: one two hour period. <i>Prerequisite: second or third professional standing.</i>

Post-graduate and Research Training	<p>This course is designed to prepare students for and promote post-graduate training, with an emphasis on residency training, but also including PhD and fellowship training. All elements of preparation for post-graduate training will be covered; the class will provide information related to various types of research, discuss the ethical considerations related to research and provide the opportunity to develop and present a research protocol. Course Format: 2 credit hours. Lecture format, discussion. <i>Prerequisite: second or third professional year standing.</i></p>
Pediatric Pharmacotherapy	<p>This challenging course is designed to provide the student with increased exposure to disease states, medication issues, and clinical decision-making skills specific to the pediatric population. Pediatrics is an integral component to most pharmacy careers, and gaining a greater understanding of the patient population's challenges and nuances is necessary to become a confident and well-rounded practitioner. This elective also seeds to provide exposure to the pediatric pharmacy community, including experts in the subspecialty areas and organizations. Course Format: 2 credit hours. Lecture format in 50-minute sessions. <i>Prerequisite: second professional year standing.</i></p>
Interprofessional Prevention of Childhood Obesity	<p>This course introduces health professions students to concepts in community and public health focusing on childhood obesity. The course is in collaboration with the Junior Doctors of Health (JDOH) program. JDOH is an interprofessional service-learning program that works with children in low-income schools with the aim of long term prevention of childhood obesity. During the course, students will lead education and interactive sessions that are part of the JDOH curriculum to promote healthy diet and physical activity behaviors. Students from public health, social work, and pharmacy will participate in didactic class sessions together then will provide education regarding the prevention of childhood obesity as interprofessional teams to elementary students in local schools. Teams will then develop presentations regarding their experiences to present during the final class session. Course Format: 2 credit hours. Lecture format. <i>Prerequisite: second or third professional year standing. Pass/Fail.</i></p>
Advanced Topics in Pharmacy Compounding I	<p>This course will build upon the knowledge acquired in the first professional year courses Dosage Forms/Drug Delivery Systems and Compounding/Applied Pharmaceutics lab. The course will provide emphasis on practical application in the evaluation of unique dosage forms, pharmacotherapy, and special pharmaceutical needs of various patient populations. This course is self-paced and delivered in an online format utilizing prerecorded lectures. Course Format: 1 credit hour. <i>Pass/Fail. Prerequisite: second professional year standing.</i></p>
Advanced Topics in Pharmacy Compounding II	<p>This course is an elective course that provides additional insight and understanding into a variety of pharmacy compounding topics, which include nutrient depletion, drug-induced nutrient depletion, metabolic demands of athletes, men's health, and family medicine. This course is self-paced and delivered in an online format utilizing prerecorded lectures. Course Format: 1 credit hour. Self-paced, online format. <i>Pass/Fail. Prerequisite: second professional year standing.</i></p>

Pharmacist Entrepreneurship	This course provides an entrepreneurship overview, including, but not limited to 1) the characteristics, behaviors, and attitudes of successful entrepreneurs, 2) current topics in entrepreneurship, e.g., the lean startup methodology, 3) examination of how to create an entrepreneurial mindset, 4) entrepreneurship as it applies to pharmacy ownership and innovative patient care initiatives, 5) application of relevant business skills, e.g., accounting, marketing, and finance, 6) business planning and creation of a business proposition. Course Format: 3 credit hours. <i>Prerequisites: second professional year standing</i> ; recommended that student has completed an accounting course.
Acute Care Therapeutics	A disease oriented approach and organ integrated approach to the care of patients with acute illnesses managed in the in-patient hospital setting. Students will learn common disease processes that affect the acutely ill hospitalized patient and the appropriate pharmacotherapy to treat these patients. This course focuses on developing critical thinking and problem solving skills, and integrating material from this course and previous courses in a case-based format. Course Format: 2 credit hours. Lecture format. <i>Prerequisite: third professional year standing.</i>
Evidence Based Medicine	This course is designed to instruct students on the proper approach to critical evaluation of the medical literature. An evidence based approach to patient care hinges on the medical team's ability to utilize the most current literature available. Students will learn the keys to critiquing the medical literature, including basic statistical and analytical concepts, in an open forum style, with application of literature information to clinical scenarios. Course Format: 2 credit hours. Lecture format. <i>Prerequisite: second or third professional year standing.</i>
Community Pharmacy Practice and Operations	This course is intended to provide a practical look at independent community pharmacy. The goal of the course is to expose students to the many aspects involved in starting, owning and running a business. Each session will focus on a unique aspect of independent pharmacy ownership or pharmacist driven business, along with management skills required to effectively operate the business. Students will learn to critically appraise and discuss independent store ownership/management or pharmacy related business through lectures, readings, discussions and projects. Course Format: 2 credit hours. Lecture format. <i>Prerequisite: third professional year standing.</i>
Drug Interactions	This course is designed to prepare students to appropriately recognize, predict, assess, and manage drug interactions that are encountered in pharmacy practice. Course Format: 2 credit hours. Lecture format. <i>Prerequisite: third professional year standing.</i>
Design and Conduct of Clinical Research Studies	This course is designed to provide students with exposure to clinical research. The demand for pharmacist researchers in a variety of settings continues to increase, and clinical pharmacists are often called upon to engage in some research activities. Residency training provides practical application of research; however, most residents lack an in-depth exposure to the varied aspects of research prior to graduation. This class will provide students with information related to various types of research, discuss the ethical considerations related to clinical research, and provide

	students with the opportunity to develop and present a clinical research protocol. This course will help prepare students for post-graduate (residency, fellowship, or PhD) research endeavors. Course Format: 2 credit hours. Lecture format. <i>Prerequisite: third professional year standing.</i>
Medication Safety Management	This course is designed to teach students proper medication safety practices. As medications are prescribed, prepared, dispensed, and administered safely and appropriately, patients' lives are ultimately improved. However, health care providers are human and thereby fallible by nature. Knowledge of ways in which medication errors commonly occur and the modalities in place to prevent such errors is important to the practice of pharmacy. This course will allow students to learn the history of medication safety, institutional policies, and technological advances in medication safety. Course Format: 2 credit hours. Lecture format. <i>Prerequisite: third professional year standing.</i>
Patient-Centered Approach to Medication Therapy Management	This elective prepares students to care for patients participating in medication therapy management. The focus will be on communicating with a patient during a MTM session to identify the patient's current medication therapy problems and prevent future medication therapy problems. Students will apply therapeutic principles learned in the curriculum to improve the patient's overall care, as related to the patient's medication therapies. Course Format: 2 credit hours. Lecture format: one two hour period. <i>Prerequisite: third professional year standing.</i>
Senior Care Pharmacy Practice	This course will introduce students to various topics related to the care of older patients in any setting. Course content will complement the USC curriculum in regard to geriatric pathophysiology, pharmacology, socioeconomics, regulations, and pharmacotherapeutics. In addition, it will expand upon the various practices of senior care pharmacy. Practicing consultants and other topic experts will serve as lecturers. In addition to class discussions and lectures, students will participate in a consultant pharmacist shadowing experience and will conduct an interview with a senior patient. Course Format: 2 credit hours. Lecture format, discussion. <i>Prerequisite: third professional year standing.</i> Distance education.
Infectious Diseases Pharmacotherapy	This course is an integrated approach to infectious diseases pharmacotherapy that builds upon required USC courses. At the conclusion of the course, the student will have a working knowledge of infectious diseases pharmacotherapy and be able to develop a complete patient care plan given an infectious diagnosis. Additionally, the course will stress important drug interactions with antimicrobials, adverse events associated with antimicrobials, and the prominent role of pharmacists in a HIV clinic, antimicrobial stewardship program, and/or medical crisis. Course Format: 2 credit hours. Lecture format, discussion. <i>Prerequisite: second or third professional year standing.</i>
Delivering Medication Therapy Management Services	This course will utilize the "Delivering MTM Services in the Community" certificate training program developed by APhA and ASCP to provide students the essential skills necessary to become a successful MTM practitioner. Students will learn how to evaluate complicated medication

	<p>regimens, identify medication-related problems, and make recommendations. Aspects of business development and management will also be discussed. Students will participate in interactive lectures, reading and writing assignments, critical thinking exercises, and patient counseling sessions. Course Format: 2 credit hours. Lecture format. <i>Prerequisite: third professional year standing.</i></p>
<p>Pharmacotherapy Cases</p>	<p>This challenging course is designed to provide the student with the opportunity to gather, analyze, and synthesize medical information from complex patient cases into complete pharmacotherapeutic treatment plans designed to improve patient outcomes. This process will enhance the student's ability to be an independent and active learner, foster the student's individual and group problem solving abilities, promote the critical examination of medical problems, and develop student's clinical skills and decision-making abilities. Course Format: 2 credit hours. Small group discussion. <i>Prerequisite: third professional year standing.</i></p>
<p>Introduction to Pharmacogenomics and Personalized Medicine</p>	<p>This course will incorporate didactic teaching from both the basic sciences and pharmacotherapy realms to prepare students to effectively engage with commonly encountered questions and pharmacy practice dilemmas related to pharmacogenomics. The course will also provide active learning through longitudinal projects involving pharmacogenomic literature analysis, and solving pharmacogenetics-related pharmacotherapy selection problems. Course Format: 3 credit hours. <i>Prerequisite: third professional year standing.</i> (Cross listed as pharmacy graduate course: PHAR 715).</p>

Faculty

Faculty and Administrative Personnel – Drug Discovery & Biomedical Sciences Department				
Rank	Full- or Part-time	Courses Taught or To be Taught, Including Term, Course Number & Title, Credit Hours	Academic Degrees and Coursework Relevant to Courses Taught, Including Institution and Major	Other Qualifications and Comments (i.e., explain role and/or changes in assignment)
Professor & (DDBS) Chair	Full Time	<p>Fall Semester: PHMY/SCCP 722: Pathophysiology/Pharmacology I 3 credit hours</p> <p>Fall Semester: PHMY/SCCP 822: Pathophysiology/Pharmacology III 3 credit hours</p>	<p>Ph.D. Purdue University 1980 Biology</p>	<p>Bachelor of Science, Biology, 1976, University of Puget Sound</p> <p>Postdoctoral Fellowship, Cell Biology, 1980-1983, Washington University School of Medicine</p> <p>Staff Fellow, Carcinogenesis, 1983-1987, National Cancer Institute</p>
Professor	Full Time	<p>Spring Semester: PHMY/SCCP 603: Foundations of Pathophysiology/ Pharmacology II 3 credit hours</p> <p>Spring Semester: PHMY/SCCP 723: Pathophysiology/Pharmacology II 3 credit hours</p>	<p>Ph.D. Simon Fraser University, Canada 1996 Carcinogenesis</p>	<p>Bachelor of Science, Biology, 1990, Simon Fraser University, Canada</p> <p>Postdoctoral Research Fellow, Carcinogenesis, 1996-1999, National Cancer Institute</p>

		<p>Fall Semester: PHMY/SCCP 822: Pathophysiology/Pharmacology III 3 credit hours</p> <p>Spring Semester: PHMY/SCCP 823: Pathophysiology/Pharmacology IV 3 credit hours</p>		
Professor	Full Time	<p>Fall Semester: PHMY/SCCP 602: Foundations of Pathophysiology/Pharmacology I 2 credit hours</p> <p>Spring Semester: PHMY/SCCP 603: Foundations of Pathophysiology/Pharmacology II 3 credit hours</p> <p>Fall Semester: PHMY/SCCP 722: Pathophysiology/Pharmacology I 3 credit hours</p>	<p>Ph.D. University of Sofia, Bulgaria 1997 Physiology</p>	<p>Masters of Science, Physiology, 1992, University of Sofia, Bulgaria</p> <p>Postdoctoral Associate, Pharmacology, 1998, University of Siena, Italy</p> <p>Postdoctoral Associate, Pharmacology, 1999, University of Vermont</p>
Professor	Full Time	<p>Fall Semester: PHMY/SCCP 602: Foundations of Pathophysiology/Pharmacology I</p>	<p>Ph.D. Massachusetts Institute of Technology 1982 Biochemistry</p>	<p>Master of Science, Virology, 1977, Moscow State University, USSR</p> <p>Professor, Dept. Genetics, University Illinois at Chicago, 1984-2003</p>

		2 credit hours		Director of Cancer Center, Ordway Research Institute, 2003-2010
Associate Professor	Full Time	Fall Semester: PHMY/SCCP 615: Pharmaceutical Biochemistry 3 credit hours	Ph.D. University of Georgia 1996 Biochemistry	Bachelor of Science, Chemistry, 1988, University of South Florida Masters of Science, Chemistry, 1990, University of California at San Diego Postdoctoral Fellow, Molecular Genetics, 2002, Johns Hopkins Oncology Center
Associate Professor	Full Time	Fall Semester PHMY/SCCP 621: Pharmaceutical Chemistry/ Pharmacogenomics I 3 credit hours Spring Semester PHMY/SCCP 622: Pharmaceutical Chemistry/ Pharmacogenomics II	Ph.D. University of North Carolina 1981 Medicinal Chemistry	Bachelor of Science, Chemistry, 1974, NC State University Postdoctoral Associate, Medicinal Chemistry, 1981-1983, University of North Carolina
Associate Professor	Full Time	Fall Semester: PHMY/SCCP 615: Pharmaceutical Biochemistry 3 credit hours Spring Semester: PHMY/SCCP 603: Foundations of	Ph.D. University of Crete, Greece 1997 Molecular Biology	Bachelor of Science, Biology, 1993, University of Athens Postdoctoral Fellow, Tumor Biology, 1998-2000, Tulane University Postdoctoral Fellow, Cancer Genetics, 2000-2003, Harvard University

		Pathophysiology/ Pharmacology II 3 credit hours		
Associate Professor	Full Time	Fall Semester: PHMY/SCCP 621: Pharmaceutical Chemistry/ Pharmacogenomics I 3 credit hours Fall Semester: PHMY/SCCP 602: Foundations of Pathophysiology/ Pharmacology I 2 credit hours Spring Semester PHMY/SCCP 622: Pharmaceutical Chemistry/ Pharmacogenomics II 4 credit hours	Ph.D. University of Edinburgh UK 1991 Chemistry	Bachelor of Science, Chemistry, 1986, University of Guelph, Canada Postdoctoral, Biochemistry, 1999, University of Alberta, Canada
Associate Professor	Full Time	Spring Semester: PHMY/SCCP 616: Pharmaceutical Biotechnology 2 credit hours	Ph.D. University of Iowa 1996 Biology	Bachelor of Science, Biology, 1986, Mount Vernon Nazarene University Master of Science, Molecular Genetics, 1988, Marshall University Postdoctoral Fellowship, Mouse Genetics, 1996-1999, The Jackson Laboratory
Associate Professor	Full Time	Fall Semester: PHMY/SCCP 615: Pharmaceutical	Ph.D. University College London	Bachelor of Science, Chemistry, 1991, Furman University

		<p>Biochemistry 3 credit hours</p> <p>Spring Semester: PHMY/SCCP 616: Pharmaceutical Biotechnology 2 credit hours</p>	<p>1996 Molecular Pharmacology</p>	<p>Master of Science, Chemistry, 1992, Furman University</p> <p>Postdoctoral Associate, Genetic Toxicology, 1999, Harvard School of Public Health</p>
Associate Professor	Full Time	<p>Fall Semester: PHMY/SCCP 602: Foundations of Pathophysiology/ Pharmacology I 2 credit hours</p> <p>Fall Semester: PHMY/SCCP 822: Pathophysiology/Pharmacology III 3 credit hours</p>	<p>M.D. Zhejiang University Hangzhou, China 1982</p> <p>Ph.D. Fukui Medical University Japan 1998 Biochemistry</p>	<p>Postdoctoral Fellow, Neuropharmacology, 2006, University of Kentucky</p>
Assistant Professor	Full Time	<p>Fall Semester: PHMY/SCCP 610: Microbiology/ Immunology 4 credit hours</p> <p>Fall Semester: PHMY/SCCP 722: Pathophysiology/Pharmacology I 3 credit hours</p>	<p>M.D. Taishan Medical University, Taian, China 1998</p> <p>Ph.D. Shanghai Second Medical University, Shanghai, China 2004 Genetics</p>	<p>Masters of Science, Immunology, Shandong Academy of Medical Sciences, Shandong, China</p> <p>Postdoctoral Fellowship, Hematology, 2004, Maine Medical Center Research Institute</p> <p>Postdoctoral fellowship, Hematology/Oncology, 2011, Cincinnati Children's Hospital</p>

Assistant Professor	Full Time	Fall Semester: PHMY/SCCP 615: Pharmaceutical Biochemistry 3 credit hours	Ph.D. Indian Institute of Technology Kanpur Chemical Biology	Bachelor of Science, Biology, Kannur University, Kerala, India Masters of Science, University of Calicut, Kerala, India Postdoctoral Fellowship, Structural Biology, 2009, The Scripps Research Institute
Assistant Professor	Full Time	Spring Semester: PHMY/SCCP 603: Foundations of Pathophysiology/ Pharmacology II 3 credit hours Spring Semester PHMY/SCCP 622: Pharmaceutical Chemistry/ Pharmacogenomics II 4 credit hours	Ph.D. Cancer Research Center, Moscow, Russia 1996 Experimental Oncology	Masters of Science, Biotechnology, 1988, Moscow Mendeleev Chemical - Technological Institute, Department of Biotechnology, Moscow, Russia Postdoctoral Fellow, 1997-1999, Department of Molecular Cell Biology, Weizmann Institute of Science, Rehovot, Israel
Assistant Professor	Full Time	Fall Semester: PHMY/SCCP 602: Foundations of Pathophysiology/ Pharmacology I 2 credit hours Fall Semester: PHMY/SCCP 822: Pathophysiology/Pharma cology III 3 credit hours	Ph.D. Georgetown University 2007 Neuroscience	Bachelor of Science, Biology, West Virginia University, 2002 Postdoctoral Fellowship, Neurogenetics, 2012, University of Pennsylvania

Assistant Professor	Full Time	Fall Semester: PHMY/SCCP 607: Dosage Forms and Drug Delivery Systems 4 credit hours	Ph.D. University of Wyoming 2007 Chemical Engineering	Bachelor of Science, Chemical Engineering, 1997, Nanchang University, China Master of Science, Chemical Engineering, 2000, Beijing University of Chemical Technology, China Postdoctoral Fellow, Pharmaceuticals, 2009, Purdue University

Note: Individuals should be listed with program supervisor positions listed first. Identify any new faculty with an asterisk next to their rank.

Faculty

Faculty and Administrative Personnel – Clinical Pharmacy & Outcomes Sciences Department				
Rank	Full- or Part-time	Courses Taught or To be Taught, Including Term, Course Number & Title, Credit Hours	Academic Degrees and Coursework Relevant to Courses Taught, Including Institution and Major	Other Qualifications and Comments (i.e., explain role and/or changes in assignment)
Professor (Clinical) & Department Chair	FT	<p>Clinical Pharmacokinetics, PHMY / SCCP 890, Spring, 3 credit hours</p> <p>Infectious Diseases Pharmacotherapy, PHMY / SCCP 882, Spring, 2 credit hours</p> <p>Independent Study, PHMY/SCCP 757, Fall and Spring, 2 credit hours</p>	<p>Doctor of Pharmacy, University of South Carolina, 1998</p> <p>Bachelors of Science in Pharmacy, University of South Carolina, 1997</p> <p>Bachelors of Science in Pharmaceutical Sciences, University of South Carolina, 1997</p>	<p>Clinical Pharmacy Resident; Infectious Diseases and Internal Medicine, WJB Dorn Veterans Affairs Medical Center & University of South Carolina, 1998, 1999;</p> <p>Chair; University of South Carolina College of Pharmacy, Department of Clinical Pharmacy & Outcomes Sciences. 2016 – present;</p> <p>Vice-Chair; South Carolina College of Pharmacy, Medical University of South Carolina and University of South Carolina. 2016-present;</p> <p>Professor, Clinical; South Carolina College of Pharmacy, University of South Carolina, Department of Clinical Pharmacy & Outcomes Sciences. 2015-present;</p> <p>Clinical Researcher, Dorn Research Institute, WJB Dorn Veterans Affairs Medical Center. 2009-present; Associate Professor, Clinical; University of South Carolina, South Carolina College of Pharmacy, Department of Clinical Pharmacy & Outcomes Sciences. 2004- 2015;</p> <p>Clinical Pharmacy Specialist; WJB Dorn Veterans Administration Medical Center. 2003- 2015;</p>

				<p>Assistant Professor, Clinical; University of South Carolina, College of Pharmacy, Department of Pharmacy Practice. 1999 to 2004;</p> <p>Clinical Pharmacy Specialist; Palmetto Health Richland and University of South Carolina School of Medicine. 1999 to 2003;</p> <p>Staff Pharmacist; WJB Dorn Veterans Administration Medical Center Department of Pharmaceutical Services. 1998 to 2001.</p>
Professor	FT	Introduction to Pharmacy Practice, PHMY/SCCP 650, Fall, 1 credit hour	<p>Doctor of Philosophy, 1989, RAND Graduate School</p> <p>Doctor of Medicine, 1981, University of Pennsylvania</p> <p>Bachelors of Arts in Mathematics, 1977, Swarthmore College</p>	<p>Fellow in Hematology/Oncology, University of Chicago-Michael Reese Hospitals, Chicago, IL, 1984-1987;</p> <p>Medical Resident, Michael Reese Hospital, Chicago, IL, 1981-1984;</p> <p>American Board of Internal Medicine with Medical Oncology Certified;</p> <p>Assistant Professor, Duke University School of Medicine, 1991-1994;</p> <p>Associate Professor of Medicine, Northwestern University, 1994-2000;</p> <p>Professor of Medicine, Northwestern University Medical School, 2000-2010;</p> <p>Director, Center for Medication Safety, Frank P and Josie M Fletcher Endowed Chair in Medication Safety and Efficacy, South Carolina Centers of Economic Excellence Chair in Medication Safety and Efficacy Professor, South Carolina College of Pharmacy; Dorn Veterans Administration Hospital, Staff Physician</p>

				(Oncology), 2011-present
Professor	FT	<p>Outcomes Design and Assessment, PHMY / SCCP 780, Spring, 3 credit hours</p> <p>Introduction to Pharmacy Practice, PHMY/SCCP 650, Fall, 1 credit hour</p>	<p>Doctor of Philosophy in Pharmacy Administration, University of North Carolina, 1983</p> <p>Masters of Science in Pharmacy Administration, University of North Carolina, 1980</p> <p>Bachelors of Science in Pharmacy, University of Maryland, 1976</p>	<p>Vice-Chair, Clinical Pharmacy and Outcome Sciences, South Carolina College of Pharmacy, 2008-2012;</p> <p>Professor, University of South Carolina, 1995-present; Chair, Pharmaceutical and Health Outcomes Sciences, 2001 – 2004;</p> <p>Visiting Professor, University of Washington, 1995-1996;</p> <p>Associate Professor, University of South Carolina, 1986-1995;</p> <p>Associate Professor, West Virginia University, 1986;</p> <p>Assistant Professor, West Virginia University, 1982-1986;</p> <p>Hospital Pharmacist, 1977-1978;</p> <p>Community Pharmacist, 1976-1983</p>
Associate Professor	FT	<p>Outcomes Design and Assessment, PHMY/SCCP 780, Spring, 3 credit hours</p>	<p>Doctor of Philosophy in Health Policy and Management, University of North Carolina at Chapel Hill, 2003</p> <p>M.S. in Statistics, North Carolina State University, 1994</p>	<p>Associate Professor, Department of Clinical Pharmacy and Outcomes Sciences, South Carolina College of Pharmacy, July 2011 – present;</p> <p>Research Health Scientist, Columbia Dorn Veterans Affairs Medical Center, July 2011—Oct 2014; Associated Research Member, Hollings Cancer Center in the Cancer Prevention & Control Program, October 2011-present;</p>

			<p>B.S. in Mathematics, Nanchang University (China), 1988</p>	<p>Research Health Scientist, Atlanta Veterans Affairs Medical Center, March 2007-July 2011;</p> <p>Director, Department of Epidemiology and Surveillance Research, American Cancer Society, September 2006-April 2009;</p> <p>Assistant professor, Division of Preventive Medicine, Department of Medicine, University of Alabama at Birmingham, October 2003-September 2006;</p> <p>Research Associate, Duke Center for Clinical Health Policy Research, Duke University, January 1996-June 2000;</p> <p>Associate Statistician, Center for Statistics Research, Research Triangle Institute, January 1994-January 1996.</p>
<p>Associate Professor (Clinical)</p>	<p>FT</p>	<p>Transforming Healthcare for the Future, PHMY/SCCP 690, Spring, 2 credit hours</p> <p>Prevention of Childhood Obesity, PHMY/SCCP 788, Fall, 2 credit hours</p> <p>Ambulatory Care, Advanced Practice Pharmacy Experience, PHMY/SCCP 970-975, Fall & Spring, 4 credit hours</p> <p>Academic Pharmacy, Advanced Practice</p>	<p>Doctor of Pharmacy, Medical University of South Carolina, 2000</p>	<p>Academic Leadership Fellows Program, American Association of Colleges of Pharmacy, 2012-2013;</p> <p>Primary Care Pharmacy Resident with an Emphasis in Family Medicine, Medical University of South Carolina, 2001-2002;</p> <p>Pharmacy Practice Resident, Medical University of South Carolina, 2000-2001;</p> <p>Associate Professor (Clinical), Department of Clinical Pharmacy and Outcomes Sciences, South Carolina College of Pharmacy, University of South Carolina, 2016-present;</p> <p>Clinical Pharmacy Specialist, Primary Care, Palmetto Health Richland, Patient Centered Medical Home Clinics, 2014-present;</p>

		Pharmacy Experience, PHMY/SCCP 983-987, Fall & Spring, 4 credit hours		<p>Co-Director of Interprofessional Education for the Health Sciences, University of South Carolina, 2013-present;</p> <p>Assistant Professor (Clinical), Department of Clinical Pharmacy and Outcomes Sciences, South Carolina College of Pharmacy, University of South Carolina, 2006-2016;</p> <p>Clinical Pharmacy Specialist, Primary Care Clinic, WJB Dorn Veterans Affairs Medical Center, 2006-2013;</p> <p>Pharmacist-in-Charge, Family Medicine Pharmacy, Medical University of South Carolina, 2004-2006; Patient Care Clinical Pharmacist, Medical University of South Carolina, 2002-2004</p>
Associate Professor	FT	<p>Medical Terminology, PHMY/SCCP 657, Fall, 1 credit hour</p> <p>Infectious Diseases Pharmacotherapy, PHMY/SCCP 882, Spring, 2 credit hours</p> <p>Acute Care, Internal Medicine & Infectious Diseases, Advanced Practice Pharmacy Experience, PHMY/SCCP 963-969 / 983-987 / 970-975, Fall & Spring, 4 credit hours</p>	Doctor of Pharmacy, University of South Carolina, 2004	<p>Infectious Diseases Specialty Residency (PGY2), Wake Forest University Baptist Medical Center, Winston-Salem, NC;</p> <p>Pharmacy Practice Residency (PGY1), Wake Forest University Baptist Medical Center, Winston-Salem, NC;</p> <p>Director of Residency & Fellowship Training, University of South Carolina College of Pharmacy, Columbia, SC, 2016-present;</p> <p>Clinical Pharmacy Specialist, Infectious Diseases, Palmetto Health Richland, 2006-present;</p>

<p>Associate Professor (Clinical) & Associate Dean</p>	<p>FT</p>	<p>Introduction to Community Pharmacy Lab, PHMY/SCCP 670, Spring, 1 credit hour</p> <p>Compounding and Applied Pharmaceutics Lab, PHMY/SCCP 671, Fall, 1 credit hour</p> <p>Applied Community Pharmacy Lab, PHMY/SCCP 771, Fall, 1 credit hour</p> <p>Academic Pharmacy, Advanced Practice Pharmacy Experience, PHMY/SCCP 983-987, Fall & Spring, 4 credit hours</p>	<p>Doctor of Pharmacy, University of South Carolina, 1997</p> <p>Bachelors of Science in Pharmacy, University of South Carolina, 1973</p>	<p>Associate Dean, University of South Carolina, South Carolina College of Pharmacy, 2001-present;</p> <p>Associate Professor (Clinical), University of South Carolina, 1999-present;</p>
<p>Associate Professor (Clinical)</p>	<p>FT</p>	<p>Pharmacotherapy I, PHMY/SCCP 772, Fall, 3 credit hours</p> <p>Independent Study, PHMY/SCCP 757, Fall and Spring, 2 credit hours</p>	<p>Doctor of Pharmacy, University of North Carolina, 2004</p>	<p>ASHP Accredited Infectious Diseases Specialty Residency (PGY-2), The University of Texas M. D. Anderson Cancer Center (UT MDACC) Houston, Texas, 2005-2006;</p> <p>ASHP Accredited Pharmacy Practice Residency (PGY-1), University of Virginia (UVa) Health System Charlottesville, Virginia, 2004-2005;</p>

		<p>Acute Care, Internal Medicine & Infectious Diseases, Advanced Practice Pharmacy Experience, PHMY/SCCP 963-969, Fall & Spring, 4 credit hours</p>		<p>Infectious Diseases Residency Coordinator, South Carolina College of Pharmacy, University of South Carolina, 2014-present;</p> <p>International Director, University of South Carolina, South Carolina College of Pharmacy, 2014-present;</p> <p>Assistant Professor (Clinical), University of South Carolina, South Carolina College of Pharmacy, 2006-2015;</p> <p>Associate Professor (Clinical), University of South Carolina, South Carolina College of Pharmacy, 2015-present</p>
Associate Professor (Clinical)	FT	<p>Pharmacotherapy II, PHMY/SCCP 773, Spring, 4 credit hours</p> <p>Acute Care Therapeutics, PHMY/SCCP 851, Spring, 2 credit hours</p> <p>Acute Care, Cardiology, Advanced Practice Pharmacy Experience, PHMY/SCCP 963-969, Fall & Spring, 4 credit hours</p>	<p>Doctor of Pharmacy, Medical University of South Carolina, 2008</p> <p>Bachelor of Science in Chemistry, Wofford College, 2002</p>	<p>ASHP-accredited PGY2 Critical Care Pharmacy, MUSC Medical Center, South Carolina College of Pharmacy Residency Program, 2009-2010;</p> <p>ASHP-accredited PGY1 Pharmacy Residency Program, MUSC Medical Center, South Carolina College of Pharmacy Residency Program, 2008-2009;</p> <p>Clinical Pharmacy Specialist, Heart Failure/Care Transitions, Palmetto Health Richland, 2015-present;</p> <p>Clinical Pharmacy Specialist, Cardiology, WJB Dorn Veterans Affairs Medical Center, Columbia, SC, 2010-2015;</p> <p>Decentralized Clinical Pharmacist, Medical University of South Carolina, 2008-2010</p>

Associate Professor	FT	<p>Pharmacotherapy IV, PHMY / SCCP 874, Spring, 5 credit hours</p> <p>Acute Care, Internal Medicine & Gastroenterology, Advanced Practice Pharmacy Experience, PHMY/SCCP 963-969, Fall & Spring, 4 credit hours</p>	<p>Doctor of Pharmacy, University of South Carolina, 1997</p> <p>Bachelors of Science, Pharmacy, 1996</p>	<p>ASHP Accredited Pharmacy Practice Residency, The University Hospital, Cincinnati, Ohio; 1997-1998; Community & Staff Pharmacist, 1996-2001;</p> <p>Clinical Pharmacy Specialist, Infectious Diseases, Baptist Memorial Healthcare Corporation, Memphis, TN, 1998-2002;</p> <p>Assistant Director of Clinical Pharmacy Services & Pharmacy Practice Residency Program Director Baptist Memorial Healthcare Corporation, Memphis, TN, 2002-2005;</p> <p>Assistant Professor of Pharmacy Wingate University School of Pharmacy, Wingate, NC, 2006-2010,</p> <p>Assistant Professor, University of South Carolina, South Carolina College of Pharmacy, 2010-2013</p> <p>Associate Professor, University of South Carolina, South Carolina College of Pharmacy, 2013-present</p>
Associate Professor (Clinical)	FT	<p>Clinical Assessment, PHMY/SCCP 895, Spring, 4 credit hours</p> <p>Pharmacotherapy III, PHMY/SCCP 873, Fall, 4 credit hours</p> <p>Pharmacogenomics and Personalized Medicine, PHMY/SCCP 891, Fall, 2 credit hours</p>	<p>Doctor of Pharmacy, Medical University of South Carolina, 2008</p> <p>Master of Business Administration, University of South Carolina, 2015</p>	<p>PGY-2 Specialty Residency, University of North Carolina Hospitals, Chapel Hill, North Carolina, 2009-2010;</p> <p>PGY-1 Pharmacy Residency, University of Virginia Health System, Charlottesville, Virginia, 2008-2009;</p> <p>Bachelors of Science & Arts, Mercer University, 2003;</p> <p>Assistant Professor (Clinical), University of South Carolina, South Carolina College of Pharmacy, 2011-2016;</p> <p>Associate Professor (Clinical), University of South</p>

				<p>Carolina, South Carolina College of Pharmacy, 2016-present</p> <p>Clinical Pharmacy Specialist, Dorn Veterans Affairs Medical Center, 2011-2013</p>
Associate Professor (Clinical)	FT	<p>Pharmacotherapy IV, PHMY / SCCP 874, Spring, 5 credit hours</p> <p>Medication Safety Management, PHMY / SCCP 863, Spring, 2 credit hours</p> <p>Acute Care, Oncology, Advanced Practice Pharmacy Experience, PHMY/SCCP 963-969, Fall & Spring, 4 credit hours</p>	<p>Doctor of Pharmacy, University of South Carolina, 2004</p>	<p>Pharmacy Practice Resident (PGY1), Cone Health, Greensboro, NC, 2004-2005;</p> <p>Oncology Specialty Resident (PGY2), Cone Health, Regional Cancer, Center, Greensboro, NC, 2005-2006;</p> <p>Clinical Pharmacy Specialist, Hematology/Oncology/Palliative Care, Dorn VA Medical Center, 2006-2015;</p>
Assistant Professor (Clinical)	FT	<p>Introduction to Health Systems Lab, PHMY/SCCP 790, Fall, 1 Credit Hour</p> <p>Applied Health Systems Lab, PHMY/SCCP 791, Spring, 1 Credit hour</p> <p>APPE Institutional Lab Academic Rotation, PHMY/SCCP 999, Fall and Spring, 4 Credit Hours</p>	<p>Doctor of Pharmacy, 2010, South Carolina College of Pharmacy, University of South Carolina</p> <p>Master of Science in Pharmacy, Pharmaceutical Chemistry, 2010, University of Florida</p>	<p>Senior Pharmaceutical Chemist, GlaxoSmithKline, 1998-2004;</p> <p>Senior Pharmaceutical Formulation Chemist, Pfizer, 2004-2006;</p> <p>Retail Pharmacy Intern, Rite Aid Pharmacy, 2006-2010;</p> <p>Hospital Pharmacy Intern, Lexington Medical Center, 2008-2010;</p> <p>Assistant Professor of Pharmaceutical Sciences, South University School of Pharmacy, May 2010-August 2013</p>

				<p>Assistant Professor (Clinical), South Carolina College of Pharmacy, University of South Carolina, August 2013-present.</p> <p>Licensed Pharmacist in SC, NC, HI; APhA Certified pharmacist immunizer; First Aid, ACLS and CPR certified responder; Attended Pharmacy Compounding seminar; Certification / attended Critical Point Sterile Compounding boot camp</p>
Assistant Professor (Clinical)	FT	Pharmacy Law and Ethics, PHMY / SCCP 885, Spring, 3 credit hours	Doctor of Pharmacy, University of South Carolina, 2002	<p>Director of Experiential Education and Assistant Professor, University of South Carolina, South Carolina College of Pharmacy, 2012-present;</p> <p>Director of Professional Affairs, South Carolina Pharmacy Association, 2003-2012;</p> <p>Community Pharmacist, 2002-2003</p>
Assistant Professor (Clinical)	FT	<p>Clinical Applications VI, PHMY/SCCP 861, Spring, 1 credit hour</p> <p>Independent Study, PHMY/SCCP 757, Fall and Spring, 2 credit hours</p> <p>Acute Care, Pediatrics, Advanced Practice Pharmacy Experience, PHMY/SCCP 963-969, Fall & Spring, 4 credit hours</p>	Doctor of Pharmacy, University of South Carolina, 2006	<p>Pediatric Pharmacy Practice Resident (PGY2), Monroe Carell Jr. Children's Hospital at Vanderbilt Nashville, TN, 2007-2008;</p> <p>Pharmacy Practice Resident (PGY1), Monroe Carell Jr. Children's Hospital at Vanderbilt Nashville, TN, 2006-2007;</p> <p>Assistant Professor (Clinical), University of South Carolina, South Carolina College of Pharmacy, 2010-present;</p> <p>Clinical Pharmacy Specialist, Pediatric Intensive Care/Neonatal Intensive Care, Palmetto Health Children's Hospital, Columbia, SC, 2008-present;</p> <p>Staff Pharmacist, Monroe Carell Jr. Children's Hospital</p>

				<p>at Vanderbilt, Nashville, TN, 2006-2008;</p> <p>Pediatric Pharmacy Residency (PGY2) Coordinator , Palmetto Health Children’s Hospital, 2016-present</p>
<p>Assistant Professor (Clinical)</p>	<p>FT</p>	<p>Self-Care and Complementary Medicine, PHMY/SCCP 750, Spring, 4 credit hours</p> <p>Creating Pharmacy Leaders, PHMY/SCCP 762, Fall, 2 credit hours</p> <p>Ambulatory Care, Advanced Practice Pharmacy Experience, PHMY/SCCP 970-975 / 983-987, Fall & Spring, 4 credit hours</p>	<p>Doctor of Pharmacy, University of Rhode Island, 2006</p>	<p>Community Pharmacy Practice Residency University of Georgia College of Pharmacy / Kroger Pharmacy, 2006-2007;</p> <p>Clinical Assistant Professor, Department of Clinical Pharmacy and Outcomes Sciences, South Carolina College of Pharmacy, University of South Carolina, 2007-present;</p> <p>Community Pharmacist, Medicine Mart Pharmacy, 2015-present;</p> <p>Assistant Coordinator, South Carolina Pharmacy Association, 2015-present;</p> <p>Community Pharmacist, Walgreens Pharmacy, 2010- 2015</p>
<p>Assistant Professor (Clinical) and Assistant Dean</p>	<p>FT</p>	<p>Introduction to Pharmacy Pathways, PHMY/SCCP 763, Fall, 3 credit hours</p> <p>Clinical Assessment, PHMY/SCCP 895, Spring, 3 credit hours</p> <p>Compounding and</p>	<p>Doctor of Pharmacy, Medical University of South Carolina, 2004</p> <p>Master of Business Administration, University of South Carolina, 2013</p>	<p>Pharmacy Practice Residency, Mission Hospitals, Asheville, NC, 2004-2005;</p> <p>Clinical Manager, Providence Hospitals, Columbia, SC, 2005-2007</p> <p>Clinical Manager, Palms West Hospital, Loxahatchee, FL, 2007-2008</p>

		<p>Applied Pharmaceutics Lab, PHMY/SCCP 671, Fall, 1 credit hour</p> <p>Pharmacy Calculations, PHMY/SCCP 656, Fall 1 credit hour</p> <p>Applied Community Pharmacy Lab, PHMY/SCCP 771, Fall 1 credit hour</p>		<p>Pharmacy Manager, Cardinal Health Nuclear Pharmacy, Columbia, SC, 2008-2009</p> <p>Director of Experiential Education,. South Carolina College of Pharmacy, Columbia, SC, 2009-2012</p> <p>Assistant Dean for Student Services, South Carolina College of Pharmacy, 2012-present</p> <p>Clinical Assistant Professor, South Carolina College of Pharmacy, 2009-present</p>
Assistant Professor (Clinical)	FT	<p>Independent Study, PHMY/SCCP 757, Fall and Spring, 2 credit hours</p> <p>Clinical Applications IV, PHMY/SCCP 761, Spring, 1 credit hour</p> <p>Acute Care, Infectious Diseases and Internal Medicine, Advanced Practice Pharmacy Experience, PHMY / SCCP 963-969 / 970-975 / 983-987, Fall & Spring, 4 credit hours</p>	<p>Doctor of Pharmacy, University of Florida, 2009;</p> <p>Masters of Science in Clinical and Translational Science, University of Illinois at Chicago, 2013</p>	<p>Infectious Diseases Pharmacotherapy Fellowship University of Illinois at Chicago, Chicago, IL, 2010-2013;</p> <p>Pharmacy Practice Residency University of Illinois at Chicago, Chicago, IL, 2009-2010;</p> <p>Associate of Arts, University of Florida, 2005; Assistant Professor (Clinical), University of South Carolina, South Carolina College of Pharmacy, 2013-present;</p> <p>Clinical Pharmacy Specialist, Infectious Diseases, Palmetto Health Richland, 2013-present</p>

Assistant Professor	FT	Outcomes Design and Assessment, PHMY / SCCP 780, Spring, 3 credit hours	Doctor of Philosophy, University of Maryland, 2011	Assistant Professor, University of South Carolina, South Carolina College of Pharmacy, 2011-present
Assistant Professor (Clinical)	FT	Clinical Applications II, PHMY / SCCP 661, Spring, 1 credit hour Senior Care, PHMY / SCCP 881, Spring, 2 credit hours Independent Study, PHMY / SCCP 757, Fall and Spring, 2 credit hours Ambulatory Care, Advanced Practice Pharmacy Experience, PHMY / SCCP 970-975, Fall & Spring, 4 credit hours	Doctor of Pharmacy, University of South Carolina, 1989 Bachelors of Science in Pharmacy, University of South Carolina, 1988	Pharmacy Practice Resident, Palmetto Health Richland, 1989-1991; Assistant Professor (Clinical), University of South Carolina, 1991-present; Clinical Pharmacy Specialist, Geriatrics, Palmetto Health Richland, 1991-present
Assistant Professor (Clinical)	FT	Introduction to Drug Information, PHMY / SCCP 680, Fall, 1 credit hour Grand Rounds / Clinical Seminar, PHMY / SCCP 999, Fall and Spring, 1 credit hour Advanced Drug Information, PHMY / SCCP 880, Fall, 2 credit	Doctor of Pharmacy, University of South Carolina, 1996 Bachelors of Science in Pharmacy, University of South Carolina, 1995	Clinical Assistant Professor, College of Pharmacy, University of South Carolina, 2000-present; Managing Director, Palmetto Poison Center, University of South Carolina, 2006-present; Toxicologist Fellow, Georgia Poison Center, 1997-1999; Pharmacy Practice Resident: Emory Healthcare, 1996-1997

		<p>hours</p> <p>Alternative Medicine, PHMY / SCCP 766, Fall, 2 credit hours</p> <p>Pharmacy Practice, Toxicology, Advanced Practice Pharmacy Experience, PHMY / SCCP 983 - 987, Fall & Spring, 4 credit hours</p>		
Assistant Professor (Clinical)	FT	<p>Clinical Applications III, PHMY / SCCP 760, Fall, 1 credit hour</p> <p>Drug Interactions, PHMY / SCCP 858, Spring, 2 credit hours</p> <p>Independent Study, PHMY / SCCP 757, Fall and Spring, 2 credit hours</p> <p>Ambulatory Care, Advanced Practice Pharmacy Experience, PHMY / SCCP 970-975 / 983-987, Fall & Spring, 4 credit hours</p>	<p>Doctor of Pharmacy, University of Tennessee, 1991</p> <p>Bachelors of Science in Biology, University of Tennessee, 1987</p>	<p>Clinical Pharmacy Residency, University of Alabama at Birmingham Hospital, Birmingham, Alabama, 1991-1992;</p> <p>Assistant Professor (Clinical), Department of Clinical Pharmacy and Outcomes Sciences, South Carolina College of Pharmacy, University of South Carolina, 1995-present;</p> <p>Assistant Professor, Department of Pharmacy Practice, School of Pharmacy, Samford University, 1992-1995;</p> <p>Clinical Pharmacy Specialist, Ambulatory Care, Diabetes Educator and Coordinator, Primary Care, William Jennings Bryan Dorn Veteran's Administration Medical Center, 1995-2013;</p> <p>Clinical Pharmacy Specialist, Palmetto Health Richland, 2013-present;</p> <p>Pharmacy Certification in Diabetes and Immunization</p>
Assistant Professor (Clinical)	FT	<p>Health Care Systems & Management, PHMY / SCCP 850, Fall, 4 credit</p>	<p>Doctor of Pharmacy, University of South Carolina, 2001</p>	<p>Executive Director, Kennedy Pharmacy Innovation Center, South Carolina College of Pharmacy, University of South Carolina, 2011-present;</p>

		<p>hours</p> <p>Personal Finance, PHMY / SCCP 764, Fall, 2 credit hours</p> <p>Advanced Topics in Compounding, PHMY / SCCP 792, Fall, 2 credit hours</p> <p>Advanced topics in Compounding II, PHMY / SCCP 793, Spring, 2 credit hours</p> <p>Independent Study, PHMY / SCCP 757, Fall and Spring, 2 credit hours</p>	<p>Masters of Business Administration, University of South Carolina, 2006</p>	<p>Executive Residency in Association Management, National Community Pharmacists Association, 2006-2007;</p> <p>Assistant Professor (Clinical), University of South Carolina, South Carolina College of Pharmacy, 2008-present</p>
Instructor	PT	<p>Pharmacy Calculations, PHMY/SCCP 656, Fall, 1 credit hour</p> <p>Introduction to Health Systems Lab, PHMY/SCCP 790, Fall, 1 Credit Hour</p> <p>Applied Health Systems Lab, PHMY/SCCP 791, Spring, 1 Credit hour</p>	<p>Doctor of Pharmacy, Tehran University of Medical Sciences, 1990</p> <p>Doctor of Philosophy in Medicinal Chemistry, Tehran University of Medical Sciences, 1996</p>	<p>Critical Care residency (PGY2), Palmetto Heath Richland, 2012;</p> <p>General Practice residency (PGY1), Saint Barnabas Medical Center, 2002</p> <p>Clinical Instructor, University of South Carolina, South Carolina College of Pharmacy, 2015-present</p> <p>Critical Care & Cardiology Pharmacist, McLeod Regional Medical Center, 2012-2014;</p> <p>Staff Pharmacist, Tuomey Healthcare System, 2007-2011;</p>

				<p>Community Pharmacist, CVS and Wal-mart Pharmacy 2004-2007;</p> <p>Post-Doctoral Fellow, Medicinal Chemistry, University of Alberta, 1996-1997</p> <p>Organic Chemistry Instructor, Tehran University of Medical Sciences, 1990-1996</p>
Instructor	FT	<p>Compounding and Applied Pharmaceutics Laboratory, PHMY / SCCP 671, Fall, 1 credit hour</p> <p>Community Laboratory I, PHMY / SCCP 670, Spring, 1 credit hour</p> <p>Community Laboratory II, PHMY / SCCP 771, Fall, 1 credit hour</p> <p>Independent Study, PHMY / SCCP 757, Fall and Spring, 2 credit hours</p> <p>Academic Pharmacy, Advanced Practice Pharmacy Experience, PHMY / SCCP 983-987, Fall & Spring, 4 credit hours</p>	<p>Bachelors of Science in Pharmacy, University of South Carolina, 1986</p>	<p>Lab Course Coordinator/Instructor, Compounding and Applied Pharmaceutics Lab, Instructor, Community Lab, 2008-present;</p> <p>Community Pharmacist, 1986-present; Certified Pharmacist in Immunizations, aseptic compounding, diabetes, hypertension</p>

Note: Individuals should be listed with program supervisor positions listed first. Identify any new faculty with an asterisk next to their rank.

Total FTE needed to support the proposed program (i.e., the total FTE devoted just to the new program for all faculty, staff, and program administrators):

Faculty 45

Staff 21

Administration 12*

*These 12 Administrators were also included in the total number of 45 faculty members.

** Administrators include Program Directors in addition to 5 Academic Administrators.

Faculty /Administrative Personnel Changes

Provide a brief explanation of any additional institutional changes in faculty and/or administrative assignment that may result from implementing the proposed program. (1000 characters)

The USC College of Pharmacy has a sufficient number of faculty and staff to teach our Pharm.D. courses over the entire four years of the curriculum. During the past six years, the department of Drug Discovery and Biomedical Sciences has increased basic science tenure and tenure-track faculty count from 11 to 17. The department of Clinical Pharmacy and Outcomes Sciences currently consists of 25 tenure and non-tenure track faculty. Thus, while the overall teaching responsibilities and course loads for the faculty will increase, we have sufficient faculty and faculty expertise to cover the entire proposed curriculum. In addition, course loads and lecture hours will be distributed in a manner such that the faculty will have sufficient time for research/scholarship, practice, and service activities. One potential teaching area we would like to strengthen is Pathophysiology and we propose to work with our USC Medical School colleagues to identify existing faculty that could assist in this area.

Library and Learning Resources

Identify current library/learning collections, resources, and services necessary to support the proposed program and any additional library resources needed. (1000 characters)

Current library resources are adequate to support the College of Pharmacy program. Resources include: approximately 5800 books, 1650 electronic books, 285 subscriptions to pharmacy journals and databases (e.g. Micromedex, Web of Science, SciFinder, BIOSIS Citation Index, and International Pharmaceutical Abstracts), and access to approximately 2600 online pharmacy journals. Library resources available to all students include more than 32,000 books, e-books, and federal government documents supporting the Colleges of Nursing and Public Health. The library also shares access to many USC School of Medicine resources. Altogether, access includes 14,000 journal titles. The library operates an Interlibrary Loan program for materials not immediately available. South Carolina's academic library consortium PASCAL also operates a collection sharing program among its more than 50 SC academic libraries. Additionally, there are 11 Research, Instruction, and Reference Librarians, and one librarian is specifically assigned to the COP.

Student Support Services

Identify academic support services needed for the proposed program and any additional estimated costs associated with these services. (500 characters)

Students have access to USC offices/services: Academic Assistance covering study/writing skills & finances; Financial Aid Services; Leadership & Service Center; and Health/Wellness Services (Counseling & Psychological, Student Health, and two Wellness Centers). Pharmacy-specific supplemental instruction is offered by the College. The College of Pharmacy has an Assistant Dean for Student Services and administrative support to assist students with daily needs. No additional costs are associated with these services as we transition from the SCCP to USC Pharm.D. program.

Physical Resources

Identify any new instructional equipment needed for the proposed program. (500 characters)

No new equipment is needed for this proposed program as we will utilize the physical resources in place as we transition from the SCCP to the USC Pharm.D. program.

Will any extraordinary physical facilities be needed to support the proposed program?

Yes

No

CAAL

11/10/16

Agenda Item 2b

Identify the physical facilities needed to support the program and the institution's plan for meeting the requirements, including new facilities or modifications to existing facilities. (1000 characters)

The physical facilities provided to the USC College of Pharmacy are housed in the Coker Life Sciences building on the USC campus in Columbia. This facility was built in 1976 and has had some partial renovations over the years. The facility has 7 floors, each about 10,000 square feet, for a total of about 70,000 square feet. Highlights of the teaching facilities include two major instructional classrooms, CLS 211 and CLS 215, each seating 100+ students in a table and chair configuration, with computer access for students at each desk, and complete teaching technology; both classrooms have been renovated during the last several years. There are also several small classrooms for small group activities and a student lounge/study area. In addition, there are four separate laboratory instructional facilities, for compounding, community practice, hospital practice, and clinical assessment; the hospital practice laboratory has been completely renovated to become a functional sterile compounding lab for student instruction.

Financial Support

Estimated New Costs by Year						
Category	1st	2nd	3rd	4th	5th	Total
Program Administration (1)	\$208,420	\$416,840	\$625,260	\$833,680	\$833,680	\$2,917,880
Faculty and Staff Salaries (2)	\$2,600,780	\$5,506,060	\$8,356,240	\$11,185,490	\$11,185,490	\$38,834,060
Graduate Assistants	0	0	0	0	0	0
Equipment (3)	\$42,000	0	0	0	\$48,000	\$90,000
Facilities	0	0	0	0	0	0
Supplies and Materials (4)	\$13,000	\$26,000	\$39,000	\$39,000	\$39,000	\$156,000
Library Resources	0	0	0	0	0	0
Other* (5)	\$153,600	\$153,600	\$153,600	\$153,600	\$153,600	\$768,000
Total	\$3,017,800	\$6,102,500	\$9,174,100	\$12,211,770	\$12,259,770	\$42,765,940
Sources of Financing						
Category	1st	2nd	3rd	4th	5th	Total
Tuition Funding (6)	\$3,089,785	\$6,179,570	\$9,269,355	\$12,359,140	\$12,359,140	\$43,256,990
Program-Specific Fees						
State Funding (i.e., Special State Appropriation)*						
Reallocation of Existing Funds*						
Federal Funding*						
Other Funding*						
Total	\$3,089,785	\$6,179,570	\$9,269,355	\$12,359,140	\$12,359,140	\$43,256,990
Net Total (i.e., Sources of Financing Minus Estimated New Costs)	\$71,985	\$77,070	\$95,255	\$147,370	\$99,370	\$491,050

*Provide an explanation for these costs and sources of financing in the budget justification

Budget Justification

Provide a brief explanation for the other new costs and any special sources of financing (state funding, reallocation of existing funds, federal funding, or other funding) identified in the Financial Support table. (1000 characters)

Note: Institutions need to complete this budget justification *only* if any other new costs, state funding, reallocation of existing funds, federal funding, or other funding are included in the Financial Support table.

(1) Program administration includes salary support for Dean, one Associate Dean, and one Assistant Dean. The amount of administrator time allotted to the USC Pharm.D. program will escalate each year until year four when the entire program is the USC Pharm.D. program.

(2) This includes faculty and staff salary and fringes. The amount of faculty and staff time allotted to the USC Pharm.D. program will escalate each year until year four when the entire program is the USC Pharm.D. program.

(3) This includes updating computers for our community and hospital labs (Thin Clients) and server upgrade. It is recommended that we update them every 3 – 5 years.

(4) This includes lab supplies for our community, hospital, and assessment labs. Year one includes only our community labs. Year two includes our hospital and community labs, and year three includes our assessment lab and last community lab. There are no practice labs in the fourth year.

(5) The other cost is for our students to be certified by the American Pharmacy Association in Diabetes Management and Immunizations. These certifications are critical for our graduates' employment. Additionally, this section includes experiential preceptor costs and malpractice insurance. This section also includes fees and dues to the American Association of Colleges of Pharmacy (AACCP) and Accreditation Council for Pharmacy Education (ACPE).

(6) The tuition figures are based on the following approximations:

Resident – 79 @ \$25,347 = \$2,002,413
Non-Resident Scholarship – 26 @ \$32,122 = \$835,172
Non-Resident – 5 @ \$37,862 = \$189,310
Total = \$3,026,895

Average summer tuition from students taking remedial courses to remove academic deficiencies = \$62,890

Total tuition = \$3,089,785

This number is added each academic year as a cohort of 110 is admitted every year. The tuition funding of the Pharm.D. program will escalate as we matriculate more students into the program in years 2 – 4. The full complement of students will be in year 4 (440 students or 110 students per year).

(7) Tuition funding was calculated as follows. Pharmacy admits 110 new students every year, for a total of 440 students in the Doctor of Pharmacy program, during the four year curriculum cycle of P1, P2, P3, and P4 students. The tuition calculation was determined per the following breakdown of our current tuition charges for the four year program, with slight variances by year, based on each student's resident status, and the majority of students being the Resident tuition status:

		Semester
Resident	Fall	\$ 11,033

(Professional years 1, 2, & 3)	Spring	\$ 11,033
	Summer	\$ 3,281
Total Tuition 2016-2017		\$ 25,347

Resident	Fall	\$ 11,123
(Professional year 4)	Spring	\$ 11,123
Total Tuition 2016-2017		\$ 22,246

Nonresident	Fall	\$ 16,448
(Professional years 1, 2, & 3)	Spring	\$ 16,448
	Summer	\$ 4,966
Total Tuition 2016-2017		\$ 37,862

Nonresident	Fall	\$ 16,586
(Professional year 4)	Spring	\$ 16,586
Total Tuition 2016-2017		\$ 33,172

Nonresident Scholarship	Fall	\$ 14,033
(Professional years 1, 2, & 3)	Spring	\$ 14,033
	Summer	\$ 4,056
Total Tuition 2016-2017		\$ 32,122

Nonresident Scholarship	Fall	\$ 14,132
(Professional year 4)	Spring	\$ 14,132
Total Tuition 2016-2017		\$ 28,264

Evaluation and Assessment

Programmatic Assessment: Provide an outline of how the proposed program will be evaluated, including any plans to track employment. Identify assessment tools or software used in the evaluation. Explain how assessment data will be used. (3000 characters)

The USC COP assessment plan will address the areas of education, research, and service, using the College’s mission statement and key performance indicators to ensure that the College is moving towards its goals and fulfilling its mission. Blackboard, E-Value, and/or Class Climate may be used in various parts of the assessment process. Additionally, a variety of methods and data sources are utilized to assess student attainment of curricular competencies, including the AACP survey data from faculty, students, alumni and preceptors, student satisfaction surveys, performance based assessments such as OSCEs, IPPE and APPE evaluations, and NAPLEX and MPJE first-time pass rates. Student focus groups are conducted each year in order to gather real life feedback for program assessment. Assessment will be continuous, systematic, and evidence-based; assessment data will be provided to faculty in a yearly report.

While the rate of unemployment among pharmacists is exceedingly low (less than 2%), we will track the employment of our graduates through 6 months post-graduation. The Assistant Dean for Student Services will work closely with college Student Services support staff to track graduates up to 6 months post-graduation. We will also utilize the South Carolina License look-up website for information as it lists current pharmacist employment within the state of South Carolina.

Outcome	Metric	Target
The program performs well on indices of quality	Percentage of students who complete the program and graduate in 6 years or less.	100%
	Percentage of students who complete the program and graduate in 4 years or less.	95%
	First-time pass rate on MJPE (law) exam.	95%
	First-time pass rate on NAPLEX exam.	≥ Natl rate
	Percentage of graduating students who agree/strongly agree they are satisfied with the program.	95%
	Percentage of residency applicants who are successful in obtaining a residency.	≥ Natl rate
Graduates will have essential foundational knowledge and essential skills for practice and care	Total scaled mean score of the NAPLEX.	≥ Natl rate
	Scaled mean score of the NAPLEX area 1.	≥ Natl rate
	Scaled mean score of the NAPLEX area 2.	≥ Natl rate
	First time pass rate on OSCE during the 3 rd professional year.	100%
	Rate of agree/strongly agree to “The learning experience with other professional students helped me gain a better understanding of how to be part of a multi-disciplinary team to improve patient outcomes.”	95%
Students will learn skills essential for personal and professional development	Percentage of students involved in USC student organizations.	50%
	Rate of agree/strongly agree to “My pharmacy practice experiences allowed me to have direct interaction with diverse	95%

	patient populations.”	
	Rate of agree/strongly agree to “Examine and reflect on how my behavior and choices affect my personal and professional growth.”	95%

Will the proposed program seek program-specific accreditation?

Yes

No

If yes, provide the institution's plans to seek accreditation, including the expected timeline for accreditation. (500 characters)

The Accreditation Council for Pharmacy Education (ACPE) has approved the USC College of Pharmacy to offer the Pharm.D. beginning in August of 2016. We will undergo an accreditation visit by ACPE in the spring semester of 2017.

Will the proposed program lead to licensure or certification?

Yes

No

If yes, explain how the program will prepare students for licensure or certification. (500 characters)

Our Pharm.D. curriculum meets the standards outlined in the ACPE Standards 2007 and will be reviewed in the Spring of 2017 to ensure it meets the new ACPE Standards. We are utilizing the same curriculum for the USC Pharm.D. that we used for the SCCP Pharm.D., and our pass rates for the NAPLEX and MJPE exams were > 93% for the past five years. At completion of our program, we offer, at no-charge to the students, a review course for the NAPLEX and MJPE exams.

Teacher or School Professional Preparation Programs

Is the proposed program a teacher or school professional preparation program?

Yes

No

If yes, complete the following components.

Area of Certification

Please attach a document addressing the South Carolina Department of Education Requirements and SPA or Other National Specialized and/or Professional Association Standards.