

Program Summary: *(Briefly describe the proposed program)*

1. Briefly summarize the overall rationale for the new academic program. Include a consideration of any ways in which the proposed program is distinct from others already offered in the SUS (use the 4-digit CIP as a guide). Discuss how this program supports specific university and SUS missions. Consider collaborative opportunities with other SUS institutions as appropriate. (maximum length 250 words)

Program Summary. The proposed Doctor of Philosophy (PhD) program in the College of Pharmacy (COP) aims to educate the next generation of PhDs in fundamental aspects of pharmacy through didactic online/in-class courses and directed cutting-edge research in three thrust areas:-translational nanomedicine, industrial pharmacy, as well as basic and clinical pharmacogenomics. These thrusts are in keeping with the recent advances in cell-, genomic-, and nano-technologies, which are expected to revolutionize health care in the 21st century – enabling us to gain new insights into diagnostics as well as therapy, and contributing to the development of new generations of pharmaceutical products and services.

Currently, the University of Florida (UF) and Florida A & M University (FAMU), offer PhD in Pharmaceutical Sciences, but with very different research foci. Thus, the proposed program is expected to have very limited overlap with these programs within the SUS inventory, and will, in fact, expand the spectrum of research being done into new areas within Florida.

Also, the proposed PhD program supports the USF and SUS strategic plans by increasing the scholarly activity and productivity by adding faculty and students, augmenting collaborative interdisciplinary research among SUS institutions, and facilitating increased community engagement by collaboration with local biotech and pharmaceutical industries.

In sum, the proposed innovative PhD program, which is highly-focused on the newest research fields in Pharmacy and is delivered using hybrid platform, aims to close the gap of skilled professionals within these exciting areas in the Tampa Bay area, the State of Florida, and nationally.

Student Demand: *(Describe the demand in the SUS for the proposed program)*

2. Briefly describe the demand for the proposed program and consider the following in your narrative:
 - Recognizing that programs at different levels may require different degrees of justification (e.g., greater duplication may be warranted at undergraduate and master's levels), indicate why duplicative programs should be warranted.
 - Consider the numbers of graduates and students enrolled at similar programs currently offered online or face-to face.
 - Consider as applicable: place-bound learners, underserved populations in the field/profession, and professional credentials requirements. (maximum length 250 words)

Resources: <http://www.expertnet.org/index.cfm?fuseaction=programs.home>

Currently, there are no formal specializations in the thrust areas for this proposed PhD program in the SUS inventory.

Both UF and FAMU, which presently offer PhD programs using face to-face format in pharmaceutical sciences, have continued to increase their PhD student enrollment since being established. The UF College of Pharmacy, which has currently 91 PhD students, received 231 completed applications in 2012-13, of which only 31 (or 13.4%) of the applicants were accepted for FY 13/14. At the FAMU, of a total of 30 -40 research doctorate applications received, an average of ~4-6 students are accepted annually (last three years). Also, at the USF the Biomedical Sciences PhD program at College of Medicine, which has specializations that differ from the proposed program, receives about 150 applications, of which it admits only 15-20 students annually. These data indicate that pharmacy PhD applicant acceptance rate in the State of Florida, is in the range of 10-20% highly suggesting the high student demand for the proposed program. Also, the other two PhD programs in Pharmacy are located in the north and central regions proposed PhD program in Pharmacy anticipates that the student demand for its program will be great, since no program of this kind exists within the southern region of the state including the major metropolitan region such as the Tampa Bay.

Finally, given the national and global importance of the nanomedicine and pharmacogenomics specializations in shaping the future of health care, and increasing high-end workforce needs nationally and globally, it is anticipated that the student demand for this PhD program will be very high.

Workforce and Economic Development Needs: *(Describe how the proposed program meets workforce and economic development needs)*

3. Briefly describe how the proposed program meets workforce and economic development needs and consider the following in your narrative:
- Impact of this program (local, state, national, international)
 - Impact of research funding
 - Changing professional credential requirements (maximum length 250 words)

Resources: <http://www.bls.gov/ooh/>
<http://www.fldoe.org/fetpip/sus.asp>

USF designs its graduate programs to specifically address critical needs of the State, boost economic development, while developing cutting-edge research and technologies to meet the highest national and international standards. In following this precedence, the COP PhD program is designed to educate and train scientists to use their knowledge, problem solving and critical thinking skills to determine the best solutions to the health-care problems of today and the future. The dynamic changes that are occurring in the health systems of America will continue to demand research pharmacy PhDs trained in cutting-edge technologies.

The national demand for Pharmacy PhD programs arises from estimated need for ~1,200 new faculty members during the next decade (AACCP). Also, employment of PhD pharmacists with nanomedicine-related skills is projected to grow by 41,400 (an increase of 14%) during 2012-2022 according to data supplied by the US Bureau of Labor Statistics. Further, increased demand for prescription medications and personalization of treatments will lead to more demand for pharmaceutical services, institutions and more PhD Pharmacy scientists. The new thrusts contained within this proposed PhD program will address the needs and future health care demands of Florida.

Additionally, new faculty students will enhance research funding to the USF and State from Federal sources such as NIH and NSF, while significantly improving the quality of overall Pharmacy education. Further, the creation of the translational/clinical research doctorate program will increase the credentialing of Florida PharmD graduates and their contribution to pharmaceutical industries in the State.

Institution Approval

USF Health assumes responsibility for funding this program if approved.

Institution Officials	Signature	Date
Dr. Shyam S. Mohapatra Associate Dean of COP Graduate Programs		9/22/14
Dr. Kevin Sneed Senior Associate VP and Dean, COP		9/22/14
Dr. Charles Lockwood Senior VP and Provost USF Health		9/23/14
Dr. Ralph Wilcox Provost, USF		

USF Pre-proposal Supplemental Application Form (for internal USF use only)

PROGRAM PROPOSAL INFORMATION	TYPE/PRINT CLEARLY
College/ Division	Pharmacy/Graduate Programs
Department	Graduate Programs
Are any other academic programs at USF offered under this CIP code? If yes, list them:	No
Target date for submission to USFBOT (Must be either May or October meeting)	August, 2014

4. How does this program support the institutional, USF System, and SUS Strategic Plans?

Support the institutional, USF System, and SUS Strategic Plans.

The proposed program will support the College of Pharmacy, as well as USF's and the SUS's strategic plan in several ways. First, it would increase the scholarly activity and productivity in the COP and USF by additional faculty and PhD students conducting high-quality research. Second, we aim to create a globally competitive PhD program with the potential for developing and promoting interdisciplinary activities. Third, it would expand community engagement by working with both local biotech and pharmaceutical industries through internship activities, collaborations and other community activities. Finally, it would enhance the program's ability to generate income through the production of graduate programs, graduate credit hours and the continuation of initiatives, such as sponsored credit Institutes.

In tune with the mission of USF positioning itself as global research institution (strategic plan) and this can only be done by aggressively targeting the pool of students who see the value of a specifically tailored learning platform as the norm for the future. Having students receive education in this field will significantly advance faculty research programs and enhance their success in extramural research funding. Additionally, since some of the thrust areas of the proposed program endow the uniqueness to the program in the State of Florida, this fits well with the SUS strategic plan that envisages new programs by fostering and promoting workforce and economic development in the State of Florida.

5. Does this program offer collaborative and/or interdisciplinary opportunities at other institutions in the USF and SUS systems? If so, what efforts have been made to initiate collaboration?

The proposed PhD program in College of Pharmacy is collaborative by definition. At this time, potential collaborative and/or interdisciplinary opportunities are being explored both within USF and also with other universities. For instance, COP is establishing a MS in Biomedical Engineering with a concentration in Pharmacy.. Within USF Health, COP will establish collaborations with College of Medicine, Public Health, Nursing and the School of Physical Therapy for the delivery of courses. Also within the USF, potential collaborations exist with the College of Engineering (electrical, mechanical and chemical) and College of Arts and Sciences (physics, chemistry and biology).

6. Provide information on the available resources and capacity for your program. In your response, include faculty availability and student support resources including the library. How will department/college resources be shifted to support the program?

Currently the College has two academic departments: Pharmaceutical Sciences and the Department of Pharmacotherapy and Clinical Research. In addition, the College has established alliances and affiliations with many research Centers and institutes at the USF. Currently, within the COP, there are a total of 40 faculty, of which a third have a PhD, making them suitable mentors for PhD students. In addition, COP has in its strategic plan to hire four additional faculty during 2014-15, who would have extramural funding, devote part of their efforts to research and will mentor PhD students. The COP plans to recruit additional faculty in the area of nanomedicine, pharmacogenomics and industrial pharmacy. COP has also established joint faculty appointments with the College of Medicine (Departments of Molecular Medicine, Molecular Pharmacology and Physiology, Internal Medicine Faculty and USF Nanomedicine Research Center) and is in the process of establishing a joint educational program with the Department of Biomedical Engineering, College of Engineering at the USF. For Industrial Pharmacy the COP, is establishing partnerships with local industries, such as (what industries), to develop this program

Regarding infrastructure support for the on-line programming, we will be exploring collaborations with the USF Health Colleges, a number of which have established successful on-line programs and College of Public Health has established itself as a leader in distance education. The USF Libraries, including Shimberg Health Sciences library, provide special assistance to distance learners (both on-line and off-campus students). USF Libraries subscribes to numerous online databases, e-journals, and e-books. In addition there are numerous online tools that will be available to all students enrolled in this PhD program.

7. Please list the Student Learning Outcomes for the program (undergraduate programs must comply with BOG Regulation 8.016 "Academic Learning Compacts").

The Student Learning outcomes of the proposed program are:

- 1) To learn principles of nanomedicine and conduct state-of-the-art translational nanomedicine research for diagnosis and therapy of diseases using nano-scale technologies and platforms.
- 2) To learn the basis of modern genomics, epigenomics and pharmacogenomics, and research their application to produce better health care and personalized medicine results.
- 3) To learn the basis of industrial pharmaceutical technologies and investigate their application for health care including improved diagnostics and pharmaceuticals.