



October 29, 2007

ANDREW A. SORENSEN
PRESIDENT

Dr. Garrison Walters
Executive Director
South Carolina Commission on Higher Education
1333 Main Street, Suite 200
Columbia, South Carolina 29201

Dear Dr. Walters:

Accompanying this letter please find a new program planning summary for M.S. (Thesis) and M.S. (Nonthesis) degrees with a major in Forensic Medicinal Chemistry, South Carolina College of Pharmacy at USC Columbia.

Sincerely,

A handwritten signature in black ink that reads 'Andrew A. Sorensen'.


Andrew A. Sorensen

AAS:nid
Enclosure

Program Planning Summary

University of South Carolina
South Carolina College of Pharmacy

General Program in
Forensic Medicinal Chemistry
M.S. - Thesis
M.S. - Nonthesis

A handwritten signature in black ink, reading "Andrew A. Sorensen". The signature is written in a cursive style with a horizontal line underneath the name.

Andrew A. Sorensen, President

Classification

Degree: Master of Science

Major: Forensic Medicinal Chemistry

Options: Thesis and Non-thesis Options

Unit offering program: College of Pharmacy

Delivery Mode: Classroom; Distance education options will be explored within 1-2 years after program implementation.

Implementation: Fall 2009

CIP Code: 51.2099

The proposed MS degree will include a unique mixture of medicinal chemistry and analytical chemistry courses not available in other currently available programs. The core courses taught in the College of Pharmacy will provide basic information related to biological systems, drug/poison kinetics, mechanism of action, adsorption, metabolism, elimination, and structure activity relationships. Shortly after admission to the program, students will create a written plan of study which includes the additional chemistry courses necessary for success as a forensic toxicologist or forensic medicinal chemist. It would be primarily comprised of a combination of analytical and medicinal chemistry that we believe to be unique but vitally needed in the United States. This program will be particularly well suited to those individuals currently employed in or interested in pursuing future careers in forensic toxicology, forensic drug identification, Medical Examiner's offices, as criminal defense or prosecution attorneys, hospital and clinical chemistry laboratories, the pharmaceutical industry, or as high school teachers. In addition, the proposed program is ideally suited for those students interested in pursuing a doctoral area in pharmacy and related sciences. Both a thesis and a non-thesis track are proposed herein in order to best accommodate recent biology, chemistry and forensic sciences undergraduates as well as personnel currently employed in state and local forensic laboratories in South Carolina. Initially the proposed program will be offered using traditional classroom delivery methods. However, we anticipate the program will be offered using video conferencing beginning in 2010/2011. Based on proposed degree requirements for non-thesis track students entering the program with a prior course in analytical chemistry, 100% of the program will eventually be available via distance education technology. The same will be true for entering thesis track students with the exception of their graduate research program.

Justification

In 2005 report entitled Census of Publicly Funded Forensic Crime Laboratories, 2002 was published by the Bureau of Justice Statistics, U.S. Department of Justice. In this report the authors attempted to examine the need for additional forensic scientists as a function of increased case load, increased case backlog and a desire to reduce turnaround time to 30 days. The consensus of the authors and those surveyed was that an additional 1,900 full-time forensic examiners were needed to reduce turnaround time to 30 days based on case submission at 2002 levels. In "*Strategy for Staffing Forensic Scientists*" (Journal of Forensic Sciences, March 2003, Vol.48 No. 2 page 1-2) authors W. Mark Dale and Wendy Becker discussed staffing strategies for public laboratories and suggested the need for an additional 10,000 new forensic scientists over the next decade to address the expanding case backlog.

Over the last two years the SLED Toxicology Department has hired seven new analysts while Drug Chemistry has hired four new analysts and expects to hire four additional analysts in 2007. In addition to the SLED laboratory, forensic laboratories have opened in Aiken, Anderson, Beaufort, Charleston, Greenville, Horry, Lexington, Orangeburg, Richland, Spartanburg, and Sumter counties and in the City of Columbia. Filling vacancies is increasing challenging as additional laboratories compete for qualified applicants.

The appearance of popular TV shows, including CSI and its spin-offs has created a new wave of interest in careers in forensic science – popularly referred to as the "CSI effect". In addition, for

well over a decade, Congress has supported forensic science in the form of funding for new laboratories, equipment purchases, personnel, training, and new technology. The recognition of the need for such federal funding by congressional legislators from Maryland and Alabama is reflected in their request for \$40 million for the Coverdale Act and an additional \$151 million for forensic DNA testing in the Senate Commerce, Justice, and Science appropriations bill. With increased funding for forensic science laboratories comes the need for additional personnel possessing appropriate education and training. Earl Wells (2005 ASCLAD President) stated that forensic laboratories often look for employees with a degree in chemistry and find that many “do not have a strong enough science background.” The lack of competent applicants to fill new and existing positions means forensic laboratories must spend significant time and resources training new personnel.

Anticipated Program Demand

PROJECTED ENROLLMENT

YEAR	FALL		SPRING		SUMMER	
	Headcount	Credit Hours	Headcount	Credit Hours	Headcount	Credit Hours
2009-2010	5	20 ¹	5	20 ¹	5	5 ⁵
2010-2011	10	46 ²	10	46 ²	10	10 ⁵
2011-2012	15	76 ³	15	76 ³	15	15 ⁵
2012-2013	20	106 ⁴	20	106 ⁴	20	20 ⁵
2013-2014	20	106 ⁴	20	106 ⁴	20	20 ⁵

¹ Assumes 5 part time students

² Assumes 7 part time students (4 hours) and 3 full time students (6 hours minimum)

³ Assumes 7 part time students (4 hours) and 8 full time students (6 hours minimum)

⁴ Assumes 7 part time students (4 hours) and 13 full time students (6 hours minimum)

⁵ Assumes all students will register for a minimum of 1 hour of graduate study/thesis preparation during summer semester.

The program will be initiated with a small number of students, but is expected to grow to approximately 20-25 students per year. We expect that students currently employed by SLED and other similar agencies will initially enroll in the program. In addition, the proposed program may be of future interest to graduates of chemistry programs and undergraduate forensic science programs currently in development around the state (Clemson and USC). Additional applicants will come to the maturing program from SLED and from analysts currently employed at regional crime laboratories. Newberry College currently offers a Bachelors Degree in Chemistry with an emphasis in Forensic Science. Two students graduated from this program in May 2007. The USC Chemistry department is currently working on a proposal to offer a bachelors degree in chemistry with an emphasis in forensic science. Graduates of the USC's criminology and criminal justice baccalaureate program may also be interested in the proposed graduate program,

Program Duplication

No other related graduate program currently exists within the University of South Carolina or other institutions within South Carolina. Among the very few similarly constructed graduate degree programs available nationwide that lead to a Master of Science in Forensic Toxicology or Forensic Drug Chemistry is the program at the University of Florida that serves approximately 200 students but only through a distance education format. In addition, a Master of Science in Toxicology is also available through Oklahoma State University.

Intra-Institutional Collaboration

The proposed program represents a collaborative effort between two units of the University and the Toxicology Division of SLED. Currently, the College of Pharmacy and the Department of Chemistry and Biochemistry have outstanding programs in their respective areas. This program will attempt to combine aspects from each department and further promote an area of

cooperation between these departments. In addition, the proposed program provides opportunity for collaborative activity with faculty from the Department of Criminology and Criminal Justice. The University has begun to explore possible sources of students and develop cooperative agreements with Newberry College and Clemson University. Collaboration with the SC Law Enforcement Division will provide the program unparalleled opportunities to interact with practicing forensic scientists, expose students to cutting edge equipment for education and research, and provide ideas and support for research projects. Recently installed teleconferencing equipment at MUSC in Charleston and USC (Greenville) will allow analysts in municipal and county laboratories to participate in this program through distance learning.

New Costs

The program administration will be overseen by the USC College of Pharmacy graduate director. Because most of the courses necessary for the proposed program are already in place, only modest additional expenditures will be required. We anticipate these additional programmatic expenses to be approximately \$15,000 annually and to include the use of a small number of adjunct faculty in selected areas of expertise as well as marketing and promotion costs.