BACKGROUND AND RECOMMENDATION

CLEVELAND STATE UNIVERSITY
Bachelor of Science in Pharmaceutical Science (BSPS)

RECOMMENDATION
This program meets the Chancellor's minimum standards for baccalaureate degrees. There were no concerns identified in the review. Approval is recommended.

Request: Cleveland State University (CSU) requests approval for a Bachelor of Science in Pharmaceutical Science (BSPS) with tracks in (1) pharmaceutical chemistry and analysis, (2) medicinal and biological chemistry, and (3) pharmacy administration.

Program Purpose: The proposed Bachelor of Science in Pharmaceutical Science will provide students with an undergraduate degree option designed as preparation for employment in the pharmaceutical and biotechnology industries or for entrance to professional and graduate programs (e.g., pharmacy, medical, chemistry or biology graduate programs, health sciences administration).

CSU has assessed the local and regional workforce need to support the degree program. The U.S. Department of Labor reports that pharmaceutical and medical manufacturing ranks among the fastest growing industries nationally, and regional data support the growth potential for these industries in northeastern Ohio. The proposed Bachelor of Science in Pharmaceutical Science is supported by local industry and has the added advantage of CSU's joint research opportunities for students with the Cleveland Clinic Foundation.

Background: The Bachelor of Science in Pharmaceutical Science will be administered by the Department of Chemistry. CSU currently has an undergraduate degree in chemistry, a pre-pharmacy program that articulates directly with the Northeastern Ohio Universities College of Medicine and Pharmacy (NEOUCOM) Doctor of Pharmacy (Pharm.D.) program, and graduate programs in chemistry and related sciences.

A limited number of qualified CSU students (15) from the existing pre-pharmacy program are given preference each year for admission to the Doctor of Pharmacy (Pharm.D.) program at NEOUCOM. These students enter the NEOCUM program directly, without completing a bachelor's degree. A similar relationship with NEOUCOM exists for students from the University of Akron, Kent State University and Youngstown State University. Preparation at the graduate/professional level is required for licensure as a pharmacist.

The rationale for proposing a bachelor of science program is two-fold. First, admission to pharmacy professional programs, such as NEOUCOM's, is very competitive. Many more qualified students complete pre-pharmacy requirements than are admitted to accelerated programs. Moreover, a national trend in pharmacy professional education is to require that students complete bachelor's degree programs before entering graduate pharmacy programs. For instance, both Ohio State and the University of Toledo require the completion of a

bachelor's degree and pre-pharmacy requirements prior to admission to their pharmacy professional programs. Second, the Bachelor of Pharmaceutical Sciences degree program will provide broader opportunities for students. Graduates will not only be prepared to enter professional pharmacy programs—they will also have the opportunity to complete a degree specifically designed for the growing regional and state need for scientists with expertise in pharmaceutical, medicinal, and biological chemistries, as well as in chemical analysis and administration.

Enrollments: Currently, CSU's Department of Chemistry has more than 50 undergraduate chemistry students, 25 master's students and 55-60 full-time doctoral students. In addition, approximately 80 students are enrolled in the pre-pharmacy program with significant coursework in chemistry as well as other science disciplines. These students come from various departments. Cleveland State anticipates that the B.S. in Pharmaceutical Science will be a very attractive option for many pre-pharmacy and chemistry students who have a specific interest in pursuing employment in the field. CSU expects an initial enrollment of 12 new students in the program, with growth to a steady state of 30 new students per year in the degree program.

Curriculum: In the initial years of the program, the curriculum focuses on a strong base in science (chemistry, biology) and laboratory instruction. The first two years are identical to the required curriculum for entry into accelerated Doctor of Pharmacy programs. Students pursue one of the three pharmaceutical science tracks beginning in the third-year of the program. The first track, Pharmaceutical Chemistry and Analysis (131 total credits), focuses on chemical analysis and provides training in both quantitative analysis and instrumental analysis. The second track, Medicinal and Biological Chemistry (129 total credits), focuses on biological processes and biochemical analysis and provides training in analytical chemistry, genetics, and analytical toxicology;. The third track, Pharmacy Administration, focuses on business methodology and administration and provides training in accounting and macroeconomics (128 total credits). Students in each track take either a practicum or senior research course in the final semester.

Resource/Faculty Needs: The proposed program has strong institutional support. Six faculty members in the Department of Chemistry and the Department of Biological, Geological and Environmental Sciences at CSU will be primarily contributing to the program, including one new tenure-track faculty member specializing in medicinal chemistry. One additional tenure-track faculty with the credentials to support the proposed degree program will be hired in 2009. The institution has sufficient resources to support the program's needs.

End of Comment Period: August 27, 2009
No Comments Received, Recommend Approval

Approved	
Eric D. Fingerhut, Chancellor	9/8/09 Date

mlc