APPENDIX L

Request for Authorization to Establish a Professional Science Master's Degree in Bioinformatics at UNC-Charlotte

Introduction

UNC-Charlotte informed UNC-GA of its intent to plan a Professional Science Master's Degree in Bioinformatics (CIP 26.1103) in September 2006. UNCC requests authorization to establish the degree effective August 2007.

Program Description

Bioinformatics is the use of computer science, mathematics, and information theory to model and analyze biological systems, especially systems involving genetic material. The Professional Science Master's (PSM) degree in Bioinformatics is an interdisciplinary program at the intersection of the disciplines of Biology, Chemistry, Mathematics and Statistics, Computing and Informatics, Physics, and Engineering. The degree includes additional training and demonstrated competence in both life sciences and scientific programming. It is structured to provide students with the skills and knowledge to develop, evaluate, and deploy bioinformatics and computational biology applications. The program is designed to prepare students for employment in the biotechnology sector, where the need for scientists with quantitative and computational skills has exploded in the past decade. The program will also provide an excellent foundation for advanced graduate study in the life sciences, biotechnology, and medicine. Students will have strong programming, numerical and statistical analysis skills, and an substantive understanding of cellular and molecular biology, genomics, evolution and individual variation. Planning for the PSM was supported by the Sloan Foundation.

Program Need

Bioinformatics has wide applicability to medicine, pharmaceuticals, and agriculture. UNC-Charlotte is uniquely positioned to contribute to all these areas. UNCC is located near three major medical centers with which it has collaborative programs, and it will provide bioinformatics expertise to the North Carolina Research Campus (NCRC) in nearby Kannapolis, which will house over 100 biotechnology companies and laboratories working in a variety of fields. These facilities will provide outstanding opportunities for internships, master's projects, and employment for students in the proposed program. A student survey indicated a strong demand for this program.

Resources

UNCC has established a Bioinformatics Research Center, which will occupy the $35 million Bioinformatics facility when it opens in 2009. The campus has hired five Bioinformatics faculty and is committed to hiring more as the program grows. Additional State funds supporting the NCRC will also benefit the program's educational activities.

Recommendation

It is recommended that the Board of Governors approve the UNCC request to establish a Professional Science Master's Degree in Bioinformatics (CIP 26.1103) effective August 2007.