Request for Authorization to Establish a
Master of Supply Chain Engineering and Management program at North Carolina State University

North Carolina State University requests authorization to establish a Master of Supply Chain Engineering and Management degree program (CIP 52.0203).

Program Description
The Master of Supply Chain Engineering and Management program will prepare graduates with a working knowledge of relevant engineering principles and tools as well as business principles and perspectives of supply chain management. The 33-hour program will begin with a "boot camp" before the start of the fall semester comprised of three one-credit courses in managerial effectiveness, accounting, and computing tools. Students would then take fifteen hours each in the fall and spring semesters. Courses include supply chain relationships, business process management, planning and control systems, logistics management, finance, supply chain modeling, operations research, statistics, and a practicum. The program is a joint offering between the College of Management and College of Engineering. The program fills a niche not sufficiently addressed by existing degree programs in either College and utilizes existing courses and resources of both.

Mission Relevance
The Master of Supply Chain Engineering and Management program aligns with the mission of North Carolina State University to support an innovative learning environment and enhance historic strengths in science and engineering. The program aligns with several goals of the Strategic Plan, including to enhance the success of students through educational innovation (Goal 1) and to enhance interdisciplinary scholarship (Goal 3). There are currently no supply chain degrees jointly offered by colleges of engineering and management in the U.S.

Student Demand
The program will target students who have an undergraduate degree in engineering (or related discipline that requires a strong mathematics background) and receives regular inquiries about such a program from students completing their baccalaureate degrees. The proposed program will draw an applicant pool distinctive from traditional MBA programs or industrial engineering programs. The target audience for MBAs will have considerably more work experience, and those interested in a master's program in industrial engineering seek to develop more in-depth analytical skills that can be used in applications beyond supply chain.

Student demand is strong for existing courses and curricula at North Carolina State University related to supply chain engineering and management. Supply chain and logistics courses in both the College of Management and College of Engineering are oversubscribed. For example, the College of Management received a request from Industrial and Systems Engineering for 67 seats in four Spring 2013 classes that collectively have only 28 seats open.

Societal Demand and Opportunities for Program Graduates
Logistics alone account for more than 9.5% of the U.S. Gross Domestic Product with over $1.3 trillion in spending on transportation, inventory, and related logistics activities. The Bureau of Labor Statistics projects a 25.5% increase in logisticians during the period 2010-2020. Members of North Carolina State University's Supply Chain Resource Co-operative were surveyed about the proposed program; 90% of the respondents representing 89% of the companies were supportive of the program and would have career prospects at their companies.

Resource Implications
North Carolina State University projects that two additional faculty are needed to launch the program, one each in the Colleges of Engineering and Management. Faculty positions will be resourced through a combination of enrollment growth funding and differential tuition. A differential tuition amount is requested at the same amount currently in place for MBA students, which is $10,625 per year per in-state student and $11,110 per year per out-of-state student.

Should enrollment growth funding be unavailable, the Office of the Provost has committed to provide the necessary support through internal reallocations. Additionally, one new EPA and one new SPA staff are needed to assist with program management, career services, and student recruiting; these positions will be supported through use of differential tuition.

Existing library, facilities, and information technology resources are adequate for the launch of the program.

Collaborative Opportunities
Three University of North Carolina institutions offer post-baccalaureate certificates in supply chain management and/or logistics. Collaborative opportunities are discussed further in the next section.

Outcome of Consultation with Disciplinary Experts
The proposal was reviewed by sixteen faculty and graduate program administrators from seven UNC campuses. Reviewers consistently noted the strong fit with North Carolina State University's mission and the excellent prospects for the program to develop into a Professional Science Masters (PSM) program. Several reviewers encouraged North Carolina State University to explore additional collaborative opportunities, to the extent possible, since the program is delivered face-to-face to full-time on campus students. Program leaders noted they would welcome possibilities for collaboration should the program move to online delivery in the future. UNC Graduate Council reviewers also noted that the employability and competitiveness of graduates with this new type of degree, as opposed to an MBA for example, is unknown. In addition to the aforementioned U.S. Bureau of Labor Statistics projections, North Carolina State University also cited a 2010 white paper from MIT's Center for Transportation Logistics and a 2012 study in Supply Chain Insights, both of which project shortages in supply chain talent, particularly at middle management and entry levels. Finally, UNC Graduate Council reviewers asked North Carolina State University to clarify plans regarding student support. Because students in the program will engage in coursework full-time, no assistantships are planned; however, students in the program will be available for the same need-based financial aid programs open to all North Carolina State University students.

Recommendation
It is recommended that the Board of Governors approve North Carolina State University's request to establish a Master of Supply Chain Engineering and Management degree program (CIP 52.0203) effective August 2013.