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B. RESPONSE TO 2002-2007 BOARD OF GOVERNORS' STRATEGIC DIRECTIONS

Over the past year, North Carolina Agricultural and Technical State University (NC A&T) engaged in developing and implementing programs/activities/initiatives supporting the six strategic directions for the University of North Carolina. The following sections represent highlights of NC A&T's comprehensive plan addressing the six strategic directions.

1. Access: Ensure affordability and access to higher education for all who qualify and embrace a vision of lifelong learning.

North Carolina A&T State University has Articulation Agreements with the following Community Colleges to facilitate accessibility for their students in North Carolina:

1. Alamance Community College
2. Asheville-Buncombe Community College
3. Brunswick Community College
4. Carteret Community College
5. Catawba Valley Community College
6. Central Piedmont Community College
7. Davidson Community College
8. Durham Technical Community College
9. Forsyth Technical Community College
10. Guilford Technical Community College
11. Johnston Community College
12. Lenoir Community College
13. Maricopa Community College District
   - Gateway Community
   - Glendale
   - Mesa
   - Phoenix
   - Scottsdale
14. Mayland Community College
15. Randolph Community College
16. Rowan-Cabarrus Community College
17. Sampson Community College
18. Surry Community College
19. Trinidad State Junior College
20. Wake Technical Community College
21. Wayne Community College
22. Western Piedmont Community College
2. Intellectual Capital Formulation: Through high quality and relevant graduate, professional, and undergraduate programs develop an educated citizenry that will enable North Carolina to flourish.

2.1 The Division of Research and Economic Development
The Division of Research and Economic Development (DORED) has been actively engaged in the expansion of intellectual capital at the University. To enhance the mission of becoming the premier interdisciplinary University in the country, the DORED formed two councils to facilitate interdisciplinary research. The Research Council, comprised of senior researchers from each school/college, provides input to the Vice Chancellor on issues pertaining to all aspects of research, provides strategic direction for implementing the DORED vision, and charts opportunities for future research. The Council of Associate/Assistant Deans (CAAD) serves as the administrative advisory board to the Vice Chancellor. This Council facilitates through its administrative policies the engagement of more faculty in the research enterprise. Charges to the Council include, but are not limited to, creating a research environment, increasing communication, and recommending policies and procedures that will remove barriers for creating a strong research environment.

In addition to the creation of the Research Council and CAAD, the DORED facilitated the creation of the new Computational Science and Engineering graduate program which started in Spring 2005. This interdisciplinary program is the first of its kind in the University of North Carolina System. A graduate program in Biotechnology has also been approved for planning by the UNC system.

To encourage more extensive research involvement at the University, for the first time, in summer 2005, the DORED sponsored faculty fellowships and student internships. Faculty will engage in six weeks of research and are expected to produce a submissible proposal by the program's end. Students will engage in research with an appointed faculty mentor and will present their findings at the end of a ten-week period.

2.2 Highlights of Intellectual Capital Formulation from Selected Academic Units

2.2.1 School of Nursing
The School of Nursing is transforming its undergraduate programs to design curricula that are flexible, accessible, responsive, and accountable to public safety. Changes in programs emanate from evidence that substantiates the science of nursing education providing the foundation for best educational practices. Additionally, the nursing faculty and registered nurse shortages position our school to increase the number of practicing nurses that are minimally BSN prepared. The program expansion to include surgical technicians is one strategy to increase the number of pre-licensure registered nurse graduates. The University recently submitted notification of planning the Master of Science in Nursing - Adult Nurse Practitioner with Specialization in Occupational and Environmental Health which is an advanced practice degree. This will allow us to develop more nurses prepared to contribute to the education of the pre-licensure students.

2.2.2 School of Education
The planned interdisciplinary BS program in Health Education is designed to augment the role of providing appropriate educational information to stakeholders across the spectrum of health care. The Health Education program is not limited to hospital education but includes community
education, patient and family education at discharge, physicians offices, health departments, city
and county health organizations, home extension agencies, student health centers, community
health centers, as well as drug companies here in North Carolina. This new interdisciplinary
program in Health Education is an integral part of NC A&T’s emerging Institute of Public
Health.

2.2.3 College of Engineering
The North Carolina Society of Surveyors and the North Carolina Registration Board for
Engineering and Land Surveyors are supporting the planning of a new degree program in
geomatics. As a result of this collaborative effort, the NC Legislature is in the process of
requiring a four-year degree for the licensure of surveyors. NC A&T will have the only four
year geomatics degree program in the State. The geomatics degree will serve four
constituencies: (1) Associate Degree holders from community colleges; (2) practicing surveyors
who wish to obtain a four-year degree in surveying so that they can gain reciprocity in Virginia,
South Carolina and Tennessee (3) new NC A&T students who wish to pursue a geomatics
degree, and (4) NC A&T students who need more instructional experience in Global Information
Systems (GIS) and Global Positioning System (GPS) for their own disciplines.

Other programmatic revisions in the College of Engineering are discussed below. The chemical
engineering program is being modified to incorporate the national attention on biochemical
engineering. The industrial and systems engineering program, supported by a three-year grant
from the NSF, continues to integrate its teaching laboratories into the “virtual enterprise,” a
working replica of a manufacturing supply chain. The Active Learning in the Virtual Enterprise
(ALIVE) system is a set of “learning modules” that allows students to learn collaboratively in an
internship atmosphere. The mechanical engineering program includes a senior capstone course
that prepares students for engineering practice in a major design experience based on knowledge
and skills acquired in earlier course work. Also, student projects are entered in national design
competitions such as SAE Aero Competition, SAE Mini Baja Competition, and the ASME
Design Competition. Two industry-sponsored projects: “Power Razor Button Testing,”
sponsored by Gillette, and “Piezoelectric Sensors to Detect Fatigue Cracks,” sponsored by
Lockheed Martin, were successfully executed.

To improve student performance on the Fundamentals of Engineering (FE) exams, the College of
Engineering restructured its core courses from 3 hours of lecture to 2 hours of lecture and 2
hours of recitation. The increased contact hours and smaller class sizes in the recitation sections
helped students master critical concepts in these important courses. Some programs have
achieved a 100% passing rate on the FE.

Faculty and students in the College of Engineering are taking a leading role in several
interdisciplinary areas such as Biotechnology, Advanced Materials and Nanotechnology,
Computational Science and Engineering, Information Science and Technology, Transportation
and, and Energy and Environment.

2.2.4 School of Agricultural and Environmental Sciences (SAES)
In alignment with the University’s Future’s vision of sustaining a responsive learning
environment, the School of Agricultural and Environmental Sciences’ agricultural education

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program established a partnership with 18 North Carolina Community Colleges. These community colleges offer the Associate of Applied Science in Horticultural Technology, Turfgrass Technology, or Landscape Gardening degrees. The resulting online 2+2 program, the first of its kind in the nation in agricultural education, will allow students from 18 North Carolina Community Colleges to transfer seamlessly community college degree work into the undergraduate agricultural education program at NC A&T. Students can finish their last two years online and also receive teacher certification. Given the shortage of teachers in the state and nation, this program has the potential to provide a pool of highly qualified individuals in agricultural education. Recently featured in “Black Issues in Higher Education,” this 2+2 program received excellent reviews. In addition, at the Annual meeting of the American Distance Education Consortium (ADEC), in New Orleans, Louisiana (April 24 – 28, 2005), this 2+2 program, along with the online master’s level program in Agricultural Education, received the 1890 Webb-Godfrey-Hill Honorable Mention Award for Excellence in Distance Education. The award was established in 2002 to stimulate the 1890 institutions to continue moving forward in their quest for excellence in distance education and to act as an incentive for excellence in teaching, research and extension programs in the ever-changing information technology/multi-media arena.

In conjunction with the agricultural education program at NC State University, NC A&T’s agricultural education program created a joint online master’s program scheduled for implementation in the Fall of 2005. Through this program students enroll at a “home” university from which they will receive their degree and take the majority of their graduate work. In turn, students simultaneously take courses from the other institutional partner, which will give them the benefit of experiencing instruction from an 1862 and an 1890 land grant university. This is the first collaboration of its kind in the nation in the discipline of agricultural education.

2.2.5 Office of the Provost and Vice Chancellor for Academic Affairs
Faculty continuously seeks innovative ways to improve instructional quality and delivery. Faculty development activities such as the Academy for Teaching and Learning, the Brown Baggers Symposia, and interdisciplinary research among colleagues exemplify meaningful ways faculty participates to provide educational quality and foster continued improvement.

The Academy for Teaching Learning (ATL), NC A&T’s teaching and learning center, has made significant contributions to the development of intellectual capital at NC AT&T during 2004-2005.

- Carnegie Scholar – Karen Hornsby, Assistant Professor of Philosophy in the Department of History, was selected from over 300 international applicants as a 2005 Carnegie Scholar, the first North Carolina A&T faculty member to be selected for this prestigious honor. Karen’s project will focus on determining what classroom pedagogies are effective at advancing the development of students’ ethical understanding and fostering life long ethical reasoning skills. During 2005-2006, Karen will work with the ATL and faculty members at A&T to promote continuing interdisciplinary linkages in the area of ethical reasoning, one of the four key knowledge areas underlying the new University Studies program that will be implemented beginning in fall, 2006.
- New Faculty Orientation Series – The ATL led a year-long new faculty workshop series aimed at helping new faculty make a successful transition to NC A&T and to promote

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ongoing professional development leading to improved teaching and learning, increased scholarly productivity, and a greater sense of community. Monthly workshop topics included an introduction to the services and facilities of the university, enhancing classroom teaching and learning, successfully competing for sponsored research, expectations for promotion and tenure, developing professional development strategies, and balancing professional and personal responsibilities.

- Teaching and Learning Workshops – The ATL has sponsored a number of faculty development workshops during the 2004-2005 academic year related to interdisciplinary teaching and learning, program and course assessment, and collaborative learning. All of these workshops directly relate to the development of A&T’s new University Studies program.

- Interdisciplinary Theme: Focus on Learning – The ATL led the activities for the 2004-2005 Interdisciplinary Theme, “Focus on Learning.” Faculty members engaged in discussions centered on the National Research Council’s (2000) text, “How People Learn: Brain, Mind, Experience, and School,” a summary of research findings in the learning sciences over the past twenty years; participated in workshops led by nationally-recognized leaders in teaching and learning, including a two-day Summer Teaching Institute; and worked with the ATL to develop and pilot new courses to be implemented in the new University Studies curriculum.

- Teaching Showcase – The ATL sponsored the first annual Teaching Showcase, highlighting innovative teaching and learning strategies employed by A&T faculty members. The Showcase included a poster session, workshops, and displays by groups providing teaching and learning resources.

- University Studies Faculty Development – During summer 2005, the ATL is leading a campus-wide project focusing on the development of 25 new University Studies courses. Over 70 faculty members are involved in an intensive process of developing course objectives, content, teaching pedagogies, and assessment strategies. Many of these courses will be piloted during the 2005-2006 academic year in preparation for the implementation of the new University Studies program in fall 2006.

NC A&T will implement a new general education curriculum, University Studies, for all entering freshman beginning in fall 2006. The purpose of the General Education (University Studies) core curriculum at NC A&T is to provide a framework for critical inquiry that serves as a foundation for continuing academic development and lifelong learning. Through an intentional developmental process of discovery, inquiry, analysis, and application, the core curriculum promotes broad-based critical thinking skills, effective written and oral communication of ideas, appreciation for diverse cultures, and a commitment to ongoing civic engagement and social responsibility.

During 2004-2005 the University Studies Committee met a number of objectives preparing for the implementation of the new University Studies curriculum:

- Town Hall meetings to update university community and present proposed University Studies curriculum structure.

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• Faculty Senate approval of general education preamble, learning objectives and curriculum model, as well as the name change from General Education to University Studies.
• Meetings with all departments on campus to outline the impact of proposed University Studies curriculum structure and thematic clusters on departmental programs.
• Development of Thematic Clusters and Cluster Teams.
• In conjunction with the Academy for Teaching and Learning, hosting faculty development workshops on inter-disciplinary teaching, learning and assessment.
• Selection of University Studies Faculty Roundtable members. This faculty group will work with the University Studies Dean to oversee development, assessment, and administration of the University Studies curriculum.
• Town Hall Meetings outlining thematic clusters.
• University Studies faculty and University Studies Dean candidates selected, interviewed, and hired.
• Faculty Senate approval of Foundation level University Studies courses and the overall structure of the UNST program (overall credit hours, Foundation courses, and 12 credits of UNST electives).
• University Studies course development - 77 faculty members are working in teams to develop/revise 25 University Studies courses during summer 2005. The teams are working with the Academy for Teaching and Learning to develop course materials, student-centered teaching strategies, and formative/summative assessment plans for the courses they are developing. Some of these courses will be offered as pilot courses during the 2005-2006 academic year.

3. K-16 Education: Continue to propose and support initiatives to serve the needs of the State’s public schools.

Initiatives listed are offered at NC A&T to serve the needs of the State’s public schools:

3.1 Initiatives Led by the School of Education
• Increase the number of certified teachers because there is a teacher shortage of nine to eleven thousand teachers each year. Supported by a planning grant from the NSF, the School of Education is working to increase the production of teachers by 50% especially in special education, mathematics, and science education and to improve the teaching of content.
• Develop a seamless 2+2 program with four community colleges to accept the AA degree and 64 hours which will allow individuals to transfer into North Carolina A&T’s teacher education program and complete it in two additional years. The community colleges involved are Guilford, Davidson, Alamance and Rockingham.
• Develop the Master’s of Arts in Teaching degree to provide a degree program for lateral entry candidates. This program will offer tracks to initial licensure and a second component to complete the advanced degree. The degree will be completed in two years.
• Develop a new master’s in reading program to ensure that teachers will have the skills to effectively teach literacy. One of the major areas of concern is reading instruction for children in the elementary schools.
• Develop a 21st Century Grant to provide after-school tutoring for students in elementary and middle schools in mathematics, reading and parent education. This grant is funded by the State Department of Public Instruction.

• Participate in the high school reform movement by offering the Middle College on campus for high school students to complete their requirements for graduation and complete college courses.

• Offer more than twenty summer programs for K-12 students ranging from athletics camps for elementary students to college courses for credit for advance high school students. Additional programs are added each year to serve the needs of the public. Special attention is being focused on academic programs for elementary aged students.

• Create an early college for academically gifted students to complete their senior year at NC A&T. Forty-four students have been registered to complete their senior year on campus during the 2005-2006 year.

• Offer summer institutes for students in mathematics, science, technology and engineering to improve and reinforce learning. More than 50 institutes are offered on campus. In addition, the SECME Program will be offered to provide seminars for principals, teachers and counselors during July 2005.

• Provide a regional center for the National Board for Professional Teaching Standards to mentor and support career teachers in completing national licensure requirements. More than 60 teachers participate in this year-long activity. In addition, a special session is held during the summer.

• Provide mentoring support for first and second year teachers to ensure that they will be inducted successfully into the teaching profession and will remain in the profession. Offer seminars and classroom observations to determine needs and provide resolutions to problems.

• Provide collaborative research opportunities for faculty and teachers to collaborate in solving problems related to teaching and learning in the classrooms. Research investigated to increase reading among African American males and to change behavior of middle grade African American females.

• Develop a proposal to work with long-term suspended students in Guilford County based on a model that was implemented during the 2004-2005 school year. If funded by Guilford County, 100 long-term suspended students will be involved in community service, returned to school early, and be given support from parents and administrators to be successful.

• Develop and offer a course on diversity for teachers and administrators as well as teacher educators to assist them in working with students from diverse backgrounds.

3.2 Initiatives Led by the School of Agriculture and Environmental Sciences (SAES)
The Department of Agribusiness, Applied Economics and Agriscience Education in the SAES has been selected to participate in the Peace Corps Masters International (MI) Program. This program serves graduate students concentrating in agriscience education, international trade, and agricultural economics. The MI Program supports the goals of the Peace Corps under its charter: to help the people of interested countries in meeting their need for trained men and women; to help promote a better understanding of Americans on the part of the people served; and to help promote a better understanding of other people on the part of Americans. The MI Program is also directly tied to the goals of the University: to provide an opportunity for students to combine
academic course work with practical field experience and to enhance ongoing international activities at the University.

The Peace Corps Master's International (MI) Program offers the opportunity to incorporate Peace Corps service into a master’s degree program. The program is offered through more than 40 schools across the United States, but only two universities in North Carolina currently offer this program. Participating graduate schools establish and monitor academic requirements, and the Peace Corps places MI students overseas as volunteers. Students apply to both the Peace Corps and participating graduate school(s) and must be accepted by both. Requirements vary by school. MI students complete one, and in a few cases, two years of course work before starting a Peace Corps assignment overseas.

The course work for the program will consist of a minimum of thirty (30) to thirty-seven (37) semester hours of academic study, depending on the program pursued. The program will consist of twelve (12) semester hours in core courses, and a minimum of nine (9) to twenty-one (21) semester hours in concentration courses. Students are required to meet core academic requirements of their respective programs before Peace Corps service. Four (4) credit hours will be granted for Peace Corps service.

During Peace Corps service, volunteers participating in the MI program work toward a thesis, professional paper, or other culminating project, under the direction of their faculty and with the approval of Peace Corps overseas staff. Participating faculty recognize that while overseas, an MI student's primary responsibility is his or her volunteer duties. Rather than determining a research topic in advance, MI students allow their volunteer assignment to shape their overseas academic requirement. MI students understand that the Peace Corps provides a unique opportunity to apply what they learn on campus to benefit a host country community. Like all volunteers, MI students seek ways to creatively apply their knowledge and skills to the assignment in which they are placed. MI students graduate with a unique combination of an advanced degree and two years of substantive professional experience in an international setting.

In support of a doctoral/research intensive University and to give focus, structure, and direction to agricultural research at NC A&T, the School of Agriculture and Environmental Sciences (SAES) faculty identified six interdisciplinary initiatives that address state and national needs, involve the greatest number of faculty, and have significant potential for establishing mutually beneficial partnerships with communities, businesses, foundations, and governmental agencies. Internally called “major program initiatives,” these six areas are: (1) human and community development; (2) biotechnology and biodiversity; (3) agromedicine, nutrition and food safety; (4) small-scale agriculture; (5) soil and water quality; and (6) international trade and development. The driving forces underpinning these initiatives are science, technology, and globalization. In addition to shaping the overall focus of SAES and guidance for investment of resources, these program initiatives also help align SAES with the five goals of Futures. Teams of faculty members are working collaboratively and synergistically both within SAES and across campus around these six initiatives. Pursuant to these efforts in advancing the six initiatives, SAES faculty members have initiated collaboration with faculty members in the College of Engineering, the College of Arts & Sciences, the School of Nursing, and the School of Technology. These efforts have meshed extremely well with the key tenets regarding the
interdisciplinary-based learning environment in the Futures plan. Two SAES major initiatives, in particular, Biotechnology and Biodiversity; and Agromedicine, Nutrition and Food Safety, lend themselves to broad-based campus involvement, especially in view of the well-established and organized involvement with other universities in these areas. These six research initiatives have also been incorporated into the SAES academic and extension programs serving the public needs of the State of North Carolina.

3.3 Other Initiatives Across the University
Student organizations participate extensively in K-12 engagement with interactions at local elementary, middle, and high schools. For example, students in Free Enterprise (SIFE), American Marketing Association (AMA) and Beta Alpha Psi (BAP), have hosted and/or participated in local programs to help build leadership, communication, and team building skills. The Business Education program places 100% of its graduates in the high schools of North Carolina. Job opportunities include: High School Business Teacher, Middle School Business Teacher, Technology Coordinator, and Corporate Trainer. The National Society of Black Engineers’ student members serve as mentors and tutors at several local middle and high schools.

Additionally, the University faculty mentors work with teachers participating in NC State’s Kenan Fellows program to enhance the delivery and relevance of course material. The goal of the Kenan Fellows program is “Promoting Teacher Leadership and Advancing K-12 Science, Mathematics and Technology Education in North Carolina.”

4. Creation, Transfer, and Application of Knowledge: Expand the frontiers of knowledge through scholarship and research and stimulate economic development in North Carolina through basic and applied research, technology transfer, and outreach and engagement.

4.1 Overview from the Division of Research and Economic Develop (DORED)
The Division of Research and Economic Development is continually building and expanding research enterprises at the University. For the period of July 1, 2004 – March 31, 2005, the University secured 167 awards, a total funding of $25,190,608. Among the many grants awarded are two of the prestigious Army Centers of Excellence for Battlefield Enhancement. Nationally only five Army Centers of Excellence were awarded. In addition, A&T continues to grow in nanotechnology research through funded projects from the Department of Defense and the National Science Foundation.

The University was recognized by the UNC Office of the President as a doctoral/research intensive institution in 2004. Research efforts are focused in eight cluster areas:

- Public Health
- Biotechnology, Bio & Food Sciences
- Advanced Materials & Nanotechnology
- Computational Science & Engineering
- Leadership & Community Development
- Information Sciences & Technology
Transportation & Logistics
Energy & Environment.

A new University policy on Centers and Institutes was also implemented this year to strengthen and realign the existing centers/institutes at the University.

Contributing to the region’s and state’s economic development, six new patent applications were filed in FY 2005, bringing the total to 10 patents pending. The University currently holds 13 patents and closed two major co-development agreements with Safety Systems, Inc. and Sensory Analytics, LLC. Both companies have strong technologies that meet current market needs. In addition, both organizations have experienced management teams which increase the likelihood of success. Interest in Small Business Innovative Research (SBIR) participation and submission of proposals is at a three year peak as a result of an industry research collaboration campaign. Fifteen faculty Invention Disclosures were received in FY 2005, increasing total Invention Disclosures to 44. For the first time, the university initiated two revenue producing Intellectual Property license agreements in FY 2005.

The University also signed a Memorandum of Agreement with Dyaneshwar University, Pune, India and Bannari Amman Institute of Technology, Coimbatore, Tamilnadu, India for faculty and student exchanges, in addition to collaborative research and development.

4.2 Creation, Transfer, and Application of Knowledge through Cooperative Extension
On September 20, 2004, a historic and very significant partnership agreement was signed between NC A&T and the USDA/Natural Resources Conservation Service (NRCS). This partnership relocated one of NRCS’s three national technology centers and a remote sensing laboratory to Greensboro, enabling the University to continue its mission to serve as an engine for economic and intellectual development and to provide research and technology transfer opportunities for students, faculty, and stakeholders. This East Region National Technology Support Center, the only USDA site connected to a university in the nation, serves 24 states and the Caribbean area and brings more than 80 new, high-tech jobs.

The East National Technology Support Center will be staffed with the following specialists: agronomists; foresters; rangeland management/pasture land specialists, soil scientists; biologists; agricultural engineers; environmental engineers; sociologists; economists; water management specialists; GIS specialists; environmental compliance specialists; and plant materials specialists. The SAES and the faculty expertise in other schools/colleges combined with the expertise of the professionals in this Center and their national network of experts enhance the academic, research, extension and outreach programs at the University.

The National Technology Support Centers were established to strengthen scientific and technological support for NRCS’s conservation programs and activities. These Centers have two primary functions: (1) to provide technological direct assistance and technology transfer (including collaboration with others for technical training) to states, Pacific Basin and Caribbean areas; and (2) to acquire and/or develop new science and technology in order to provide cutting-edge technological support. These Centers are also charged with developing and maintaining national technical standards and other technological procedures and references.
Finally, the Center at NC A&T will have a special technology development team designed to lead the acquisition and/or development of new science and technologies to address prescribed special emphasis areas. The focus emphasis will be on animal waste utilization technology, soils, and social sciences.

The Cooperative Extension Program, at NC A&T State University, continues to put “Knowledge to Work” for the citizens in half of North Carolina counties through the expertise of its 42 county-based team members, located in 32 of the 101 Cooperative Extension centers. In keeping with its mission of “helping to improve the quality of life of limited-resource individuals through education,” extension provides research-based educational programs and information, regarding critical issues, to individuals, families and communities across North Carolina, the southeast and the nation. To accomplish its goals and objectives, Cooperative Extension utilizes a vast array of delivery methods, ranging from such time-tested methods as on-farm demonstrations and one-on-one instruction, to such cutting-edge information delivery methods such as videoconferences and online computer training.

During the 2004-2005 academic year, the Cooperative Extension Program cites as significant accomplishments and milestones the following initiatives:

- **Economic Impact for NC** – The Cooperative Extension Program assisted small, part-time farmers select and implement successful marketing approaches to increase their income. Programming efforts included business and marketing planning to address issues of scheduling, quality, risk management, display and packaging, licensure, permits and liability. Extension is also working to bring market awareness to high-end market opportunities in organics, specialty meats and flowers as well as the development of production systems to offer quality products over an extended marketing period. Economic impact is estimated at $3,491,408.

- **A Safe and Healthy Environment in NC** – The Cooperative Extension Program promoted through its environmental education efforts programs that focused on asthma, mercury, mold/moisture, outdoor air, pesticides and second hand-smoke. A program cost/benefit analysis indicates the dollar value of these programs to the target audience was $5,291,823 and the dollar value to society was $6,329,812.

- **Quality of Life in NC** – The Cooperative Extension Program assisted limited-resource individuals and families improve their quality of life by helping them develop skills and strategies to manage their personal finances and reduce the incidents of child abuse and neglect. The “Parenting Matters” educational program potentially saved the state of North Carolina $69.90 per pay per child by not having to place a child in foster care. Two hundred and fifty-six children remained with their parents as a result of this parenting training. Parents of youth in the 4-H K-3rd Grade program noted an increase in the quality time spent with their children. Nutrition education programs helped food stamp recipients be wiser consumers and decision-makers relative to their health and well-being.

- **Regional Leadership Conferences** – Recognizing the need for strong leadership at the grass roots level, the Strategic Planning Council recommended and supported three regional leadership conferences in 2005. Conference participants (143) explored strategies for identifying local issues and needs of the limited-resource audience.
Specialized committee members generally provide input at the county level and never connect to the larger communities surrounding them. In each of the regional conferences, members of the Board of County Commissioners in the host county joined the group for dialogue relative to programming efforts at NC A&T.

- **New Curriculum and Support Materials** – Specialists have launched new or expanded programs in the following areas of:
  - Posters, banners brochures and a CD to use as supporting materials for the Parenting Matters curriculum
  - ATV Safety Bumper Stickers for display
  - Financial Literacy Network website
  - National Nutrition Month resource packages
  - Two fact sheets on Lead-Based Paint Pre-Renovation Education Rule printed in both English and Spanish
  - Organic Agriculture display
  - Power point presentations on Plastic-Culture; Summer Cover Crops; Cut Flower Fertility; Grow your own Nutrients and Nutrient Management

- **Educational Workshops** – County based faculty conducted a total of 829 educational workshops with a total of 19,237 limited-resource individuals participating. Specialists and Extension Associates conducted 31 workshops for field staff and stakeholders.

### 4.3 Creation, Transfer, and Application of Knowledge Through School of Agricultural and Environmental Sciences (SAES)

In addition, during the 2004-2005 academic year, the SAES faculties collaborated in the development of six initiatives designed to have a positive impact upon the intellectual capital of the state’s and nation’s citizens.

- **Jarrow Formulas, Inc.** In June 2004, Jarrow Formulas and NC A&T signed a license agreement that will enable the nutritional supplement manufacturer to significantly increase the efficacy of their probiotic product line. JFI is a Los Angeles-based company that develops, manufactures, markets, and sells dietary supplements including friendly bacteria including bifidobacteria and lactobacillus. These friendly bacteria promote human health. However, during manufacturing and processing, the number of viable cells declines. SAES researchers have developed a technology that promotes the growth and enhances the survival of bacteria during processing. According to Dr. Salam Ibrahim, SAES food scientist, "the food industry can benefit greatly by research that improves scientific supplements’ ability to maintain their quality throughout the manufacturing process.” Dr. Ibrahim further states that “the results of this research may help to improve the market for beneficial supplements and increase demand for the development of more beneficial combinations.”

- **TransTech Pharma, Inc:** SAES researchers have signed a partnership agreement with TransTech Pharma to perform pharmacokinetics studies on mice and rats using experimental drug molecules. TransTech Pharma focuses on Alzheimer’s and diabetes.

- **Institute for Rural Entrepreneurship:** SAES researchers in the Department of Agribusiness, Applied Economics and Agriscience Education, and in the International Trade Center have joined with the North Carolina Rural Economic Development Center to develop an Institute for Rural Entrepreneurship to stimulate and support the
development of micro, small and medium-size enterprises in North Carolina's 85 rural counties. The Institute grew out of the recognition that entrepreneurs—people who create and grow business play a powerful role in the economic well-being of rural communities. The Institute is based on five elements: technical assistance and information, entrepreneurship education and training, access to capital, access to networks and leadership and policy development. The Center for Entrepreneurship and E-Business in the School of Business and Economics is also collaborating in this effort, along with 34 other participating organizations.

- 1890 Family and Consumer Sciences Distance Instructional Alliance: SAES faculty members in the Department of Human Environment and Family Sciences formed an alliance with seven 1890 land-grant universities (Alabama A&M University, Fort Valley State University, South Carolina State University, Southern University, Tennessee State University, University of Arkansas at Pine Bluff and the University of Maryland-Eastern Shore) to develop a practical, contemporary academic program in Family and Financial Planning. This alliance, the first online collaboration of its kind for Historically Black Colleges and Universities, will create an online certification program in Family Financial Planning that will prepare students for the CFP Certification Examination. The certification program will teach more than 100 integrated, CFP Board required topics, such as general financial planning, insurance, retirement and employee benefits, investments, income taxes, and estate planning.

- USAID Peanut Collaborative Research Support Program: SAES researchers in the Departments of Human Environment and Family Sciences and Agribusiness, Applied Economics and Agriscience Education are collaborating with researchers at the Institute de Technologie Alimentaire (Dakar, Senegal) and the University of Georgia to enhance the research capability of developing countries and the United States on the alleviation of major research constraints that limit sustainable peanut production and food delivery through an environmentally sound system. The five major thrusts include: food safety and nutrition, production efficiency, socioeconomic forces, post-harvest and marketing technology, and training and information management.

- North Carolina State University (NCSU) – Colleges of Veterinary Medicine and Agriculture and Life Sciences: SAES faculty in the Department of Animal Sciences developed a proposal with NCSU and participated as program coordinators for the NIH BRIDGE to the Ph.D. program supporting master’s degree students in the Department of Animal Sciences who will attend NCSU and other universities to receive the Ph.D. The program has recently received funding for the fourth time and is now in its tenth year. Several students have now gone on to NCSU and other schools. In fact, one student (Dr. Francisco J. Cisneros), graduated with a M.S. degree in Animal Sciences, received the Ph.D. from NCSU and is now on the faculty in the Department of Biology at NC A&T. Other collaborations with NCSU include the on-line 2+2 Licensure Program in Agricultural Education, agromedicine, and environmental farming systems.

4.4 Other Creation, Transfer, and Application of Knowledge Initiatives and Activities

The School of Business and Economics through its Interdisciplinary Center for Entrepreneurship and E-Business Center offers a Certificate in Entrepreneurship. Students in these programs explore entrepreneurial career options and participate in the entrepreneurship internships. Over 20 certificates have been awarded since the program started. Additionally, the University's
affiliation with the Small Business Technology Development Center (SBTDC) and the Nussbaum Center play an integral part in the stimulation of economic development.

The Pit Crew Certification Program launched three years ago started with twelve students. Of these twelve students, six received certificates. The certificates were presented at a banquet before several officials from Ford Motor Company in Spring 2004. Of the 12 students, several are working in the motorsports industry. The Department of Manufacturing Systems in the School of Technology received approval to begin a new Interdisciplinary Motorsports Concentration in Fall 2004. The Pit Crew Certification Program is now an integral component of the new motorsports concentration.

The Office of Continuing Studies, in conjunction with academic departments in the schools and colleges of the University, offers professional development programming through industry partnerships, high tech training seminars, short courses and workshops, and conferences. Programming is offered on campus in the evenings and on weekends, online and on-site.

Examples of professional development programming include several resulting from industry and/or professional association partnerships: a series of short courses in quality processes to improve business operations, improve quality and productivity, reduce costs and prepare for the American Society for Quality certification examinations; a series of seminars in height safety and rescue for climbers in the telecommunications industry; a six-credit-hour industry-approved course to train nurses to assist in the operating room (RN First Assistant); computer networking and security courses toward industry certification.

Also offered are review courses for professional engineering certification, height modernization forums for engineers, surveyors and others engaged in height modernization and its use for precision engineering applications, and workshops in wireless communications.

Most of the programming offered by the Office of Continuing Studies award Continuing Education Units (CEU) upon successful completion. Permanent transcripts are kept for all training. Non-credit certificate programs are being developed in quality processes and technical writing to be offered in fall 2005.

5. Internationalization: Promote an international perspective throughout the University community to prepare citizens to become leaders in a multi-ethnic and global society.

5.1 Overview of Internationalization from the Office of International Programs
This UNC strategic direction is directly related to the goals of NC A&T’s strategic vision Futures. The Office of International Programs at NC A&T is charged with leading campus efforts to:

- Promote global awareness and understanding through student, faculty, and staff development
- Provide access to study abroad and international exchange programs, international
internships and service learning opportunities;
- Increase the number of students graduating with the interdisciplinary Global Studies Certificate;
- Increase participation in the UNC Exchange Program and other study abroad programs;
- Increase opportunities for faculty to develop in-house study abroad and exchange programs;
- Market NC A&T International Programs and capabilities both on and off campus; and
- Continue to expand the external sponsorship of research and other creative activities for students and faculty.

5.2 Selected Internationalization Program Activities
The NC A&T SIFE Team was instrumental in the formation of SIFE Nigeria and many other global outreach projects with countries such as Russia, Germany, and Botswana. Students participate in study-abroad programs while faculty engages in research and other professional development activities through the attendance of regional and national conferences in specialized disciplines.

The NC A&T International Trade Center continues to assist in connecting North Carolina companies with companies trading internationally. Last year, with the help of the International Trade Center, a NC-based manufacturer of flour, corn meal, mixes and feed, attended a trade show, where the company established leads that have developed into lucrative contracts. The company and A&T International Trade Center representatives established contact with companies trading internationally, who recently ordered 43,200 pounds of corn meal and 43,200 pounds of flour from the company. This year, the Center assisted a Duplin County wine maker in securing trade opportunities with China. The North Carolina company imports selected wine bottles from China and then exports the wine to China. Another wine company in NC has contacted the Center for assistance in locating trade sources for their wine also (underway). In addition, food exports to Canada have been obtained.

6. Transformation and Change: Use the power of information technology guided by IT strategy and more effective education, administrative, and business practices to enable the University to respond to the competitive global environment of the 21st Century.

The University's Comprehensive Information Technology and Telecommunications (ITT) Plan is driving the ITT transformation on the campus. The major accomplishment in this third year of implementation was the successful implementation of the advancement application of SCT Banner. This application enabled Development and University Relations to enhance the administrative operations of the office. The other major accomplishments are summarized according to the ten major themes of the comprehensive plan:

1. Governance: Create a learner-centered interdisciplinary community that moves from good to great through:
   - Re-organized the Help-Desk unit for better customer service
   - Re-organized the Teaching and Learning Technologies unit
• Held numerous workshops for the Division of Information Technology and Information (ITT) senior team on “Execution: The Art of Getting Things Done”
• Worked with the newly established Board of Trustees ITT Committee to establish a framework for review and assessment of ITT campus-wide activities

2. Infrastructure: Provide universal service excellence to the learner-centered community by:
   • Installed additional intrusion detection/prevention equipment in the campus security network
   • Installed Cisco core and edge routers in the converged network
   • Installed plasma monitors for campus signage bulletins and announcements
   • Developed a campus-wide wireless computing plan
   • Installed the cluster portion of the grid computing network
   • Deployed Service Desk Manager, Vulnerability Manager and Network System Manager products to enhance system-wide manageability

3. Content: Establish a consolidated mission-critical data repository:
   • Installed the Banner Advancement application for better manageability of the administrative functions of the Office of Development and University Relations
   • Solved a major communication problem through deployment of a new email system
   • Enhanced Website content and design throughout the academic year including the Homecoming Website, Biology Symposium Website, Minority Summit/Black Caucus Website, Online University Assessment Tool, and UNC Financial Systems Conference Website.
   • Installed a new system for the Cashier’s Office
   • Implemented the Resource25 Web Viewer for display of campus events
   • Implemented an application that facilitates direct depositions of student refunds

4. Partnership: Established and continue to develop critical partnerships:
   • A key partnership was established with Computer Associations to focus on autonomic computing

5. Funding: Diversify the funding sources:
   • Received a $450,000 software grant from the Thurgood Marshall Scholarship Fund.

6. Instruction: Assisted the learner-centered community’s efforts to optimize the University’s use of technology:
   • Conducted extensive Banner technical training and user training
   • Conducted numerous workshops for faculty, staff and administrators in the areas of Blackboard, MS Office, e-mail, FOCUS reporting, Multimedia, and online interactive technologies.

7. Service: Provide universal service excellence to the learner-centered community:
   • Completed the required UNC System Data Extract process early with a campus record minimum number of errors
   • Provided students with a stationary computing environment in the Bluford Library to complement the laptop checkout program
   • Installed expanded printing services in the Bluford Library

8. Assessment: Institute a system of checks and balances for IT efforts:
• Achieved a clear financial audit of the Center for Distance Learning

9. Communication: Update the learner-centered community regularly about the direction and progress of the plan:
• Met with numerous groups to discuss technology status and directions including the College of Engineering, School of Technology, Faculty Senate, Faculty Forum, and Deans’ Council
• Published articles in the Aggie Report monthly
• Published bi-monthly Aggie Tech Talk newsletters

10. Awards and Recognition: Award innovation, progress and achievement through creative programs. For example, staff accomplishments may be rewarded through additional professional development opportunities and travel to technology conferences
• Several ITT staff attended conferences and received special recognition
• ITT is working on a plan to provide more opportunities for recognition for a wider range of staff.

C. ACADEMIC PROGRAM DEVELOPMENT

Introduction

Faculties and administrators at NC A&T continuously review all academic programs to assess their contributions to the Mission and Vision of the University. Each academic degree granting program is formally reviewed every five years and must prepare a report that is reviewed by the staff of Academic Affairs. To develop new programs, the Academic Deans work with faculty committees to define new programs and degree offerings.

C1. Academic Program Review

NC A&T reviewed low producing degree programs as indicated by the Office of the President. This review included the Criteria and Guidelines for Program Review and Recommendations. The academic deans, respective department chairs, and faculty have been involved in the completion of the review, which employed national and university trends and data to assess the merits of each program. Programs reviewed are listed below:

<table>
<thead>
<tr>
<th>CIP Code</th>
<th>Program Title</th>
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<tbody>
<tr>
<td>05 - Bachelor's Degree</td>
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<tr>
<td>010000</td>
<td>Earth and Environmental Sciences ***</td>
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<tr>
<td>010103</td>
<td>Agricultural Economics</td>
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<tr>
<td>040601</td>
<td>Landscape Architecture</td>
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<td>131001</td>
<td>Special Education</td>
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<tr>
<td>131209</td>
<td>Child Development: Early Ed &amp; Family Studies</td>
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<td>Agricultural Education</td>
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<tr>
<td>131308</td>
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<tr>
<td>400801</td>
<td>Physics</td>
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<tr>
<td>450601</td>
<td>Economics</td>
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<td>500901</td>
<td>Music</td>
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**07 - Master’s Degrees**

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<td>Biology</td>
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<tr>
<td>131323</td>
<td>Chemistry, Secondary Education</td>
</tr>
<tr>
<td>400801</td>
<td>Physics</td>
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</tbody>
</table>

The University chose to review each of these programs even though all were not designated for review at the UNC System level. As will be noted later, decisions were made on selected programs.

The sub-set of programs that will be reviewed at the System level is presented in the following table. The reviews for all to be reviewed by the UNC are presented in the Appendix as Attachment #1. According to our records, the Earth and Environmental Sciences is a new program; therefore, Enclosure 3A is presented instead of Attachment #1.
<table>
<thead>
<tr>
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<tr>
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<td>Bioenvironmental Engineering</td>
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<td>Engineering Physics</td>
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<td>190501</td>
<td>Food and Nutritional Sciences</td>
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<td>310301</td>
<td>Recreation Administration</td>
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<tr>
<td>07 - Master's Degrees</td>
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<tr>
<td>131322</td>
<td>Biology</td>
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<tr>
<td>400801</td>
<td>Physics</td>
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</table>

C1.1. Programs in the School of Agricultural and Environmental Sciences (SAES)

In order to maximize the resources of the three teacher education programs within SAES while simultaneously maintaining the uniqueness of each specific discipline, a new Bachelor of Science degree program entitled Agriculture, Family and Consumer Sciences Education is proposed. The new degree program would combine the existing programs in Agricultural Education, Child Development Early Education & Family Studies (B-K), and Family and Consumer Sciences Education into one degree producing program. Administratively, the program would be jointly governed by the departments of Agribusiness, Applied Economics and Agriscience Education and the Department of Human Environment and Family Sciences, with program faculty remaining in their respective units.

To maximize the resources of the remaining nationally accredited programs in the Family and Consumer Sciences, it is proposed that these three programs be combined into one general Family and Consumer Sciences Degree. These three program areas are child development, food and nutritional sciences, and family and consumer science. The degree in the Family and Consumer Sciences will function as one general discipline with major specializations in Child Development and Family Studies, Dietetics; Fashion Merchandising and Design, and Food Science. Administratively, the program would be governed by the Department of Human Environment and Family Sciences.

The B.S. in Earth and Environmental Sciences has only been approved since 2003; thus, this program is not of sufficient epoch to be examined in terms of low productivity. Additionally, since it is a new degree program it will not be under scrutiny until 2008 or 2009. During the last two years, students have been recruited under this program. Brochures were printed and this program is cited in the new catalogue. Thus we believe a sufficient number of students will be recruited, enrolled and graduated from this program in the next three years to justify it continuous existence. Also, this program will be an excellent feeder program for the new Ph.D. Program in Energy and Environmental Studies.

Given the unique nature and importance of agricultural economics, landscape architecture and bioenvironmental engineering together with program quality and the potential for growth, NC
A&T proposes that these three programs remain as stand-alone programs. The rationale is seven-fold:

1. The employment demand for our graduates (particularly minority scientists);
2. The increased support of our program by agribusinesses and federal agencies as reflected in increased visitations and scholarship monies;
3. The increased number of entering freshmen declaring these disciplines as their major;
4. Findings of the United States Department of Agriculture and state and national accrediting bodies;
5. The crucial role these programs play in the interdisciplinary focus of the University;
6. The contributions of these programs to the doctoral program in energy and environment; and
7. The fact that North Carolina A&T State University is only one of two institutions in North Carolina where a student can obtain a degree in agricultural economics, landscape architecture and bioenvironmental engineering.

Specifically, NC A&T is deleting four B.S. degrees and adding two B.S. degrees in the SAES for a net loss of two B.S. degrees. Deleted are B.S. degrees in Agricultural Education, Family and Consumer Science Education, Child Development, Early Education & Family Studies (B-K) (Teaching), Food and Nutritional Sciences. Added are B.S. degrees in Agriculture, Family and Consumer Sciences Education and Family, and Consumer Sciences

C1.2. In the College of Arts and Sciences

C1.2.1 BS Teacher Education Programs

Given the very low degree award rates in these programs (all 8 programs together awarded 3 degrees in 03-04), consolidating these programs would not generate a single, combined degree program that meets UNC productivity guidelines and criteria. On the other hand, where these programs are paired to a productive B.S. program, (all except the Physics and Music programs) these programs generate only small additional costs (supervising student teaching is the main additional cost) to the University.

Proposed is the consolidation of the science education programs into one Comprehensive Secondary Science Education program with concentrations in Biology, Chemistry or Physics. The departments of Biology, Chemistry, and Physics have agreed to reevaluate and redesign, if necessary, their education programs if such a program is established.

C1.2.2 MS Teacher Education Programs

Given the very low productivity of the Biology and Chemistry MS education programs, consolidating these programs as concentrations in the new MAT program is proposed. Both the departments of Biology and Chemistry will support that effort.
C1.2.3 BS/BA Discipline Programs

Engineering Physics – NC A&T with the concurrence of the Physics faculty proposes to delete this degree program and create an engineering physics concentration in its B.S. in Physics program.

Physics – NC A&T with the concurrence of the Physics faculty proposes to consolidate its B.S. Engineering Physics with this program (as a concentration rather than as a separate degree program). Curricular revisions to this program to increase its appeal to students are planned.

Mathematics – The B.S. Mathematics degree program is to be retained.

Music – NC A&T, with the concurrence of the faculties in the Departments of Music and Visual and Performing Arts, proposes to consolidate several of their V&PA degree programs into a single, new B.A. degree program in Visual and Performing Arts with concentrations in specialty areas such as Music.

C1.2.4 MS Discipline Program

Physics – NC A&T with the concurrence of the Physics faculty desires to retain this program due to its support of the Department’s successful research programs. There is no similar master’s program at another institution in the area.

C2. Request for Authorization to Discontinue a Program

NC A&T is requesting the discontinuation of the programs listed in the following table.

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<tr>
<th>CIP</th>
<th>LEVEL</th>
<th>PROGRAM OR TRACK TITLE</th>
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<tbody>
<tr>
<td>131001</td>
<td>B</td>
<td>Special Education</td>
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<td>131203</td>
<td>M</td>
<td>Middle Grades Education</td>
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<tr>
<td>131209</td>
<td>B</td>
<td>Child Development, Early Education &amp; Family Studies (B-K) (Teaching)</td>
</tr>
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<td>131301</td>
<td>B</td>
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<td>B</td>
<td>Recreation Administration</td>
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</tbody>
</table>

North Carolina A&T State University
Long Range Plan 2006-2011
C3. Status Report on Recently Established Programs

C3A. Inventory of Academic Programs Established 1-2 years ago
NC A&T has four academic programs that fall under this category. The B.S. program in Journalism and Mass Communication (090102), BA program in Liberal Studies, the B.S. in Criminal Justice, and the Master of School Administration are progressing very well.

The new degree bachelor’s programs in Liberal Studies and Criminal Justice are significantly exceeding enrollment expectations. The new degree bachelor’s program in Journalism and Mass Communication and Master of School Administration degree program are just under the projected enrollment numbers. Each of these programs is reviewed and presented in an Attachment #3A

C3B. Inventory of Academic Programs Established 3-4 years ago
NC A&T has one academic program in this category. The M.S. in Management is progressing well. The enrollment in the program was larger than projected the first year, but is now just under. The faculty have evaluated class size and believe that the present enrollment is optimum considering faculty size. The number of graduates of the program is just below the originally projected value. This program is reviewed and presented in an Attachment #3B

C4. Planning New Degree Programs

NC A&T is planning several new programs. At the bachelor’s level, the University has notified the Office of the President of the planning of a new engineering program in geomatics. This program is expected to be presented for implementation in early fall 2006. At the doctoral level, a faculty committee is developing the proposal to plan a doctoral program in Computational Science and Engineering. The committee expects to present the proposal in the Fall cycle of the UNC Graduate Council for approval. Also, long term planning is occurring for a graduate degree in Cultural Studies. The faculty committee has been working for a year trying to define a program.

The B.S. educational programs in the College of Arts and Sciences will be discontinued and a new program – Bachelor of Teaching - will be requested. This new program will have concentrations in each of the areas that presently have full programs. This organization will look very similar to the Master of Teaching program at the graduate level.

Emerging Initiatives

The University’s goal is to be a premier interdisciplinary institution and an engaged partner in our state’s economic development. Furthermore, we believe that as a land-grant
doctoral/research intensive university we are well prepared to participate in numerous initiatives. We are poised to become even more engaged through our growing research enterprise and emerging academic programs.

Veterinary Medicine
The Staying A Step Ahead: Higher Education Transforming North Carolina’s Economy report notes the substantial gaps in the production of two professional degrees (medicine and veterinary sciences). The fact that there is only one school of veterinary science/medicine in the state of North Carolina is based on a long pattern of historical discrimination. With the shortage of graduates in the veterinary sciences and with our institution’s robust Animal Science and related programs, NC A&T plans to correct this longstanding inequity and reduce the gap in the production of veterinarians by starting a second school of veterinary sciences at North Carolina A&T.

The access of African American and other minority students within the state of North Carolina and the United States into veterinary medicine is at its most critical plateau. Specifically the students within the Department of Animal Sciences at NC A&T who are preparing for a career in veterinary medicine are still being underserved by the existing college of veterinary medicine in North Carolina. The majority of A&T students (as well as minority students from other undergraduate programs in the US) still attend Tuskegee University in Alabama. In 1985, NC State College of Veterinary Medicine graduated its first class of veterinary students. Today, twenty years and nearly 1,400 graduates later, less than 0.7 percent of those graduates are African Americans. With increasing diversity in the state’s population, there is increasingly limited access to veterinary medicine for African American and other minority students.

The State of North Carolina is 21.6 percent African American and has a rapidly growing Hispanic population. Opportunity and access are being denied to these students who are passionate about becoming veterinarians and serving in other professional roles that will benefit and meet the needs of agriculture and pet owners, particularly those representing minorities, within the state and nation.

Public Health Initiative
The newly formed Institute for Public Health, supporting the university’s expertise in a variety of disciplines that have public health content, will include programs and research in the area of health disparities, environmental studies, sustainable energy, genetics, occupational safety and health, and policy analysis. NC A&T is uniquely positioned to support this initiative. Because there are serious health challenges within minority populations, rural communities, and Third World nations, the Institute for Public Health has local, national and international implications. The search for a Director of the Institute is underway. Programs will begin as certificate and outreach initiatives and will include a public health working group of NC A&T faculty and public health professionals. Additional research opportunities and the creation of an international advisory board will follow the naming of a director.

Millennial Campus
The University of North Carolina-Greensboro (UNCG) and NC A&T are partners in developing the joint millennial campus known currently as the Greensboro Center for Innovative
Development (GCID). Recognizing the power generated by leveraging the human capital and financial resources of two outstanding public institutions, NC A&T and UNCG are jointly establishing a millennial campus. This Campus responds to the needs of the Greater Greensboro Area and the State with a synergy that would not be possible if either institution were working alone.

Both institutions are home to numerous faculty members with expertise in health, physical, natural, and social sciences, education, technology, engineering, business, arts, and humanities. This combined expertise is found in the arts and sciences and professional schools and is demonstrated in basic and applied research projects, as well as through outreach provided by various clinical services and educational programs at both institutions.

Combining the research talents of both faculties will foster scientific research and teaching with the potential for technology transfer and patents, for creation of new revenue-generating companies and for services to local and state agencies. Economic development projects will typically be characterized by efforts to improve the businesses/industries of today while helping to invent the businesses/industries of tomorrow. Building on the complementary strengths of both universities, initiatives born and nurtured at the millennial campus (GCID) will help strengthen the area's economy, improve community services, and enrich the quality of life of citizens in the region and state.

Degree Programs Recently Added
- B.S. Criminal Justice (April 2003)
- B.S. Agricultural Education via Internet (June 2003)
- B.A. Liberal Studies (September 2003)
- M.S. Computational Science and Engineering (July 2004)
- B.S. Computer Engineering (September 2004)
- Ph.D. Energy and Environmental Studies (November 2004)
- Ph.D. Leadership Studies (November 2004)
- B.S. Sport Science and Fitness Management (January 2005)
- M.A.E.D. Reading Education (April 2005)
- M.A.T. Teaching (April 2005)

D. Enrollment Goals

The University has submitted its enrollment goals as prescribed by Academic Planning.

E. Reports on Institutes and Centers

NC A&T has no UNC Centers. The University has developed and adopted criteria and procedures to define some NC A&T centers and institutes. This document is included in the appendix.
F. New Faculty Positions

The University has used the allocated new faculty positions to meet critical needs all across campus. The actual faculty are in listed in Attachment #4.

G. Institutional Response to the Minority Presence Plan Revisions

Admissions/School Outreach Programs/Transition Programs

The Enrollment Management Office supports and implements a holistic approach to reviewing and evaluating all applicants for admission to NC A&T. The office communicates its specific admissions requirements to prospective students, their parents, and high school/community college representatives by the following means:

- high school/community college visits,
- participation in state, regional and national college & career fairs
- general correspondence with students, fliers
- publication of a college view book and other recruitment and marketing materials
- conducting tele-counseling campaigns
- publication of a web-site
- participation in the state and regional High School Guidance Counselor’s Conference.

The Admissions Office assigns an Assistant Director to serve as the liaison for the office to community colleges and transfer students. This Assistant Director works with the community colleges and A&T faculty to ensure that the State’s Transfer Articulation Agreements are kept current and implemented. The Admissions Office and the Office of Evening and Weekend Programs host various recruitment programs/activities on the campuses of our major feeder community colleges throughout the year. The Admissions Office participates in a variety of community service activities and programs that service many adult and non-traditional students in reference to addressing their questions and/or concerns about starting or completing a college degree.

Financial Aid

The Office of Student Financial Services provides information concerning institutional, alumni, state, federal and corporate based financial aid and/or merit scholarships opportunities to students by the following means:

- establishing a Scholarship Office within the Office of Student Financial Services
- using general correspondences
- updating the web-site
- conducting financial aid workshops during the New Student Orientation Programs
- hosting financial awareness month in February of each year
- conducting financial aid workshops for students and parents both on and off campus
- participating in various admission and recruitment activities and/or programs
- using fliers and target mailings.
The Office of Student Financial Services also participates in the UNC Campus Scholarship Programs. All applicants for scholarships that meet scholarship requirements are reviewed and given due consideration. Under-represented groups that meet the scholarship requirements are targeted to receive additional encouragement to apply for scholarship opportunities.

H. Organizational Charts

The organizational chart for NC A&T is presented in the Appendix. The only change is the addition of the Interdisciplinary graduate program under the School of Graduate Studies.
APPENDICES

Academic Program Reviews Enclosure #1
Bachelor's Degree
- Earth and Environmental Sciences
- Agricultural Economics
- Landscape Architecture
- Bioenvironmental Engineering
- Engineering Physics
- Food and Nutritional Sciences
- Recreation Administration

Master's Degrees
- Biology
- Physics

Requests for Authorization to Discontinue a Program Enclosure #2

Status Report on Recently Established Programs Enclosure #3
Form 3A
- B.S. - Journalism and Mass Communication
- M.S. - School Administration
- B.A. - Liberal Studies
- B.S. - Criminal Justice

Form 3B
- M.S. - Management

New Faculty Positions Enclosure #5

Organizational Chart Enclosure #6

POLICIES AND PROCEDURES FOR PLANNING, ESTABLISHING AND REVIEWING UNIVERSITY CENTERS & INSTITUTES
STATUS REPORT ON RECENTLY ESTABLISHED (1-2 YEARS) DEGREE PROGRAMS AND TRACKS
(Authorized January 2002-December 2003)

THE UNIVERSITY OF NORTH CAROLINA

Date: April 22, 2005

Constituent Institution: North Carolina Agricultural and Technical State University

Discipline Specialty Title: Earth & Environmental Science

Discipline Specialty Number: 0248/CIP Code 01.0000 027 513 Level: B X M ___ I ___ Prof. ___ D ___

Specify Type of Degree (e.g., B.S., B.A., M.A., M.S., Ph.D.): B.S.

Program Track (if any): None

Date Established: August 2003

If the program has not yet been established, why not?

Headcount Enrollment, as projected in Request for Authorization to Establish, and Actual Headcount Enrollment (upper division program majors, juniors and seniors only, for baccalaureate programs):

<table>
<thead>
<tr>
<th>Year (2003-04)</th>
<th>1st Year</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected</td>
<td>35</td>
<td>10</td>
</tr>
<tr>
<td>2nd Year (2004-05)</td>
<td>Projected</td>
<td>Actual</td>
</tr>
<tr>
<td>65</td>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year (19 - )</th>
<th>1st Year</th>
<th>Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Year (19 - )</th>
<th>2nd Year</th>
<th>Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Degrees Conferred to Date: None

Resources: Describe the resources that have been allocated to this program, the adequacy of these resources, and plans to remedy any deficiencies. (See Attachment)

Faculty: one 1/2 time faculty and one (1) new hire
Courses are taught by faculty in other departments

Staff: None

Libraries: Bluford Library – adequate

Equipment: Available throughout campus

Facilities: Adequate – Need updated classroom facilities and laboratories
One additional full time faculty member is needed to recruit and retain students

Curriculum: Has the curriculum been developed as indicated in the request to establish proposal? Yes
Are any modification planned? Yes

Other Information: Please provide any additional information that describes the progress made in development of this new program.
One faculty member has been hired to work with students in the program.
A Web page and brochures are in progress.

Chancellor:

North Carolina A&T State University
Long Range Plan 2006-2011
Resources

Faculty
One and half faculty positions have been allocated for this program. This program offers a campus wide course (EASC 201) as a science elective and was taught by three part-time instructors. This course is offered through six sections each semester to satisfy the demand. One new faculty person will join the program in Fall 2005 and will engage in recruitment, advising and mentoring students. The new faculty person will teach 9 credit hours each semester.

Staff
Currently, we are using 25% of our existing secretary in the department. Four full-time technicians are engaged in research related to the environmental pollution. These staff persons are hired through the formula funds (Evan-Allen, USDA-CSREES).

Libraries
Adequate books, journals, periodicals, and magazines are available in the library. However, these materials are added or updated with new editions.

Equipment
The Department of Natural Resources and Environmental Design and School of Agriculture and Environmental Sciences have research equipment worth more than $1.5 million. The current available equipment is adequate to train our undergraduate and graduate students in research. Also, adequate educational equipment is available for classroom instruction.

Facilities
The classroom and laboratory facilities are adequate. The classroom facilities are adequate, but need to be renovated.

Curriculum
The curriculum has been developed as indicated in the request to establish the program. We will revise the curriculum based on the university studies requirement and the needs of our future students.

Other Information
Curriculum and Recruitment/Retention Committees have been formed. A web-page and brochures have been developed for recruitment purposes. Faculty members are encouraged to submit more extramural funding proposals to provide scholarships to Earth and Environmental major students. Environmental Science Student Club has been established to market the program and make the program more visible by their environmental activities in the society.

The Earth and Environmental Science undergraduate degree program is the only such program on the campus. Due to the new cluster in Energy and Environment through the University Studies and Ph.D. in Energy and Environmental Studies, it will attract more students into the program in the next two to four years.
The University of North Carolina

Criteria and Guidelines for Program Review and Recommendations

Date: May 2, 2005

Constituent Institution: North Carolina Agricultural and Technical State University

API Discipline Number: N/A

CIP Discipline Specialty Title: Agricultural Economics

CIP Discipline Specialty Number: 01.0103 027 000
Level (B, M, CAS, D, First Professional): B (Bachelor)

Exact Title of the Program: Agricultural Economics

Exact Degree Abbreviation (e.g. B.S., B.A., M.A., M.S., Ph.D.): B.S.

1. Centrality to University's Mission

The mission statement of North Carolina A&T State University (NC A&T) states that, the university is a public, comprehensive land-grant university committed to fulfilling its fundamental purposes through exemplary undergraduate and graduate instruction, scholarly and creative research, and effective public service. The Bachelor of Science degree program in Agricultural Economics is a vital component of the Department of Agribusiness, Applied Economics and Agriscience Education. It has a mission of creating, expanding, applying, and disseminating knowledge on a wide range of economic, social and business issues and problems in agriculture, policy, natural resource use, rural areas, agribusiness and allied industries for the benefit of the people of North Carolina, the nation, and global community through teaching, research and extension and service programs. Thus the mission of this program is in line with the mission of North Carolina A&T State University as a land grant institution. As a discipline, agricultural economics is one of the points of convergence between the natural and the social sciences. It is an applied, problem-oriented science characterized by its traditionally interdisciplinary nature and firmly based on the principles of modern economics. Consequently, the Agricultural Economics program contributes to North Carolina’s (1) economic development through teaching, research and extension; (2) quality of life by impacting every aspect of the economy; (3) economic activity through its strategically targeted activities that affect agricultural producers, trade agreements, socioeconomic development, rural education, welfare programs, economic development strategies, causes and consequences of poverty, and technical assistance.

As an applied science, agricultural economics deals with the problems arising in agriculture and the food system, whereby sustainable utilization of natural resources and the environment are of decisive importance. In this context, the agricultural economics program is in total alignment with the six program initiatives of the School of Agriculture and Environmental Sciences. These are: (1) human and community development; (2) biotechnology and biodiversity; (3) agro-
medicine, nutrition and food safety; (4) small-scale agriculture; (5) soil and water quality; and (6) international trade and development. Each of these six program initiatives has an agricultural economic dimension to it. The importance of the agricultural economics program becomes more apparent if one considers the role socio-economic analysis plays in any effective interdisciplinary research program that requires a change in behavior or action including the development and transfer of appropriate technologies, and the need for economic impact analysis when communities experience significant changes in the local economic base. This interdisciplinary approach is specified in Futures Goal One: Establish and ensure an interdisciplinary focus for North Carolina A&T that mandates overall high quality, continued competitiveness, and effective involvement of global strategic partners in marketing and delivery of programs and operations.

At present, drastic changes are transforming the agricultural-political order which was established after the Second World War and the agricultural interventionist policies of western industrialized countries. North Carolina A&T State University aims to be part of this change as embodied in Futures Goal One. At the same time, we are facing the beginning of a new, biotechnological era which could revolutionize the entire agricultural and food supply sector. In this context, emphasis is placed on the following fields of research:

- New economic issues arising from the gradual adaptation of our structures to conform with those of other countries, with special emphasis on ecological and social aspects;
- Modified, liberalized agricultural market regulations which demand greater innovation and flexibility at all stages;
- Scientific support and analysis of agricultural policy and its implementation;
- New functions for rural areas: In highly-developed economies like the United States, the importance of the traditional task of food production is declining. On the other hand, there is a steadily increasing demand for agriculture to supply public services (care of arable land, creation and maintenance of leisure and recreation areas, etc.);
- Study of economic issues associated with food assurance, biotechnological developments, the utilization of natural resources and the production of renewable raw materials and sources of energy.

Biotechnology and biodiversity is one of the stated program initiatives of the School of Agriculture and Environmental Sciences. Elimination of the agricultural economics program would jeopardize the School’s ability to be fully engaged in the University Futures and the implementation of its program initiatives by denying it the vital interdisciplinary support through its social science dimension.

One of the hallmarks of the agricultural economics program is the options offered to students to concentrate in Agribusiness. Agribusiness is a very important sector of the North Carolina economy. Last year, this sector contributed over $59 billion to the North Carolina economy. In recognition of the importance of agribusiness to the economic development of rural North Carolina, the State has established an Institute for Rural Entrepreneurship to stimulate and support the development of micro, small and medium enterprises in 85 of North Carolina’s 100 counties, classified as predominately rural. It is a program of the N.C. Rural Economic Development Center and builds on partnerships with more than 30 organizations statewide to
serve the needs of rural entrepreneurs; including the Department of Agribusiness, Applied Economics and Agriscience Education, community and economic leaders, and state policy makers. The program has 10 elements, one of which is to expand opportunities for agricultural entrepreneurs. Under this program, the Institute and the Agricultural Advancement Consortium will join with the NC Department of Agriculture; NC State University; NC A&T State University and the Farm Bureau, to establish programs to stimulate innovations in agriculture. Again, elimination of the agricultural economics program would undermine this effort.

The Department has a very active research program, conducting research in a variety of areas vital to the State of North Carolina and to the Nation as a whole. Research areas include agribusiness and international trade, economics and policy issues affecting small-scale agriculture, rural health and farm safety. Departmental faculty have collaborated with faculty and research personnel from other units to research into developing alternative enterprises for individuals and communities that have been adversely impacted by the recent changes in the tobacco industry. This effort has been through the Golden Leaf Foundation of North Carolina. In the area of rural entrepreneurship and trade, the Department has been working with commodity groups and small producers to access international markets for their products. This effort has led
to a number of successes including export of pork products and locally produced wine to China. The faculty writes an average of 30 proposals and generates over $1.2 million each year in extramural funding.

2. Quality of the Program

The agricultural economics program does not have any licensure examinations nor are there any special accreditation review requirements. However, a series of review/evaluations are conducted each year. Students’ evaluations of faculty are conducted each semester for each course offered again using standardized forms developed by the University. These are used for merit salary raises, faculty development and program improvement. Periodically, the University undergoes a self-assessment study. The last time such a study was conducted was during the 2001-2002 academic year. As part of this study questionnaires were administered to students, faculty, staff, alumni and employers. The overall assessment was positive. The “academic program” received excellent rating from respondents so did the “quality of faculty.”

Consistently, our students rate our courses very highly. Over the last four years, the overall rating of the agricultural economics program has been around 4.6 compared to the university average of 4.3. Over the past four years, freshman enrollment has been growing at an average rate of 7 percent. However, the program is beset with low retention and graduation rates. Strategies are being developed to reduce the attrition rates and improve the number of students graduating from the program. Further, close to 85 percent of the graduates gained have professional employment or have enrolled in graduate programs. As stated earlier, the faculty members in the program excel in research productivity. On the average, the faculty writes about 30 proposals each year with about half of them receiving funding that totals over $1.2 million. Furthermore, each year, the faculty publishes about 15 research articles and 17 public exhibits are developed together with 38 public service performances. Over the last five years, two books and several book chapters have also being published. Faculty members are also involved in international research including countries such as Jamaica, China, Mali, Democratic Republic of Congo and many
more. This exposure in the international arena has also opened experiential learning opportunities for our students in some of these countries.

As part of our efforts towards program improvement, the agricultural economics program requested a comprehensive review by Cooperative State Research, Education, and Extension Service (CSREES) of the United States Department of Agriculture (USDA) from October 26 to 29, 2003. The review team identified many strengths and opportunities and few weaknesses as summarized below:

Strengths: The team listed the following as strengths of the department:
1) outstanding university and college leadership
2) a strong land-grant university and 1890 institution commitment
3) a departmental history of leadership to School of Agriculture and Environmental Sciences
4) strong departmental faculty
5) success in securing extramural funding
6) an interdisciplinary focus
7) departmental interest in all six SAES program initiatives
8) international and global experience
9) bright, enthusiastic undergraduate and graduate students

Weaknesses: The team identified several existing weaknesses within the department
1) lack of sustainable critical mass of faculty
2) no female faculty, and a heavy dependence on international faculty
3) no formal Cooperative Extension Service function
4) reactive rather than proactive

Opportunities:
1) interdisciplinary leadership
2) institutional motivation
3) agricultural business growth in North Carolina
4) experiential learning
5) enhanced undergraduate enrollment

In addition, the review team gave a number of recommendations and suggestions in the following areas: (1) Departmental Strategic and Structural Issues; (2) Academic Capacity; (3) Research Focus and Productivity; and (4) International and Global Involvement.

In response to the recommendations, the department has developed a six-year strategic plan to move our programs forward. This strategic plan has received the approval of the administration. At the core of this plan are curricula revisions and strategies to increase enrollment, and retention and graduation rates (see section on Actions to Improve Productivity). Fall 2005 will mark the beginning of the implementation of this long-term.
3. Faculty Involved

There are four agricultural economics faculty members in the department, each with a doctorate degree in agricultural economics (Table 1). Each faculty member teaches and conducts research on a variety of issues important to the state of North Carolina and to the nation as a whole. The average teaching load for each full-time faculty member is four (4) courses or 12 hours per semester. There are 15 graduate research assistants and four adjunct faculty members. The entire adjunct faculty has terminal degrees, except one.

Table 1: Teaching Faculty in the Agricultural Economics/Agribusiness Program

<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>Rank</th>
<th>Area of Specialization,</th>
<th>Terminal Degree</th>
<th>Institution and Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Godfrey Ejimakor</td>
<td>Associate Professor</td>
<td>Natural Resource and Ag. Policy</td>
<td>Ph.D.</td>
<td>Texas Tech (1989)</td>
</tr>
<tr>
<td>Donald McDowell</td>
<td>Professor and Associate Dean</td>
<td>Marketing and Agribusiness</td>
<td>Ph.D.</td>
<td>University of Illinois (1985)</td>
</tr>
<tr>
<td>Anthony Yeboah</td>
<td>Professor and Chairperson</td>
<td>Production Economics and Quantitative Methods</td>
<td>Ph.D.</td>
<td>Iowa State University (1981)</td>
</tr>
</tbody>
</table>

If the agricultural economics program were to be discontinued these faculty members could offer expertise in other university academic units such as the School of Business and Economics. However, the university and the state of North Carolina would be best served if they were given the opportunity to carry out current and future programmatic activities in the area of agriculture.

4. Facilities/Equipment

The existing physical facilities will be adequate to accommodate learning activities such as: lectures, seminars, discussions, conferences, laboratory experimentation and research. The degree program in agricultural economics is housed mainly in Carver Hall and there is a need to modernize certain aspects of this building including classrooms, offices, bathrooms and heating and air-conditioning.

Each faculty member is already equipped with a personal computer and a furnished office. In addition, there are several laboratory facilities as summarized in Table 2. All the necessary equipment are available and in good working order.
Table 2: Laboratories and Other Facilities in Support of Teaching and Research in the Proposed B.S. degree in Agricultural Sciences

<table>
<thead>
<tr>
<th>Laboratory</th>
<th>Teaching</th>
<th>Research</th>
<th>Type of Research or Teaching Activity</th>
<th>Undergraduates &amp; Graduate Student Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart Classroom (255 Carver Hall)</td>
<td>X</td>
<td></td>
<td>Application Software; Instructional Software; Operating Systems Hardware</td>
<td>64 undergraduates 12 graduates</td>
</tr>
<tr>
<td>Computer (201 Carver Hall)</td>
<td>X</td>
<td></td>
<td>Operations Educational Technology</td>
<td>30 undergraduates 15 graduates</td>
</tr>
<tr>
<td>Applied Survey Research Laboratory</td>
<td>X</td>
<td></td>
<td>Training relating to the techniques of the Computer Assisted Telephone Interview process (CATI) and Computer Assisted Personal Interviews (CAPI)</td>
<td>Approximately 15 undergraduates and 20 graduate students</td>
</tr>
</tbody>
</table>

5. Demand

The School of Agriculture and Environmental Sciences has established the high priority goal of increasing undergraduate student enrollment by seven percent annually for the next five years. The Agricultural Economics program adheres to this goal of increasing student enrollment. Concerted efforts will be made to improve the enrollment, retention and graduation rates. The B.S. degree in agricultural economics was initiated in 1956 and the enrollment in it has been fluctuating over the years. Table 3 provides data on the number of full-time undergraduate students for the 2000-2004 academic years.

The figures in Table 3 also indicate an upward trend in enrollment in the Agricultural Economics program and trend is expected to continue given the effective recruitment plan in being developed.

Table 3: Number of full-time undergraduate students in the Agricultural Economics program (2000-2004)

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<tbody>
<tr>
<td></td>
<td>21</td>
<td>25</td>
<td>33</td>
<td>42</td>
<td>41</td>
</tr>
</tbody>
</table>

The effect of these high enrollment figures is beginning to be felt in the graduation rates. Eleven (11) students will graduate this year as opposed to the low figures for the previous years (see Table 4). Effective strategies for increasing retention and graduation rates are being developed to ensure continuation of this trend. This program is offered mainly on-campus with only a few existing online courses. Online course offering is a major component of the curriculum revision.
currently underway. The program is not offered off campus. The strategic plan that has been put in place emphasizes online course offering to increase enrollment.

Table 4: Number of Graduates from the Agricultural Economics Program for 2002-2005

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<thead>
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</thead>
<tbody>
<tr>
<td>Number of Graduates</td>
<td>3</td>
<td>3</td>
<td>11</td>
</tr>
</tbody>
</table>

Job placement rate is over 85 percent for our graduates and the remaining students enroll in graduate school. It should be added that job placement rate would be higher if not for the unwillingness for some graduates to relocate. In a study, entitled “The Agribusiness Industry: New Opportunities for Business Graduates,” (Journal of Education for Business), the authors indicated that there is a strong and attractive job market for individuals possessing agribusiness management skills. The agribusiness industry constitutes approximately 20% of the U.S. gross national product. During the past decade, the agribusiness sector has undergone overwhelming changes that have affected every phase of the industry. The global market, the advent of high-tech production practices and integrated system of production, marketing, processing, and distribution have necessitated the need for more competent personnel, creating a market for trained and experienced agribusiness managers. The USDA estimates that the demand for graduates with strong agribusiness-management and financial-analysis credentials is likely to reach approximately twice the number of actual graduates. There can be no dispute that the agribusiness industry is a vital element in today’s economy as stated in the article and USDA. The agribusiness industry employs 20% of the U.S. labor force and firms that store, process, transport, manufacture, distribute, retail, or otherwise add value to agricultural products after the products leave the farm, account for the largest portion of the agribusiness GNP, with 82% of the total production value.

The undergraduate program offers a B.S. degree in agricultural economics and a B.S. degree in agricultural economics with concentration in agribusiness. Most of the students in the agricultural economics program opt for the agribusiness concentration; hence the elimination of the program will also take away or destroy this lucrative option.

According to official fall 2004 data, however, it has been determined that a senior student is still being counted under the Rural Sociology program, a program that was discontinued in 1999. Accordingly, an adjustment has been made in fall 2004 data to reflect this error, giving a total fall 2004 enrollment of 41 students (see Table 5): 8 freshmen, 12 sophomores, 9 juniors and 12 seniors. Given this distribution of students in the program, and assuming an increase of 3 incoming freshmen per year, a 85% retention rate for freshman to sophomore and sophomore to junior; 100% retention rate for junior to senior; and attracting at least 3 transfer or undecided students per year (freshman to sophomore and sophomore to junior), 90% graduation rate for seniors, the enrollment and number of graduates in the program are projected as summarized in Table 5.
Table 5: Projected Annual Enrollment and Graduates for the B.S. degree in Agricultural Economics (2004-2010)

<table>
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<tr>
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<tbody>
<tr>
<td>Freshmen</td>
<td>8</td>
<td>11</td>
<td>14</td>
<td>17</td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td>Sophomores</td>
<td>12</td>
<td>10</td>
<td>12</td>
<td>15</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>Juniors</td>
<td>9</td>
<td>13</td>
<td>11</td>
<td>14</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>Seniors</td>
<td>12</td>
<td>9</td>
<td>13</td>
<td>11</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td>43</td>
<td>50</td>
<td>57</td>
<td>67</td>
<td>77</td>
</tr>
<tr>
<td>Graduates</td>
<td>9</td>
<td>8</td>
<td>12</td>
<td>10</td>
<td>12</td>
<td>14</td>
</tr>
</tbody>
</table>

Based on the assumptions made, there will be about 77 students in the program by fall 2009 and the program will be graduating about 14 students annually.

In reference to employment demand, a USDA publication entitled, “Employment Opportunities for College Graduates in the U.S. Food, Agricultural, and Natural Resources System (2005-2010),” disclosed that “you can expect approximately 24,000 annual openings compared to about 20,200 graduates with expertise in management and business areas, a shortfall of almost 16 percent. The report added that “in fact, of all projected jobs for college graduates in the food, agricultural, and natural resources system, you’ll find just under half (46 percent) in management and business occupations.” The report cited strong employment opportunities for: 1) technical sales representatives, 2) food brokers, 3) accountants and financial managers, 4) forest products salesperson, 5) market analysts, 6) fruit and vegetable marketing representatives, 7) sales managers, 8) landscape managers, 9) small animal health care product distributors, and 10) international business specialists. The report also stated that colleges offering degrees in agriculture and natural resources are expected to produce 60 percent of the graduates who will compete for these positions. It is projected that 40 percent of the qualified graduates will have degrees in allied fields such as marketing, business management, economics, advertising, accounting, and retailing.

The importance of this program is reflected in the increased visitation to our department by agribusinesses and federal agencies. These agribusinesses and agencies include Cargill, Elanco Animal Health, Norvatis Animal Health, Archer Daniels Midland Company, Purina and Southern Sates Cooperatives. As a further reflection of the interest in our program, Syngenta has established a “Syngnet” Scholars program to provide scholarship monies to students who enroll in the agribusiness concentration. Examples of federal agencies that visit our department include Agricultural Marketing Service, Economics Research Service, Foreign Agricultural Service, Natural Resource Conservation Service, National Agricultural Statistics Service and Risk Management Agency. The program has enjoyed more than its fair share of a number of USDA Scholars (7 since program’s inception). Elimination of the agricultural economics program will jeopardize these relationships.

The current trend is for employers of agricultural graduates to give preference to students who are multi-faceted in the field. For example, they prefer graduates of the natural sciences to have the economic and computational background that will make them more effective in their duties. As such students from other departments in the School of Agriculture and Environmental Sciences frequently enroll in several of the courses in the agricultural economics program such
as agricultural finance, agricultural price analysis, computer applications in agriculture, and agribusiness management. In addition, the program offers courses in environmental economics hence this program has the potential of being an incubator for the newly established doctoral program in Energy and Environment.

6. Costs

The program requires 127 credit hours for completion and is 3 more than the university requirement. This is due largely to the interdisciplinary nature of the program which requires students to take courses from other programs to enhance their marketability upon graduation. The average class size in the major courses is fifteen (15). Table 6 provides a summary of the program productivity in terms of student credit hours generated. Again the data point to an upward trend in program productivity as measured by student credit hours generated. The percentage of courses with less than 10 students is beginning to show a downward trend.

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Number of Courses Offered</td>
<td>16</td>
<td>13</td>
<td>11</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>Student Credit Hours</td>
<td>360</td>
<td>399</td>
<td>255</td>
<td>465</td>
<td>519</td>
</tr>
<tr>
<td>Course with &lt;10 enrollment</td>
<td>10</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>5</td>
</tr>
</tbody>
</table>

Furthermore, the ongoing curricula revisions are being done with the aim of consolidation or elimination of courses to reduce course proliferation and costs. The program has only one concentration (Agribusiness hence there is very limited possibility for consolidation). Most of the additional courses required in this concentration are taken in the School of Business and Economics which is a further cost-saving measure.

The average yearly cost of library resources is about $1,500 for the agricultural economics program, while the average yearly cost of specialized equipment will be approximately $9,000.

7. Duplication

The economics of agriculture and food systems is only taught in the Department of Agribusiness, Applied Economics and Agriscience Education. As mentioned earlier, the agricultural economics program complements several other programs on campus both in the three areas of learning, discovery and engagement. Students in other programs in the School of Agriculture such as animal sciences, human environment and family sciences and horticulture all require knowledge in the area of agricultural economics to enable them to be well-rounded intellectuals in their respective fields. Employers of graduates from these areas continually stress the importance of their prospective employees of having the agricultural economic/business backgrounds needed in making a variety of decisions in the fields. Interdisciplinary training is the basis for meeting this requirement. Consequently, students in these programs take courses from the agricultural economics/business program. There are no other programs or departments that provide the
"agricultural dimension" that agricultural economics brings in meeting the interdisciplinary needs of these students.

As we continue to revise the curriculum as stated above, there are plans to increase online course offerings by sharing courses with other institutions both within and outside the state. This effort is expected to increase enrollment. However, given the increased trend in enrollment data over recent years, continued emphasis would be placed on strategies for increasing retention and graduation rates.

This program is distinctive in the UNC system in the sense that it is one of only two such programs in the system. The location of the program is geographically advantageous to individuals in the Piedmont and Mountain areas of North Carolina; in particular, those who otherwise would have to travel great distances for agricultural economics degree coursework. Finally, the curriculum is being revised to ensure no duplication and to enhance the overall quality of the educational product provided.

8. Critical Mass

The program's elimination would drastically impact minority agricultural economics representation in the state and nationwide. The program has been one of the major sources of minority agricultural economics graduates both at the NC Dept of Agriculture and Consumer Sciences and the United States Department of Agriculture. Furthermore, elimination of this program would affect adversely the ability of the School of Agriculture and Environmental Sciences to provide interdisciplinary approach to learning in the School. In addition, if eliminated, minority as well as majority students who desire a more intimate and responsive learning environment would be left without this learning option and would have to travel great distances for this training. Relations have been established with agribusiness companies such as Syngenta, Eli Lilly, the North Carolina Agribusiness Council, the N.C. Farm Bureau and Carolina Farm Credit to support and strengthen the mission of the agricultural economics program.

Actions to Improve Productivity

Finally, this section of this document outlines efforts to coordinate recruitment functions in a manner which positions the program effectively to increase our enrollment to comply with UNC-OP expectations and as well as to increase the attractiveness and quality of the program. This effort is comprised of the following specific strategies:

Low Student Enrollment

- Work closely with the Office of Agricultural Communication to develop and disseminate program brochures, flyers, posters and folders.
- Enhance collaborative links with high school counselors.
- Work closely with the newly established scholarship office on campus.
- Expand the use of the World Wide Web to advertise the program, inclusive of applying for admission.
• Student and faculty teams to visit/target programs in North Carolina high schools
• Make a concerted effort to use our facilities such as the Applied Survey Research Lab and the International Trade Center as recruitment tools by organizing seminars, workshops and conferences for target audiences.
• Make use of activities such as AGGIE Nights, Career Expo, University Day, and Alumni Receptions as recruitment conduits.
• Send postcards or follow up letters to all interested students.
• Meet with guidance and career counselors to target students well suited for the program, personally contact these students.
• Send recruitment teams to two year colleges and community colleges as well.
• Appoint faculty committee to research and apply for additional scholarship monies.
• Advertise the availability of scholarships for students in the program on-campus.
• Actively recruit alumni in fund raising efforts for scholarship monies
• Earmark funds from NC A&T State University’s portion of the 1890 Facilities Grants Program, to embellish teaching and laboratories. This will include enhancing classrooms and instructional laboratories to make them attractive to potential students
• Increase enrollment through competitive support by targeting businesses for scholarships and interfacing with area employers.

Low Student Retention Rates

• Strengthen collaboration with the Office for Student Success to access support services for our students.
• Strengthen collaboration with the Academy for Teaching and Learning to access support services for our faculty and students.
• Encourage one on one professional relationship between students and faculty.
• Encouraging faculty to become more accessible both in terms of convenient for students and availability after hours.
• Enhance the use of student mentors.
• Participate in the School of Agriculture and Environmental Science’s “Academic Summit” during fall 2005.
• Professors make available to those students who are marginal review/extra sessions, find out where the problems are and help them through it.
• Require students wishing to change their major to have an exit interview, this could pin point why students are leaving and areas that we can improve.

9. Recommendation about the Program

Agricultural Economics should be continued for the reasons cited above and its potential for continued growth.
REFERENCES


5. Ag Advocate, February 2004


The University of North Carolina

Criteria and Guidelines for Program Review and Recommendation

Date: May 5, 2005

Constituent Institution: North Carolina Agricultural & Technical State University
API Discipline Number: N/A
CIP Discipline Specialty Title: Landscape Architecture
CIP Discipline Specialty Number: 040601
Level (B, M, CAS, D, First Professional): B (Bachelor) & First Professional
Exact Title of the Program: Landscape Architecture
Exact Degree Abbreviation (e.g. B.S., B.A., M.A., M.S., Ph.D.): B.S.

Landscape Architecture

1. Centrality to University’s Mission

The mission statement of North Carolina A&T State University (NC A&T) states that the university is a public, comprehensive land-grant university committed to fulfilling its fundamental purposes through exemplary undergraduate and graduate instruction, scholarly and creative research, and effective public service. The four-year Bachelor of Science degree program in Landscape Architecture at NC A&T supports this mission. The Landscape Architecture Program further promotes the University’s Future’s strategic vision as a learner-centered community that develops and preserves intellectual capital through interdisciplinary learning, discovery, engagement, and operational excellence.

The mission of the Landscape Architecture Program is to provide an educational opportunity of excellence to the constituent student population at a baccalaureate level. Instruction in the discipline of Landscape Architecture focuses on solving physical design problems related to sustaining the natural resources and the environment while improving the quality of human life. Instructional knowledge is drawn from art, science and technology and focuses on analysis and synthesis, leading to graphic solutions of physical design (aesthetic, engineering and management) problems in the landscape.

The purpose of the Landscape Architecture Program is to educate and train students who can work across disciplines with engineers, environmental scientists, architects, social scientists and planners to provide ecologically sound design solutions. The Landscape Architecture Program insists on high quality instruction, creative works, and community outreach.

The Program’s outreach/public service to the community focuses on providing physical design solutions (conceptual only) on an “as-need” basis for public and institutional land uses.

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Executed projects enhance instruction by providing students with real problems, sites and clients while making the program and the discipline more a part of the community.

Research, creative works, and consulting by the faculty are as diverse as the backgrounds and broad interests of the faculty. These activities satisfy the mission of a comprehensive, land grant university. Topical areas focus on: (1) land use as it affects water quality; (2) contemporary cultural landscape interpretation (women and minorities); (3) un-built landscapes exploration; (4) technical landscape publications (irrigation and landscape management); (5) historical cultural landscape interpretation, and; (6) professional landscape architectural practice concerned with urban, institutional and residential site planning and design problems. Again, these activities serve to strengthen the instructional program by providing the faculty with current data, experience and knowledge to bring to the classroom, as well as strengthen the program with its constituent agencies and professional community.

The loss of the program would have adverse effects on the mission of the University and the UNC system since it is the only accredited four-year Bachelor of Science degree in Landscape Architecture in the UNC system. The program at North Carolina State University is a five-year Bachelor of Landscape Architecture degree. The program at NC A&T was developed to encourage minorities into the field of landscape architecture. The Landscape Architecture Program at NC A&T continues to do an excellent job in this goal. Landscape architects are educated to protect and enhance the nation’s resource base and environment. They develop environmental impact analysis; residential development at various scales; highway roads and transportation systems; farmland preservation plans; rural revitalization; plans for arid and desert areas; develop and enhance national parks; agricultural and use plans; forest management and visual resource management plans; consult in water treatment plans; sediment, erosion control and storm water plans; natural preservation/conservation plans; historic and cultural sites; wetland delineation and restoration; and irrigation and water management plans. Participation in the solution of these problems is the primary focus of the Landscape Architecture Program at NC A&T.

The Landscape Architecture Program serves a unique segment of the population. Because of the nature of the program, there is a frequent need for mentoring, remediation and one-on-one tutoring. Although the program must and will continue to grow, we must maintain our ability to provide the one-on-one remediation and mentoring that our students require. Although African Americans comprise 15% of the national population, only three hundredths of one percent of practicing landscape architects is African American. According to the Director of Education for American Society of Landscape Architects (ASLA), NC A&T graduates more African American students than the other 55 accredited institutions, while serving the diverse population of the Piedmont.

This program cannot be combined with any other program. The program is accredited by the Landscape Architecture Accreditation Board (LAAB) which requires a stand alone program.
2. Quality of the program

Established in 1976, the program received an initial three-year accreditation in 1993. It was accredited for a five-year accreditation period in 1996 and 2001. The Program is scheduled for a re-accreditation visit in the Fall of 2005. This program is the only accredited four year undergraduate program in the State of North Carolina. It is also the only accredited undergraduate program of its type at any Historically Black College or University (HBCU) in the United States and enrolls more African American students than any other accredited university.

The Landscape Architecture Program at NC A&T is an excellent program. Our students are sought after at a local, state and national level. Re-accreditation by the Landscape Architecture Accreditation Board, input from an appropriate advisory board drawn from public and private institutions, as well as student evaluations, are used to assess quality. The Advisory Board consists of the professionals from a cross-section of the industry. This board meets once a year for evaluation and guidance. The accrediting body evaluates the program on a five-year basis.

The program has gained a national reputation for its program quality, national symposia, community service projects, dedicated faculty and students. The Landscape Architecture Accreditation Board (LAAB) visitation team reported in October of 2000 that they were pleased with the overall quality of our program. It concluded that the program has: “excellent teachers who generally share a common philosophy and devotion to the welfare of the students. Those students who continue in their studies are bright and articulate and exhibit a positive attitude about their academic experiences and the profession. There is widespread agreement that the program has improved significantly and has performed extremely well over the years...the program enjoys a fine reputation throughout the community, profession, and University” (LAAB Team 2000).

Currently, the mission, goals, curriculum and course content are intensely and narrowly focused on excellence in physical design in order to prepare graduates to enter private practice, pass their professional licensure exams and become principals in private landscape architecture, architecture or engineering consulting firms. North Carolina A&T’s Landscape Architecture Program has an excellent track record in fulfilling the above. Our graduates understand, accept and enjoy the narrow focus and undergo the academic rigor and often overwhelming time demands associated with that focus.

The results of a recent survey to practicing landscape architects, throughout the country to determine the knowledge, skills and abilities needed by young graduates entering the professional practice world supports the above, as does the nature of one’s career path opportunities with continuing and evolving forms of employment from private practice to public practice to sales positions in the green industry to positions in the real estate and land development sectors, etc.

Recent accreditation teams, chaired by one of NC A&T’s landscape architecture professors, sent to universities such as Penn State and Purdue University illuminated the trend of other landscape architecture programs moving toward a more broad based curriculum of interdisciplinary core

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curricula, learning critical thinking skills, and drawing more from the liberal arts, rather than being so intensely and narrowly focused on an older architectural/engineering curriculum model that no longer may adequately serve the needs of today’s students and the profession of landscape architecture.

3. Faculty involved

There are three faculty members in the program. There are no part-time faculty members and no graduate assistants. All faculty members hold appropriate terminal degrees. The average teaching load of the faculty is 9-10 hours per semester (mostly studio type courses) with the remaining time spent advising, recruiting, tutoring and supporting the various time-intensive studio sessions. There is no reassigned faculty time and are no related areas in which faculty can be reassigned.

4. Facilities/Equipment

At present, the classrooms/studios need better lighting, proper tile flooring and proper temperature controls. Several studio rooms do not have air conditioning making the teaching and learning environment inadequate. The electrical system in the building is not sufficient to accommodate the demands in the building. Tack boards are needed in the classrooms to accommodate class presentations for drawings and teaching. Drawing tables and stools are needed to accommodate the studio/teaching atmosphere. All of these problems are being corrected this summer, with the exception of the electrical system.

Also, during the summer 2005, the computer laboratory will be equipped with the latest multimedia equipment and each studio will have six computers and a scanner. Wireless internet connections will be available in the program in the fall 2005.

5. Demand

The Landscape Architecture Program has been in place for thirty years. Since the initial accreditation in 1993, the number of students in the Landscape Architecture Program has slowly increased (see Table 1). The program is serving the projected number of students. There are currently forty-seven majors in the program (including six students who recently changed to landscape architecture). Currently, all on campus numbers are expected to grow (see Table 2). The number of graduates is increasing (see Table 3).

Job prospects are excellent. There are far more jobs than there are graduates. According to the U.S. Department of Labor, Bureau of Labor Statistics: “Employment of landscape architects is expected to grow faster than the average for all occupations through the year 2012. Their expertise will be highly sought after in the planning and development of new residential, commercial, and other types of construction, to meet the needs of a growing population. With land costs rising and the public demanding more beautiful spaces, the importance of good site planning and landscape design grows.” Registered Landscape Architects send their children to this Landscape Architecture program. At present our students are employed by government agencies; one student was a supervisor of construction for the Franklin D. Roosevelt Memorial in Washington, DC, employed with the
National Park Service. City governments from across the United States (Texas, Colorado, Florida and North Carolina just to name a few) employ our students as City Planners, Landscape Architects for Parks and Recreation Departments. Top national and international landscape architectural private firms such as Carol Johnson and Associates, Cambridge, MA and EDSA, Ft. Lauderdale, FL have employed our graduates.

There are two courses offered in the Landscape Architecture curriculum that are necessary for the Environmental Horticulture curriculum.

Table 1: Number of Full-Time Undergraduate Students In The Landscape Architecture Program (2000-2005)

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Table 2: Projected Annual Enrollment For B.S. Degree in Landscape Architecture (2004-2010)

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Table 3: Number of Graduates from the B.S. in Landscape Architecture (2000-2005)

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6. Costs

One hundred twenty-eight hours are required for completion of the program. The total is greater than the institutional average. There is no other option in the program. Courses average 8-10 students so only a few are under enrolled. We prefer a minimum of 5 which could be less for graduating seniors who may need a given class to graduate. Yearly expenses for library resources and specialized equipment have been sustained by the University. Approximately $1,500 is allocated for library collections. The state allocation support budget is about $12,000. Space and library holdings are adequate.

Support for scholarships and equipment will be sought through the writing of proposals to federal, state or private agencies. For example, a $200,000 proposal has been sent to USDA requesting assistance for scholarships, recruiting and retention of the Landscape Architecture Program.
7. **Duplication**

The Landscape Architecture Program compliments the other programs in the Department of Natural Resources and Environmental Design, which fits with the land-based mission of the department. This is a stand-alone program with specific accreditation and skill requirements. There is no course duplication in other departments. Because of the intensive, hands-on nature involving large blocks of guided studio time as well as ongoing faculty and student peer review, many of these courses are not amenable to distance learning. However, some lecture courses such as Landscape Architecture History (LDAR 270, 271) are candidates for distance learning.

As stated earlier, this program is unique in that it is the only accredited four-year landscape architecture program in North Carolina. Being approximately in the center of the state provides reasonable access to residents from around the state.

8. **Critical Mass**

If the program under review was eliminated, 46% (47 of the 103) of the students in the Department of Natural Resources and Environmental Design would be lost.

This program is not related to other programs at NC A&T; therefore, a merger is not recommended. The strategies outlined will be implemented and we are confident that the minimum requirement for enrollment and graduation will be met in the future.

Scholarship development, recruitment and retention have been a major focus of the program. Attention to retention strategies has helped our retention rate in the Landscape Architecture program. To make the program more productive a $200,000 USDA Capacity Building grant proposal will address the need area of student recruitment and retention. This proposal will go a long way in developing scholarships and developing more exposure to our program.

9. **Recommendation about the Program**

The Landscape Architecture Program at NC A&T should be continued as a separate degree program based on the critical services it offers to the State of North Carolina and the nation.

Although the Landscape Architecture Program has a national reputation, there is a need for more graduates. With the help of the USDA Capacity Building grant, our focus through student recruitment and retention will be a landscape architecture awareness campaign, which offers: (a) scholarships, and (b) monitors student matriculation and course activities to better serve the student and the university at large. This will strengthen our ongoing retention and recruitment program efforts. At the heart of this program is a need to develop more awareness of and give more exposure to a very good Landscape Architecture Program by way of printed, voice, and digital media. The message will be, “We have an excellent program. We have excellent graduates who are engaged in meaningful work. We have an excellent student body. We have scholarships.”

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The main thrust is to increase the number of students entering and graduating from the Landscape Architecture Program. These strategies will be accomplished through:

**Low Student Enrollment**

- Acquire scholarship funds for students on campus
- Continue to encourage North Carolina Chapter of ASLA to add to the scholarship endowment fund
- Develop audio, video, and multimedia presentations for potential students
- Plan, design, and purchase print, non-print, and electronic media
- Create brochures for the Landscape Architecture Program
- Publish a newsletter for students, faculty, administration, alumni, other landscape architecture programs, and potential students
- Purchase ASLA and NCASLA brochures for distribution
- Plan and design CD ROM for distribution
- Develop advertisements for newspapers and magazines
- Develop carry size portfolio for visits to high schools and other sites
- Slides/visuals of student projects (CD-ROM)
- Design a first class website
- Increase and enhance high school visitations with both faculty and students
- Invite high school students to campus for A&T student presentations (Senior to Senior Program)
- Other ongoing or future projects that will help with the recruitment effort
- Disseminate information about the program by displaying recruitment materials in garden shops, at trade shows, and conferences
- Investigate and research other businesses or facilities to place Landscape Architecture Program display panels
- Continue to participate in community/civic projects
- Work with businesses, civic, and community groups to develop a community lecture series
- Research ways to develop a Summer or Career Discover Program
- Research landscape architecture programs across the region, state, and nation, review professional literature and review published research to learn how student progress is monitored.
- Design and implement a plan that will determine the procedures, criteria, and strategies that will be used to monitor student progress.
- Assess if monitoring process contributed to increased number of students retained in the program.
- Design and implement a plan that will determine the procedures, criteria, and strategies that will be used to monitor faculty effectiveness.
- Continue computer courses training
- Publish Program Calendar of Events
- Develop permanent display of graphic material needed and completed for each year of student work
- Slides/visuals of current award winning professional projects (CD ROM)
Low Student Retention Rates

- Monitoring student progress
- Monitor faculty effectiveness and delivery
- Review faculty courses and teaching effectiveness
- Recommend continuation, modification, or elimination of course content or activities.
- Workshop for professors about teaching methodology and other subjects
- Revisit Buddy System
- Promote Student Club enrichment activities
- Strengthen collaboration with the Office of Student Success to access support services for our students
- Strengthen collaboration with the Academy for Teaching and Learning to access support services for our faculty and students.
- Continue one-on-one student mentoring/advising
- Continue senior student exit interviews to establish ways of strengthening the Program

A plan to reorganize NC A&T's Landscape Architecture Program's mission, goals, curriculum, and course content is being discussed by the faculty and will be phased in during the next academic year. This reorganization will bring A&T's Landscape Architecture Program closer in line with other landscape architecture programs in the nation and should profoundly improve NC A&T's Landscape Architecture Program's retention and graduation rates.

Statistics from the accreditation reports have shown a positive progression in enrollment since 2002. This indicates a positive steady growth in the program's development. Our current program enrollment based on earned hours, at the junior and senior classification is 15 and 10, respectively. With the continued growth at the university level, our continued use of retention strategies, use of a more broad based teaching and learning environment, and the proposed curriculum restructuring, we will exceed the requirements for enrollment in the next two years.

Signatures:

Chancellor

Chief Academic Officer

Person to Contact if there are Questions about Information in this form

Dean Alton Thompson
The University of North Carolina

Criteria and Guidelines for Program Review and Recommendations

Date: May 2, 2005

Constituent Institution: North Carolina A&T State University

API Discipline Number: N/A

CIP Discipline Specialty Number: 14.0301-027-000

Level (B, M, CAS, D, First Professional): B (Bachelor)

Exact Title of the Program: Bioenvironmental Engineering

Exact Degree Abbreviation (e.g. B.S., B.A., M.A., M.S., Ph.D.): B.S.

Centrality to the University’s Mission
The mission of the Bioenvironmental Engineering (BEE) Program at NC A&T State University (NC A&T) is to provide quality Bioenvironmental Engineering education for its students to prepare them to be leaders and to satisfy the educational and technical needs of society on local, national, and international levels. Key areas of emphasis of the program include efficient production of food and fiber, conservation of natural resources, and environmental sustainability.

At the heart of the University’s mission as a land grant state university is the goal to provide exemplary undergraduate instruction in engineering, agriculture, sciences, and technology. Recent advances in engineering, biotechnology and related sciences have created the need for programs that teach students how to apply engineering principles to biological systems. Animal waste management, renewable energy system design, production of value added and safe environmental products through fermentation and watershed modeling are some of the activities in this engineering field. The Bioenvironmental Engineering program at NC A&T provides such an opportunity by blending together components of engineering mechanics with biotechnology and other agricultural sciences to create a unique program of instruction that prepares students for a range of career opportunities involving the application of technology to agricultural production, energy development, and environmental protection. This instructional combination gives the program the capacity to offer an educational degree to students of diverse interests and backgrounds.

The program at NC A&T is nationally accredited and the only program of its kind that is accredited at any minority institution in the United States. In 1991, the program was first reviewed by the Accreditation Board for Engineering and Technology (ABET) and was re-accredited for the second and the third time in 1995 and 2001, respectively.

The program is jointly administered by the College of Engineering (COE) and the School of Agriculture and Environmental Sciences (SAES). Several of our courses (CAAE-204, 362, and
were developed and are taught jointly with the Civil Engineering Program. Research activities are conducted jointly with several departments including Civil Engineering relating to water and waste management, and water quality research, Chemical Engineering addressing bioprocessing, biorefinery, and renewable energy, and Industrial and Systems Engineering examining manufacturing issues. In the School of Agriculture and Environmental Sciences, we collaborate with Human Environment and Family Science department on biotechnology and food engineering topics and Agribusiness, Applied Economics department on small farm issues.

Bioenvironmental Engineers have been called the architects of the environment and will play an even greater role as society becomes more technologically advanced. Considering our ever-changing world, these engineers have broadened their scope of bioenvironmental topics to include food and biological systems. These challenges address the production of food and fiber but also include the residual effects of production which can degrade our natural resources and the environment. Society must address these challenges or concerns. There is also a need to ensure that minorities are trained to assume responsible positions and contribute to society. Our graduates will supply the talent necessary for a diversified work force that is projected for the year 2020 and beyond. USDA/NRCS is currently supporting students in this major to meet their employment objectives.

To prepare students for these challenges and to provide an educational program of unique scope and emphasis NC A&T developed the Bioenvironmental Engineering (BEE) program. In 2000-2001, the program was consolidated with Civil and Architectural Engineering programs under one department to eliminate duplications. Additional changes and mergers would not be advantageous to the program or its students.

The administration and faculty in the COE and SAES consider the accreditation of this program as a major accomplishment because the program at NC A&T is the "envy" of the other minority institutions that have been trying to establish an accredited Agricultural Engineering program on their campuses. With continued support from the Administration, the prospect of increased scholarship funding from USDA-Natural Resource Conservation Service (NRCS) and the Ford Foundation, and more intensified recruitment, the program will become more viable.

Quality of the Program
The BEE Program received an excellent review by the visitor from ABET in 2001. The fact that more than 50% of our graduates pursued graduate education at major universities and the remainder of our graduates were employed with average starting salaries comparable to other engineering disciplines were sited as major strengths of this program.

We are proud to report that the graduates of the program from recent academic years are either gainfully employed or pursuing graduate degrees at well recognized U.S. universities. Table 1 shows the placement of some of the graduates. Furthermore, five graduating seniors in 2005 either have job offers or have admission to attend graduate schools. One of our alumni received her Ph.D. degree in Engineering from the Purdue University last year and is working for USDA as a program manager. Two others have received their Ph.D. degrees this year, one from Penn State and the other from University of Illinois. Another student is due to complete his Ph. D. degree from North Carolina State University this summer. The post degree educational success
of our graduates clearly demonstrates the value of the BEE degree as a strong foundation for higher learning and development of quality scholarship and professional development. In short, our graduates are in demand and are marketable due to the quality and scope of the program. Since its inception, the program has received excellent reviews by several external reviewers. Graduates report being satisfied with their training and feel prepared for graduate work or entry into the biotechnology workforce.

Faculty
The faculty members are highly skilled and well-trained Bioenvironmental Engineers. Their diverse educational backgrounds contribute greatly to teaching, research, service, and the development of our students.

a. There are three full time faculty members with doctorate degrees (Agricultural Engineering) serving this program. Currently, the faculty number is at the minimum level (3 FTE) required by the accrediting agency to maintain accreditation. However, through research funds we have been able to recruit additional personnel needed to sustain the program.

b. Two adjunct faculty members are registered engineers who have teaching assignments and one research associate who is involved in research.

c. The three full time faculty members are active in conducting research, writing proposals, and publishing papers.

d. The average teaching load of the faculty in the department ranges from 9 hours.

e. Full time faculty members receive 25%-50% release time each semester to conduct research. The maximum time currently released for research is 50%.

f. The faculty members are required to recruit, mentor, and advise students in the program.

Facilities/Equipment

a. The facilities are excellent. The ABET program reviewer in 2001 stated that the equipment and facilities are in excellent condition. Federal funds, in excess of $700,000, were used to renovate Sockwell Hall, where the Bioenvironmental Engineering is housed. A four-fold increase in laboratory and office space has been achieved in the past five years. The laboratory facility consists of: (1) Computer lab with twelve student workstations loaded with general application software, data management, statistical package, and Geographic Information Systems (GIS) software; (2) Water resources Laboratory equipped with hydraulic bench, open channel flume, and hydrograph; (3) Soil Physics Laboratory equipped with hydraulic conductivity tester and soil penetrometer; (4) Instrumentation Laboratory equipped with devices for measuring physical parameters, energy management devices and data acquisition systems; and finally (5) Bioprocess Engineering Laboratory multiple fermentors, incubators, centrifuges, an anaerobic reactor, and High Performance liquid chromatograph.

Additionally, approximately $2.0 million have been obtained from grants to further develop teaching and research laboratories as well as to provide scholarships.

b. Excellent instructional equipment is available and will be adequate for the projected enrollment over the next five years.
Demand
a. The program name was changed from Agricultural Engineering to Bioenvironmental Engineering in 2002. Based on our current strategic plan for recruitment and retention we are projecting 50% increase in total enrollment by fall of 2006 and meeting the minimum enrollment of 25 students in junior and senior year by 2007 (See Table 2).
b. Requests to fill job vacancies and offers for graduate study were in excess of the number of graduates.
c. In 2003-2004, the program produced nine graduates with three more graduating in spring 2005 and another two scheduled to graduate in the second session of summer 2005 (See Table 1).
d. The job prospects for these graduates are excellent. Upon graduating, these graduates on average receive two job offers. The 2005 USDA report on employment opportunities forecasts strong employment opportunities for Agricultural Engineering and Science graduates during the next 5 years. The report projects over a 5% shortage in the number of qualified graduates each year.
e. There are several courses from this major that are being used as supporting courses in other majors. AGEN-522 Introduction to Food Engineering is used in Food Science and Nutrition curriculum, AGEN-216 Geographic Information System is used in Landscape Architecture and Civil Engineering curricula, and AGEN-114 Farm Maintenance is used in the Agricultural Education curriculum.

Costs
a. A total of 128 credit hours are required for the completion of this degree program.
b. There is only one concentration offered under this program—which is Soil and Water Engineering.
c. Class size varies from year to year. Normally, there are more students in the lower level courses than in the upper level courses. Average class size for courses in this major varies and is currently at 8 students.
d. With the threshold of 10 students for undergraduate courses, there are under-enrolled courses in this program. This will be changed in the future as we implement the new strategies for increasing the enrolment.
e. There is an annual $1,000 library budget and $10,000 equipment and maintenance budget for this program.
f. Library resources and laboratory equipment are adequate at this time.
g. Given that the program has sufficient equipment, we will maintain this equipment, reduce the expenditure on new equipment, and reallocate these funds ($10,000) to program development and recruitment, because the program has the potential to attract more students. It should be noted that similar programs nationally, have low enrollments. For example, the same department at the University of Tennessee with 8 faculty members only has 28 students.
h. Funds for scholarships are included in our research proposals and several scholarships are already available. With these scholarship funds and the scholarship assistance from the College of Engineering, quality students will be recruited into the program. Without scholarships, the students will not be as motivated to enter the program. Additionally, retired professors and persons from the private sector have established endowments from which the interest is used to offer scholarships for students majoring in Bioenvironmental Engineering. Thus far, five scholarships have been established that include the North Carolina Section of...
the American Society of Agricultural Engineers, the USDA-NRCS Environmental Scholarship, the E.S. Carr Scholarship, the Lee A. Yates Scholarship, and the Bernard Marshall Scholarship. There will be a Ford Motor Company Environmental Scholarship established during the next academic year.

i. This program will play an important role, in training students who would earn their MS degree from other engineering majors (i.e. civil and chemical engineering) and then enroll in the interdisciplinary Ph. D. in Energy and Environmental Studies. This program has the potential to attract, retain, and graduate quality students who will continue to positively impact both the state and the nation.

**Duplication**

a. This program is not a duplication of other programs at the University. Rather, this program provides a bridge between engineering and agriculture. The program focuses on studying agriculturally based environmental issues and designing biological and ecological systems.

b. Courses are not duplicated in other programs/departments. All duplications have previously been eliminated as a result of the merger between Civil, Architectural, and Bioenvironmental Engineering.

c. This program is unique and distinct. This is the only ABET accredited Bioenvironmental Engineering Program at a minority institution in the country. The national organization of the American Society of Agricultural Engineers and other 1862 institutions have expressed support for the continuance of this program since we are a major source of graduate students for such institutions of higher learning. Continued activities in this program will increase minority participation in this profession in the future.

d. The program's location at NC A&T is advantageous in providing continuing education to all professionals working in the Piedmont area (i.e., USDA and several environmental and bioprocessing companies) as well as attracting traditional and non-traditional students from high schools and two year colleges within North Carolina and surrounding States.

**Critical Mass**

Since its beginning in 1992, the BEE program has operated as an interdisciplinary academic program and has gained valuable experiences through its successes and its challenge of low enrollment. With these experiences, the BEE Program can now be used as an important model to the success of the interdisciplinary Futures vision at NC A&T.

In addition, faculty from this program generate significant amount of research funds that help to support this and other programs. Therefore, it follows that a major portion of these funds would be lost by eliminating the program. Majority of our USDA research funds are capacity building type grants which is intended for student training.

We have established our niche in North Carolina for constructed wetland studies, impact on swine waste management, and erosion and water quality modeling as well as the training of undergraduate students on the use of various erosion and water quality models. Also we have a good research and educational program in bioenergy and bio-fuels. As a result of eliminating this program many minority students will lose the opportunity to study Bioenvironmental Engineering. It is because these students only want to study in minority institution.
Merger
Because the mission, goals, and objectives are different, the program cannot be combined with other programs at this institution. Also, there is no similar program at the institution that addresses erosion and water quality modeling, bioenergy and renewable energy, and non-point source pollution. Even though Civil Engineers conduct water resources and waste management projects, they only target urban areas and municipalities, whereas, the BEE trainings focus on agricultural issues and rural areas. This program cannot be combined with any other program within the Department without losing its identity and probably ABET accreditation. Since there is a definite market for Bioenvironmental Engineers, the program should be allowed to retain its interdisciplinary status.

The bio-energy and bio-fuels education and research program is motivating BEE students to finish their MS degree in related engineering fields and then apply to the Energy and Environmental Studies Ph. D. Program at the University. We already have two students who are following this plan. This is unique to the program at NC A&T.

Justification for Sustaining the Program
Workforce Development. The program is unique both regionally and nationally. At land grant universities with both agricultural and engineering programs, bioenvironmental engineers have contributed significantly to education, research, and outreach especially in the areas of food production, food safety, and air, water, and environmental quality. We consider this program to be the engineering discipline of the future since such engineers are trained to work on interdisciplinary teams to address issues relative to the safe, reliable, and efficient production of food and fiber in an environmentally conscious society. With agricultural practices cited as the primary source of non-point source pollution, bioenvironmental engineers are trained to analyze such practices, recommend prescriptive measures, and implement sound practices as solutions to these societal problems. This unique program is, therefore, an important part of the land grant triumvirate of teaching, research, and extension. Bioenvironmental engineers bridge the fields of engineering and agriculture. As the demand for food, water, and environmental safety increases, the role and influence of the bioenvironmental engineers becomes even more critical.

Interdisciplinary Model. The Bioenvironmental Engineering Program was established in 1992 as one of NC A&T's original models for its interdisciplinary academic programs. It continues to be used as a model for establishing and operating new interdisciplinary academic programs, recognized across the University as a successful combination and collaboration of scholastic instruction across several disciplines.

Natural Resource Conservation Service (NRCS) Technical Center Connection. The Bioenvironmental Engineering research and academic program is specifically aligned with the newly established USDA-NRCS technical center in Greensboro. We have the qualifications to train the new NRCS staff and collaborate with other staff members at the center in developing NRCS specific outreach programs. Therefore, majors in the program and other students taking program specific courses will directly benefit from this relationship with the new USDA center. The NRCS professional staff will also strengthen the BEE program through collaborative activities and joint trainings.
Strategies to Improve the Low Productivity in Bioenvironmental Engineering

The immediate goal is to graduate at least 10 students per year or maintain at least 25 students in the Junior and Senior year in the degree program. The faculty has developed an aggressive recruitment plan to accomplish this. The plan focuses on currently recruiting, advising, and raising scholarship funds. To achieve our recruitment and retention goals, the following strategic steps will be taken.

Recruit and Mentor Undecided Students. The BEE director will regularly make presentations to undecided students at Center for Student Success to expose them to Bioenvironmental Engineering Program. The Bioenvironmental Engineering faculty will serve as mentors to recruits from the undecided pool. The faculty will meet regularly (at least once per week) with these students to listen to their concerns, answer their questions, solve their problems and make them feel comfortable in their new academic major.

Provide Academic Tutoring to Students Enrolled in the Degree Program. To help students to perform satisfactorily in the classroom, tutorial offices have been set up to assist students with their math courses. Additional tutors will be identified to help students with physics and engineering science courses.

Recruit High School Students. The Bioenvironmental Engineering faculty will conduct a series of visits to middle schools, high schools, and community colleges across North Carolina. They also will operate recruitment booths at the state and selected county fairs.

Recruit Through A&T Alumni Association. The Michigan chapter of the A&T Alumni Association has agreed to distribute the BEE recruitment material during their annual recruitment event in April. We will contact other alumni chapters, especially in the states where BEE has a higher alumni presence, and ask them to organize a recruitment event to promote the BEE Program in their state. The School of Agriculture and Environmental Sciences also has an active alumni society that has agreed to assist us recruit more BEE students.

Increase Scholarships and Financial Aid. Establishment of scholarship funds and stipends are very important since about 85% of our students receive financial aid from the University. Currently, USDA-NRCS is the only government agency that provides a major scholarship for our students. In addition to USDA funds, four scholarships targeted for Bioenvironmental Engineering students have been established representing the North Carolina Section of the American Society of Agricultural Engineers, the E. S. Carr Scholarship, the Lee A. Yates Scholarship, and the Bernard Marshall Scholarship. The Ford Foundation, which has a representative serving on our advisory board, has pledged to establish an Environmental Scholarship fund for the benefit of Bioenvironmental Engineering students during the next academic year. Funds for student support also are being solicited from alumni as well as private and public organizations. Negotiations are in process to obtain research stipends from universities that recruit our graduates. The SAES and the COE both have development officers that will assist us to raise scholarship dollars. In addition, the university now has a scholarship office to assist in our efforts.
All faculty members are committed to this plan and are fully prepared to carry it out. Faculty members from this program have leading roles in local non-profit organizations such as the Guilford Solar Community program (GSCP). The GSCP has recently established linkages with K-12 schools in our local community, which will give our program additional community exposure. The Bioenvironmental Engineering program director will be actively making presentations to local middle and high school students.

BEE is an important program for developing biotechnology leaders and bioengineering professionals but it has not yet been adequately marketed. As a result, the Dean of SAES made changes in the direction and the leadership of the program by supporting the appointment of a new director in July 2004. The new director will continue to strengthen ties with BEE alumni, local high school teachers and non-profit organizations. He will be vigilant in creating strategic plans and getting them implemented to achieve the desired results. The new director has begun to re-organize the faculty to improve the program’s advising and mentoring of its students. The faculty not only support the changes but also strongly believe they can implement the strategies set forth in this report to develop a larger pool of qualified applicants to the program and increase enrollment.

We believe these steps will enable the program to meet the expectations of the UNC-OP. With our record of success with students' achievement and enhanced recruitment and marketing of the program, we are very confident that enrollment in the program will increase appreciably.

Table 1. Summary of Recent Graduates and Their Placement

<table>
<thead>
<tr>
<th>Year</th>
<th>Graduates</th>
<th>Placement Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>Anthony Grubbs</td>
<td>Staff Engineer, Schnabel Engineering</td>
</tr>
<tr>
<td></td>
<td>Andrita Casterlow</td>
<td>M. Sc. Student at NC A&amp;T</td>
</tr>
<tr>
<td></td>
<td>Lakeisha Williams</td>
<td>M. Sc. Student at NC A&amp;T</td>
</tr>
<tr>
<td></td>
<td>Brian Muhammad</td>
<td>Department of Homeland Security</td>
</tr>
<tr>
<td></td>
<td>Darius Broughton (December Graduate)</td>
<td>Brown and Caldwell Environmental Consultants</td>
</tr>
<tr>
<td></td>
<td>Judodine Patterson (December Graduate)</td>
<td>M. Sc. Student, Purdue University</td>
</tr>
<tr>
<td>2004</td>
<td>Howard Conyers</td>
<td>M. Sc. Student at Duke University</td>
</tr>
<tr>
<td></td>
<td>Crystal Moore</td>
<td>M. Sc. Student, NC A&amp;T State University</td>
</tr>
<tr>
<td></td>
<td>Mark Thomas</td>
<td>M. Sc. Student, Purdue University</td>
</tr>
<tr>
<td>2005</td>
<td>Tinina Thompson</td>
<td>M.S.C/Ph.D. Program @Penn State Private Industry, Malcolm Pinnie</td>
</tr>
<tr>
<td></td>
<td>Ryan Davis</td>
<td>Private Industry, Malcolm Pinnie</td>
</tr>
<tr>
<td></td>
<td>Jermaine Perry</td>
<td>M.S.C/NC A&amp;T State University</td>
</tr>
<tr>
<td></td>
<td>Carrie Mitchell (Summer Graduate)</td>
<td>EPA Prospect</td>
</tr>
<tr>
<td></td>
<td>David Seed (Summer Graduate)</td>
<td></td>
</tr>
</tbody>
</table>

North Carolina A&T State University
Long Range Plan 2006-2011
### Table 2: Projected Enrollment Trends in Bioenvironmental Engineering

<table>
<thead>
<tr>
<th>Year (Fall)</th>
<th>Number of Students Recruited</th>
<th>Total Enrollment</th>
<th>No. of Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>8</td>
<td>30</td>
<td>4</td>
</tr>
<tr>
<td>2002</td>
<td>8</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>2003</td>
<td>8</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>2004</td>
<td>9</td>
<td>30</td>
<td>4</td>
</tr>
<tr>
<td>2005*</td>
<td>12</td>
<td>38</td>
<td>5</td>
</tr>
<tr>
<td>2006*</td>
<td>14</td>
<td>47</td>
<td>6</td>
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<tr>
<td>2007*</td>
<td>15</td>
<td>56</td>
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<tr>
<td>2008*</td>
<td>16</td>
<td>64</td>
<td>10</td>
</tr>
<tr>
<td>2009*</td>
<td>17</td>
<td>71</td>
<td>11</td>
</tr>
</tbody>
</table>

*Projected

Signatures:

Chancellor

Chief Academic Officer

Person to Contact if there are Questions about Information in this form

Dean Alton Thompson
The University of North Carolina

Criteria and Guidelines for Program Review and Recommendations

Date: May 2, 2005

Constituent Institution: North Carolina A&T State University
API Discipline Number: 14.1201 027 000
CIP Discipline Specify Title: Engineering Physics
CIP Discipline Specialty Number: 14.1201
Level: B
Exact Title of the Program: Engineering Physics
Exact Degree Abbreviation: B.S

General Administration (GA) has identified the B.S. in Engineering Physics program as a low-producing degree program according to the established criteria. This report outlines measures and steps to be taken to enhance and increase the productivity by merging the Engineering Physics program as a concentration under the Physics degree program. In the recent report "Strategic Programs for Innovations in Undergraduate Physics" by the American Association of Physics Teachers (AAPT), one of the hallmarks of thriving physics programs in the nation is the considerable flexibility to meet the needs of students with a broad spectrum of career interests. Such programs have a set of core requirements that all majors satisfy, but leave considerable flexibility for options at upper level.

In this report similar steps for the 2 physics programs are outlined: common core physics, math and UNST requirement for all concentrations are defined and a B.S. physics degree program with multiple concentrations. One of these concentrations will be the Engineering Physics concentration (currently an independent degree program) with either electrical engineering focus or mechanical engineering focus designed to satisfy the requirements of Accreditation Board for Engineering and Technology (ABET).

1. Centrality to University Mission
   - By providing the basic physics courses to a wide audience in the university, the Department of Physics plays a very central role in the training and development of future professionals. The Department of Physics plays a critical role in almost all interdisciplinary research and training. Hence, its role is indispensable and very important to the goals of Futures and the University's vision and mission to be an Interdisciplinary University.
   - The physics degree programs are central to the mission of A&T to provide a comprehensive offering of degree programs with particular emphasis on science and engineering. The undergraduate and graduate physics degree programs assure scientific support of all programs in science and engineering to maintain the university's national competitiveness. These NC A&T physics degree programs also serve the national need of producing African Americans with undergraduate and advance degrees in physics. Elimination of the Engineering Physics program would
adversely affect the institutions ability to be a leading engineering and technology university.

- Nanoscience or nanotechnology, constitutes highly interdisciplinary efforts that involve physics, chemistry, biology and materials science. To produce an entirely new workforce knowledgeable about nanoscience is the major challenge in contemporary global education. The new training requires a team of scientists well prepared in physics, biology, chemistry, computational science and materials science, and engineers who can communicate with one another effectively, as well as some individuals steeped in the essentials of all of the above. Physics has been at the root of every technological advance and engineering breakthrough in the last century, and will continue to play a significant and defining role in the new century, the "nano" age. In this sense the program serves a very critical societal need.

- Physics along with mathematics, chemistry, and biology is one of the core disciplines. Any effort to establish a strong interdisciplinary program requires strong and thriving core disciplinary programs. The program cannot be combined, as there is no another department it can fit into without destroying it.

2. Quality of the Program

The Department of Physics provides quality instruction, mentoring, and training to produce competitive graduates who are trained in the arts of critical thinking, analytical reasoning, independent learning, and problem solving. The department currently offers three Bachelor of Science degrees in Professional Physics, Engineering Physics, and Physics Secondary Education, as well as one Master of Science degree in Physics. The department prepares students to meet the contemporary workforce demands of academia, environmental agencies, high-technology industries, medical and healthcare professions, national research laboratories, and state and federal governments.

The quality of the program is assessed using the following indicators.

1. Success of graduates in the workplace and advanced degree programs.
   - 60-80% of the graduates pursue graduate studies in major universities.
   - All obtain employment within three months of graduation.
   - Our students win major national competitions for scholarship awards.

2. Research productivity.
   - The department received over $600,000 per year in research funds since 2001. These strong research initiatives help majors complete a required undergraduate research course.
   - On average, the faculty and students publish over 15 refereed articles and make over 25 presentations at national and international conferences per year.
   - More than 50% of our students participate in summer or academic year research.

3. Research collaboration created and sustained.
   - The department has strong and active collaborations with major research institutions such as Duke University, the University of North Carolina at Chapel Hill, Stanford University, and the University of Connecticut. Collaborations with national laboratories include the Joint Institute for Laboratory Astrophysics.
4. **Program standing in comparison to programs in the state and nationwide.**

- Among 1,376 four-year colleges and universities in the U.S., 759 offer the bachelor degree in physics, and 137 institutions offer the Ph.D. Of the BS granting institutions 61% produce 3 BS degrees per year, 31% produce 4-9, and only 8% (all Ph.D. granting) produce more than 10. Our program produces 4-5 graduates (this includes both professional and engineering physics).

3. **Faculty Involved**

- Seven full time faculty teach in this program.
- Ten graduate assistants serve as laboratory assistants and 4 to 5 part-time faculty teach in this program.
- Two temporary research associates participate in departmental research.
- All full time faculty have terminal degrees.
- The average teaching load is a twelve hours equivalent per semester.
- All full time faculty participate in a number of interdisciplinary activities.
- The number of faculty positions has declined from 11 full-time to 7 full-time since 1996. Since then the Department has established a masters program in physics and has one and half times more majors.

4. **Facilities/Equipment**

a) **Teaching Facilities**

The teaching facilities currently available are quite adequate. Most of the departmental teaching equipment needs were made available through research grants from NSF, and the Department of Education as follows:

- In 2001-2002 the smart classrooms in Marteena Hall became operational. The smart classrooms are outfitted with document cameras, PC and Mac computers, multimedia facilities, DVD players, VCR players, and Internet access. This improved the teaching of the large classes by providing faculty instant access to the Internet and provided computer based simulations and demonstrations to enhance learning.
- With a grant from the U. S. Department of Education, the department has a computerized introductory mechanics lab, Macintosh G4 computers, and a file server was introduced. Vernier LabPro interfaces; probes and sensors were introduced for microcomputer-based laboratory (MBL) experiments.
- With a NASA Partnership Award, the second semester physics labs were also computerized and modernized, with computers and interfaces like those of the first semester (mechanics) labs.
- Through “A Cooperative Physics Project” the advanced lab is modernized with more modern and state of the art equipment.
- With support from Title III, worn out lab equipments have been replaced.
b) Research Facilities

The research program is organized into five areas, all with well-equipped modern and state-of-the-art laboratories.

a. **Low and Medium Energy Physics**: Research is carried out on campus, at Thomas Jefferson National Accelerator Facility, and Triangle Universities National laboratory. The group at TJNAF is supported by a grant from the National Science Foundation.

b. **Chemical Physics-Experimental and Theoretical**: State-of-the-art laser lab and a computational facility with support from NSF.

c. **Physics of Materials**: Research in low temperature and semiconductor physics.

d. **Physics Education**: Research on web-based education and innovative teaching methods and creating a responsive learning environment. The research is supported by a grant from the National Science Foundation and the Department of Education.

e. **Seismic Data Processing Facility**: Research in seismic physical modeling, seismic data analysis, subsurface imaging and non-destructive testing using ultrasonic waves. The research is supported by a grant from the National Science Foundation.

5. **Demand**

- All programs: Professional Physics, Engineering Physics, and Physics Secondary Education programs began in 1972.
- All except the Secondary Physics Education program has grown modestly since 1991.
- The number of physics majors has grown from under 25 before 2000 to 37 in 2003-2004 in all three programs. There are 36 students in all of the programs in the 2004-2005 year. The programs are serving the expected number of students based on the national trend.
- Five students per year on the average graduate from the physics programs. In 2004-2005 the programs graduated 9 students, which is the largest ever.
- Most graduates of these programs have gone on immediately to graduate or professional school or to the military. The graduates seeking employment secured it in education, national laboratories, and industry. For example, 2 of the 7 graduates in 2001-2002 are in graduate school and five are employed. Of the graduates in 2002-2003 and 2003-2004, 66% are in graduate school and 33% employed. Of the nine graduates in 2004-2005, 4 have already accepted graduate school offers.
- In addition to serving physics majors, the undergraduate physics program serves large numbers of non-majors enrolled in core courses. Approximately 600 students are enrolled in General Physics I & II, 300 in College Physics I & II, 200 in Astronomy; 30 in Survey of Physics, and 25 in Physics for Non Scientists each semester. In particular, General Physics is a requirement in all science programs at the University.
and College Physics is a required course in most of the School of Technology programs.

6. **Cost**

- The B.S. programs in Professional Physics, Engineering Physics, and Physics Secondary Education require 128 credit hours for completion. This is greater than the institutional average.
- Currently all three degree programs are independent. A concentration in Environmental Geophysics has been added to the Professional degree program starting spring 2005. There will be a reduction in core courses and all other courses offered for the various concentrations are courses that already exist on campus and have enough enrollment.
- The average class size in the General Physics introductory courses is 85 students. In advance physics courses the average class size is 6 to 10 students. Usually a minimum of 8 must be enrolled in an advanced course for it to be offered. However, given a threshold of less than 10, some advanced physics courses are slightly under-enrolled.
- The yearly budget for library materials is $4,000 and the yearly budget for educational equipment is $6,000 to support the undergraduate physics programs. Federal grants from the National Science Foundation and the Department of Education have been used to upgrade laboratory equipment and classroom infrastructure. An equipment budget of at least $10,000 per year is needed to be adequate for the physics program. Also additional office and laboratory space is necessary to adequately situate faculty and their research projects.

7. **Duplication**

- The Professional Physics, Engineering Physics, and Physics Secondary Education programs are unique at the University and their objectives cannot be accomplished through any other program.
- The Physics programs compliment the engineering and technology programs at the university. The Engineering Physics program is unique also in the UNC system. When accredited, it will be the only ABET accredited Engineering Physics program in the state and one of three-dozen nation-wide.
- This program provides a strong core of physics subjects. Physics is a core discipline in the sciences and none of the core courses are duplicated in other programs or departments. As the university develops interdisciplinary programs and interactions, efforts will be made to consolidate applied courses, which can be offered in multiple programs. For example, physics of solids (engineering and physics), and applied quantum mechanics, which can be used to replace quantum chemistry and the second semester of quantum mechanics etc.
- The A&T physics program provides the natural and necessary support to programs in science and engineering at the university. Also, this program enrolls the largest number of African American physics majors in the state of North Carolina and the nation.
8. **Critical Mass**

- The Physics program at North Carolina A&T cannot be eliminated without serious detriment for all of the science, math, and engineering programs at the university. Physics is fundamental to all science and engineering areas and is a requirement in those curricula. The single Bachelor of Science in Physics degree in multiple program tracks would maintain the competitiveness of the world renowned engineering program and the university.

- Nanotechnology is being heralded as a new technological revolution, one so profound that it will touch all aspects of human society. It is, therefore, not over exaggerating to say that the future of science and technology is already defined. This poses a new challenge in the new work force training. The new training requires a team of scientists well prepared in physics, biology, chemistry, computational science and materials science, and engineers who can communicate with one another effectively, as well as some individuals steeped in the essentials of all of the above. Many of the basic rules that define the behavior of nanostructures are the laws of quantum mechanics in disguise. Understanding nanoscience requires a deep understanding of the physics behind nanosystems.

- For our state to thrive economically, and replace the old economy based on textile and tobacco with biotechnology and nanotechnology, eliminating physics programs is eliminating the basis on which these technologies depend.

- It takes time to create a thriving program. Among the various factors that would help such programs to thrive is an unwavering support from administrators, who are convinced of the need and importance of preserving such programs as a way of meeting the national strategic interest and the future economic competitiveness of the nation.

9. **Recommendations for the Program**

A single B.S. in Physics degree program with multiple concentrations should be continued at NC A&T State University; however, the Engineering Physics program will be combined in the general Physics program. Placing the B.S. Engineering Physics (14.1201 027 000) as a concentration under the BS Physics (40.0801 027 000) would have the effect of discontinuing it as an Engineering discipline.

Signatures:

Chancellor

Chief Academic Officer

Person to Contact if there are questions about Information in this form

Dean Caesar Jackson

North Carolina A&T State University
Long Range Plan 2006-2011
The University of North Carolina

Criteria and Guidelines for Program Review and Recommendations

Date: April 27, 2005

Constituent Institution: North Carolina Agricultural and Technical State University

API Discipline Number: N/A

CIP Discipline Specialty Title: Food and Nutritional Sciences

CIP Discipline Specialty Number: 19.0501

Level (B, M, CAS, D, First Professional): B (Bachelor)

Exact Title of the Program: Food and Nutritional Studies

Exact Degree Abbreviation (e.g. B.S., B.A., M.A., M.S., Ph.D.): B.S.

1. Centrality to University’s Mission

The mission statement of North Carolina A&T State University (NC A&T) states that the university is a public, comprehensive land-grant university committed to fulfilling its fundamental purposes through exemplary undergraduate and graduate instruction, scholarly and creative research, and effective public service. The Bachelor of Science degree program in Family and Consumer Sciences at NC A&T aligns well with this mission. The Family and Consumer Sciences Program emphasize high quality instruction based upon the latest in research-based pedagogical delivery methods and discipline specific curricula.

NC A&T is the only historically black university in the State to offer a comprehensive course of study in Family and Consumer Sciences and the only historically black university in the state to offer a course of study in Food and Nutritional Sciences that involves teaching, research and extension. The mission of Family and Consumer Sciences Program is to prepare students, many of whom come from families with limited incomes, for careers that focus on improving the quality of life of individuals and families. This program prepares students for employment in education and other service agencies, institutions, companies and industries that influence the quality of life for all of society. Students are prepared to assist families in meeting the need for nutritious diets, understanding human development, developing skills in family and parent education, managing materials and human resources and providing appropriate and affordable living environments. In addition, the discipline prepares students to apply computer-assisted design in the apparel design industry and to apply food science and technology in the commercial food industry. Family and Consumer Sciences programs seek to prepare students to think critically, to communicate ideas effectively and to develop leadership potential for the profession. Research is consistent with the university’s goal of encouraging research.
participation by faculty. The department ranks number one in research among 1890 Family and Consumer Sciences units and among minority units in the state.

Research is conducted in Family and Consumer Sciences programs that contribute to the body of knowledge in the areas of nutrition, food science, housing, textiles and family issues. In addition, the Human Environment and Family Sciences Department has a commitment of providing continuous professional development for family professionals and related paraprofessionals who are in employment positions that impact the quality of life of individuals and families.

Family and Consumer Sciences is also the only degree program on campus that provides in-depth knowledge of the family and its role in modern society, as well as skills that relate to nutritional concerns, apparel design quality, care of children and marketing and merchandising techniques that improve various aspects of family living.

The family and consumer sciences program cannot be combined with a similar or related program in another department, because of its unique focus on the preventive solutions to contemporary societal issues that impact individuals and families.

A degree in Family and Consumer Sciences will function as one general discipline with major specialization in the areas of Child Development and Family Studies, Dietetics, Fashion Merchandising and Design, and Food Sciences. There are no programs that approach the family holistically outside of this discipline. Clothing, nutrition, housing, parenting, family resource management and marital relationship skills all are germane to this program.

The didactic program in Nutrition and Dietetics supports the philosophy and mission of North Carolina A&T State University and the Department of Human Environment and Family Sciences by preparing predominantly minority students and other ethnic groups for diverse professional careers, personal development, civic responsibility and continued personal development and learning. The program aims to academically prepare and train students to become qualified food service managers, nutritionists/dietitians, and health care professionals who can provide quality nutritional health care for diverse populations. An important goal of the program is to meet academic requirements of The American Dietetic Association (ADA) for undergraduate education, and to prepare students for advanced graduate study and admission into a supervised practice experience sanctioned by the ADA. In 1991, the passage of a licensure law in North Carolina has made programs such Food and Nutritional Sciences at NC A&T even more important for those wishing to become fully accredited as Licensed in Dietetics and Nutrition in North Carolina. One of the goals of the NC A&T is to place emphasis on strengthening its programs in engineering, science and technology. The Food and Nutritional Sciences’ program objectives are consistent with the University’s goals and objectives, including the Institute of Public Health.

The objectives of the Food and Nutritional Sciences Program are to: (1) prepare students with knowledge, skills, and competencies that meet the academic requirements of The American Dietetic Association (ADA) for undergraduate education and for entry into a supervised practice experience through either an accredited Dietetic Internship or an approved Pre-professional
Practice Program; (2) prepare students for entry-level positions in nutrition/dietetics and food service; prepare students for continuing education and graduate studies that will further expose them to research and problem-solving in food, nutrition and related disciplines, and to careers in food and nutrition/dietetics; and (3) prepare students for leadership roles in nutrition and dietetics in the communities where they work.

In December 2001, the Institute of Food Technologists (IFT), professional organization for food scientists, conducted a survey of its former IFT student members on employment and salary data. Out of 632 former students who were sent the questionnaire, 254 students responded, representing a 40% response rate. The survey showed that African Americans constituted only two percent of persons employed in the food and nutritional sciences. This result strongly suggests that there is under-representation of African Americans in this field. Equally important, this situation reflects a lack of diversity in the work force in hospitals, industries, government agencies and universities. The major objective of the Food and Nutritional Sciences Program is to expand career opportunities available to minority students and meet the industry demand for a diverse work force.

The Food and Nutritional Sciences Program is the only program that focuses on human health and well being through dietary modifications, education, and food sciences. The Food and Nutritional Sciences Program also requires broad basic science courses as well as applied science courses, therefore, it can not be combined with other program(s).

2. Quality of the Program

The Family and Consumer Sciences Program is accredited by the American Association of Family & Sciences (AAFCS); certain standards must be validated by site visitors every ten years. The quality of faculty and success of the graduates are strong indications of the quality programs. This program accounts for 50% of the minority enrollment in graduate programs in Food and Nutrition in the UNC system. Additional evidence of North Carolina A&T's leadership role in meeting the demand for human capital in this area, is the success enjoyed by graduates of its Food and Nutritional Sciences Program. Several graduates have obtained MS degrees and three have obtained medical degrees. Currently, graduates are enrolled in Ph.D. programs at Pennsylvania State University, the University of Nebraska, and Louisiana State University.

The faculty in this concentrated area is very involved in professional organizations and serves on many diverse committees related to Family and Consumer Sciences. Faculty is also involved in acquiring external funding. In the last few years, there has been a decline in the number of students completing the undergraduate degree in some of the program areas. However, the greater majority of the graduates are employed and follow-up surveys conducted by the department indicate that our students are excellent employees. Many graduates have completed work at some of the top graduate schools in the country and have been very successful in those programs.

The faculty in this area is renowned and is very involved in professional organizations and serve on many local, state, national and international boards and committees related to Child
Development and Family Studies, Dietetics, Fashion Merchandising and Design, and Food Sciences.

The Dietetic undergraduate program is accredited by the American Dietetics Association. The didactic program in Dietetics program went through the 5-year review in 2001. In order to assess the effectiveness of the program, an alumni survey was conducted during 2000-2001 academic year. The results showed the majority were working in their field, or a closely related area, or attending graduate school. The majority of the students indicated that they received a very good level of knowledge or were very knowledgeable of the competencies in their respective fields. The companion survey completed by employers evaluated graduate competency from another perspective. The majority of the employers responding ranked the characteristics as “above average” or “excellent” with additional comments on traits such as having very good clinical knowledge, performing as an excellent dietitian, and the “best we have ever had.” One hundred percent stated they would strongly recommend the graduates with no reservation.

3. Faculty Involved

There are 13 full-time faculty members teaching in the areas of Child Development and Family Studies, Dietetics, Fashion Merchandising and Design, Food Science, and supporting program core courses. All full-time faculty hold the doctorate degree (or near completion) in their respective areas.

As required by accreditation standard of ADA, one faculty member directs the Didactic Program in Dietetics (DPD). There are two other full-time positions, of which one is dedicated to the nutrition emphasis. Also, two adjunct faculty members are teaching in the program. All full-time faculty hold a doctorate degree in the related areas. All current faculty conduct nationally recognized research in various aspects of the food and nutritional sciences. While there is a graduate program in the department, no graduate assistants teach in this program.

The teaching and research appointments vary within program areas and contribute to the greater good of the department. The average teaching load of the full-time faculty is four (4) courses or 12 hours per semester. Additionally, six part-time faculty support the courses offered in program areas.

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Terminal Degree</th>
<th>Institution</th>
<th>Program Area</th>
<th>Course Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Thurman Guy</td>
<td>Ed. D.</td>
<td>University of North Dakota</td>
<td>Child Development and Family Studies</td>
<td>4</td>
</tr>
<tr>
<td>Dr. Valerie McMillan</td>
<td>Ph.D.</td>
<td>Iowa State University</td>
<td>Child Development and Family Studies</td>
<td>4</td>
</tr>
<tr>
<td>Dr. Thessalasure Hinnant-Bernard</td>
<td>Ph.D.</td>
<td>Iowa State University</td>
<td>Housing</td>
<td>2</td>
</tr>
<tr>
<td>Dr. Lizette Sanchez-Lugo</td>
<td>Ph.D.</td>
<td>University of North Carolina</td>
<td>Dietetics</td>
<td>4</td>
</tr>
<tr>
<td>Faculty</td>
<td>Terminal Degree</td>
<td>Institution</td>
<td>Program Area</td>
<td>Course Load</td>
</tr>
<tr>
<td>-------------------</td>
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<td>--------------------------------------------------</td>
<td>---------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Ms. Patricia Lynch</td>
<td>Ph.D. (Expected August 2005)</td>
<td>Greensboro University of Nebraska</td>
<td>Dietetics</td>
<td>4</td>
</tr>
<tr>
<td>Dr. Geraldine Ray</td>
<td>Ph.D.</td>
<td>Virginia Polytechnic Institute and State University</td>
<td>Fashion Merchandising and Design</td>
<td>4</td>
</tr>
<tr>
<td>Dr. Jane Walker</td>
<td>Ph.D.</td>
<td>University of North Carolina Greensboro</td>
<td>Fashion Merchandising and Design</td>
<td>4</td>
</tr>
<tr>
<td>Dr. Mohamed Ahmedna</td>
<td>Ph.D.</td>
<td>Louisiana State University</td>
<td>Food Science</td>
<td>2</td>
</tr>
<tr>
<td>Dr. Ipek Goktepe</td>
<td>Ph.D.</td>
<td>Louisiana State University</td>
<td>Food Science</td>
<td>2</td>
</tr>
<tr>
<td>Dr. Salam Ibrahim</td>
<td>Ph.D.</td>
<td>University of Kentucky</td>
<td>Food Science</td>
<td>2</td>
</tr>
<tr>
<td>Dr. Chung Seo</td>
<td>Ph.D.</td>
<td>Florida State University</td>
<td>Food Science</td>
<td>4</td>
</tr>
<tr>
<td>Dr. Rosa Purcell</td>
<td>Ph.D.</td>
<td>University of Illinois</td>
<td>Family and Consumer Science Education</td>
<td>4</td>
</tr>
</tbody>
</table>

4. Facilities/Equipment

The physical facilities are adequate to accommodate learning activities such as: lectures, seminars, discussions, conferences, laboratory experimentation and research. Over the past five years the Family and Consumer Sciences Program areas have strived to maintain well-equipped programs with resources for students and faculty. The library inventory is constantly updated in terms of research journals and other related periodicals. Additionally, computer equipment has been purchased for the departmental computer laboratory and distance-learning classroom (Smart Lab). The computer laboratory in the department has been updated with more advanced computers and software applications. Recently, facility renovations have provided adequate office space for faculty to advise students and perform daily tasks. A variety of research projects are underway in the department that will provide opportunities for students to work with state-of-the-art technology and in state-of-the-art research laboratories.

5. Demand

The number of graduates produced annually varies within the specific program areas. However, enrollment and retention will be monitored to ensure that enrolled students can meet the standards for completing the degree. With aggressive recruitment action and scholarships, the goal of graduating more students per year can be achieved.

The program in food and nutritional sciences was initiated in 1968. The low representation of minorities in the food and nutritional sciences at the national level remains a prevalent indicator for the dire need for the program to exist in this area.
This course services the requirements of other areas of study including Nursing and Human Performance and Leisure Studies. Students in these majors are required to take the HEFS 337 (Introduction to Human Nutrition) as part of their core curriculum. This course averages upward of 90 students per semester, often requiring two or more sections to adequately accommodate student enrollment.

In addition to HEFS majors, students majoring in Nursing, Human Performance and Leisure Studies, Education, and Psychology are required to take the HEFS 310 Introduction to Human Development as part of their core curriculum. The courses in this program are not duplicated in other areas of the University.

Based on current numbers and efforts to increase enrollment considering transfer students, the average projected increase is around 10% per year (See Table 1).

### Table 1. Projected Enrollment

<table>
<thead>
<tr>
<th>Program Area</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Development and Family Studies</td>
<td>147</td>
<td>162</td>
<td>178</td>
<td>196</td>
<td>215</td>
</tr>
<tr>
<td>Dietetics</td>
<td>14</td>
<td>15</td>
<td>17</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>Fashion Merchandising and Design</td>
<td>115</td>
<td>118</td>
<td>123</td>
<td>125</td>
<td>130</td>
</tr>
<tr>
<td>Food Science</td>
<td>12</td>
<td>13</td>
<td>15</td>
<td>16</td>
<td>18</td>
</tr>
</tbody>
</table>

6. Costs

The combining of program areas under the general Family and Consumer Sciences Degree would not cost the university any additional funding. Currently, all program areas are within the same department, therefore only the title of the degree would reflect any change.

7. Duplication

The interdisciplinary nature of the Family and Consumer Sciences program areas are needed in preparation of becoming an effective employee.

The program areas of dietetics and food science compliment Nursing, Human Performance and Leisure Studies, Animal Science, Chemistry and Biology programs. In addition to HEFS majors, students majoring in Nursing and Human Performance and Leisure Studies are required to take the HEFS 337 Introduction to Human Nutrition as part of their core curriculum. The courses in this program are not duplicated in other areas of the University.

Other programs closely related to the food and nutritional sciences areas in the UNC system are mostly nutrition-oriented programs. However, the Food and Nutritional Sciences program at NC A&T covers the areas of nutrition and food science. This program is unique because of its position in the land grant model in the School of Agriculture and Environmental Sciences.
experience enhances students basic knowledge through exploring research and extension field experience, thus it provides a variety of skills for the students. The program has historically enrolled a majority of African-American students with limited resources.

8. Critical Mass

The four program areas represented serve a vital need to the state of North Carolina and the nation. For example, the areas of dietetics and food science accounts for 90% of minority enrollment in graduate programs in Food and Nutrition in the UNC System. By elimination of this program, the opportunity is lost to train minority students for the health care and food industries.

Elimination of the didactic program in Nutrition and Dietetics would provide a decrease in the supply of minority dietitians and nutritionists from the ever-expanding nutrition, health care, and food industry. The incidence and prevalence of obesity and chronic diseases is increasing among all Americans. In particular, minority populations are usually the most affected by these chronic conditions, such as, diabetes, heart diseases, and hypertension. The conditions could be prevented by proper nutrition intervention. African-Americans are underrepresented as professionals in the field of nutrition and dietetics, even though African-Americans suffer form more of the chronic diseases associated with poor nutrition. Rapid advances in science and technology demand highly skilled and trained food scientists to carry out today’s high-tech tasks.

Specific Action

A Student Services Coordinator for the School of Agriculture and Environmental Sciences has been employed to assist with overall recruiting efforts. A variety of efforts are underway to recruit in the areas of Dietetics and Food Sciences to make this area a high priority. The faculty is making conscientious efforts to participate in all recruiting activities both on and off campus. Special sessions have been arranged with high school science teachers. New brochures and an updated website are recruiting efforts to enhance the marketing of the programs. High school students work with researchers during the summer to gain exposure to the food and nutritional sciences. In addition, undergraduate students are engaged in contemporary research projects and are provided with financial assistance. The number of research projects in the department should be maintained at the current level to continue this precedent and the possibility for increasing productivity in the future are great.

This program should be continued based on the important services that it provides as illustrated above and in support of the licensure law in North Carolina for those wishing to become fully accredited as Licensed in Dietetics and Nutrition. The program areas should be continued based on the important services that it provides to the State of North Carolina in general and more specifically to the NC Public School system; the Cooperative Extension Service and the overall potential for renewed growth as community colleges feed into the program.
NC A&T SU

Signatures:
Chancellor

Chief Academic Officer

Person to contact if there are questions about information in this form:
Dean Alton Thompson
The University of North Carolina

Criteria and Guidelines for Program Review and Recommendations

Date: 5/20/05

Constituent Institution: North Carolina A&T State University
API Discipline Number: 13.1322 123 007
CIP Discipline Specialty Title: Biology Teacher Education
CIP Discipline Specialty Number: 13.1322
Level: M
Exact Title of Program: Biology Education
Exact Degree Abbreviation: M.S.

1. Centrality to University's Mission
NC A & T State University is a public comprehensive land-grant university, committed to exemplary undergraduate and graduate instruction, scholarly and creative research and effective public service. The University continues to place an emphasis on strengthening its programs in engineering, the sciences, and technology. The MS in Biology, Secondary Education, not only contributes to the strengthening of the sciences but in providing highly trained and enlightened teachers. No Child Left Behind Legislation requires school districts to show that all teachers in core academic subjects are "highly qualified" by the summer of 2006. Teachers must have earned a bachelor's degree, obtained a state license and proven their mastery of subjects they teach by methods such as taking a state test or undergoing evaluations. The MS program in Biology Education allows a teacher to become "highly qualified" as leaders in their fields by continuing their education. Research shows that there is a strong relationship between teacher professional development and retention. NC A&T has a responsibility to provide high quality minority role models as teachers to the children of NC, especially in the field of science.

2. Quality of the Program
The BS and MS degree programs in biology education are fully-accredited and continue to receive excellent reviews from the National Council for Accreditation of Teacher Education (NCATE) and North Carolina State Board of Education.

3. Faculty Involvement
At the present time one faculty member is responsible for this program. This faculty member holds a PhD in Science Education. The average teaching load of this faculty member is ten semester hours per semester. This member is responsible for the Secondary Science Methods course and supervision of the student teachers.

4. Facilities/Equipment
There is adequate space available for this program and it is in working order. The laboratory facilities in the Biology Department offer secondary science teachers the experiences they need to be highly qualified to teach Biology in high schools.
5. Demand
Reliable accounts date the origin of teacher preparation at A&T to 1907 when the College established the Teacher Training Department to "prepare teachers of Agriculture and trades for public schools." Departmentalized work in education, which included biology, began in the early 1950s, offering introductory courses to coordinate with other academic departments of the college in a teacher training program. Records show that a significant number of biology education teachers have earned Bachelor and Masters degrees in biology education over the years. During the past five years, a combined total of fourteen students have earned undergraduate and graduate degrees. Due to the increasing shortage of minority teachers, the job prospects for our graduates are excellent and are predicted to remain high well into the next decade. Students in this program have access to numerous scholarships for teachers including the Teaching Fellows program, the NC Teacher Assistant Scholarship Fund (TASF), and the NC Prospective Teacher Scholarship program. In addition, the College of Education has submitted a grant to the Robert Noyce Scholarship Program from NSF to recruit secondary math and science teachers to NC A&T. Other possible opportunities are available to NC A&T for building this program includes the Tom Joyner Foundation which has raised more than $25 million and helped some 80 colleges and thousands of deserving students who attend HBCUs. Since its inception, the foundation has assisted every HBCU, which is defined as "any historically black college or university that was established prior to 1964, whose principal mission was, and is, the education of black Americans."

6. Costs
The undergraduate curriculum for a student pursuing a B.S. degree in Biology Education currently consists of a minimum of 126 semester hours and 39 semester hours for the M.S. degree in Biology Education. The total number of credit hours required for completion of these programs is in keeping with the institutional average. Using a threshold of less than 10 for undergraduate courses and less than 5 for graduate courses, the program has under-enrolled courses in primarily CUIN 535 (Methods of Teaching Science) and periodically selected graduate biology courses. The yearly costs for specialized equipment and library resources to support the program are minimal. Space, equipment and library holdings are adequate.

7. Duplication
Neither Elon University nor Wake Forest University offers a Secondary Science Program. UNC Greensboro offers a science concentration in the Department of Curriculum and Instruction, College of Education. NC A&T is unique in its offering a Secondary Science Program. Elon University and UNC Greensboro do offer Masters in Teaching degrees.

8. Critical Mass
The impact on the Department of Biology would be small however the impact on the School of Education and the ability of NC A&T to provide high quality secondary science teachers would be large.

9. Recommendation about the Program
It is recommended that this program be merged with the MAT program as a concentration in Biology. The University proposes to close this program to new enrollments on August 1, 2006.
Signatures:

Chancellor

Chief Academic Officer

Person to Contact if there are questions about Information in this form
Dean Caesar Jackson
The University of North Carolina

Criteria and Guidelines for Program Review and Recommendations

Date: 5/20/05

Constituent Institution: North Carolina A&T State University
API Discipline Number: 40.0801 123 000
CIP Discipline Specify Title: Physics, General
CIP Discipline Specialty Number: 40.0801
Level: M
Exact Title of the Program: Physics
Exact Degree Abbreviation: M.S.

General Administration (GA) has identified the Masters program in Physics as a low-producing degree program according to the criteria established. This report is a recommendation to keep the program, and suggest strategies to increase enrollment.

1. Centrality to University Mission
   • By providing the basic physics courses to a wide audience in the university, the Department of Physics plays a very central role in the training and development of future professionals. The Department of Physics plays a critical role in almost all interdisciplinary research and training. Hence, its role is indispensable and very important to the goals of Futures and the university’s vision and mission to be an Interdisciplinary University.
   • The physics master’s degree program is central to the mission of A&T as it grows to be a research-intensive institution. Most students in the Ph.D. programs in engineering require graduate level physics courses to do basic research in engineering or to carry out applied work. The number of students taking the graduate level physics courses has increased. This NC A&T Graduate program in physics also serves the national need of producing African American Ph.D’s. The program is providing a less stressful transition to major Ph.D granting institutions for a number of African Americans whose undergraduate preparation is not very strong. The program also provides research infrastructure and relevant courses to the MS program in computational sciences and the newly established Ph.D. program in energy and environmental sciences. Elimination of the program will adversely affect the institutions ability to be a leading engineering and technology university.
   • Nanoscience or nanotechnology constitutes highly interdisciplinary efforts that involve physics, chemistry, biology and materials science. To produce an entirely new workforce knowledgeable about nanoscience is the major challenge in contemporary global education. The new training requires a team of scientists well prepared in physics, biology, chemistry, computational science and materials science, and engineers who can communicate with one another effectively, as well as some individuals steeped in the essentials of all of the above. Physics has been at the root of every technological advance and engineering breakthrough in the last century, and it
will continue to play a significant and defining role in the new century, the “nano” age. In this sense the program serves a very critical societal need.

- Physics is one of the core disciplines along with mathematics, chemistry and biology. Any effort to establish a strong interdisciplinary program requires strong and thriving core disciplinary programs. Physics as one of these core programs is at the root of every advance in technology. The program cannot be combined, as there is no other department it can fit into without destroying it.

2. **Quality of the Program**
The Department of Physics provides quality instruction, mentoring, and training that produce competitive graduates who are trained in the skills of critical thinking, analytical reasoning, independent learning, and problem solving. The department prepares students to meet the contemporary workforce demands of academia, environmental agencies, high-technology industries, medical and healthcare professions, national research laboratories, and state and federal governments. It also provides opportunities for students to transition to major research universities.

**The quality of the program is assessed using the following indicators.**

1. **Success of graduates in the workplace and advanced degree programs**
   - Our graduates have successfully pursued Ph.D. degrees in major universities.
   - All obtain employment within three months of graduation in major corporations.
   - Our students won competitive assistantships in major universities.

2. **Research productivity**
   - The department received over $600,000 per year in research funds since 2001.
   - These strong research initiatives help majors complete required graduate research and thesis.
   - The thesis projects of most of our MS recipients have been published in refereed prestigious journals.
   - On average, faculty and students publish over 15-refereed articles and make over 25 presentations at national and international conferences per year.

3. **Research collaboration created and sustained**
The department has strong and active collaborations with major research institutions such as Duke University, the University of North Carolina at Chapel Hill, Stanford University, and the University of Connecticut. Collaborations with national laboratories include the Joint Institute for Laboratory Astrophysics (JILA), Lawrence Berkeley National Laboratory (LBNL), Lawrence Livermore National Laboratory (LLNL), Los Alamos National Laboratory (LANL), Oak Ridge National Laboratory (ORNL), Thomas Jefferson National Accelerator Facility (JLab), and PENN State. International collaborations include the University of Marseilles in France and Addis Ababa University in Ethiopia.

4. **Placement of MS graduates.**
   - Our graduates are making good progress and passed qualifying exams in graduate programs at Chapel Hill, Connecticut, UGA, NC State and at NC A&T.
   - Those in the workforce are employed in major corporations.
3. **Faculty Involved**
   - Seven full time faculty teach in this program.
   - Ten teaching assistants (7 of which are graduate students in the program) serve as laboratory assistants.
   - Two temporary research associates participate in departmental research and advise graduate students.
   - All full time faculty and most temporary part-time faculty have terminal degrees.
   - The average teaching load is a twelve-hour equivalent per semester.
   - All full time faculty participate in a number of interdisciplinary.
   - Since its inception, the program has not received any additional faculty positions. The graduate program in Physics started at a time when the Department had 11 faculty positions, and an undergraduate student population of close to 25. Currently both the undergraduate and graduate programs are run with only 7 full time faculty, and most of the graduate courses (thesis and research) are taken as overload by the faculty.

4. **Facilities/Equipment**
   
a) **Teaching Facilities:**
   The teaching facilities currently available are quite adequate. Most of the departmental teaching equipment needs were made available through research grants from NSF, and the Department of Education. These include:
   - In 2001-2002 the smart classrooms in Marteena Hall became operational. The smart classrooms are outfitted with document cameras, PC and Mac computers, multimedia facilities, DVD players, VCR players, and Internet access. This improved the teaching of the large classes by providing faculty instant access to the Internet and provided computer based simulations and demonstrations to enhance learning.
   - With a grant from the U. S. Department of Education, the Department has a computerized introductory mechanics lab and Macintosh G4 computers and a file server were introduced. Vernier LabPro interfaces; probes and sensors were introduced for microcomputer-based laboratory (MBL) experiments.
   - With a NASA Partnership Award, the second semester physics labs were also computerized and modernized, with computers and interfaces like those of the first semester (mechanics) labs.
   - Through “A Cooperative Physics Project.” The advanced lab is modernized with state of the art equipment.
   - With support from Title III, warm out lab equipment has been replaced.

   b) **Research Facilities.**
   The research program is organized in five areas, all with well-equipped modern and state-of-the-art laboratories.
   
a. **Low and Medium Energy Physics:** Research carried out on campus and at Thomas Jefferson National Accelerator Facility and Triangle Universities Nuclear Laboratory with support by a grant from the National Science Foundation. There is also a detector development laboratory in the department.

   b. **Chemical Physics: Experimental and Theoretical:** Facilities include: Two 20 Hz ND: YAG Laser two Continuum ND 6000 dye lasers, a UVX: frequency doubling
and tracking system. A Continuum Leopard pico second laser with second, third and fourth harmonic generating crystals. Reflection Time of Flight Mass Spectrometer: with pulsed source and effusive source. Other Accessories include a 35 cm McPherson Monochromator, a SPEX Spectrometer, a Tektronix digital oscilloscope, Le Croy 4 channel, 3GHz with 20 GS/s sampling rate oscilloscope, Box Car averager and gated integrator system (Stanford System), Power Supply (Stanford), Temperature controllers (Omega Engineering), PMT, PMT cooled housing, and optical components: In addition for theoretical and computational work facilities include: Eight paralleled dual-processor Apple Macintosh G5's ("Big-Mac"), several IBM and SUN servers. The National Science Foundation supports the research.

c. **Physics of Materials**: Research in low temperature and semiconductor physics. Facilities include: Closed cycle refrigerators, LR-400AC Resistance bridge, tube furnace, AC susceptibility set up, crystal growth setup, water cooled electromagnet (Varian), Lakeshore EM4-HV water cooled electromagnet.

d. **Physics Education**: Research on web-based education and innovative teaching methods and creating a responsive learning environment. The research is supported by a grant from the National Science Foundation and The Department of Education. (Space and Earth Science Education development through NASA grant.

e. **Seismic Data Processing Facility**: the research in seismic physical modeling, seismic data analysis, subsurface imaging and non-destructive testing using ultrasonic waves. The research is supported by a grant from the National Science Foundation.

5. **Demand**
- The Masters program in Physics began in 1996.
- The total number of students has remained at around 7 or 8. The program is serving the expected number of students based on the national trend.
- One to three students per year graduate from the physics programs. In 2002-2003 the program graduated 3 students.
- Most graduates of these programs have gone on immediately to graduate or professional schools for a terminal degree. The rest are employed
- In addition to serving physics majors, the graduate physics program serves a number of non-majors enrolled in the following courses: Quantum mechanics (5) Physics of Atoms, Molecules and Nanosystems (7), Classical mechanics (4)

6. **Cost**
- The MS program requires 30 credit hours for completion with a thesis or 33 credit hours for completion with project or course option. This is the same as the institutional average.
- The program requires 18 hours of core course work in the first year and 9 hours of research and thesis.
- The average class size in the core courses in 2004-2005 was 7. However, given a threshold of less than 5, some of the courses; mainly Thesis have one or two students per advisor. These courses and research courses are taken as overload and never counted as a teaching load to faculty
- The graduate program is not funded separately. It uses funds from the undergraduate program. Student support, supplies and materials for research are
provided by federal grants to faculty members. Title III funds from the Department of Education have also been used to purchase research equipment and support students.

7. **Duplication**
   - The master’s program in physics is unique at the university and its objectives cannot be accomplished through any other program.
   - The Physics program complements the engineering and technology programs at the university.
   - This program provides a strong core of physics subjects. Physics is a core discipline in the sciences and none of the core courses are duplicated in other programs or departments. As the university develops interdisciplinary programs and interactions, efforts will be made to consolidate applied courses, which can be offered in multiple programs: For example, physics of solids (engineering and physics). Applied quantum mechanics can be used to replace quantum chemistry and the second semester of quantum mechanics etc.
   - The A&T physics program provides the natural and necessary support to programs in science and engineering at the University.

8. **Critical mass**
   - The Physics program at North Carolina A&T cannot be eliminated without serious detriment to the engineering programs at the university. Physics is fundamental to all science and engineering areas and is a requirement in some of those curricula. The single Master of Science in Physics degree would maintain the competitiveness of the engineering program.

9. **Recommendations about the Program**
   It is recommended that the M.S. in Physics program should be continued at NC A&T State University.
   1. NC A&T State University is transitioning to a “Research Category II” University with an interdisciplinary research focus. The graduate program in the Department is helps to promote and carry out active research programs at the university.
   2. The graduate program in the Department is a unique vehicle allowing the faculty to be engaged in long term nationwide research activities, which in turn provide
      a) Professional growth of faculty members
      b) High quality and professional teaching
      c) Effective training of students in contemporary science
      d) The possibility to obtain research grants and awards from federal and state level funding organizations.
   3. A well-developed graduate program with an established research program always has a potential to accumulate enough funds from awards and grants to fully cover research and student expenses. Our graduate program can be considered as one of them. The department’s success in acquiring the competitive research federal grants (CAREER, MRI) is due to the presence of the graduate program in physics. In particular since the establishment of the graduate program 1.6 Million in grants to chemical physics research, and 1.5 Million in grants in Nuclear Physics research have been obtained. These grants
have been used not only to build infrastructure, but also to support graduate students and provide financial help to a number of undergraduate students, who may otherwise not been able to continue their studies.

4. The existence of a (healthy) graduate program creates both an academic and research environment in the Department from which also highly benefits the undergraduate program academically, by exposing undergraduates to cutting edge research through seminars and colloquia.

5. According to the APS data the largest undergraduate physics major producers are the MS and Ph.D. granting institutions, with the MS granting departments producing 4-9 physics BS graduates per year and Ph.D granting institutions producing more than 10 BS graduates per year. The existence of the MS program in Physics at NC A&T will help the growth of the undergraduate program.

6. The graduate program in the Department of Physics with its M.S. degree program is currently playing a unique “bridge” role by preparing minority students for their Ph.D. level studies at well established and highly competitive research universities nationwide. Our graduate program is effectively carrying this highly important mission, and therefore, the existence of the program is fully justified. To the best of our knowledge, there are not very many programs in the country effectively performing this task in the field of physics.

7. Nanotechnology is being heralded as a new technological revolution, one so profound that it will touch all aspects of human society. It is, therefore, not over exaggerating to say that the future of science and technology is already defined. This poses a new challenge in new work force training. The new training requires a team of scientists well prepared in physics, biology, chemistry, computational science and materials science, and engineers who can communicate with one another effectively, as well as some individuals steeped in the essentials of all of the above. Many of the basic rules that define the behavior of nanostructures are the laws of quantum mechanics in disguise. Understanding nanoscience requires a deep understanding of the physics behind nanosystems. For example 7 of the 11 graduate students enrolled in the Physics 735 course are engineering Ph.D. students.

8. The Department has a strong record of research and grantmanship, and is actively collaborating in research grants with several universities and programs on campus to develop interdisciplinary graduate research collaborations in nanoscience, (NC A&T engineering) and has pending proposals in medical physics (with biology and Wake Forest Medical Center), Optics (with UNC Charlotte and Clemson), Nuclear Physics (TJNRF and DUKE), Geosciences (PENN State and African Universities) Biophysics (Ohio State), International collaborations in theoretical quantum chemistry (France) nano-modeling (Ethiopia) seismology (Ethiopia, Tanzania) to mention a few. The elimination of the program will kill these initiatives.

There are opportunities for growth due to both internal and external factors

External Factors:

1. There are opportunities for growth, considering the national and local trends. With more physicists reaching retirement age in places like NASA, National Labs, NRC and so forth, we have strong opportunity to grow and produce the future physicists.
2. The new industrial revolution, the nanorevolution, with its demands for a new type of workforce trained in basic sciences, physics being one will provide the need and hence growth.

3. Physicists in industry have contributed immeasurably to the technological superiority, which the United States has enjoyed for many years. More recently, economic pressures have prompted American industry to place increasing emphasis on specific technical and communication skills in their selection of personnel. We believe that the unique quantitative analytic skills and creative thinking abilities, which are acquired through a rigorous physics and science education, prepare an individual well for a career in industry and the business world.

Internal Factors: - The Department.

1. The Department of Physics is a dynamic department that shows significant growth and improvement. The department keeps pace with changes in the local, state and national physics and scientific communities. It has a long history of producing leading professionals in the nation, including Dr. McNair.

2. Further more the department has strength in what is most important for growth
   a) Faculty strongly committed to teaching and excellence.
   b) High degree of collegiality, willingness to collaborate in areas of teaching, strong personal interaction among faculty and students, general concern of faculty for students recognized by students, good communication among faculty, open and accessible to students.
   c) Sense of shared mission, clear sense of mission, effective use of resources and people.
   d) Consensus decision, regular meetings to discuss and assess, student progress and retention.
   e) Strong funding source, for research and established research activity and productivity

3. The Department has clearly articulated its mission and goals, and drafted strategies for growth the following will be implemented.

4. The Department has made significant contributions to the MS program in computational sciences and the PhD in energy and environmental studies. These programs will provide opportunities for growth.

Signatures:

Chancellor

Chief Academic Officer

Person to Contact if there are questions about Information in this form
Dean Caesar Jackson

North Carolina A&T State University
Long Range Plan 2006-2011
REQUEST FOR AUTHORIZATION TO DISCONTINUE A DEGREE PROGRAM

DATE: May 2005

CONSTITUENT INSTITUTION: North Carolina A&T State University

Instructions:

1. For all programs proposed for discontinuation simply list them below and indicate the proposed effective date.

<table>
<thead>
<tr>
<th>CIP</th>
<th>LEVEL</th>
<th>PROGRAM OR TRACK TITLE</th>
<th>EFFECTIVE DATE</th>
<th>REASON FOR DISCONTINUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>131001</td>
<td>B</td>
<td>Special Education</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>131203</td>
<td>M</td>
<td>Middle Grades Education</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>131209</td>
<td>B</td>
<td>Child Development, Early Education &amp; Family Studies (B-K) (Teaching)</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>131301</td>
<td>B</td>
<td>Agricultural Education</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>131302</td>
<td>B</td>
<td>Visual Arts, Art Education</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>131305</td>
<td>B</td>
<td>English, Secondary Education</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>131308</td>
<td>B</td>
<td>Family and Consumer Science Education</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>131311</td>
<td>B</td>
<td>Mathematics, Secondary Education</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>131312</td>
<td>B</td>
<td>Music education</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>131314</td>
<td>B</td>
<td>Health and Physical Education</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>131322</td>
<td>B</td>
<td>Biology Education</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>131322</td>
<td>M</td>
<td>Biology Education</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>131323</td>
<td>B</td>
<td>Chemistry, Secondary Education</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>131328</td>
<td>B</td>
<td>History, Secondary Education</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>141201</td>
<td>B</td>
<td>Engineering Physics</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>190501</td>
<td>B</td>
<td>Food and Nutritional Sciences</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
<tr>
<td>310301</td>
<td>B</td>
<td>Recreation Administration</td>
<td>August 1, 2006</td>
<td>Low enrollment</td>
</tr>
</tbody>
</table>

CHANCELLOR (OR DESIGNEE) [Signature]

North Carolina A&T State University
Long Range Plan 2006-2011
STATUS REPORT ON RECENTLY ESTABLISHED (1-2 YEARS) DEGREE PROGRAMS AND TRACKS  
(Authorized January 2002-December 2003)  

THE UNIVERSITY OF NORTH CAROLINA  

Date: April 27, 2005  

Constituent Institution: North Carolina Agricultural and Technical State University  
Discipline Specialty Title: Journalism and Mass Communication  
Discipline Specialty Number: 09-0102 Level: B X M I Prof. D  
Specify Type of Degree (B.S., B.A., M.A., Ed.D., Ph.D.): Bachelor of Science  
Program Tracks (if any): Broadcast Production, Electronic Media and Journalism, Media Management, Print Journalism, and Public Relations  

Date Established: August 9, 2002  

If the program has not yet been established, why not? N/A  

Headcount Enrollment, as projected in Request for Authorization to Establish, and Actual Headcount Enrollment (upper division program majors, juniors and seniors only, for baccalaureate programs):  

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected/Actual</td>
<td>495</td>
<td>513</td>
</tr>
<tr>
<td>Projected/Actual</td>
<td>525</td>
<td>498</td>
</tr>
</tbody>
</table>

Degrees Confferred to Date: 70 69 75 67  

Resources: Describe the resources that have been allocated to this program, the adequacy of these resources, and plans to remedy and deficiencies.  

Faculty: More faculty are needed in the public relations, electronic media and journalism, and broadcast production sequences. Faculty positions have been garnered in public relations. If enrollment continues to increase, plans will be to request additional faculty positions. External funding opportunities will be explored to provide resources for these positions. Additionally, there must be movement to appoint assistant or associate chairs through endowment or state funds.  

Staff: A minimum of two additional administrative staff members are needed to meet the increase in faculty members and the student population.  

Libraries: External funding as well as additional assistance from Title III will be needed to meet the needs of the library.
Equipment: External funding as well as additional assistance from Title III will be needed to purchase and maintain the needed equipment to maintain university and accreditation requirements.

Facilities: External funding as well as additional assistance from Title III will be needed to maintain and expand the facility as the department continues to grow.

Curriculum: Has the curriculum been developed as indicated in the request to establish proposal? Are any modification planned? N/A

Other Information: Please provide additional information that describes the progress made in development of this new program. N/A

Chancellor: [Signature]

North Carolina A&T State University
Long Range Plan 2006-2011
STATUS REPORT ON RECENTLY ESTABLISHED (1-2 YEARS) DEGREE PROGRAMS AND TRACKS
(Authorized January 2002-December 2003)

THE UNIVERSITY OF NORTH CAROLINA

Date: May 31, 2005

Constituent Institution: North Carolina A&T State University

Discipline Specialty Title: Masters of School Administration

Discipline Specialty Number: 13409 Level: B_M X___ I____ Prof. _D____

Specify Type of Degree (e.g. B.S., B.A., M.A., M.S., Ed.D., Ph.D.): M.S.

Program Tracks (if any): none

Date Established: May 10, 2002

If the program has not yet been established, why not?

Headcount Enrollment, as projected in Request for Authorization to Establish, and Actual Headcount Enrollment (upper division program majors, juniors and seniors only, for baccalaureate programs):

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected/Actual</th>
<th>Projected/Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Year (2002-03)</td>
<td>0/0</td>
<td>45/32</td>
</tr>
<tr>
<td>2nd Year (2003-04)</td>
<td>0/0</td>
<td></td>
</tr>
<tr>
<td>3rd Year (2004-05)</td>
<td>45/32</td>
<td></td>
</tr>
<tr>
<td>4th Year (2005-06)</td>
<td>60/52</td>
<td></td>
</tr>
</tbody>
</table>

Degrees Conferred to Date: 5 May 2005

Resources: Describe the resources that have been allocated to this program, the adequacy of these resources, and plans to remedy any deficiencies.

Faculty: There are two full time and two part time faculty, coordinator and recruiter

Libraries: Resources are adequate for the library. Additional requests are being made to ensure current and relevant resource

Equipment: Computers, video cameras, recording equipment, copying machines and other electronic devices are available to accommodate the need of the program.

Facilities: Adequate office space, conference rooms, computer laboratories and large auditorium are available at the request of the coordinator.
Curriculum: Has the curriculum been developed as indicated in the request to establish proposal? Are modifications planned?

The curriculum has been developed as indicated in the request. Modifications have occurred to include more interdisciplinary courses.

Other Information: Please provide any additional information that describes the progress made in development of this new program.

Chancellor: [Signature]
STATUS REPORT ON RECENTLY ESTABLISHED (1-2 YEARS) DEGREE PROGRAMS AND TRACKS
(Authorized January 2002-December 2003)

THE UNIVERSITY OF NORTH CAROLINA

Date: April 18, 2005

Constituent Institution: North Carolina A&T State University

Discipline Specialty Title: Liberal Studies

Discipline Specialty Number: 240101 Level: B X M I Prof. D


Date Established: June 2004

If the program has not yet been established, why not?

Headcount Enrollment, as projecting in Request for Authorization to Establish, and Actual Headcount Enrollment (upper division program majors, juniors and seniors only, for baccalaureate programs):

<table>
<thead>
<tr>
<th></th>
<th>1st Year (2004-05)</th>
<th>2nd Year (2005-2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected/Actual</td>
<td>50</td>
<td>73</td>
</tr>
<tr>
<td>Projected/Actual</td>
<td>125</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>1st Year (2004-05)</th>
<th>2nd Year (2005-2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected/Actual</td>
<td>none</td>
<td>8</td>
</tr>
<tr>
<td>Projected/Actual</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Degrees Conferred to Date: none 8

Resources: Describe the resources that have been allocated to this program, the adequacy of these resources, and plans to remedy any deficiencies.

Faculty One faculty member has been assigned as Interim Director of Liberal Studies and provided with up to 50% teaching release time. A permanent Director of Liberal Studies will be appointed during the next year.

Staff None. Full-time staff support is desperately needed for the Liberal Studies Program. An SPA position has been requested and a search will be conducted during the summer.

Libraries No resources allocated. As new concentrations are formed, additional library materials may be required.

North Carolina A&T State University
Long Range Plan 2006-2011
Equipment: Two desktop computers, one laptop computer and two printers have been allocated to Liberal Studies. Additional equipment needs include: color printer, staff computer and office furniture, file and storage cabinets, and bookshelves.

Facilities: No office area has been allocated to the Liberal Studies Program. The program has requested three adjoining offices, a separate telephone line, and a meeting room.

Curriculum: Has the curriculum been developed as indicated in the request to establish proposal? YES
Are any modifications planned? See attached.

Other Information: Please provide any additional information that describes the progress made in development of this new program.

Chancellor: [Signature]
STATUS REPORT ON RECENTLY ESTABLISHED (1-2 YEARS) DEGREE PROGRAMS AND TRACKS
Liberal Studies Program

Planned Curriculum Modifications:
1. The International Studies concentration of the Liberal Studies Program has only one student enrolled. Over the next year, discussions will transpire with the Office of International Programs, the Department of Foreign Languages and the Global Studies Certificate Program to ascertain if a merged degree program is desirable and feasible.
2. The Liberal Studies Program will additionally establish minimum GPA standards for retention in the major, minimum GPA requirements for a change of major into the program and implement an honors awards program to recognize academic excellence.

Progress of Program:
1. The name of customizable concentration “Self-Design” was misleading to students so it was changed from to “Interdisciplinary.” An approval process was established for reviewing individualized programs of study. Two new LIBS courses were created to facilitate completion of an interdisciplinary senior research project and for an interdisciplinary independent study.
2. Five new concentration tracks have been developed and moved through the curriculum approval process. The new concentration tracks are Women’s Studies, Pre-Law, Cultural Change and Social Development, Business, and Dance. Concentration coordinators have been assigned for three of the new tracks.
3. Nontraditional students have shown exceptional interest in the Liberal Studies program. Thus, many of the required support courses are being offered in evening and weekend timeslots to accommodate this population.
4. Distance Learning has assisted in online course development of Arts and Sciences support courses required for all Liberal Studies concentrations. During the next year we will focus on online development of the African-American and Business concentration courses. Since Distance Learning development resources are limited, the Liberal Studies program will be working with the College of Arts and Sciences to secure additional online course development funding or release time.
5. Liberal Studies minimum grade requirements were established to promote academic excellence. Majors are now required to achieve a final grade of ‘C’ or better for all concentration courses, related electives, ENGL 100/101, and HIST 100/101 classes.
STATUS REPORT ON RECENTLY ESTABLISHED (1-2 YEARS) DEGREE PROGRAMS AND TRACKS

THE UNIVERSITY OF NORTH CAROLINA

Date: April 22, 2005

Constituent Institution: North Carolina Agricultural and Technical State University
Discipline Specialty Title: Criminal Justice
Discipline Specialty Number: 43.0104 027 000 Level: B 027 M I Prof. D
Specify Type of Degree (e.g. B.S., B.A., M.A., Ed.D., Ph.D.): B.S.
Program Tracks (if any): None

Date Established: November 8, 2002

If the program has not yet been established, why not?

Headcount Enrollment, as projected in Request for Authorization to Establish, and Actual Headcount Enrollment (upper division program majors, juniors and seniors only, for baccalaureate programs):

Growth of Program

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Growth</th>
<th>Actual Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-2004</td>
<td>50 students</td>
<td>133 students</td>
</tr>
<tr>
<td>2004-2005</td>
<td>95 students</td>
<td>164 students</td>
</tr>
<tr>
<td>2005-2006</td>
<td>150 students</td>
<td></td>
</tr>
</tbody>
</table>

Degrees Conferred to Date: One degree conferred in December 2004

Resources:

Faculty
The original faculty request was for a Program Director and a full time faculty position that would be aided by several adjuncts to meet teaching and administrative requirements. Presently, an Interim Director has been appointed.
and the resources from Focus Growth and Title III funding have been used to fund four (4) adjuncts and establish the GIS/CATI Laboratory.

There was also a request for one (1) additional full-time faculty member after the program had been in existence for one year. Due to anticipated growth as indicated above, additional faculty will be required following the third and fourth year due to the enrollment growth.

Since the program has only one position, it is anticipated that with the increase in SCHs there will be a shifting of resources to reflect where enrollment has increased and the additional and needed faculty members will be allotted to the Criminal Justice Program.

**Staff**

The staffing needs for the program must grow with the faculty and student growth. Presently, staff duties are the responsibility of the Political Science department office assistant. This one staff person has to support the entire Political Science faculty and adjuncts, along with the Criminal Justice faculty and adjuncts. The program requires an administrative assistant to support the growing administrative and faculty demands.

The completed GIS/CATI Laboratory will also require a manager to oversee the increased research demands for the lab. In order for the lab to be available and useful to the faculty and students a manager is needed to direct the technical and instruction responsibilities of the facility. Shifting of resources will correct the shortage.

**Libraries:**

Library resources are sufficient at this time.

**Equipment:**

Financial resources from the Focus Growth and Title III funds have equipped the GIS/CATI laboratory with 11 computers, four laptops, and four printers. For telephone interviewing while conducting a poll, 11 telephones were purchased for the lab.

**Facilities:**

The GIS/CATI laboratory is complete and functioning. The lab has ten bays for interviewing, one faculty desk for instruction and monitoring, a white board, and a conference table with six chairs. This meets our present needs.

**Curriculum:** Has the curriculum been developed as indicated in the request to establish proposal?

Yes, the curriculum has been established and the first classes were offered Fall 2003.
Are any modifications planned?

Future modifications will reflect an interdisciplinary development of a concentration in Forensics

Other Information: 

Chancellor: [Signature]
STATUS REPORT ON RECENTLY ESTABLISHED (3-4 YEARS) DEGREE PROGRAMS AND TRACKS
(authorized January 2000-December 2001)

THE UNIVERSITY OF NORTH CAROLINA

Date: May 25, 2005

Constituent Institution: North Carolina A&T State University

Discipline Specialty Title: Master of Science in Management
Discipline Specialty Number: 0500 Level B M I Prof. D
Specify Type of Degree (e.g. B.S., B.A., M.A., M.S., Ed.D., Ph.D.): MSM
Program Tracks (if any): Management Information Systems, Human Resources Management, Transportation/Logistics

Date Established: Fall 2001 (authorized by the State Fall 2000)

If the program has not yet been established, why not?

Headcount Enrollment, as projected in Request for Authorization to Establish, and Actual Headcount Enrollment (upper division program majors, juniors and seniors only, for baccalaureate programs):

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected/Actual</th>
<th>Projected/Actual</th>
<th>Projected/Actual</th>
<th>Projected/Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Year (2000-2001)</td>
<td>18</td>
<td>0</td>
<td>25</td>
<td>36</td>
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<tr>
<td>2nd Year (2001-2002)</td>
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<tr>
<td>3rd Year (2002-2003)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year (2003-2004)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Degrees Conferred to Date: 5 9 10 11 15 8

Resources: Describe the resources that have been allocated to this program, the adequacy of these resources, and plans to remedy any deficiencies.

Faculty

In the original program request, the School of Business and Economics indicated that one additional faculty member was needed in each of the proposed academic tracks for a total of two new positions. Funding for these positions was appropriated by the University through a reallocation of existing state funds. Dr. Alice Johnson, Assistant Professor of Management Information Systems was hired to fill one position, and Dr. Mark Burkey, Assistant Professor in Economics and Transportation/Logistics was converted from an adjunct position to a full-time faculty position.

In 2003, the faculty and the administration of the School and the University unanimously supported the implementation of an additional MSM track in Human Resources Management (HRM). The University used state allocations authorized for new faculty positions to support the School’s request to hire Dr. Angela Miles, Assistant Professor in Organizational Behavior and HRM, to facilitate program development and teaching in the new MSM track.
Staff

The School has continued to use existing faculty and staff to handle the administrative tasks associated with the MSM program. The program director, Dr. Roger Gagnon, Associate Professor of Management, has fundamental responsibility for marketing, recruitment, retention, and graduate placement. Ms. Barbara Pratt, serves as the MSM Administrative Assistant. The chairpersons of the Department of Business Administration and the Department of Economics and Transportation/Logistics handle the academic management associated with the program, including student matriculation, course delivery, and faculty scheduling.

Libraries

The School has enjoyed adequate library support since the implementation of the MSM program. During the fall and spring semesters, the University’s Bluford Library has significantly expanded its hours of operation to include a 24-hour schedule during peak periods. The library’s collection of electronic resources has been expanded to enhance access to relevant materials from remote locations. These program expansions have been a valuable resource for the delivery of quality education at the graduate level.

Equipment

Over the last four years, all Title III funding appropriated to the School of Business and Economics has been allocated to the MSM program to support new equipment purchases and other program related travel and/or instructional resource expenses. These allocations have facilitated program delivery and mitigated shortfalls in state funding during periods of strict budgetary constraints. The School recognizes that Title III allocations cannot be the primary long-term resource, and it is, therefore, expected that state funding will be appropriately secured for future program growth.

Facilities

As a result of the voter support for the North Carolina Higher Education Bond Referendum in 2000, the School of Business and Economics opened its doors in 2003 to a new state-of-the-art classroom building. Students have access to learning in classrooms that are fully equipped electronically to access audio, video, and Internet services. Most classrooms are also equipped to support the use of laptop computers at student desks. The renovation of Merrick Hall was completed in the Spring 2005, and the opening of this facility affords MSM students the opportunity to have separate facilities for graduate study individually and in group settings.

Summary

In the Fall 2000, the University of North Carolina System approved the implementation of the MSM degree program at North Carolina A&T State University, however, no additional
funding was approved to support program delivery. Through the creativity of the University’s administration with respect to the reallocation of existing resources, and the appropriation of the School’s Title III funding to the MSM program, the School of Business and Economics has been able to offer its students a high quality program of graduate study without incurring significant resource deficiencies. While the School and the University is delighted with this outcome, long-term program delivery will require state-funded support to meet the needs of North Carolina citizens.

Curriculum:

The curriculum was developed as indicated in the request to establish proposal. The only modification has been the expansion to offer a third concentration in Human Resources Management.

Other Information:

The actual headcount enrollment differs from the data submitted in the original request for authorization to establish. With respect to enrollment, the School anticipated an implementation date during the 2000-2001 academic year, with a projected enrollment of 18 students. While the program was approved for establishment in the late Fall 2000, the lack of supporting state resources delayed implementation to the Fall 2001, at which time 36 students were enrolled in the program. With respect to degrees conferred, the School has observed fewer graduates than projected due to the high level of part-time enrollees. Many students maintain full-time employment while pursuing efforts to advance their education. While we commend the enthusiasm and vision of the students, such enrollment lengthens the period required for completion, and was not anticipated in the original request for authorization. For this reason, graduation rates for program completion lag projections by 18-24 months.

Chancellor: [Signature]
<table>
<thead>
<tr>
<th>Position #</th>
<th>School/College</th>
<th>Faculty Name</th>
<th>Rank</th>
<th>Date Filled</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1004</td>
<td>Arts &amp; Sciences</td>
<td>Lavie Leasure</td>
<td>Lecturer</td>
<td>8/9/2004</td>
<td>$37,000</td>
</tr>
<tr>
<td>1006</td>
<td>Arts &amp; Sciences</td>
<td>Kimberly Harper</td>
<td>Lecturer</td>
<td>8/9/2004</td>
<td>$36,000</td>
</tr>
<tr>
<td>1008</td>
<td>Arts &amp; Sciences</td>
<td>Pamela Richardson</td>
<td>Lecturer</td>
<td>8/9/2004</td>
<td>$32,500</td>
</tr>
<tr>
<td>1012</td>
<td>Arts &amp; Sciences</td>
<td>Ahmad Deeb</td>
<td>Visiting Assistant Professor</td>
<td>8/9/2004</td>
<td>$46,000</td>
</tr>
<tr>
<td>1014</td>
<td>Arts &amp; Sciences</td>
<td>Yaw Kyei</td>
<td>Visiting Lecturer</td>
<td>8/9/2004</td>
<td>$43,000</td>
</tr>
<tr>
<td>1062</td>
<td>Arts &amp; Sciences</td>
<td>Michelle Linster Glenn</td>
<td>Visiting Assistant Professor</td>
<td>8/9/2004</td>
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<tr>
<td>1090</td>
<td>Arts &amp; Sciences</td>
<td>Stephanie Carrino</td>
<td>Lecturer</td>
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<td>1092</td>
<td>Arts &amp; Sciences</td>
<td>Conchita Kemei</td>
<td>Professor</td>
<td>1/1/2004</td>
<td>$48,000</td>
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<td>1202</td>
<td>Arts &amp; Sciences</td>
<td>Andrea Johnson</td>
<td>Adjunct Assistant Professor</td>
<td>8/9/2004</td>
<td>$35,000</td>
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<tr>
<td>2007</td>
<td>Arts &amp; Sciences</td>
<td>Dewayne Wickham</td>
<td>Distinguished Professor</td>
<td>1/1/2005</td>
<td>$125,000</td>
</tr>
<tr>
<td>1041</td>
<td>Business &amp; Economics</td>
<td>Hal Snarr</td>
<td>Assistant Professor</td>
<td>8/9/2004</td>
<td>$67,000</td>
</tr>
<tr>
<td>1046</td>
<td>Business &amp; Economics</td>
<td>Inman Burford</td>
<td>Adjunct Instructor</td>
<td>1/1/2004</td>
<td>$47,000</td>
</tr>
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<td>1052</td>
<td>Business &amp; Economics</td>
<td>Kathy Mack</td>
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*No new 2004-2005 positions filled
Source: EPA Salary Administration
NORTH CAROLINA A&T STATE UNIVERSITY
POLICIES AND PROCEDURES FOR PLANNING, ESTABLISHING AND REVIEWING UNIVERSITY CENTERS & INSTITUTES

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A. INTRODUCTION

Creating and developing partnerships with private and corporate sponsors, educational institutions, and federal and state agencies is an important pathway to fulfill the mission of the University. Centers and institutes are representative of how this process is maximized. Centers and Institutes are usually multidisciplinary, have an important educational component, and may be established when a collection of faculty have secured long-term funding commitments to pursue unique research, public service, and/or instructional endeavors.

The objective of The Policies and Procedures for Planning, Establishing, and Reviewing University Centers and Institutes is to provide a uniform framework governing the establishment, review, and discontinuation of centers and institutes to ensure the effective and efficient use of resources. Specific types of centers and institutes, as well as the regulations and procedures pertaining to these individual categories, are defined in these regulations (adapted from UNC-OP Document: Regulations for Planning, Establishing, and Reviewing Centers and Institutes in The University of North Carolina, No. 400.5(R), Amended 5/6/2004).

The suggested reporting format for review of centers and institutes follows as Appendix I. These policies and procedures only apply to University-level Centers or Institutes. Centers created in response to specific solicitations will be governed by the stipulations of the grant or contract and will not be subject to these regulations. Special reporting requirements for these centers are provided in Appendix II.

B. DEFINITIONS FOR SPECIFIC CATEGORIES OF CENTERS AND INSTITUTES

1. Centers Versus Institutes

No distinction is made between the terms "center" and "institute." Both typically offer interdisciplinary programs attracting faculty, students, and staff from various academic departments or other structured units. In practice, an "institute" frequently refers to an activity with a broader scope than a "center." For example, an institute may create centers as separate units within its administrative structure.
2. Types of Centers and Institutes

Research
This policy applies to research centers and may apply to others if there is a significant research component. Although classified as a research center or institute, such a unit may also provide instruction, training, technical assistance, or public service programs. Although such units do not have jurisdiction over academic curricula, they may offer courses in cooperation with academic units.

Public Service
A public service center or institute has public service or technical assistance as its primary mission. Research, instruction, and training activities may also be conducted as secondary components of the mission. Although such units do not have jurisdiction over academic curricula, they may offer courses in cooperation with academic units.

Instructional
An instructional center or institute has training or instruction as its primary mission. These units may also conduct research and public service activities. Although instructional centers and institutes do not have primary jurisdiction over academic curricula, they may offer courses in cooperation with academic units.

3. Other Designations for Centers and Institutes

Membership Centers or Institutes
Any center or institute may also be defined as a membership center or institute. These units receive a substantial portion of their funding from membership fees paid by corporate or other private or governmental entities to pursue research, public service, or instructional activities of mutual benefit. Membership agreements are routed through the institution using the standard internal processing forms for approvals of sponsored program requests. Once the agreement is signed and the fees have been paid by the member organization, the agreement is processed as a sponsored program award by the institution.
C. PURPOSE AND SCOPE OF CENTERS AND INSTITUTES

Centers and institutes are established within the University to strengthen and enrich multidisciplinary programs of research, public service, or instruction conducted by the faculty and staff. They also may provide undergraduate, graduate, and postdoctoral students with added research opportunities, facilities, and assistance, as well as enhance their involvement in public service and educational activities. Centers and institutes also have a strong positive impact on the economic development of the state by providing job opportunities, supplying technical assistance and training, fostering community development, and enhancing the transfer of new technologies.

Centers and institutes must avoid unnecessary duplication within A&T. Each unit seeks to differentiate its mission, activities, and/or clientele from other A&T units, and to make its facilities available to other constituent institutions for cooperative activities as appropriate.

D. AUTHORITY AND LINES OF RESPONSIBILITY

Centers and institutes are established or discontinued at the recommendation of the Vice Chancellor for Research and Economic Development and approved by the Chancellor. The policies outlined will be followed to govern the planning, establishment, and regular review of the University centers. These policies are consistent with the guidelines provided by the UNC System and have the approval of the Board of Trustees.

All centers and institutes have the authority to manage space (within allocated limits), budget, and personnel matters, but in general do not offer faculty appointments. Exceptions or additional lines of responsibility may be determined for specific centers and institutes.

A center or institute is responsible to the Chancellor or, by his or her delegation, to the Vice Chancellor for Research and Economic Development (VCRED). The director of a center or institute is appointed by the VCRED. If the director’s position is that of a senior administrative officer, the appointment is made in accordance with existing policies for
such appointments. If a faculty appointment is involved, the regular procedures for faculty appointments are also followed. Associate or assistant directors are appointed by the director, subject to the approval of the VCRED.

E. REQUEST FOR ESTABLISHING A UNIVERSITY CENTER OR INSTITUTE

Requests for establishing a University center or institute shall the address the following:

a. the name of the proposed center or institute;

b. the specific objectives and goals of the proposed unit;

c. the unit’s relevance to the University’s mission, including the impact upon the existing academic departments, schools, centers and institutes;

d. a statement about any anticipated effects of the proposed unit on the instructional programs;

e. the name of the proposed director and a description of any proposed advisory or policy boards;

f. a description of the proposed unit's responsibility structure, including an organization chart showing the relationship of the proposed unit to the existing organizations, the University and the internal organization of the proposed unit, and whether the proposed center or institute duplicates the mission and objectives of an existing center or institute;

g. budget estimates for the first year of operation, projections for the following four years, and anticipated sources of funding;

h. a statement of operating needs such as equipment and library resources;

i. a description of immediate space needs and projections of future space needs;
j. any additional information necessary to support the request to establish.

If the Vice Chancellor for Research & Economic Development agrees with the establishment of the Center/Institute, he/she will make recommendation to the Chancellor for approval. On the Chancellor's approval, a request to establish a center or institute will submitted to the Board of Trustees for final approval.

F. PERIODIC REVIEW OF CENTERS AND INSTITUTES

Centers and institutes will be subject to review every two years. A suggested reporting format is included as Appendix I. Particular attention should be paid to the relationship between the objectives of the center or institute and the mission of the University. Other important criteria in evaluations may address the following:

a. Is current funding of the unit sufficient to continue its operation? If the unit was originally given start-up funds from the University or other granting agencies, has it been able to attract sufficient external funds to continue without major additional University support?

b. Are the unit's stated goals and objectives being met? Are the support and training of students consistent with the unit's stated goals and objectives?

c. Are the quality and quantity of scholarly activity by faculty, professional staff, and students reflected in the unit's output (e.g., publications, patents, grants, contracts)?

d. Do current operations duplicate the efforts of other units?

e. Do financial audits and professional evaluations demonstrate that the unit is being managed appropriately?

f. Are the facilities required for continued operation of the unit adequate?

g. Are the unit's clients being served?
North Carolina A&T State University
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h. Examples of significant accomplishments.
i. Industry members and partnerships with external organizations.

G. REPORTING REQUIREMENTS

Each center or institute will have a website displaying at minimum, the center’s name, primary designation (research, public service, instructional), director’s name and contact information, and a brief mission statement. A list of active centers and institutes, their primary designation (research, public service, instructional), and a link to their corresponding website will be submitted to the Vice Chancellor for Research and Economic Development every year for inclusion in the update of the University’s Strategic Research Plan.

H. PROCEDURES FOR DISCONTINUATION OF A CENTER OR INSTITUTE

The University may discontinue a center or institute at the discretion of the Vice Chancellor for Research and Economic Development and approval of the Chancellor. This decision may be made on the basis of a number of factors, such as a loss of funding or key faculty, or if the mission, goals, or objectives of an established center or institute are superseded by a new one. The adequacy of funding sources is a critical element in determining whether a center or institute should continue operations. There are, of course, instances where the continuing operation of the center is of sufficient importance to warrant some additional financial assistance from the institution on an interim basis. However, if the external sources of support have been lost, discontinuation is strongly advised unless alternative long-term prospects for funding can be identified.

The "phase-out" period for centers or institutes that are to be discontinued shall be sufficient to permit an orderly termination or transfer of contractual obligations and to allow an effort to find alternative employment for full-time staff. Normally, the "phase-out" period shall be no more than one year after the end of the academic year in which final approval is given to discontinue the center or institute.

I. EXCEPTIONS TO THESE REGULATIONS

Centers or institutes that report directly to the "school" or "college" or to a senior administrative level are considered University centers and are
subject to these regulations. These centers have a separate administrative structure or budget, and do not depend on the direct support of a single department. Some campus centers or institutes do operate within a single academic department or are incorporated within a larger center or institute. These units may be considered exempt from these regulations. Centers that are formed as a result of a research solicitation would be governed by the stipulation of the grant or contract and are exempt from these regulations. However, they should report using the form provided in Appendix II to be listed in the DOR web site. Any other exceptions or modifications to these regulations must be approved by the Vice Chancellor for Research and Economic Development and the Chancellor.
APPENDIX I

Reporting Format for Existing Centers and Institutes

I. CENTER

A. NAME OF CENTER OR INSTITUTE
B. YEAR ESTABLISHED (MM/DD/YYYY)
C. INTERNET HOME PAGE URL
D. PRIMARY DESIGNATION (RESEARCH, PUBLIC SERVICE, INSTRUCTION)

II. DIRECTOR

A. NAME
B. TITLE
C. ADDRESS
D. PHONE AND FAX NUMBERS
E. E-MAIL ADDRESS
F. OTHER CONTACT NAME
G. OTHER E-MAIL ADDRESS (LEAVE BLANK IF NONE PROVIDED)

III. MISSION STATEMENT

IV. RELEVANCE TO UNIVERSITY MISSIONS (INCLUDING INVOLVEMENT WITH INSTRUCTIONAL PROGRAMS)

V. MEASURES OF PERFORMANCE - FISCAL YEAR ________

A. PERSONNEL
   1. NUMBER OF FTE (EQUIVALENT) FACULTY AND STAFF: EPA POSITIONS ________ SPA POSITIONS ________
   2. NUMBER OF FTE (EQUIVALENT) STUDENTS: DOCTORAL ________ MASTERS ________ UNDERGRADUATE ________

B. FUNDS (ACTUALLY RECEIVED DURING SPECIFIED FY)
   1. DIRECT STATE APPROPRIATIONS: $ ________
   2. TOTAL EXTERNAL SUPPORT FROM GRANTS AND CONTRACTS: $ ________
   3. ALL OTHER UNIVERSITY SUPPORT (OVERHEAD RECEIPTS, COST SHARING, PATENT AND LICENSING REVENUE, UNIVERSITY ALLOCATIONS): $ ________
   4. GIFTS TO THE CENTER: $ ________
   5. TOTAL ALL SOURCES OF SUPPORT (ITEMS 1-4 ABOVE): $ ________

C. CONTRACTS AND GRANTS AWARDED TO CENTER (NUMBERS)
   1. NUMBERS OF AWARDS
      FEDERAL ________ INDUSTRIAL ________ STATE ________ OTHER ________ TOTAL ________
   2. DOLLAR AMOUNTS OF AWARDS
      FEDERAL $ ________ INDUSTRIAL $ ________ STATE $ ________ OTHER $ ________ TOTAL $ ________

D. EXPENDITURES
   1. TOTAL EXPENDITURES: $ ________

E. PUBLICATIONS (NUMBERS)
   BOOKS ________ JOURNAL ARTICLES ________ PROCEEDINGS PAPERS OR REPORTS ________ TOTAL ________

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F. TECHNOLOGY TRANSFER ACTIVITIES (NUMBERS)
   INVENTION DISCLOSURES ___ PATENT APPLICATIONS ___ PATENTS RECEIVED ___
   LICENSES

G. MEMBERSHIP CENTERS ONLY
   NUMBER OF MEMBERS ___ NUMBER OF LICENSES AWARDED TO CENTER MEMBERS ___

VI. MAJOR SERVICES DELIVERED TO NORTH CAROLINA (INCLUDING CLIENTELE SERVED, SOCIETAL
   BENEFITS, STATE AND REGIONAL PRIORITIES BEING ADDRESSED, ECONOMIC IMPACT)

VII. EXAMPLES OF MOST SIGNIFICANT ACCOMPLISHMENTS

VIII. ROLE OF CENTER WITHIN THE UNIVERSITY
   A. GEOGRAPHIC REGION SERVED BY CENTER
   B. DUPLICATION OF CENTER WITHIN UNIVERSITY (IF YES, PLEASE JUSTIFY)
   C. INTER-INSTITUTIONAL COOPERATIVE ACTIVITIES INVOLVING THE CENTER

IX. PLANNED CHANGES FOR PROGRAM IMPROVEMENT DURING NEXT PLANNING PERIOD
   A. SIZE (PERSONNEL, SPACE)
   B. BUDGET (INCLUDE INTERNAL VERSUS EXTERNAL SUPPORT)
   C. ADMINISTRATIVE STRUCTURE AND GOVERNANCE
   D. MISSION

X. CENTERS OR INSTITUTES PROPOSING DISCONTINUATION
   A. REASON FOR DISCONTINUATION
   B. PROPOSED ACTIVITIES FOR PHASE OUT PERIOD
   C. EFFECTIVE DATE FOR DISCONTINUATION

Division of Research and Economic Development
APPENDIX II
Reporting Format for Project Centers/Institutes

I. CENTER
   A. NAME OF CENTER OR INSTITUTE
   B. SPONSOR NAME
   C. SOLICITATION #
   D. YEAR ESTABLISHED (MM/DD/YYYY)
   E. INTERNET HOME PAGE URL
   F. PARTNERING UNIVERSITIES, IF ANY
   G. INDUSTRY COLLABORATIONS, IF ANY

II. DIRECTOR
   A. NAME
   B. TITLE
   C. ADDRESS
   D. PHONE AND FAX NUMBERS
   E. E-MAIL ADDRESS
   F. OTHER CONTACT NAME
   G. OTHER EMAIL ADDRESS (LEAVE BLANK IF NONE PROVIDED)

III. MISSION STATEMENT

IV. MEASURES OF PERFORMANCE - FISCAL YEAR ________
   A. PERSONNEL
      1. NUMBER OF FTE (EQUIVALENT) FACULTY AND STAFF: EPA POSITIONS ______
         SPA POSITIONS ______
      2. NUMBER OF FTE (EQUIVALENT) STUDENTS: DOCTORAL _____ MASTERS _____
         UNDERGRADUATE _____
   B. FUNDS (ACTUALLY RECEIVED DURING SPECIFIED FY)
      1. TOTAL EXTERNAL SUPPORT FROM GRANTS AND CONTRACTS: $___________
      2. ALL OTHER UNIVERSITY SUPPORT (OVERHEAD RECEIPTS, COST SHARING,
         PATENT AND LICENSING REVENUE, UNIVERSITY ALLOCATIONS): $___________
      3. GIFTS TO THE CENTER: $___________
      4. TOTAL ALL SOURCES OF SUPPORT (ITEMS 1-3 ABOVE): $___________
   C. EXPENDITURES
      1. TOTAL EXPENDITURES: $___________
   E. PUBLICATIONS (NUMBERS)
      BOOKS ______ JOURNAL ARTICLES ______ PROCEEDINGS PAPERS OR REPORTS ______
      TOTAL ______
   F. TECHNOLOGY TRANSFER ACTIVITIES (NUMBERS)
      INVENTION DISCLOSURES ______ PATENT APPLICATIONS ______ PATENTS RECEIVED ______
      LICENSES ______
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V. EXAMPLES OF MOST SIGNIFICANT ACCOMPLISHMENTS