

**ACADEMIC PLAN 2004-2009**

**BIOLOGY DEPARTMENT**

**THE UNIVERSITY OF NORTH CAROLINA  
AT PEMBROKE**

**January 26, 2004**

## EXECUTIVE SUMMARY

The Department of Biology strives to support and contribute to the University of North Carolina at Pembroke's mission by providing its students with a broad-based educational experience in preparation for roles of knowledgeable, resourceful, and responsible leadership. Through its diversity of course offerings and its commitment to excellence in teaching, research, and service, the department provides academic programs that prepare students for careers as biological professionals, biological educators, or for post-graduate study. The department strives to provide its faculty with the opportunities, resources and rewards to achieve excellence in teaching, scholarship, and service to the university and local communities. Members of the biology faculty strive to enhance and enrich the intellectual, economic, social and cultural life of the region.

The biology department currently has slightly more than 300 majors. As a consequence we are one of the largest departments on the UNCP campus in terms of generation of student semester hours. The department currently provides four programs leading to the Bachelor of Science degree. These degree programs are (1) biology, (2) biology with teacher licensure, (3) biology with emphasis in medical technology, (4) biology with biomedical emphasis. A new degree program in environmental science has been planned and should be implemented in Fall 2004. An interdepartmental degree program (in cooperation with the Department of Chemistry and Physics) in biotechnology is currently being planned.

The biology department has 12 full-time and three part-time faculty members. Of the 12 full-time faculty, eight are tenure track and six are tenured. Of the four non-tenure track full-time faculty positions, three are full-time temporary positions funded by UNCP, and one is a "Change Agent" supported by a grant from the PMABS program. Of the three part-time faculty, two are phased retirees and one is a SPIRE Postdoctoral Fellow supported by a grant from the PMABS program. The biology faculty represent a wide range of sub-disciplines including botany, zoology, ecology, field biology, molecular biology, cell biology, genetics, microbiology, and science education. Four new faculty positions seem necessary during the planning period (these positions are presented here in their departmental priority rank): 1. A masters level non-tenure track instructor to teach general biology lab in order to free existing faculty to teach more sections of general education courses to support enrollment growth (this position has been approved for Fall 2004). 2. A tenure-track aquatic ecologist to support the proposed environmental science degree program (this position has been approved for Fall 2005). 3. An additional individual in human anatomy and physiology to help meet needs of pre-med majors. 4. An immunologist to support the proposed biotechnology degree program.

The biology department currently occupies four trailers just north of the Dial Building on the UNCP campus. These spaces will be occupied until approximately August of 2004. Two trailers provide 18 offices and two workrooms for faculty and staff. A second trailer provides two 50-seat classrooms for departmental use. The third trailer provides four labs and associated prep rooms as well as a video/teleconference room for teaching on the Internet. Obviously, current teaching and lab facilities are not adequate to the department's present needs. However, these facilities are temporary and the department is scheduled to move into the renovated science

building in August of 2004. The renovated science building should provide more than adequate laboratory space for the department, but teaching space will be no more than adequate. The most pressing problem with the new building will be office space, with the present number of offices being just enough to house existing faculty and staff. Any increase in size of the department in the near future will immediately cause an office shortage. Indeed, if enrollment growth at UNCP continues as planned, the renovated science building will be inadequate in terms of teaching and office space within 3-5 years. A new office/research wing for the science building should be planned for in the near future. Additional facilities include: (1) a small teaching greenhouse (currently under construction), (2) access to facilities of the Highland Biological Station and (3) access to facilities of the Bermuda Biological Station for Research.

In order to fulfill its mission statement, the Biology Department has five main goals with associated objectives and assessment criteria. These five goals are listed below; objectives and assessment criteria may be found in the larger document.

**Goal 1:** To maintain a diverse and up-to-date curriculum that accurately reflects the current state of the major areas of biological science, which includes courses that satisfy the University's General Education requirements and which is intellectually challenging yet within the capabilities of the serious student.

**Goal 2:** The Biology Department will graduate students who are prepared for entry into the workplace or graduate/professional programs of study.

**Goal 3:** To maintain a faculty who stay current in their respective disciplines by engaging in a variety of scholarship activities which result in enhanced expertise, publications, updating of lecture and laboratory presentations, and general strengthening of the programs offered by the department.

**Goal 4:** The biology department will maintain a faculty who provide leadership and expertise that enhances the University's strength and educational reach in the region by participating in appropriate levels of service to the University and to the local communities.

**Goal 5:** The biology Department will provide programs and/or courses for students who are seeking initial licensure, lateral entry, licensure-only, and advanced licensure in the area of biology.

## ACADEMIC PLAN 2004-2009

THE UNIVERSITY OF NORTH CAROLINA AT PEMBROKE  
BIOLOGY DEPARTMENT

## MISSION STATEMENT OF THE BIOLOGY DEPARTMENT

The mission of the Biology Department is to support and contribute to the University's mission of providing its students with a broad-based educational experience in preparation for roles of knowledgeable, resourceful, and responsible leadership. Through its diversity of course offerings and its commitment to excellence in teaching, research, and service, the department provides academic programs that prepare students for careers as biological professionals, biological educators, or for post-graduate study. The department strives to provide its faculty with the opportunities, resources and rewards to achieve excellence in teaching, scholarship, and service to the university and local communities. Members of the biology faculty strive to enhance and enrich the intellectual, economic, social and cultural life of the region.

## INTRODUCTION

Degree Programs

The Department of Biology of the University of North Carolina at Pembroke currently provides four programs leading to the Bachelor of Science degree. These degree programs are (1) biology, (2) biology with teacher licensure, (3) biology with emphasis in medical technology, (4) biology with biomedical emphasis. Within the biology degree program students have the option of choosing a concentration in one of four biological sub-disciplines: botany, zoology, molecular biology and environmental biology. All biology and supporting chemistry courses are intended to provide graduates a strong background in four major biological areas: molecular and cellular biology, genetics, ecology, and organismal function and systematics. Biology graduates will have experienced a diversity of observational and experimental laboratory procedures. Students in the teacher licensure program must complete all requirements of the biology program and additional courses in a variety of sciences, mathematics and education. The variety of required coursework insures a broad base in several science areas with emphasis in biology, as well as intensive preparation for, and exposure to, teaching in public schools. Students in the medical technology program receive the final thirty hours of credit for one year of clinical work and training at an affiliated hospital. The biomedical emphasis program is structured to prepare students that wish to pursue a career in one of several health professional schools.

Faculty

The biology department has 12 full-time and three part-time faculty members. Of the 12 full-time faculty, eight are tenure track and six are tenured. Of the four non-tenure track full-time faculty positions, three are full-time temporary positions funded by UNCP, and one is a "Change

Agent” supported by a grant from the PMABS program. Of the three part-time faculty, two are phased retirees and one is a SPIRE Postdoctoral Fellow supported by a grant from the PMABS program. The biology faculty represent a wide range of sub-disciplines including botany, zoology, ecology, field biology, molecular biology, cell biology, genetics, microbiology, and science education. All of the tenure track faculty hold the Ph.D. degree in the appropriate area of specialization. Each semester each biology faculty member typically teaches at least one course in his or her area of specialization and one introductory biology course. The average teaching load for members of the biology faculty is three courses. Each of these courses has three lecture hours and typically one laboratory of at least two hours duration. The biology department is currently involved in an attempt to find the appropriate individual to occupy the Friday Chair in Molecular Biology and Biochemistry. The person that occupies this position will add additional expertise to our program in molecular biology.

**The Biology Department has immediate and pressing need for additional faculty for the following reasons (Appendix A): 1. Rapid general enrollment growth at UNCP necessitating more sections of general education courses. 2. Increases in the number of majors in the pre-medical area. Over half of new majors in the biology department wish to enter medically related professions. This puts increasingly great pressure on introductory and mid-level biology electives important to these majors. In particular, Human Anatomy and Physiology, Animal Physiology and Microbiology currently close early and have large waiting lists each semester. A second faculty member in this area is a necessity. 3. The new environmental science major will require the addition of an aquatic ecologist to handle new coursework associated with that degree. 4. A proposed interdepartmental degree in biotechnology (in cooperation with the Department of Chemistry and Physics) will require the hiring of an immunologist to support coursework associated with that degree program.**

### Students

In recent years the department of biology has experienced significant, consistent growth in numbers of students. The biology department currently has slightly more than 300 majors. As a consequence we are one of the largest departments on the UNCP campus in terms of generation of student semester hours. The make-up of the students in the biology department, in general, is a reflection of the composition of the overall student body (predominantly from the surrounding region with a significant minority percentage). Although the number of students interested in the various health professions continues to compose a large percentage of biology majors, there has been significant growth in several other areas, including environmental biology and biotechnology.

### Facilities and Support

The biology department currently occupies four trailers just north of the Dial Building on the UNCP campus. These spaces will be occupied until approximately August of 2004. Two trailers provide 18 offices and two workrooms for faculty and staff. A second trailer provides two 50-seat classrooms for departmental use. The third trailer provides four labs and associated prep rooms as well as a video/teleconference room for teaching on the Internet. Obviously,

current teaching and lab facilities are not adequate to the department's present needs. However, these facilities are temporary and the department is scheduled to move into the renovated science building in August of 2004. The renovated science building should provide more than adequate laboratory space for the department, but teaching space will be no more than adequate. The most pressing problem with the new building will be office space, with the present number of offices being just enough to house existing faculty and staff. Any increase in size of the department in the near future will immediately cause an office shortage. Indeed, if enrollment growth at UNCP continues as planned, the renovated science building will be inadequate in terms of teaching and office space within 3-5 years. A new office/research wing for the science building should be planned for in the near future. Additional facilities include: (1) a small teaching greenhouse (currently under construction), (2) access to facilities of the Highland Biological Station and (3) access to facilities of the Bermuda Biological Station for Research.

**To summarize, there is general consensus among biology faculty and staff that the space currently under construction for the biology department is inadequate to meet classroom and office space demands in the short-term future (Appendix A). Certainly the new space is insufficient to accommodate anticipated long-term growth in numbers of students, faculty, programs and faculty research activities. It is not anticipated that the planned move to the new science building will significantly ameliorate this shortage of space.**

The department has an excellent collection of equipment, particularly in the areas of molecular biology and biotechnology. A partial listing of this equipment would include: a scintillation counter, an ultracentrifuge, an epifluorescent microscope, polymerase chain reaction thermocyclers, research grade physiographs, and a variety of spectrophotometers, centrifuges, electrophoretic equipment etc. The general consensus is that the department is currently in very good position in regard to its equipment holdings.

Historically the prime source of funding for this equipment has been externally funded programs such as the Minority Access to Research Careers Program (NIH), the Historically Minority Universities Biotechnology Initiative (North Carolina Biotechnology Center) the Partnership for Minority Advancement in the Biomolecular Sciences (Howard Hughes Foundation), and an environmentally oriented grant from the Department of Energy. In addition to funds for equipment, these grants have also provided the major portion of the funding for essential laboratory supplies. In addition, the department receives a relatively small annual appropriation from the state to fund the purchase of laboratory supplies, but there is no recurring budget for equipment. The continuation of at least some of these externally funded programs appears to be necessary if the department is to continue to provide adequate laboratory experiences to its students.

#### Other Facilities and Support

In general the support of the efforts of the biology department is excellent. Every faculty member and staff person has a personal computer. The UNCP Computer Center provides technical support as needed. A high lumen liquid crystal display projector and a scanner are available for use in conjunction with the computers.

The library resources of the biology department (housed in the Sampson-Livermore Library) consist of about 5,000 bound volumes and 84 journals. The support staff for the biology department includes a secretary and a laboratory manager who are supported by appropriations from the state. In addition, the department has a biotechnology laboratory manager who is funded by the North Carolina Biotechnology Center.

The Biology Department is currently awaiting the renovation of the Oxendine Science Building and the construction of a new laboratory wing to the building. Construction is scheduled to be completed in July 2004; the outset of the period covered by this academic plan. Although the department of biology is scheduled to occupy part of this new building, it does not appear that this move will result in a significant improvement in available space (excepting laboratory space), facilities or resources. This particularly true with respect to office space (see summary sentence under facilities).

#### ASSUMPTIONS

1. The department will continue to provide a diverse and up-to-date curriculum that supports degree programs in biology (with concentrations in botany, zoology, molecular biology, and environmental biology), biology with teacher licensure, biology – medical technology, and biology – biomedical emphasis. In addition, the department will explore opportunities or needs for development of new programs or courses. Specifically, we will explore the need to develop a new degree program in environmental biology and to develop new courses (requiring additional faculty) in developmental biology. In addition, continued growth of the department's role in the Science Education Program will necessitate an increase in faculty.
2. As we move into the 21<sup>st</sup> century, recruiting the best and the brightest will require that UNCP become a household name in this region and beyond. In this area we stand to gain a lot from partnerships established with other educational institutions and industry. Through this mechanism we can provide our students with direct access to internships in governmental and industrial settings.
3. Students will continue to need and profit from a variety of programs that provide hands-on instruction and practical experiences. Employers and graduate and professional schools will seek college graduates who have basic laboratory, teaching, and/or research skills and experience. Since, in the past, allocations from the state have represented a relatively small portion of the funding needed for laboratory supplies and equipment it is assumed that these allocations will increase as funding from external sources becomes more difficult to obtain.
4. There is continuing need for faculty to stay abreast of the current state of the art of his/her area of expertise and to utilize updated materials and tools in the lecture and the laboratory; there is need to increase scholarship activities by faculty to enhance competitiveness for institutional and research grants.

5. Partially as a result of growth of the University in general and partially because an increasing percentage of students will choose a biology curriculum, the department will continue to experience consistent growth in the numbers of students taking biology courses and majoring in biology. As in the past, a large percentage of these students will be interested in curricula related to the health care field but there will be significant growth in many other areas including biotechnology and environmental biology.

## GOALS AND OBJECTIVES

**Goal 1:** To maintain a diverse and up-to-date curriculum that accurately reflects the current state of the major areas of biological science, which includes courses that satisfy the University's General Education requirements and which is intellectually challenging yet within the capabilities of the serious student.

**Objective 1.1:** The department will continue to offer a variety of quality degree programs in biology (with concentrations in botany, zoology, molecular biology and environmental biology), biology with teacher licensure, biology – medical technology, and biology – biomedical emphasis and other appropriate fields as appropriate.

**Action 1.1.1:** Degree programs will continually be reviewed and updated to insure currency, comprehensiveness and responsiveness to student needs.

**Evaluation 1.1.1.1:** The number, quality and breadth of degree programs offered

**Assessment procedure:** The department chair and faculty will conduct an annual review of all programs to determine currency, comprehensiveness and responsiveness to student needs.

**Objective 1.2:** To implement a new degree program in environmental science.

**Action 1.2.1:** The permission to plan this program has been granted by the UNC Office of the President and permission to implement will be requested of the UNC Office of the President within the next two months.

**Evaluation 1.2.1.1:** Student demand and financial feasibility of a new degree program in Environmental science.

**Assessment procedure:** The Dean of Arts and Science, Provost and Vice Chancellor for Academic Affairs, and UNC Office of the President will evaluate the findings of the intradepartmental committee as expressed in the permission to implement the program.

**Objective 1.3:** To explore the possibility of a new degree program in biotechnology to be administered jointly with the Department of Chemistry and Physics.

**Action 1.3.1:** An interdepartmental committee will be formed to ascertain if a new degree program in biotechnology is possible and appropriate. The interdepartmental committee will submit a report of its findings to the relevant departmental chairs, the Provost and Vice Chancellor for Academic Affairs, and the UNC Office of the President.

**Evaluation 1.3.1.1:** Student demand and financial feasibility of a new degree

program in biotechnology.

**Assessment procedure:** The relevant departmental chairs, the Provost and Vice Chancellor for Academic Affairs, and the UNC Office of the President will evaluate the findings of the intradepartmental committee as described in the permission to plan the program.

**Objective 1.4:** To add additional faculty with appropriate expertise. At this time four new faculty members are thought to be necessary over the planning period: A full time MS level individual to teach general biology lab, Three Ph.D. level individuals to teach 1. Aquatic Ecology, 2. Anatomy and Physiology, and 3. Immunology. Priority will be given to the Biology Lab and Aquatic Ecology positions (immediate attention needed) with Anatomy and Physiology and Immunology being filled later (within 1-2 years).

**Action 1.4.1:** A recommendation will be made to the Provost and Vice Chancellor for Academic Affairs that the biology department start searches for the Biology Lab and Aquatic Ecology positions within the next year.

**Evaluation: 1.4.1.1:** The addition of new faculty members with appropriate expertise.

**Assessment procedure:** The department chair will determine if individuals with appropriate expertise have been added to the biology faculty.

**Goal 2:** The Biology Department will graduate students who are prepared for entry into the workplace or graduate/professional programs of study.

**Objective 2.1:** Biology graduates will have a basic knowledge of the major concepts of the discipline along with concepts specific to the degree program chosen.

**Action 2.1.1:** Courses in each degree program will require knowledge of the major concepts of Biology as well as concepts specific to the program.

**Objective 2.2:** Biology graduates will be able to communicate effectively, integrate basic knowledge with new findings, and think critically.

**Action 2.2.1:** Some courses in each degree program will require oral presentations and/or written assignments.

**Action 2.2.2:** Some courses in each degree program will require integration and critical thinking skills.

**Objective 2.3:** Biology graduates will have developed skills needed to perform experimentation and data gathering associated with the degree program chosen.

**Action 2.3.1:** Some courses in each degree program will require effective use of laboratory/field equipment and procedures common to the sub discipline.

**Group Actions, Objectives 2.1-3.**

**Action 2.1-3.1:** The Biology Department will maintain a highly qualified faculty who continues to develop teaching, laboratory, and research skills.

**Action 2.1-3.2:** Faculty will provide syllabi for each course with clear measurable objectives, activities to support those objectives, and methods used to evaluate student outcomes.

**Action 2.1-3.3:** Faculty will be available outside class to support student learning and to advise students toward successful completion of the program chosen.

**Action 2.1-3.4:** Faculty will provide or direct interested students to opportunities for individual research projects.

**Evaluation:** Grade analysis of courses will show that greater than 75% of majors will receive C or better. Student evaluations will show greater than 70% rate the instructor good or excellent. The Chair will rate faculty good or excellent in teaching and scholarship on annual evaluations. Of those graduates seeking employment or advanced study in fields related to their degree program, 75 % will be successful.

**Assessment Procedure:** The Chair will evaluate teaching effectiveness and scholarship of each faculty member annually. The Chair or his designee will collect and monitor course syllabi, student evaluations, the grade analysis summary supplied by Institutional Research and Planning, and Alumni Survey results supplied by Career Services or Alumni Relations (or administered by the department if not by those offices).

**Use of Assessment Data:** A summary of student evaluations and the Chairs evaluation will be shared with individual faculty members. The Chair may visit classes and meet with faculty members whose evaluations do not meet expected outcomes. Measures to improve will be discussed and implemented. Course syllabi, Grade analysis data, and Alumni survey results will annually be shared with faculty committees monitoring each degree program. The committees will review the course syllabi to insure that the learning outcomes reflect the objectives of the department for each degree program. The committees will review the grade analysis and survey results and, should outcomes fall short of expected, determine areas of concern and submit a report with suggestions for improving effectiveness.

**Goal 3:** To maintain a faculty who stay current in their respective disciplines by engaging in a variety of scholarship activities which result in enhanced expertise, publications, updating of lecture and laboratory presentations, and general strengthening of the programs offered by the department.

**Objective 3.1:** The department will insure that faculty members participate in an appropriate level of scholarly activities.

**Action 3.1.1:** The department will provide all faculty members the opportunity to attend a scientific meeting at least once in the school year to keep abreast of the current state of the art of his/her specific discipline.

**Action 3.1.2:** The department will provide all faculty members the opportunity to participate in national teaching workshops and education conferences to acquire new and effective teaching methods and to network with other educators.

**Action 3.1.3:** The department will provide faculty members the opportunity to engage in scholarship activities related to the following situations: summers, collaborations with industries and governmental research agencies, participation in bridge programs, mentoring student research or advancement.

**Action 3.1.4:** The department will provide faculty members the opportunity to present a seminar at least once a year on topics from the scientific meeting she/he has attended to share new information about his/her discipline with faculty and students.

**Action 3.1.5:** The department will encourage faculty members to be active in research and to present papers at meetings, publish in journals, submit articles on teaching strategies in newsletters, publish abstracts from meetings, and to participate in other forms of creative activity.

**Action 3.1.6:** The department will encourage faculty members to be active in writing grants, both for research and for institutional development.

**Action 3.1.7:** The department will encourage faculty members to direct the independent research of students with the goal of either an oral or poster presentation at a regional meeting

**Action 3.1.8:** The department will encourage faculty members to hold membership and actively participate in professional organizations.

**Evaluation 3.1.1-8:** The percentage of faculty attending scientific meetings, workshops, and conferences. The number of faculty engaged in summer research and/or sabbaticals in industry and governmental research agencies. The number of faculty who present seminars in the UNCP science seminar series. The number

of faculty obtaining research and or institutional development grants and publishing results in professional journals. The number of faculty that direct student research projects. All faculty should be active in at least two of these areas during each academic year.

**Assessment Procedure:** All faculty will submit to the Chair an annual self-evaluation, which will report the scholarly activities that were performed. The Chair will review the faculty self-evaluations for scholarly activities.

**Goal 4:** The biology department will maintain a faculty who provide leadership and expertise that enhances the University's strength and educational reach in the region by participating in appropriate levels of service to the University and to the local communities.

**Objective 4.1:** The department will participate in activities that will strengthen the image and educational outreach of the University in the region

**Action 4.1.1:** The department will strongly encourage faculty to present at least one guest lecture/workshop per year at/for a public institution in the region served by UNCP.

**Evaluation 4.1.1.1:** Documentation of presentation(s) and/or workshop(s) each year.

**Action 4.1.2:** The department will strongly encourage faculty to serve on various panels, boards, advisory committees, etc in the region/county/community/ pertaining to their area of expertise.

**Evaluation 4.1.1.2:** Documented community service and survey results indicating that the community has a greater awareness/contact with the biology department.

**Assessment Procedure:** The Chair during yearly evaluation shall confirm that each faculty member has given at least one guest lecture/workshop at/for a public institution of their choice each academic year.

**Objective 4.2:** The department will provide students with access to and experience with the latest in scientific information, biological technology and research through working partnerships and/or internships with other research agencies, industry, and outside agencies.

**Action 4.2.1:** The department will explore opportunities to initiate and develop cooperative arrangements in the form of partnerships and/or internships with research agencies, industry, and outside agencies.

**Evaluation 4.2.1.1:** Documentation of newly developing and/or established

relationships/ partnerships/internships with research agencies, industry, and other outside agencies.

**Assessment Procedure:** The Department Chair will perform a yearly review to document the department's effort at developing and/or establishing new relationships with research agencies, industry and other outside agencies with the intent of establishing working partnerships and/or student internships.

**Goal 5:** The biology Department will provide programs and/or courses for students who are seeking initial licensure, lateral entry, licensure-only, and advanced licensure in the area of biology.

**Objective 5.1:** The department will provide a program of study for undergraduate students wishing to major in biology with teacher licensure.

**Action 5.1.1:** The coordinator for biology education working with the chair and members of the biology department will monitor the biology with teach licensure program to insure compliance with state and national guidelines for initial licensure in biology.

**Evaluation 5.1.1:** At each accreditation cycle of the NC Department of Public Instruction (DPI) and NCATE, the Biology Education Program for initial licensure in biology will meet all state (DPI) and national (NCATE) standards for accreditation.

**Assessment Procedure:** Outside evaluation teams from DPI and NCATE will, on a regular basis, visit our campus for the purpose of reviewing our curricular areas in biology education. These teams will review documentation of program content that has been collected by the coordinator of biology education and members of the biology department. This review will determine compliance with state and national guidelines and competencies for biology with teacher licensure.

**Objective 5.2:** The biology department will provide individualized program plans based on individual needs of persons seeking lateral entry or licensure-only in the biology with teacher licensure program.

**Action 5.2.1:** The Biology Education Coordinator with School of Education designee will complete Individual Education Plans (IEPs) for persons seeking licensure-only or lateral entry in Biology with teacher licensure.

**Action 5.2.2:** The Biology Education Coordinator will serve as advisor to applicants for licensure-only and lateral entry.

**Evaluation 5.2.1.1:** Seventy-five percent of persons seeking biology with teacher licensure by way of licensure-only or lateral entry will complete the

program of study as designed on the IEP and receive licensure.

**Assessment Procedure:** The Coordinator of Biology Education, and the Chair of the Biology Department along with the School of Education designee will review the numbers of students who complete the IEP programs and are recommended for licensure. Information on the completion rate and licensure recommendations will be shared with the biology department.

**Objective 5.3:** The Biology Department will provide graduate courses in biology for the Masters of Education in Science Education.

**Action 5.3.1:** The Co-Coordinator for the Masters of Education in Science Education along with the Chair of the Biology Department or his/her designee will monitor course offerings so that these courses maintain compliance with state and national standards for advanced licensure in biology.

**Evaluation 5.3.1.1:** At each accreditation cycle of DPI and NCATE, the courses that compose the biology component of the Masters of Education in Science Education will meet all state (DPI) and national (NCATE) standards which are used to accredit education programs at an institution of higher education.

**Assessment Procedure:** Outside evaluation teams will, on a regular basis, visit our campus for the purpose of reviewing our curricular areas in science education. These teams will review documentation of course content that has been collected by the Co-Coordinator of the Masters of Education in Science Education program and biology department members. This review will determine compliance with state and national guidelines and competencies (standards) for the biology component of the Masters of Education in Science Education.

## APPENDIX A

PROGRESS SINCE LAST REPORT  
FUTURE NEEDS

## 1. PROGRESS SINCE LAST REPORT

The following is a point-form listing of activities that will enhance to performance of the Department of Biology's during the two-year interval since submission of the 2002-07 version of this report.

1. Participation in the PMABS grant program which has resulted in: a) the influx of hundreds of thousands of dollars to the department, b) the acquisition of a postdoctoral position as well as a full time faculty member, c) the creation of a VTC room and the introduction of smartboard technology to the department which has greatly enhance student learning.
2. The planning of and request to implement a new degree program in environmental science. This degree program is scheduled to commence in Fall 2004.
3. The acquisition of a three-year focused growth grant from the Office of the President of the UNC System to support the planning and implementation of the new degree program. This grant amounts to \$225,000 over three years.
4. The beginning of planning of an interdepartmental degree in Biotechnology with the cooperation of the Department of Chemistry and Physics.
5. Construction of a new wing on the science building that will provide more lab and office space for the Biology Department.

## 2. FUTURE NEEDS

The following is a point-form listing of the Department of Biology's needs (facilities, faculty, and funding) to accomplish the anticipated departmental growth over the planning period covered by this document (2004-09).

## FACILITIES

1. Additional classroom space (2-4 rooms) in the range of 30-70 student sections will be needed to accommodate enrollment growth.
2. Additional offices (3-6) will be needed to house anticipated new faculty.

3. As the department begins to emphasize undergraduate research, the need for personalized research space for faculty will become increasingly important. A possible solution would be the addition of a small office/personal lab wing to the science building in the next five years in order to meet the needs itemized above.
4. Office, storage and teaching space will be needed at the tract of land purchased to support the environmental science degree program. It is anticipated that two to four offices, two storage rooms and two small teaching labs would be necessary.

#### FACULTY

1. An additional individual in human anatomy and physiology to help meet needs of pre-med majors.
2. An aquatic ecologist to support the proposed environmental science degree program.
3. An immunologist to support the proposed biotechnology degree program.
4. A masters level non-tenure track instructor to teach general biology lab in order to free existing faculty to teach more sections of general education courses to support enrollment growth.

#### FUNDING

1. The Biology Department will need increases in travel and supply funding from the institution to support new faculty and enrollment growth in all of its programs.

## APPENDIX B

AN INITIATIVE TO IMPLEMENT A NEW  
INTERDEPARTMENTAL PROGRAM IN MATH/SCIENCE EDUCATION

The Departments of Biology, Chemistry and Physics, and Mathematics are currently cooperating to form an interdepartmental Program in Science and Mathematics Education. Such a program will more efficiently meet the needs of science and math education students, and should greatly enhance the ability of UNCP to attract greater numbers of such students in the future. The goal is to have the program operational by the Fall of 2004.

Such a program will require substantial commitments of staff, space and funding by the Institution. A committee comprised of Professors Bourquin, Klinikowski and Truman (math) along with Professor McBroom (science) is currently constructing a proposal on behalf of the involved departments which will be forwarded to the Dean of Arts and Science for his consideration.

The proposal mentioned above was to be inserted in this space, but it is unfinished at present. The proposal will be placed in this space upon completion and approval by the Dean of Arts and Sciences.