CLEMSON UNIVERSITY



REPORT
ON
INSTITUTIONAL EFFECTIVENESS



SUBMITTED TO
COMMISSION ON HIGHER EDUCATION



JUNE 1995

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This summary report for Clemson University includes:

Majors or Concentrations, Performance of Professional Program Graduates on Licensing and Certification Exam, Academic Advising, Analysis of Undergraduate Retention and Attrition, Academic Performance of Student Athletes, Library Resources and Services, Administrative and Financial Processes and Performance, Facilities, Public Service, and Research.

The following remaining components will be reported on in the annotated year:

General Education (1997), Entry-Level Placement and Developmental Education (1996), and Procedures for Student Development (1996).

The following components are to be reported by the CHE:

Reports of Program Changes that have Occurred as a Result of External Program Evaluations, Success of Entering Students in Meeting College or University Admissions Prerequisites, Achievement of Students Transferring from Two to Four Year Institutions, and Minority Students and Faculty Access and Equity.

CHE COMPONENT 1
GENERAL EDUCATION


STATEMENT OF PURPOSE:  Clemson University students will demonstrate competence in the use of basic communication and language skills, basic quantitative methodology with special emphasis on problem solving, and critical thinking.

EXPECTED RESULTS:
      1.  Clemson University juniors will demonstrate a greater proficiency than freshmen in the above competencies as reflected in scores on the College BASE (Riverside Publishing Co.), a standardized assessment instrument, or other appropriate assessment instrument.
      2.  Clemson University alumni will indicate satisfaction with their preparation in the above competencies.

ASSESSMENT PROCEDURES:
      1.  Selected samples of freshmen and juniors will be tested in the fall semester.  The institutional matrix form of the Riverside College BASE Test, or other appropriate instrument, will be used.
      2.  Alumni survey will be distributed in the fall semester.  Selected questions on alumni satisfaction regarding general education will be included.

ADMINISTRATION OF ASSESSMENT:  The University Assessment Committee in conjunction with the Office of Assessment will be responsible for administering the College BASE, or other appropriate instrument.  The Office of Assessment will be responsible for administering the Alumni survey.

USE OF ASSESSMENT FINDINGS:

INTERNAL:  The University Assessment Committee will be responsible for distributing the results to appropriate academic groups (e.g. Commission on Undergraduate Studies).

EXTERNAL:  Every three years, an action plan will be forwarded to the CHE.

REPORTING YEAR:  1997

Component 1
General Education

This component was reported on last in 1994.  Based on the schedule of reporting, this component will be reported on next in 1997.

CHE COMPONENT 2
MAJORS OR CONCENTRATIONS


STATEMENT OF PURPOSE:  To ensure that undergraduates receive a high quality education at Clemson University.

EXPECTED RESULTS:  Academic Departments will demonstrate that they meet their educational objectives as described in their mission statement and the university mission statement.  These objectives are defined by the departmental faculty.

ASSESSMENT PROCEDURES:  Departments will assess the education of the undergraduate major through a variety of means outlined in their individual education assessment plans.  These means include, but are not limited to: exit interviews, capstone courses, student portfolios, surveys of alumni, and national and locally prepared exams.  Departments are expected to engage in assessment activities yearly.  (See the enclosed matrix for Assessment of the Undergraduate Major.)

ADMINISTRATION OF ASSESSMENT:  Departments will be responsible for developing and maintaining their assessment plans and for conducting the assessment.  Assessment should concentrate on assessing the outcome of the educational program.  The University Assessment Committee will be responsible for ensuring that departments have adequate assessment plans in place and will review the reports sent to CHE.  The Office of Assessment will aid departments in maintaining the assessment plans by providing advice on request and will coordinate assessment when needed at the university level, e.g., surveys of alumni.

USE OF ASSESSMENT FINDINGS:

INTERNAL:  The departmental assessment plans specify the use of findings.  In most cases, the findings are reported to and discussed by the entire departmental faculty or departmental committees (e.g., departmental curriculum committees).  The findings will also be shared with, and reviewed by, the University Assessment Committee.

EXTERNAL:  On a rotating schedule of approximately 3 or 4 years, each department will prepare a 3- to 4-page action plan outlining their assessment activities, a written summary of the findings and a discussion on actions taken resulting from the assessment activities.  Departments will be expected to discuss their strengths, weaknesses, and measures taken or planned in order to improve their programs.

REPORTING YEAR:  Annually

Component 2
Majors or Concentrations

It is the belief of the Assessment Committee that faculty in each of the academic departments are the best prepared to determine appropriate goals and objectives for their majors. Each department was asked to prepare an assessment plan, including a statement of educational objectives and expected results prior to the Southern Association of Colleges and Schools (SACS) Self-Study visitation. For this report, the departments were asked to present the results of their departmental assessment plans in an action plan format.

This year XX departments reported on their majors. For details on each of their efforts, please refer to Appendix XX. Some of the departments continue to focus on "process" rather than "outcomes". Additionally, there are still some statements of objectives such as obtaining a certain grade in a course instead of focusing on what the student will learn in the course. The Assessment Committee is continuing to work with the departments to refine those assessment plans and increase the level of involvement among the faculty. The Assessment Committee is stressing a focus on outcomes and is asking the departments to collect data on two or three objectives which they would find useful from a continuous improvement perspective. As part of the educational process for departments, the Assessment Committee sponsored an interactive video conference this past semester entitled "Enhancing and Evaluating College Teaching and Learning". The conference was attended by 65 faculty and was highly rated. Currently the Director of Assessment and the Chair of the Assessment Committee have applied for University Innovation Funds to bring a consultant on campus this fall to help re-direct departmental assessment activities with one goal of causing assessment plans to be updated and to focus on "outcomes".

Clemson has undergone significant changes due to re-structuring and most of the people who were involved in developing the original assessment plans have either been replaced or assigned to other activities. Each time an assessment is required, the departmental person responsible for preparing the action plan must be re-educated about the process. It is appropriate that the new emphasis be undertaken as the restructuring is complete and the new process, the result of the overlap committee report, is about to be implemented.

Although many departments are not conducting the quality assessment activities the assessment committee hopes to see, it is apparent that several departments are using assessment findings to make positive changes to the curriculum and improving student satisfaction ratings. The following are examples of the successful application of the outcomes assessment process:

**Psychology:**    Alumni surveys identified two issues concerning advising. 1) more proactive advising concerning career and graduate school preparation needed during the freshman and sophomore years. The department developed a comprehensive handbook and distributed it to all undergraduate psychology majors and with the assistance of Psi Chi and the psychology club, a peer advising service was instituted.
            Alumni surveys identified a need for additional emphasis on multicultural issues. As a result, the department developed a new course, Psychology and Culture, and added it to the regular curriculum.
            The student advisory committee expressed concerns about the class size of the methods courses. As a result, the department reduced the number of students allowed in the methods courses by 10 each.

**Political Science:**        Due to student concerns about class size in the methods class it was rated the least satisfactory of all the political science classes by students. As a result, the department lowered the cap on enrollment in the course to equal the number of computers available for students to use. The first semester under the new system, student evaluations improved dramatically.

**Physics and Astronomy:** Alumni survey responses indicated students feel a lack of computer experience in their major field.  As a result, a course in "computational physics" has been added to the curriculum to help familiarize students with computer applications in the major.

**Health Science:** Students rated the field work experience as needing improvement.  As a result, the department revised the field work experience  to include a series of six on-site visits and an 18 hour work experience.

**Finance:** Senior exit interviews consistently mentioned a need for improved career counseling, explanation of career opportunities in finance, a feeling that faculty were not concerned about interest in student progress, and a need for improved academic advising.  As a result, each student is now assigned an advisor in the department (previously the department used a central advising office in the college).  This action, personalizing academic advising and using faculty in the department is also expected to improve the student faculty relationship and the ratings of faculty being interested in student progress is expected to improve.  Additionally, a symposium on career counseling will be held during the fall semester.

**Economics:** Alumni surveys and graduating student surveys indicated that students were not as satisfied with academic advising (both on career planning and curriculum issues) as faculty in the department felt they should be.  As a result, two faculty members have been appointed junior-senior advisors and a brochure has been developed to assist them with advising duties.

**Agricultural and Applied Economics:** Alumni and current student comments indicated a need to publicize career opportunities for graduates.  As a result, the department initiated a series of workshops and seminars and developed a brochure to market the department's curricula.

CHE COMPONENT 3
PERFORMANCE OF PROFESSIONAL PROGRAM GRADUATES ON LICENSING
AND CERTIFICATION EXAMS


STATEMENT OF PURPOSE:  Student achievement in professional programs may be assessed in part through an examination of performance on licensure and certification exams in teaching, nursing, and engineering.  Licensure and certification exams match collegiate achievement with professional standards and norms.

EXPECTED RESULTS:
        1. (Education) The 1989-90 fiscal year represents the first full year of Clemson's College of Education students taking the National Teachers Exam's Professional Knowledge Examination. During the 1990-91 fiscal year, the College of Education will analyze test results and establish guidelines for the use of the exam as an assessment tool.
        2. (Nursing) The College of Nursing expects the National Council Licensure of Registered Nurses Examination results to be at the national average or above.

ASSESSMENT PROCEDURES:  The nursing and education students will take the exam during or upon completion of their senior year.

ADMINISTRATION OF ASSESSMENT:  The Dean's Office, in the respective colleges, is responsible for coordinating the administration of the exams.

USE OF ASSESSMENT FINDINGS:

INTERNAL:  Faculty of the respective colleges will monitor and review the findings of the exams and institute appropriate changes to curriculum and policies.

EXTERNAL:  The latest, most recent annual report will be submitted to CHE.

REPORTING YEAR:  Annual

Component 3
Performance of Professional Program Graduates on Licensing and Certification Exam


The College of Nursing regularly examines the success rates of students completing the NCLEX as a method of determining whether adjustments need to be made to curriculum or methods. The expectation in the College of Nursing is that student success on the examination should be as high or higher than the national pass rates.  In the past year, there has been a significant change in the methodology used in administering the examinations and this change may have an impact on both local and national pass rates over time.  Until recently the NCLEX examinations were only offered in February and July.  All nursing students were aware of those dates and paced their preparation for the examination accordingly.  As a result of recent changes allowing computerized testing, students are allowed to take the examination very shortly after graduation. This may mean that students will not spend the same amount of time in preparation and could cause a long term decrease in the success rates.

Rather than the rates from the February and July examination schedules as have been reported in the past, rates are now provided on a quarterly basis since graduates are able to sit for the examination at any time.  The rates indicate that Clemson students exceeded the national pass rate on two of the three quarters for which data are available.  Data for the most current quarter will not be available until a later date.  It is interesting to note that the Clemson rate, as well as the national rate, has decreased each quarter since the new testing format and timing was initiated. Based the fact that Clemson students are exceeding the national average on most quarters Clemson does not have plans to change the curriculum or methods used in nursing preparation. The trends will be monitored by the faculty and if changes are needed, they will be made.  During the one quarter in which Clemson was below the national pass rate, only two more successes would have been required in order to meet the rate.  This small fluctuation is well within the realm of random variation.

Component 4
Reports of Program Changes That Have Occurred as a Result of External Program Evaluations

CHE reports on this component.

CHE COMPONENT 5
ACADEMIC ADVISING


STATEMENT OF PURPOSE:  The purpose of academic advising at Clemson University is to assist the student in scheduling courses so as to fulfill the requirements of the degree program.

EXPECTED RESULTS:
       1.  A majority of students will report satisfaction with academic advising experiences.
       2.  The university graduation rate, based on definitions from the Student Right to Know and Campus Security Act, will not drop below 65%.
       3.  A majority of students will report satisfaction with the availability of their academic advisor.
       4.  A majority of students will report satisfaction with the information provided by the advisor.

ASSESSMENT PROCEDURES: A survey of graduating students will be employed to provide information relative to expected results 1, 3, and 4.  Expected result 2 will be determined by analysis of the annual graduation rate based on cohort data.

ADMINISTRATION OF ASSESSMENT:  The survey data will be collected and analyzed by the Office of Assessment.  The graduation rate data will be computed by the Office of Institutional Research.

USE OF ASSESSMENT FINDINGS:

INTERNAL:  The data will be compiled and provided to all departments and academic advising centers. The academic departments and advising centers will use the information to determine whether changes to the academic advising procedures are required.

EXTERNAL:  The information will be reported to the CHE as part of the annual Institutional Effectiveness Report.

REPORTING YEAR:  1995

Component 5
Academic Advising


This is the first year academic advising as been included as an institutional effectiveness component.  Clemson's assessment plan for academic advising is based on determining the level of achievement of four expected results:

1. A majority of students will report satisfaction with academic advising experiences.
2.  The university graduation rate, based on definitions from the Student Right to Know and Campus Security Act, will not drop below 65%.
3.  A majority of students will report satisfaction with the availability of their academic advisor.
4.  A majority of students will report satisfaction with the information provided by the advisor.

Data from an annual American College Testing (ACT) survey has been used to determine the extent to which the first expected result has been achieved.  For the past three years, the number of students reporting satisfaction (a combination of those reporting satisfied or very satisfied) has 54.2%, 57.4% and 58% respectively.  Not only does this represent a majority, which fulfills the expected result, but it also indicates an upward trend of students being more satisfied with academic advising over the three year period.

Data from the six year graduation rate, as required by the Student Right to Know legislation, indicates a six-year graduation rate of around 70% for all first-time full-time students who made up the original cohort.  This graduation rate is above the rate required for success in meeting expected result two.  As additional information regarding the Clemson graduation rate, Postsecondary Educational Opportunity recently did a study of graduation rates of national universities in which the SAT scores were used to develop a "predicted" graduation rate which could then be compared with the "actual" graduation rate of the university.  Clemson was found to have a predicted rate of 59% and an actual rate of 71%.  This would indicate that Clemson is doing an outstanding job in graduating students who would not be expected to be successful on SAT scores alone.

The ACT survey also provided the data for expected result three.  For the last three years the percentage of students reporting satisfaction with the availability of their advisor was 49.4%, 56% and 56.4% respectively.  Clemson was pleased to note the increase in the percentage of students reporting satisfaction with advisor availability.

Expected result four was not achieved based on data from the ACT survey.  For the last three years the percentage of students reporting satisfaction with the value of the information provided by advisors was 44.4%, 47.8%, and 48.8% respectively.  Although this does not meet the requirements of expected result four, there is some solace in the upward trend.

Although three out of the four expected results were achieved, Clemson has taken steps to improve academic advising on campus.  The Provost has appointed a task force to study academic advising and make recommendations for improving the process.  Several members of the task force attended a workshop in Columbia which was sponsored by the South Carolina Assessment (SCHEA) Network.  The workshop was led by Dr. Chip Anderson, from UCLA, a recognized leader in academic advising.  After studying the advising process, the task force will make recommendations for changes in the academic advising process and the resulting changes will be assessed with an expectation of improvement in both satisfaction with advising and in satisfaction with the value of information provided by the advisor.

Several departments are using their assessment findings to make improvements to the academic advising process.  The following three are indicative of some of the improvements being made within departments as a result of the regular assessment process:

**Economics:**    Alumni surveys and graduating student surveys indicated that students were not as satisfied with academic advising (both on career planning and curriculum issues) as faculty in the department felt they should be.  As a result, two faculty members have been appointed junior-senior advisors and a brochure has been developed to assist them with advising duties.

**Finance:**        Senior exit interviews consistently mentioned a need for improved career counseling, explanation of career opportunities in finance, a feeling that faculty were not concerned about interest in student progress, and a need for improved academic advising.  As a result, each student is now assigned an advisor in the department (previously the department used a central advising office in the college).  This action, personalizing academic advising and using faculty in the department is also expected to improve the student faculty relationship and the ratings of faculty being interested in student progress is expected to improve.  Additionally, a symposium on career counseling will be held during the fall semester.

**Psychology:**    Alumni surveys identified two issues concerning advising.  1)  more proactive advising concerning career and graduate school preparation needed during the freshman and sophomore years.  The department developed a comprehensive handbook and distributed it to all undergraduate psychology majors and with the assistance of Psi Chi and the psychology club, a peer advising service was instituted.

## CHE COMPONENT 6
## ENTRY-LEVEL PLACEMENT AND DEVELOPMENTAL EDUCATION

STATEMENT OF PURPOSE:  To ensure that the placement procedures in English and Mathematics are successful.

EXPECTED RESULTS:
      1.  The students who successfully complete MathSc 104 and 105 will successfully complete the immediately subsequent mathematics course.
      2.  Students who complete English 100 or who are placed in English 101 based on an internal placement examination will successfully complete English 101.

ASSESSMENT PROCEDURES:  The distributions of grades will be tabulated in the introductory-level Mathematics and English courses based on the placement history of the students and their performance in any prerequisite courses.

ADMINISTRATION OF ASSESSMENT:
      1.  The Department of Mathematical Sciences, with the help of the Office of Assessment, will be responsible for maintaining the database.
      2.  The Director of the Pearce Center with the help of the Office of Assessment will be responsible for maintaining the database.

USE OF ASSESSMENT FINDINGS:

INTERNAL:  The findings will be reported to the respective departments on an annual basis to be used when evaluating their curriculum.  If the pass rates are found to be less than expected, steps will be taken to revise the courses or teaching methods to improve the likelihood of success.

EXTERNAL:  An action plan summarizing the findings will be reported to CHE.

Component 6
Entry-Level Placement and Developmental Education


This component was reported on last in 1994.  Based on the schedule of reporting, this component will be reported on next in 1996.

Component 7
Success of Entering Students in Meeting College or University Admissions Prerequisites

CHE reports on this component.

Component 8
Achievement of Students Transferring from Two to Four Year Institutions


CHE reports on this component.

CHE COMPONENT 9
ANALYSIS OF UNDERGRADUATE RETENTION AND ATTRITION


STATEMENT OF PURPOSE:  To identify factors that are related to the decision of Clemson students to leave the university prior to graduation.

EXPECTED RESULTS:
      1.  Academic factors related to the attrition of Clemson students including special groups (e.g., minorities, older students) will be identified at the university and college levels.
      2.  Subjective reasons for students leaving Clemson University will be identified and related to both academic performance and student life, where possible.

ASSESSMENT PROCEDURES:
      1.  A statistical model will be developed which will include academic progress for each student by semester.  Among the factors included in the model are overall GPR, each semester's GPR, entering SAT scores, major (including subsequent changes), and course credit load.  The model will be used to identify differences among academic factors that are related to students who choose to leave or remain at Clemson.
      2.  Exit interviews will be conducted, where possible, with students who choose to leave Clemson University prior to graduation.  The interviews will focus on academic factors as well as non-academic student life factors.  In those instances when an exit interview is not possible a telephone or written survey will be used to contact the student.

ADMINISTRATION OF ASSESSMENT:  The retention data will be collected and analyzed by the Offices of Assessment and Institutional Research.  The interviews and surveys will be conducted by the Office of Undergraduate Academic Studies.

USE OF ASSESSMENT FINDINGS:

INTERNAL:  The University Assessment Committee will review and monitor the development of and revisions to the model and the surveys.  The Committee will forward the results to appropriate groups on campus (e.g., Academic Council, Office on Student Life).

EXTERNAL:  An action plan summarizing the findings will be reported to CHE.

REPORTING YEAR:  1995

Component 9
Analysis of Undergraduate Retention and Attrition

The factors affecting graduation and retention rates are complex. Regardless of the programs and services offered by a university, some students will not graduate. It is clear from the research literature that better incoming students, as represented by higher Scholastic Aptitude Test (SAT) or American Collegiate Testing (ACT) scores, are strongly associated with academic success as defined by graduation rates. In other words, better prepared incoming students are more likely to graduate than poorly prepared incoming students regardless of the programs and services offered to assist with retention. However, in reality, public universities are not likely to be able to admit only the brightest of incoming students. The question then becomes, in a more practical sense, what are those factors which effect graduation and retention rates and which of those factors are subject to influence by the university through programs and services.

Dr. James Rieck and Eleanor Nault have undertaken a year-long study to answer the question posed above. The study they have undertaken will be completed in three phases. During phase 1 they conducted a literature review to determine what variables are most directly related to retention and graduation. In phase II they selected a cohort of Clemson students and examined the cohort to determine the relative strength of each of the previously identified factors in predicting the liklihood of student success. During phase III they will conduct a mail survey of the student's perception of factors that may have contributed to the time affecting graduation. A copy of a paper presenting the preliminary results from phase I and II is attached in Appendix XX.

Although the study is not yet complete, some of the highlights of the preliminary findings are listed below:

- A student who withdraws from a three credit hour course is 1.87 times less likely to graduate in four years than a student who never withdraws from a course.
- A student who withdraws from six credit hours is 3.87 times less likely to graduate in four years than a student who never withdraws from a course.
- A student who participates in a cooperative education experience is over 30 times less likely to graduate in four years than a student who does not participate in a cooperative education experience.
- Students who are majoring in Engineering their first semester are more than seven times less likely to graduate in four years than students who are not Engineering majors.
- Students with a first semester GPA of 3.0 are 1.8 times more likely to graduate in four years than a student with a 2.0 first semester GPA.
- Students who stop-out are over fourteen times less likely to graduate in four years than students who do not stop-out.
- Students who complete eighteen hours by the end of the first semester are 1.29 times more likely to graduate in four years than students who complete fifteen hours.
- Athletes are over four times less likely to graduate in four years than non-athletes.
- Female students who live on campus are more likely to graduate in four years than female students who do not live on campus.
- Students who change majors between colleges (within the university) are 2.33 times less likely to graduate in four years than a student who does not change majors between colleges.
- African-American students are over three times less likely to graduate in four years than other students.
- In-state students are over 1.3 times less likely to graduate in four years than out-of-state students.

These findings provide a part of the picture by indicating the relative strength of variables which have a direct impact on the liklihood of a student graduating within four years at this institution. It is the intention of the investigators, and the Office of Assessment, to find out why some of these

variables have the impact they do and to further determine how the university can best intervene. The results from phase III of the study should provide additional insight into that aspect of the issue.  The results of the study will be used to improve the retention rate and the rate of graduation within four years, where feasible.
(See Jim and El)

CHE reports on this component.

CHE COMPONENT 11
ACADEMIC PERFORMANCE OF STUDENT ATHLETES


STATEMENT OF PURPOSE:  The programs and guidance of the Student Athletic Enrichment Program will instill sound academic values in our student-athletes, leading them to success in the classroom, achievement of academic honors, and the earning of a degree from Clemson University.

EXPECTED RESULTS:
      1.  Improvement in overall academic performance.
      2.  An increase in overall graduation rates.  Further, that over an as yet undetermined period, graduation rates will approach those levels achieved by the student body as a whole.
      3.  A greater percentage of student-athletes who receive academic honors and/or recognition, e.g., dean's list.
      4.  Integration of student athletes into the mainstream of the student body.

ASSESSMENT PROCEDURES:  Data will be compiled and analyzed related to team GPR's, honor rolls, academic achievement, and graduation rates of student athletes.  These data will be used to compare athletes with the other members of the Clemson student body.

ADMINISTRATION OF ASSESSMENT:  The staff of the Student Athletic Enrichment Program will be responsible for the evaluation process.

USE OF ASSESSMENT FINDINGS:

INTERNAL:  The result of the assessment procedures will be used as a basis for evaluating both the academic performance of student-athletes and the programs and services which are offered through the Student Athletic Enrichment Program.  The results will also be forwarded to the Athletic Council.

EXTERNAL:  The NCAA report, along with an action plan based on the results of the evaluation process, will be forwarded to the CHE on an annual basis.

REPORTING YEAR:  Annual

Component 11
Academic Performance of Student Athletes

(Report due by end of week)

CHE COMPONENT 12
PROCEDURES FOR STUDENT DEVELOPMENT


STATEMENT OF PURPOSE:  To provide programs and services which are responsive to the needs of students in adjusting to campus life, developing successful interpersonal relationships, expressing social and cultural awareness, and making the transition from college student to adults who achieve and succeed in the workforce.

EXPECTED RESULTS:
　　　　1.  A majority of current students and graduates will report their participation in programs and services sponsored by the Division of Student Affairs.
　　　　2.  A majority of current students and graduates who report their participation in programs and services sponsored by the Division of Student Affairs will report satisfaction with those programs and services.
　　　　3.  A majority of current students and graduates who report their participation in programs and services sponsored by the Division of Student Affairs will report finding the programs and services to be beneficial to their personal and social development.

ASSESSMENT PROCEDURES:  Current students and graduates will complete combinations of institutionally designed or nationally normed surveys and needs assessments.  In addition, selected groups may participate in focus group discussions, personal interviews, or other appropriate data collection methodologies.

ADMINISTRATION OF ASSESSMENT:  Responsibility for initiating assessment activities, developing assessment criteria with the staff, and meeting existing deadlines will reside with the Directors of the Departments within Student Affairs.  These activities will be coordinated with the Associate Vice-President in charge of the departments, who will review criteria, instruments, methodology, and other pertinent procedures periodically.

USE OF ASSESSMENT FINDINGS:

INTERNAL:  The results of the assessment activities will be reviewed by the University Assessment Committee and will become part of the departmental annual reports of effectiveness submitted to the Vice President for Student Affairs.  Each Director will discuss the findings with his or her staff and Vice-President, specific faculty, students, and other individuals that may benefit from knowledge of the findings.  The results of the assessment data will be incorporated into the departmental planning meetings held at the beginning of each year.  Specific programs and service offerings will be revised based on the outcome of the assessment activities.

EXTERNAL:  An action plan from the Vice President for Student Affairs will be submitted to the CHE.

REPORTING YEAR:  1996

Component 12
Procedures for Student Development


This component was reported on last in 1994.  Based on the schedule of reporting, this component will be reported on next in 1996.

CHE COMPONENT 13
LIBRARY RESOURCES AND SERVICES


STATEMENT OF PURPOSE:  To insure that students, faculty, and staff of the University have access to and can utilize the Libraries collections via simple procedures and timely responses to inquiries.  Further, as the knowledge base continues to expand, the Library is committed to the continuous development of services to scholars, as well as the scope of its collections.

EXPECTED RESULTS:  Current students, faculty, and other populations to be specified will indicate satisfaction on surveys concerning the usage of materials, the efficiency of procedures for accessing the materials, and the scope of the information available, not limited to library collections.

ASSESSMENT PROCEDURES:  Various institutionally generated and nationally normed surveys and needs assessment instruments will be used.  Focus groups with selected populations may also be used to gather additional information.

ADMINISTRATION OF ASSESSMENT:  The Dean of the Library, in consultation with the Provost, will initiate the assessment process.  Selection and/or composition of instruments will be under the purview of the Dean and the University Library Advisory Committee.  Reporting the results will be initiated by the Library at the end of the assessment period.

USE OF ASSESSMENT FINDINGS:

INTERNAL:  The findings of the assessment process will be shared with the University Library Advisory Committee, compared to the standards developed by the American College and Research Library Association, and communicated by the University Assessment Committee to other appropriate university groups.  Information will be utilized to revise policy, expand collections, and improve library services to scholars.

EXTERNAL:  An action plan summarizing the findings and actions taken will be forwarded to CHE.

REPORTING YEAR:  1995

Action Plan
CHE Component 13
Assessment of Library Usage and Collection Development Procedures

Purpose: To insure that students, faculty and staff of the University have access to and can use successfully the Library's collections, obtain needed access to off-site information, and enjoy facilities conducive to achieving their purposes in coming to the Library.

Expected Results:  Current students, faculty and other users will indicate success and satisfaction on surveys and in focus groups concerning the usage of materials, the efficiency of procedures for accessing the materials, the scope of collections available both on and off site, and the services and facilities provided.

Outcomes: Several assessment methods were used during this three-year reporting period to determine how successful the Library has been in providing services to our users, identifying areas where users felt improvement was needed, and testing the results of any changes.  Focus groups, surveys, and suggestion box responses were primary sources of information.

A survey was conducted during the week of March 27, 1995 to determine the success of users in accomplishing selected activities and the ease and level of satisfaction of using library services on that visit.  This duplicated in large part the survey conducted during the week of April 12, 1992, creating a measure to judge improvement.  In almost every case where the same question was used, the mean rating rose from 1992 to 1995.  In 1995, for example, 81% of the 859 respondents rated Cooper Library above average in ease of use (mean 4.3) vs. 76% of the 807 respondents in 1992 (mean 4.1); 76% rated their satisfaction with the visit above average in 1995 (mean 4.1) vs. 68% in 1992 (mean 3.9).

Questions regarding selected activities were rated on a scale of 1-5 with 1 indicating "not at all successful" and 5 indicating "completely successful".  The following table shows the percent of users participating in the activity in 1992 and 1995, followed by the mean rating of degree of success.

| Activity | % in 1992 | % in 1995 | Mean 1992 | Mean 1995 |
|---|---|---|---|---|
| Looked for books and  periodicals | 38% | 40% | 3.8 | 4.0 |
| Studied | 58% | 55% | 3.9 | 4.1 |
| Reviewed current literature | 19% | 16% | 3.5 | 3.7 |
| LUIS | 31% | 35% | 4.1 | 4.0 |
| DORIS | 18% | 20% | 3.7 | 3.7 |
| Lexis/Nexis | | 5% | | 2.6 |
| Used CD-ROM data bases | | 9% | | 3.9 |
| Asked Reference Question | 16% | 16% | 3.8 | 4.0 |
| Browsed | 20% | 24% | 3.3 | 3.6 |
| Used Reserves | | 20% | | 4.0 |
| Circulation Transaction | 17% | 20% | 4.0 | 4.4 |
| Used Computer Lab | | 24% | | 4.1 |
| Used Patent collection | | 3% | | 2.0 |
| Used Photocopiers | | 26% | | 4.1 |
| Used Microform Reader/printers | | 9% | | 3.5 |

The Library was pleased with the results of the 1995 survey, especially the improvement in overall ease of using the Library and in satisfaction with the visit.  Respondents were expressive, with the majority including written comments on the forms.

Complaints about noise in the Library which were received in the suggestion box and the 1992 survey prompted us to designate three floors as "quiet floors" and establish two group study

areas where talking would be allowed.  The 1995 survey  showed a drop in the number of complaints about noise and many respondents expressed appreciation of the two aforementioned changes.    There were fewer complaints about lack of cleanliness, reflecting the hard work done daily by housekeeping staff and the work of the library staff in removing graffiti from the walls.

Issues identified for attention during the upcoming year include: the possibility of putting Tiger Stripe on more photocopiers/reader-printers, improving signage for the building both inside and out, creating more publicity about library services so users know what is available, pursuing the purchase of more microform reader/printers, especially for the cartridges, removing graffiti from desks and tables as well as from the walls. Concerns were expressed about the adequacy of our collections and information resources in some areas--which will be examined by the subject specialists.  Studying in groups is becoming more common, (20% of those who studied indicated they did it with a group), and accommodation needs to be made for these users.

As a result of comments from users and staff, we are pursing air quality problems with the Campus Air and Water Quality Committee and FM&O to improve the indoor environment which has caused severe respiratory problems for many staff and patrons.  We have added assistive learning devices including a Reading Edge reading machine, a ClearVue Magnifier, and a TDD telephone to aid the handicapped in pursing their college careers.  We have added new services such as the LAN, became a Patent depository, increased our access to databases, and established a gopher site and a Home Page on the WWW. We are continuing to use Daniel as overflow for study space which has been used regularly by students, especially for group study. In response to repeated requests, we are designating part of the fifth floor lounge as an eating area.

Two sets of focus groups were also held in the review period to get input from user-categories on existing and potential future services.  Three sessions with faculty were held in the fall of 1992, and two with undergraduate students in the fall of 1994.  Topics pursued with the faculty included remote storage of materials, ILL/document delivery, and journal cancellations.  Topics pursued with the students included reasons and times for using the library, ease of use of the library, and preferred types of study space.  Ideas and concerns generated in these meetings have influenced the planning of the prospective Remote Storage/Records Center building, determine goals in turn-around time for ILL/document delivery, and planning best use of study space in present and future library spaces.  Ideas from the suggestion box also generated change.

Bibliographic Instruction teachers in the Library took the initiative to redesign their traditional presentation into a hands-on training session for English 101/102 following a survey of class members.  Evaluations of the new method which has now been in place for two semesters, has shown marked improvement in satisfaction with the session and increased understanding of presented materials.

Evaluation of the collections, including access to off-site databases, is proceeding, with Information Access Policies being written by the subject specialists in the Library.    The AMIGOS collection analysis database was purchased for comparison of our holdings with peer libraries. SAS reports have been generated from NOTIS--our on-line catalog--to aid in the analysis of various aspects of the collection.  Items held in the library which were not adequately described in the on-line catalog were identified and a project begun to improve access.  Records for federal documents are being added to NOTIS as they are received to increase public awareness of and access to these important items. The monograph allocation formula has been rewritten to reflect better the support of the undergraduate curriculum.  Serials are being continually reviewed for cost-effective relevance to the collection as we try to do the best we can with our limited budget.

In addition, the proposed new Records Center/Library Remote Storage facility will provide more room in the main libraries for collections, new services, and study space, while yet preserving the lesser used materials for research as needed.

STATEMENT OF PURPOSE:  The purpose of the university administration is to facilitate attainment of department, college, and university goals and objectives by:

> obtaining, managing, and allocating resources to maximize scholarly activity;
> ensuring that the university is operated according to established policies; and
> providing an atmosphere conducive to high morale among students, faculty, and staff.

EXPECTED RESULTS:  The administrative process at Clemson University will be judged effective in facilitating scholarly activity and managing resources.

ASSESSMENT PROCEDURES:
1.  Review of academic administrators as defined in the Faculty Manual and of other administrators as defined by the "Employee Performance Merit System" (and appropriate University policies) will be conducted.
2.  In order to enhance the talents and skills of administrators, a program of continuous improvement will provide administrators with feedback from their immediate constituencies regarding performance on relevant dimensions (e.g., communication, decision-making ability, assistance in professional development).
3.  Data on costs of teaching, research, public service, and support services will be analyzed.  Appropriate ratios will be calculated for each administrative unit for analysis across time and for comparison to peer institutions.

ADMINISTRATION OF ASSESSMENT:  The surveys will be tabulated and summarized by the Office of University Assessment with summaries provided to appropriate persons.  The Office of Assessment, in cooperation with the Office of Institutional Research, will generate and analyze appropriate university budget data.

USE OF ASSESSMENT FINDINGS:

INTERNAL:
1.  The evaluations resulting from formal review of administrators will be used for decisions of continuance and enhancement of their performance.
2.  Information will be handled in a confidential manner and will be summarized by the Office of Assessment.  Information summarizing constituent feedback will be reported directly to each affected administrator.  The administrator will be expected to utilize this information to enhance administrative performance.
3.  Budget information and ratios will be reviewed by the Vice Presidents and the Academic Council.  This will allow an assessment of cost effectiveness and efficiency with the expectation of adjusting goals and using tactics to improve cost effectiveness in the attainment of instructional and administrative unit goals.

EXTERNAL:  Related to Assessment Procedure 1, the Provost and Vice Presidents will provide a summary report annually to the Office of Assessment citing the number of administrators reviewed and reappointed at each level (e.g., Department Head, Director, Dean).  The Office of Assessment will summarize the program in Assessment Procedure 2.  Feedback from the Vice Presidents and the Academic Council regarding Assessment Procedure 3 will be provided to the Office of Assessment.  The Office of Assessment will use this information in preparing an action plan to be reported to CHE through the Provost.

REPORTING YEAR:  1995

Component 14
Administrative and Financial Processes and Performance

Statement of Purpose:  The purpose of the University administration is to support the multi-part (teaching, research, and public service) mission and strategic goals of Clemson University by ensuring:

the appropriate allocation of resources;
the development and maintenance of efficient administrative processes;
and the provision of needed information management systems and technological support.

Expected Results:  The administration and financial processes of the University will be perceived as effective in supporting the mission and goals of Clemson University.

Assessment Procedures:

I.  Assessment of Resource Allocation:

A.  In the assessment of resource allocation, the evaluation should focus on the extent to which the University has been able to create and implement a flexible allocation system that encourages quality and responds to the multi-part mission and strategic goals.  Consistent with the recommendations of the University Budgeting/Funding Task Force, the allocation system should be driven by the planning process and support the University's priorities, short-term, and long-range goals.

II.  Assessment of Administrative Processes and Performance:

A.  In the past the University has used a system of annual surveys to evaluate the effectiveness of academic administrative processes, and perceived effectiveness of academic department chairs and school directors as expressed by their constituents.  That process has been placed on hold during the reorganization effort, but the intent is to re-institute this initiative following the completion of the academic reorganization effort.

B.  From the perspective of 'top-down' evaluation, new plans are emerging that will result in periodic comprehensive review of academic department chairs and school directors, their academic programs, research and service activities by the appropriate academic dean and the provost.  This process will be initiated concurrent with implementation of the University's new organizational structure.  Additionally, review of academic administrators (as defined by the Faculty Manual) and review of other administrators (as defined by the Employee Performance Management System) will continue as in the past.

C.  General Business and Finance Services:  The Business and Finance Division has undertaken an extensive assessment effort over a three year period.  These efforts have included process reviews by internal task forces, peer reviews, organizational review by the Vice President, and customer surveys.  The internal assessments have produced meaningful results including restructuring, elimination of unnecessary positions, and re-focusing of services.  Additionally, the Division has benefited from surveying and analyzing customer responses.

D.  Auxiliary Services:  The first effort to improve auxiliary services was initiated by using on-site surveys to evaluate customers' levels of satisfaction.  The survey responses are used by Auxiliary managers to make improvements in service.  All customers were asked to complete surveys as they left the site in order to solicit feedback relative to the services each of the operations provided.  The basic strategy is to collect and analyze the survey results to facilitate a process of continuous improvement.

E.  Non-Academic Organizational Structure:  In May of 1994, an Administrative and Support Organizational Task Force was appointed by then President Max Lennon.  The group's charge

was "to develop and recommend alternative long range administrative and support structures which will reduce costs, be more flexible and responsive to the academic needs of the University and its strategic plan (including teaching, research and outreach) and which best allow Clemson University to be a dynamic and competitive institution."  The task force solicited input through town meetings, surveys, individual meetings with vice presidents, staff and other groups, and informal discussions with faculty, staff and student leaders.

III.  Assessment of Information Management Systems and Technological Support:

A.  The Division of Computing and Information Technology  developed a Strategic Plan which identified and defined major initiatives to be pursued.  A structure of cross campus committees was created, and they, in turn, established specific goals and objectives which were consistent with the major thrusts of the Strategic Plan.  The various strategic initiatives include development of a voice response system for Financial Aid and Records and Registration, creation of a Client Support Group to assist users in the client/server environment, enhanced e-mail systems, creation of an Advanced Technology Center (ATC) to be a central point for multimedia activities within the University in order to enhance efficiency, improved training initiatives especially in the use of the new Banner business system for administration, and continued improvements to the Internet System.

CHE COMPONENT 15
FACILITIES


STATEMENT OF PURPOSE:  To insure that sufficient, quality space is provided for the various functions of the university.

EXPECTED RESULTS:
      1.  Required space for classrooms, laboratories/studios will be available for the academic programs.
      2.  Required space for support activities will be available.
      3.  Required space for student life activities, e.g., dormitories, recreational facilities, etc., will be sufficient.
      4.  The quality of the facilities in each of these areas will be rated as at least satisfactory by the university community.

ASSESSMENT PROCEDURES:
      1. Indicators of usage and space available will be  developed.
      2. A sample of the university community will be surveyed on a regular basis to determine the degree of satisfaction with the availability and quality of facilities provided for the various functions.

ADMINISTRATION OF ASSESSMENT:  The Office of Space Resources, in conjunction with the Facilities Planning Committee, will be responsible for developing indicators of usage, identifying available space, and developing and administering a survey to determine the level of satisfaction with the facilities available.

USE OF ASSESSMENT FINDINGS:

INTERNAL:  The University Assessment Committee will report the findings to the Facilities Planning Committee and other  appropriate university groups for their review and action.

EXTERNAL:  Every three years an action plan will be submitted to the CHE identifying the results of the assessment and the steps taken to improve existing facilities or to address other concerns related to facilities.

REPORTING YEAR:  1995

Component 15
Facilities


Data to support the assessment of facilities comes primarily from two sources: The American College Testing (ACT) Evaluation Survey and the annual alumni survey of graduates who have been out of the university for one year.  The Office of Assessment has been conducting the (ACT) Evaluation Survey of currently enrolled students for the past three years.  There are seven questions on the ACT survey which directly relate to the assessment of facilities, both academic and support facilities.  For each of the past three years 64.6, 64.5, and 64.7 percent of the students have been satisfied with classroom facilities and 57.7, 58.3, and 56.6 percent have been satisfied with laboratory facilities.

On the alumni survey students are asked whether the classroom facilities and laboratory facilities are conducive to learning.  Classroom facilities were rated conducive to learning by 72.4 percent and laboratory facilities by 65.2 percent.  Since this is a general rating, students were also asked to specifically rate whether classroom facilities and laboratory facilities in their major were conducive to learning.  Classroom facilities in the major were rated as conducive to learning by 72.4 percent and laboratory facilities in the major were rated conducive to learning by 65.2 percent.

Students were also asked about athletic facilities, study areas, the student union, availability of student housing and the general condition of buildings and grounds.  The table below summarizes the responses for the past three years:

| | | | |
|---|---|---|---|
| Athletic Facilities | 74.3 | 73.7 | 72.9 |
| Study Areas | 63.1 | 66.1 | 67 |
| Student Union | 62.9 | 63.2 | 63.7 |
| Availability of Housing | 42 | 54.6 | 57.5 |
| General Condition of Buildings and Grounds | 68.5 | 69.3 | 73 |

These results indicate that with the exception of the availability of student housing three years ago, the majority of students are satisfied with the condition and availability of facilities.  The low rating on the availability of student housing which occurred three years ago, coincides with Clemson's record student enrollment and has since been solved by the implementation of enrollment management policies which limits the number of freshmen admitted in the fall semester.

Because there is concern about crowding students into classrooms and in some cases possibly creating classes which are so large students are unable to learn appropriately, the alumni survey asks students whether they agree that most of their classes were the right size.  The majority, 68% of students agree that most of their classes are about the right size.

These results indicate that Clemson is successful in meeting the assessment objectives in the area of facilities.  It also indicates, as demonstrated in the response to the low rating of availability of student housing, that the University is willing and able to respond to student feedback in improving the perceptions of facilities quality and availability.

STATEMENT OF PURPOSE:  The purpose of public service activities is to extend education beyond the university and share the expertise and research findings with a broader audience to improve the welfare and quality of life of the citizens of South Carolina.  A secondary purpose is to advance and strengthen the activities in the faculty's professional disciplines in order to improve the quality of both teaching and research.

EXPECTED RESULTS:  These public service activities will result in measurable improvements in economic development and quality of life in the state.  Public service activities relating to professional organizations will enhance the visibility and national standing of Clemson University.

ASSESSMENT PROCEDURES:  Each academic department and unit has developed an assessment procedure based on its specific goals and objectives in the context of the broader goals and objectives for public service of the University's expanded mission statement.  (See the enclosed matrix for Assessment of Public Service.)

ADMINISTRATION OF ASSESSMENT:  Departments will be responsible for developing and maintaining their assessment plans and for conducting the assessment where feasible.  Assessment should concentrate on assessing the outcome of public service activities.  The University Assessment Committee will be responsible for ensuring that departments have adequate assessment plans in place and will review the reports sent to CHE.

USE OF ASSESSMENT FINDINGS:

INTERNAL:  Assessment results will be reviewed by the appropriate departmental or unit committee to provide feedback and identify areas of successful performance and unmet needs.  The University Assessment Committee, or the appropriate designated unit, will provide feedback in its reporting process to all units.

EXTERNAL:  An action plan summarizing the findings will be reported to CHE.

REPORTING YEAR:  1995

In the past, Clemson has struggled with the issue of public service primarily because of problems associated with definition. Additionally, faculty have long felt that rewards for public service have not been on par with rewards for the other primary aspects of academic life in a land-grant university (teaching and research). In the fall of 1992, the University moved boldly to clarify public service and to determine what public service activities should encompass as the millenium is approached. The President, Max Lennon at that time, created a Commission on Extended Educational Services. He asked the Commission to learn about the ongoing national debate on public service, to examine the present public service activities of all nine colleges, and to educate itself regarding the structure and activities of the Cooperative Extension Service. The Commission was then charged with 1) choosing the narrow (agricultural) or some broader focus, 2) defining public service, 3) suggesting changes in the University's procedures which might better reward public service, and 4) suggesting changes in the University's administrative structure which might improve the delivery of public service to the citizens of South Carolina.

As part of the educational process for the Commission, each of the colleges was asked to provide a summary report of their public service activities. Copies of those summary reports are attached in Appendix XX. The summaries indicate that Clemson was heavily involved in public service activities as of the date those summaries were submitted. Additionally, it appears that the public service activities described in the summaries are easily in keeping with the mission of the University. However, the newly defined public service component clearly indicates a broader perspective of what consititutes public service than that previously used and should eventually be responsible for an increase in activities which would fall within the public service perview. Interestingly, the Commission clearly indicates that the department is the appropriate unit to decide the appropriate relationship among public service, teaching and research.

In the final report the Commission recommended that Clemson University:

1. Utilize the expertise of <u>all</u> of its colleges in responding to the needs of the citizens and communities of South Carolina.
2. Expect all academic units to be responsive to public service requests from the citizens of South Carolina, and assist the colleges and departments in securing the necessary resources required to respond to these requests in a timely way.
3. Adopt the following definition of public service: "Informal and continuing education, technical assistance, or specialized professional consultation rendered on a compensated or non-compensated basis outside the traditional University setting to businesses, industries, agriculture and natural-resource related interests, schools, local governments, state government agencies, or directly to the citizens of South Carolina."
4. Devise a new model for a University-wide extension service, integrating the present Cooperative Extension Service into a campus-wide and statewide public-service organization.
5. Appoint a chief administrative officer for this expanded University extension service, and structure this leadership role so that it occupies a position in (or reports directly to) the central administration of the University.
6. Include a brief description of the threefold mission of the University (teaching, research, and service to the public) in all personnel appointment letters, so that these letters communicate and reinforce the public-service responsibility of every member of the University community.
7. Incorporate into college and departmental guidelines for the retention, promotion, and tenure of faculty members a set of procedures for evaluating and rewarding each candidate's performance in all three areas of the University's land-grant mission, with specific attention to service to the public.
8. Ensure equity in the funding of both public-service and research initiatives within the University's annual operating budget.

Since the Commission finished its study, the University has undergone major re-structuring and a change in Presidents.  These significant changes have slowed the adoption of the recommendations of the Commission.  However, the clarification of focus and issues related to public service provided by the Commission, will undoubtedly lead to an improved ability to assess public service in the future.

CHE COMPONENT 17
RESEARCH


STATEMENT OF PURPOSE:  To ensure that Clemson University meets the research objectives as outlined in the University Mission Statement as well as developing:

      1. A program of applied and basic research, technology transfer activities, and industrial sponsored research.

      2. Links between research, sponsored programs, and graduate education.

EXPECTED RESULTS:  The University will be actively involved in research endeavors at a state, national, and international level.

ASSESSMENT PROCEDURES:  University-level assessment will include:

      1. Comparing the number and quality of research papers, reviews, books and monographs, software, and creative works published across years and among peer institutions.

      2. Tabulating the number of research proposals submitted, the number funded, and the sources and amounts of awards, and expenditures.

      3. Compiling statistics on growth over the years and analyzing the University's position with respect to the top 50 research universities in the country.

ADMINISTRATION OF ASSESSMENT:  The Office of University Research will provide the university-level assessment.

USE OF ASSESSMENT FINDINGS:

INTERNAL:    The university-wide findings will be reported to the Commission on Graduate Education and Research as well as to other appropriate groups, e.g., Council of Academic Deans and the

Faculty Senate.  These groups will use the findings to develop strategies to direct and support research and scholarly activities which are in keeping with the University's research objectives.

EXTERNAL:  The university-wide statistics will be reported to the CHE on a 3 year basis.

REPORTING YEAR:  1995

Component 17
Assessment of Research

PURPOSE: To assure that Clemson University fulfills the research objectives outlined in the University's mission statement, specifically to enhance, interpret, and disseminate the body of human knowledge, serving the state, the nation as a whole, and the international community through teaching, research, and public service activities.  Faculty are responsible for the fulfillment of the mission; they individually, collectively, and in conjunction with all University personnel, generate new knowledge independently and in conjunction with colleagues and students; stimulate creative thought and expression; foster speculative and critical thought; and advance the common good by anticipating and devising new solutions for intellectual, scientific, social and technical problems.

EXPECTED RESULTS:  Departments will meet or exceed their research goals as outlined in their Assessment Plans, with particular attention to fulfilling the mission of the University.

RESULTS:  Most of the departments reporting on their research assessment plans state they met or exceeded their goals for basic and applied research, student participation in research projects, and receiving grants.  Research was describes as serving multiple purposes: expanding human knowledge, solving real-life problems, allowing new discoveries to be incorporated into teaching, and involving students in the problem-solving process which provides them skills needed for their future professions.

Student Involvement:  In 1994, 1903 students were actively engaged in sponsored research, 372 from the upper division and 1531 graduate students.  This represents 5.6% and 37.4% respectively of their population at the University. Clemson University ranks first in the state in terms of percentage of students involved in sponsored research, almost triple the percentage of the next closest institution.  In addition, many more students are involved in unsponsored research--projects not supported by outside funds.  In 1992, the last year figures on unsponsored research were collected, a ratio of 3.3 to 1 existed for unsponsored vs. sponsored research. Extrapolating this ratio to 1994, 6280 students would be involved in unsponsored research.  Thus 8183 or 76% of the upper division/graduate student population were involved in research activities.

Examples from some departmental assessment plans:

Math:  The Department is striving to develop partnerships with local and regional industries in order to provide graduate students with opportunities to work on the type of real world problems they will encounter after graduation

Biological Sciences:  The $10 million agreement signed between Clemson University and the Greenville Hospital System (GHS) has increased the research opportunities of our students and faculty.  GHS has been responsible for arranging several collaborations with doctors at GHS and have been financially supportive of the research efforts of our department as well as helping us resurrect a seminar program that had been decimated by budget cuts.

Forest Resources:  Integrating research findings into the undergraduate education process is involving the presenting of research findings into lecture material, employment of students to work on research projects, and the instruction of students registered for research problem courses.

 Extensive research is being done at Clemson both in the basic and applied modes. $36,428,249 was received for research and sponsored programs from grants in 1994.  In addition,  $20,311,138 was received in research donated equipment, research donated software, research fellowships, research gifts, pledges and donations, and other similar contributions.

During the period 1992 to 1994, $139.8 million in grants were awarded to Clemson University. While the actual number of awards decreased slightly in 1994 over the previous two years, the percentage of awards to requests increased, from 70% to 73%.

It is important to note that research and scholarly endeavors vary in nature from discipline to discipline, and may include the creation of a work of art, the composition of a new piece of music, a study of human behavior, discovering a new use for a chemical compound, or even a new compound itself. All expand human knowledge and provide new ways of looking at the world.

Much of the research at Clemson University has a direct impact on the quality of life of the residents of South Carolina and the region. In keeping with the University's land-grant mission, significant quantities of faculty and student research time has been devoted to solving real problems connected with the state. A perusal of the list of awards and research topics in the 1994 report of Research and Sponsored Program Activity reveals that at least $15,000,000 of the $36,000,000 in grants are identifiable by title as relating directly to issues important to South Carolina and the region. These vary from plant pest surveys to control of peach tree short life in SC, to the small business institute, to water quality analyses, to studies on sustainable coastal development and needs assessment of outdoor recreation for the Charleston Harbor Project, to a summer research experience for undergraduates in mechanical engineering. See the Appendix for the list.

Quality of research

Measures used by departments to judge quality of research by their faculty by and large involve the degree of publication of results in refereed journals, books, presentations at conferences, and awards. Most of the departments reporting on their research assessment cite meeting or surpassing their goals. Some examples:

91% of the Marketing faculty published at least one journal article in the 1994 academic year; 64% had more than one;

Agricultural and Applied Economics faculty produced 52 peer-reviewed publications from 1991-1993;

Economics faculty at Clemson averaged 20.7 citations per faculty member in the Social Sciences Citation Index for 1992-93, exceeding the median for Big 10 schools.

Management faculty's contributions to top-ten journals in operations management during the period 1989-94 was ranked seventh nationally by a team of researchers at the University of Utah.

Two faculty from Accounting received national awards for outstanding research.

Concerns:

Several departments commented that the productivity of the research efforts of their faculty and students was impacted by the reduction of funds received by the University from the state. In order to participate at national conferences where new research is presented, faculty must often expend their own funds. At least one department reported that its entire graduate program was supported by sponsored research, and that new equipment badly needed for research and instruction was often obtainable only through grant funding. University support, as well as outside funding, is critical to the success of these projects to expand the frontiers of knowledge and solve problems in the state and region as well as support this essential part of the educational mission of the University.

Future:  Departmental research assessments will continue to reflect success in achieving their research goals, which will be written to support the mission of the University and the individual department.

Infrastructure support for research will be examined to see if the level and type of support are conducive to or hindering the quality and quantity of research at the University.

See Appendix XX for copies of departmental action plans for the research component.