Lander University
Institutional Effectiveness Summary 2005

According to Section 59-101-350 of the SC Code of Laws, 1976, as amended, each public institution in the state of South Carolina must submit an Institutional Effectiveness Report annually to the South Carolina Legislature and to the people of the state of South Carolina. Lander University's assessment procedures are very much a part of our mission. Lander University has been an institution dedicated to providing higher education to the people of South Carolina, particularly in the upstate region, from its inception, and we want to show the taxpayers of South Carolina, to whom we are accountable, that our institution is both extremely effective and cost-efficient. At Lander University, each unit establishes its program goals and assessment measures to be consistent with both the university's mission statement and each unit's unique area of expertise. Lander University assesses its effectiveness continually, and we strive to maintain educational excellence while working to improve in any area that demonstrates a need for improvement.

The 2005 Institutional Effectiveness Report for Lander University reports on the assessment of educational effectiveness for the following areas, following the Commission on Higher Education's established uniform schedule for reporting:

MAJORS UNDER REVIEW

Full Reports

- Biology

Interim Reports

- Math
- Computer Information Systems

OTHER AREAS UNDER REVIEW

- Library Resources
- Alumni/Placement Survey

ADDITIONAL INFORMATION

- Policies and Procedures for Preparing a Technologically Skilled Workforce: Pursuant to the 2001 legislative amendment to SC 59-101, we include a statement on Lander University's policies and procedures for preparing a technologically skilled workforce.
- Link to Title II report

The various academic units employ a broad array of assessment techniques in their program evaluation, each using multiple measures tailored for the specific qualities of the discipline. During the 2004-2005 academic year, majors Biology reported assessment findings through the CHE Program Reviews, and interim reports were submitted for majors in Math and Computer Information Systems. The table below summarizes the assessment measures used by the majors under review.

Assessment Measures of Majors under Review

Assessment Measure	Full Reports	Interim Reports	
	Biology	Math	Computer Information Systems
Alumni Surveys	X	X	X
Content area exams	X	X	
Exit interviews		X	X
Portfolios	X		X
Graduate School Acceptance/Completion Rates		X	X
Evaluation of curriculum	X		

Program Assessment Summary for Biology

I. Program Goals

The goal of the biology program is to train biologists and to produce graduates who are prepared for post-baccalaureate pursuits including graduate or professional schools and employment in the field (discipline). Program graduates will:

1. possess an understanding of a broad spectrum of the accumulated knowledge in the field of biology.
2. possess a working understanding of the application and performance of technologies and laboratory skills in the discipline.
3. be able to successfully enter and compete in graduate or professional school programs, or be able to secure employment in an area of science.
4. possess an understanding of the vocabulary of the discipline and be able to communicate concepts in biology through the proper use of this vocabulary.

II. Means of Assessment:

Assessment	Goals Addressed	Frequency of Administration	Frequency of Evaluation
Professional Knowledge Exam	1	Annually	Annually
Laboratory Techniques Folio	2	Annually	Annually
Lander University Alumni Survey*	3	Biennially	Every 4 years
Science Division Alumni Survey**	1,2,3,4	Every 4 years	Every 4 years
Writing Sample Folio	4	Annually	Annually

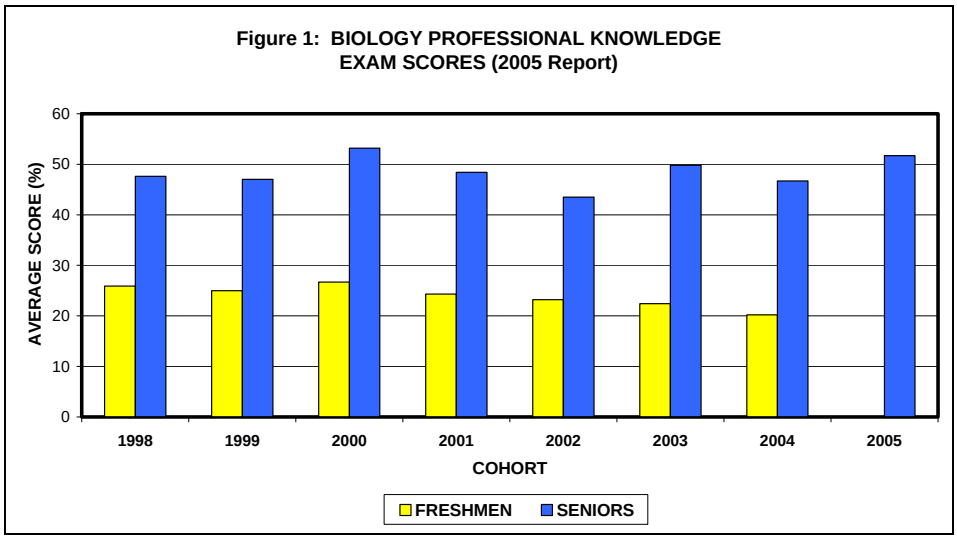
* In the preparation of this report it was discovered that the Lander University Alumni Survey does not collect data by discipline. Therefore, this survey was not utilized in this report.

** With the reorganization of the university in 2003-2004, this became the Biology Alumni Survey

Program Goal 1: Graduates will possess an understanding of a broad spectrum of the accumulated knowledge in the field of biology.

This goal is assessed by the Professional Knowledge Exam and the Biology Alumni Survey. The results of the 2005 Biology Alumni Survey are available online at http://www.lander.edu/biology/2005_alumni_survey_results.htm.

The Professional Knowledge Exam is administered to entering freshmen who have declared a biology major and to seniors graduating with a B.S. degree in biology. As seen in the figure below, scores for graduating seniors are consistently 15 to 25 percentage points higher than the scores for entering freshmen.



Biology alumni were asked to indicate their relative agreement with the following statement: *The biology major provided me with a broad spectrum of knowledge in the field of biology.* Sixty percent of all respondents (n = 47) *strongly agreed* with this statement and forty percent *agreed*.

In order to gain additional assessment information in the future on the extent to which the Department of Biology satisfies Goal 1, the above question from the Biology Alumni Survey will be added to the Senior Exit Interview, which is administered each fall semester to graduating seniors as part of the required Professional Concerns Seminar (BIOL 499).

Program Goal 2: Graduates will possess a working understanding in the application and performance of technologies and laboratory skills in the discipline.

The Biology Laboratory Techniques Folio indicates that biology majors are exposed to a broad range of laboratory skills and technologies in the discipline. A copy of this folio is available online at http://www.lander.edu/biology/documents/Biology_Lab_Techniques_2005.doc.

Biology alumni were asked to indicate their relative agreement with the following statement: *The biology major provided me with a working knowledge of biological laboratory skills and technologies.* Fifty-five percent of all respondents (n = 47) *strongly agreed* with this statement, forty-three percent *agreed*, and two percent had *no opinion*.

Although the initial assessment plan called for the production of a techniques folio annually, this was not conducted in a systematic way. During the preparation of this report the Department of Biology determined that compilation of the folio every four years (to coincide with the cycle of interim and full CHE program reviews) is sufficient to demonstrate the breadth of laboratory techniques utilized by our majors. Therefore, a four-year cycle will be employed for future program reviews. In order to gain additional assessment information in the future on the extent to which the Department of Biology satisfies Goal 2, the above question from the Biology Alumni Survey will be added to the Senior Exit Interview, which is administered each fall semester to graduating seniors as part of the required Professional Concerns Seminar (BIOL 499).

Program Goal 3: Graduates will be able to successfully enter and compete in graduate or professional school programs, or be able to secure employment in an area of science.

Of the 47 respondents to the Biology Alumni Survey, 28% currently hold an advanced degree. These degrees include four Ph.D.s in biological fields, two M.D.s, four Master of Science degrees in biological fields, and four Masters degrees in other fields. Another 21% of respondents are actively pursuing advanced degrees, including two Ph.D.s in biological fields, two M.D.s, one Master of Science degree in a biological field, two Masters degrees in other fields, and three advanced degrees that were unspecified. In response to the statement, "The biology major prepared me well for entry into graduate or professional school," 47% "strongly agreed," 21% "agreed," and 2% "disagreed" with this statement, while 30% indicated "no opinion."

Seventy-four percent of alumni described their first full-time job following graduation as being "highly" (55%) or "moderately" (19%) related to biology. In response to the statement, "The biology major prepared me for employment in biology or another scientific field," 47% "strongly agreed," 34% "agreed," 4% "disagreed," and 2% "strongly disagreed" with this statement, while 13% indicated "no opinion."

Program Goal 4: Graduates will possess an understanding of the vocabulary of the discipline and be able to communicate concepts in biology through the proper use of this vocabulary.

Biology alumni were asked to indicate their relative agreement with the following statement: "The biology major provided me with an understanding of biological vocabulary and with the ability to communicate biological concepts using this vocabulary." Sixty-two percent of the 47 respondents "strongly agreed" and 38% "agreed" with this statement.

Although the initial assessment plan called for the production of a writing sample folio annually, this was not conducted in a systematic way. The written communication skills of biology majors and their use of proper vocabulary are assessed in essentially every course in the program in multiple ways each semester (through written lab reports, term papers, and essay responses to exam questions). For this

reason, in 2005 the Department of Biology voted to abandon the writing sample folio as a means of assessment. In order to gain assessment information in the future on the extent to which the Department of Biology satisfies Goal 4, the above question from the Biology Alumni Survey will be added to the Senior Exit Interview, which is administered each fall semester to graduating seniors as part of the required Professional Concerns Seminar (BIOL 499). An additional means of assessment will also be implemented for the future. As a means of assessing oral competency, all students currently prepare and deliver oral presentations on scientific topics as a component of the required Professional Concerns Seminar (BIOL 499). For the future, a question will be added to the assessment of these presentations that focuses specifically upon the students' understanding of biological vocabulary and their ability to communicate biological concepts using this vocabulary.

Interim Assessment Summary for Math

I. Program Goals

Students graduating from Lander University with a degree in mathematics should have specific competency in:

1. *The Foundations of Mathematics.* This includes first and foremost a firm grounding in the major concepts of mathematics needed for successful continued learning in the field. Students must learn to analyze a given situation, extract the pertinent facts, and then draw correct conclusions. Specifically included are basic algebraic operations, the elements of set theory, and the fundamentals of logic.
2. *Advanced Algebra.* This includes a knowledge of the basic constructs in the fields of linear and abstract algebra. Specifically the student should have a clear understanding of the concepts of group, ring, field, and vector space.
3. *Analysis.* This includes calculus and at least one of the fields of real or complex analysis. Students must have knowledge of continuity, differentiation, integration, sequences and series, and multivariable calculus. Additionally all students will be able to solve the basic differential equations that arise in common applications.
4. *Probability and Statistics.* This includes the acquisition and analysis of data, probability, discrete and continuous probability distributions, estimation using confidence intervals, testing of hypotheses, and linear regression.

II. Means of Assessment:

Assessment	Goals Addressed	Frequency of Administration	Frequency of Evaluation
Alumni Survey (Math & CS Division)	1-4	Triennially	Triennially
Lander University Alumni Survey	None	Biennially	Biennially
Dual-Degree Engineering Students' Acceptance and Successful Completion	1-4	Annually	Triennially
Major Field Achievement Test*	1-4	Annually	Triennially
Senior Exit Interview* (Includes check of oral competency)	None	Annually	Triennially

Since last reporting, Lander University has been reorganized and the Mathematics Major now resides in the Department of Mathematics and Computing. Within the major, students have the choice of completing a (five year) dual-degree engineering program with Clemson University, completing the Secondary Education Certification program, or completing an emphasis option. (The graduate school, the business, and the computer science options are the ones most frequently selected.)

Due to changes in the organization and leadership of the Mathematics program across the last 4 years, the current assessment interim report revealed a variety of assessment issues that need to be addressed in the future. Both strengths and weaknesses of the current assessment plan are highlighted here by method of assessment rather than by program goal.

The Department of Mathematics and Computing Alumni Survey. This was last administered in the spring of 2000. On a three-year cycle, the Spring 2003 cycle was missed due to an oversight when the Division Chair was experiencing medical difficulties. Plans are to update the survey questions during the Fall 2005 semester and administer it during the Spring 2006 semester. Essentially this assessment has not been conducted in a systematic way during the time covered by this report

Lander University Alumni Survey. During the preparation of this report it was discovered that the Lander University Alumni Survey does not collect data by discipline. The usefulness of this assessment tool will be re-evaluated and will likely be removed from subsequent Assessment Plans.

Dual-Degree Engineering Students' Acceptance and Successful Completion. Since May 2001, 12 students have successfully completed the Engineering dual-degree program at Clemson University and have graduated from both institutions. Since May 2001, 13 students matriculated at Clemson in the program. Twelve of them (92%) have either graduated or are making satisfactory progress in their course work at Clemson. One student in the program returned to Lander University to complete a degree in Mathematics after successfully completing (B-average) one semester at Clemson but deciding that he did not want degree in engineering. The continued success of our students in their courses at Clemson attests to the quality of the mathematics education they receive at Lander.

Major Field Achievement Test (MFAT). Available through the Educational Testing Service (ETS), this test is administered as part of the math capstone course, MATH 400, which is offered every spring semester. Some years many of the students in the course are in their Junior year because they are scheduled to leave for Clemson before the following spring. These students have not yet completed all of the course work for the material covered on the MFAT and are, therefore, not as prepared for the MFAT as the students who are graduating seniors. ETS provides individual student scores and the institution's average score. In addition, every few years ETS also provides Individual Total score distributions and Institutional Mean Score Distributions. The most recent comparative national summary data provided by ETS is based on 3877 (senior only) students who took the MFAT in Mathematics between 1999 and 2002.

Lander results from 2002 and 2004:

10/18 scored above the 50th percentile
2/18 scored between the 40th and 50th percentile
6/18 scored below the 25th percentile

- 3 were Juniors (Engineering)
- 1 was a transfer student who did not take any of the calculus sequence at Lander

Our institutional average, for our seniors, in 2002 and 2004 were at the 85th and 30th percentiles in the distribution of national institutional averages for seniors from 1999 through 2002.

Senior Exit Interview Also part of the Capstone course, the exit interview allows the students to reflect on their experiences at Lander and to give feedback orally, in a group interview with faculty members, and also anonymously, on a written evaluation form. The information obtained, including the comments made by students are summarized and presented to the Mathematics faculty for discussion and action. Students are asked to address the curriculum, the quality of instruction, advising, library resources, the equipment and software used in their major classes, and also the General Education program.

Some items mentioned in recent years that have been or will be considered for action include:

- The appropriateness of computer science course requirements
    - Students suggested removing CIS 230 as a pre-requisite for MATH 300 (Numerical Analysis). The course was recently taught without requiring CIS 230 and a permanent change in pre-requisites will be discussed and decided on during the fall 2005 semester.
- The number of hours for free electives; the importance of the emphasis option to the major
    - Faculty have recently removed the requirement of the emphasis option replacing it with 9 hours of mathematics electives and freeing up some hours for general electives
- Students using the Internet for research purposes
    - Faculty will consider the implications of this on the most appropriate use of our Library book budget
- Students suggesting that MATH 134 should be a required course
    - Faculty are not willing to require the course, however, for the next two years student in Calculus I will be strongly encouraged to take MATH 134 the following semester when they are also in Calculus II

During the Spring 2005 Assessment Meeting, the Mathematics faculty discussed student comments about the qualities of effective teachers. A suggestion was made to develop a means of assessing some of these qualities on a regular basis through the annual peer review process for faculty. This will be pursued during the next academic year.

Another future plan is to perform an analysis of historical MFAT data to determine an appropriate expectation of student performance and to distinguish between junior and senior performance to more appropriately use the MFAT summary information on seniors, and to attempt to document any real performance differences between the students in our dual-degree engineering program (who are juniors) and our graduating seniors.

Interim Assessment Summary for Computer Information Systems

The Computer Science Program has had four goals based on competencies in four specified areas and also one competency in a special interest area chosen by the student. This program is being phased out and being replaced by a program in Computer Information Systems. Changes to the Assessment Plan are being discussed and implemented in light of the ABET Accreditation Standards for programs in Information Systems.

OTHER AREAS UNDER REVIEW

Library Resources

I. PURPOSE OF PROGRAM

The Jackson Library is a central resource of information for the entire University. The Library is responsible for library services, instruction, and resources to meet the needs of the faculty, undergraduate students, graduate students, and staff as part of the education experience of Lander University. Material in all formats is provided to support and implement the instructional programs of the University. The library provides access to information for the Lander community as well as for the GLEAMNS community (Greenwood, Laurens, Edgefield, Abbeville, McCormick, Newberry, and Saluda counties).

II. MEANS OF ASSESSMENT:

Assessment	Frequency of Administration	Frequency of Evaluation
Monitoring of Bibliographic Instruction for Students	Ongoing	Variable
Monitoring Interlibrary Loan Use	Ongoing	Variable
Monitoring Student Use	Ongoing	Variable
Surveying Faculty and Students	Ongoing	Variable
Checking Standard Bibliographies Against Collection	Variable	Variable

Program Assessment 1: Monitoring of Bibliographic Instruction for Students:

Every student who takes English 101 and 102 receives bibliographic instruction. In addition, faculty members may ask for bibliographic instruction for other classes, both upper and lower division classes. The table below gives the number of classes offered and the number of students taught over a three-year period.

	2001-2002	2002-2003	2003-2004
Number of Classes Offered	106	121	184
Number of Students Taught	1,692	2,058	1,729

The English 101 and 102 classes include a brief lecture and demonstration by a librarian, and that is followed by the use of the resources by students. In 2001-2002, bibliographic instruction for these two classes was revised to include a much-needed electronic component for teaching the searching of databases. This was possible because there were a few more computers available. Decisions were made about the databases to include. By the end of the 2003-2004 academic year, there were enough computers so that an entire class could have access to one. At this point there was a major revision of instruction to include more use of electronic resources. The bibliographic instruction for English 101 classes was completely revised. In the 2003-2004 student survey, 97 percent of the students responding agreed or were neutral about electronic databases providing relevant information for their assignments.

Since the English 101 classes are in the library for a week of instruction, English 101 students are asked to evaluate the bibliographic instruction classes, and the results are consistently good. The evaluations of the English 101 classes indicated satisfaction with the instruction. Two important questions received good responses:

	2001-2002	2002-2003	2003-2004
Percent who indicated that the use of practical experience through an exercise helped	97%	97%	96%
Percent who felt free to ask a librarian for help	99%	99%	100%

Knowing the number of students receiving bibliographic instruction keeps the librarians aware of the percentage of Lander students who have basic knowledge of locating material and using search strategies. The use of the evaluation in English 101 keeps the librarians aware of how effective the bibliographic instruction is.

Program Assessment 2: Monitoring Interlibrary Loan Use

The availability of more full-text electronic resources provided by the State of South Carolina has helped greatly in providing information needed by faculty and students. The use of interlibrary loans increased slightly from 1,143 in 2001-2002 to 1,280 in 2003-2004. In 2003-2004, 8% of the students and 82% of the faculty surveyed had used interlibrary loan services. Ninety-nine percent of the faculty who responded to the 2003-2004 survey indicated satisfaction or no opinion with the interlibrary loan services. In addition, often faculty members who use interlibrary loan services will comment favorably on the services. No changes need to be made in this area unless the future state-wide union catalog and state-wide courier services make changes necessary.

Program Assessment 3: Monitoring Student Use

Student use is monitored in several ways: observation, door count, use of circulation, electronic searches, copies made, and count by hour. Several changes were made to facilitate student use. To give students computer access anywhere in the library, nine laptops were placed on reserve. An ADA compliant workstation for wheelchair accessibility was purchased. The goal was reached to provide enough computers to give an entire class of students adequate access to electronic sources and for bibliographic instruction. A microform reader printer that was able to digitize microforms was purchased. A scanner was provided for student use in their assignments. Remote patron authentication was installed to permit students to assess the library's electronic resources from off-campus and from anywhere in the world. The lack of use of one electronic database resulted in cancellation of the title.

Program Assessment 4: Survey Faculty and Students

For the first time, in 2002-2003, students and faculty were given an opportunity to respond to an electronic library survey. Until that time paper surveys had been used. Surveying electronically made it possible for each student to have a chance to respond. Surveys had always been sent to all faculty members. The responses were favorable, and no corrective actions were needed.

Program Assessment 5: Checking Standard Bibliographies Against Collection

Checking standard bibliographies against the collection gives an idea of the strength of the collection in various areas, provides suggestions for titles to order, and makes titles in the reference collection easier to use in answering reference questions. Over a three-year period of time, fourteen bibliographies were checked against the online catalog. Some were checked in order to identify material that needed to be purchased. For example, *Brandon/Hill Selected List of Print Nursing Books and Journals* was checked against the collection, and several books were purchased to strengthen the nursing collection.

Alumni/Placement Survey: 2001-2002 Graduates

Click here to access Institutional Alumni Survey Summary
Click here to access Placement Data on Graduates Summary

Policies and Procedures for Preparing a Technologically Skilled Workforce

Lander University has a proactive plan for ensuring that its students receive a superior undergraduate education, including the use of computer and other technologies that they will be able to use effectively when they enter the workforce. The core of the plan is to provide the faculty with the tools and training required to integrate technology into teaching and learning; to ensure that the staff can effectively and efficiently provide student support processes; to ensure that students have computers to access academic, financial, and other information at any time and place that they need or desire to support their education; to enable the University to provide a superior education for its students; and to provide access through technology to those students who wish to study at Lander but who must do so through long-distance and web based instruction.

In order to achieve these goals, we adopted the following plan in 2002. The plan called for

- 95% of the faculty to have laptop computers by the end of the 2004-05 academic year.
- A "Technology Learning Center" to provide training for faculty and staff.
- The conversion of our traditional classrooms into "smart" classrooms
- The purchase and implementation of one student information systems software package and one course management software package
- Conversion of the campus into a wireless campus
- Student training in the use of the student information and course management software

This plan has been successfully implemented, and many goals largely achieved. The following provides highlights of our success.

As of August 2005, approximately ninety (90) percent of the University's full-time faculty members have been issued laptop computers. The Technology Learning Center has been established, staffed, and ongoing training of continuing and new faculty is provided on a routine basis. Forty-two (42) classrooms have been converted into "smart" classrooms, which represents 82% of the University's total classrooms and 100% of the classrooms to date that can be converted to smart classrooms. Smart classrooms, by definition, are equipped with all of the electronics required for the faculty member to use computer technology in teaching, including access to the internet from the classroom. From the records that we keep on the number of hours each classroom is used, the classrooms are used extensively, and the number of hours used has increased each semester. WebCT® and SCT Banner® software has been purchased. WebCT is used for on-ground and on-line classes. SCT Banner, which is an information systems software package, became operational in March of 2005. As of this date, all of the University's academic buildings have wireless capabilities. Finally, the University offers its RN to BSN program and its Health Care Management Certificate Program on-line and the State's Commission on Higher Education has recently approved Lander to develop an online BS degree completion program in Criminal Justice Management to serve law enforcement officers needing the Baccalaureate degree to advance within their profession.

During the summer of 2005, the University moved its long-distance classroom to a new facility and upgraded its capabilities. Among the improvements made is a new full T1 line which will substantially improve the quality of the audio and video images sent between classrooms at the University in Greenwood and the University Center of Greenville.

Beginning this fall (August 2005) freshmen are required to either purchase or ensure that they have 24/7 access to a laptop computer. By 2009 all students will be expected to meet this requirement. In August of 2004, freshmen students began their classes one week prior to continuing students. This year, with the University entering an agreement with Gateway® to become a Gateway campus, the Freshman

Academic Orientation Week was modified. Gateway representatives and Lander IT staff will be involved in training sessions to ensure that each student computer is fully functional prior to the beginning of regular classes. In addition, mini courses are provided, which involve an introduction to and use of WebCT.

Currently, almost all of the University's academic programs involve the use of computers and other technologies to some degree. In the sciences, computers are now interfaced with most of the laboratory equipment used in our undergraduate programs. In our mathematics program, statistics courses are almost entirely computer based. These computers were originally purchased though a grant. In the College of Education, specifically in the departments of Psychology and Teacher Education, computer laboratories have been established to support the needs of the two departments. The Department of Psychology uses the computers extensively, through the use of SPSS software to enhance the research capabilities of their students. In the Department of Teacher Education, the use of computer technology applicable to K-12 classroom instruction is provided to all education majors to ensure that they will be able to integrate computer technology into their teaching upon employment in the State's school districts. In the Department of Nursing, computers and PDAs are used extensively in their academic and clinical training. In the Department of Business, a computer laboratory was established to support the education of business majors, specifically in regards to the role of computers in the support of accounting, finance, and marketing courses. Finally, in our Department of Art, a MAC® lab was established to support graphics art education.

During the 2004-05 academic year, a tablet-laptop hybrid computer pilot project was implemented. Ten faculty members were selected to participate and used the tablet-laptop hybrid computers for the 2004-05 academic year. Feedback about their experiences was gathered from each faculty participant and, as a result of positive experiences with the hybrid computers, the University adopted a policy to enable faculty members to choose between a hybrid and regular laptop, depending upon the needs of the faculty member.

In August 2005, a digital signage system will be operational. This system consists of a number of digital plasma screens, strategically located in academic buildings. The system will enable the University to provide students, staff, and visitors with up-to-date visual information on events, classes, inclement weather announcements, and, to some degree, world events, all simultaneously through split-screen imaging.

Finally, in the spring of 2006, Centennial Hall, a new 300 bed residence hall is expected to open. It will have wireless internet access as well as at least one smart classroom.

prepared by: Michael E. Sonntag, Ph.D., Director of Assessment and Planning, msonntag@lander.edu

END OF DOCUMENT