Detailed Assessment Report
2013-2014 Biology B.S. / Marine Science B.S. / Microbiology B.S.
As of: 7/16/2014 01:16 PM CENTRAL

Analysis Questions and Analysis Answers

For Academic Programs

Informed by your assessment activities related to student learning, what changes have you made in your degree program in the last three to five years? Describe the changes (e.g., curriculum revision, new courses, faculty development), the general results that prompted the changes (e.g., student performance on an assessment measure), and any impact on student learning that you might attribute to these changes.

The implementation of the assessment activities during the past three years in the Department of Biological Sciences has resulted in the improvement of several areas:

1. Quality of instruction: The students responding to our senior exit survey provided excellent feedback on our instruction and curriculum. As an average 82.5% of senior students agree with the following statement "the quality of instruction is adequate to enable me to learn the materials presented". Additionally, 87.5% of senior students also considered faculty to be accessible and helpful to them.

2. Enrichment courses: An increase of over 20% in enrollment in enrichment courses has been a trend in the department. These courses allow our students to have a hands-on research experience in individual faculty laboratories exposing them to the most current techniques and ideas in biological sciences.

3. Course Assessment: Our course assessment has dramatically increased from the first year biology courses (8 courses) to currently include all the core courses required for a biology major (14 courses).

4. Faculty Service: 100% of our faculty are involved in outreach activities, including research publications (2.5 per faculty per year) and submission of research grants (2.7 submissions per faculty per year).

The impact of these assessment outcomes are as follows:

We have overhauled our core curriculum to modernize our course offerings and have a faculty retreat planned for this August where we will finalize these changes for addition to the undergraduate catalog. We are also planning to increase the diversity of courses offered in the department in response to feedback from the senior exit survey and implement assessment in courses that are not currently in the core biology curriculum. These past three years of assessment have resulted in changes that complement the original tripartite goals (teaching, research & service) of the Department of Biological Sciences.

Mission / Purpose

The Mission of the Department of Biological Sciences is to provide high quality instruction to students at the undergraduate and graduate levels with an emphasis on active learning and problem solving. The department is committed to the advancement of knowledge through research and scholarly activities. Our faculty participates in outreach to the state, nation and world through service to the university community, to public, governmental and industrial sectors, and to professional societies. Within its areas of expertise, the department supports the tripartite mission of the University in teaching, research, and service.

Student Learning Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 1: Discipline Specific Knowledge
Students who complete this program will apply skills used in biology laboratories and field research.

Connected Document
Biology Undergraduate Curriculum Maps

Relevant Associations:
Student Learning Outcome #1 Improvement Action to be advanced:

We will continue with the process of gathering data following current procedures. In light of our recent program review, the department is reviewing and developing a more standardized rubric for reporting of data regarding assessment of student learning at the 100-level.

Standard Associations
SACS 3.3.1
3.3.1.1 Educational programs, to include student learning outcomes

Strategic Plan Associations
University of Alabama
1.1 Promote and enhance areas of academic, scholarship, and research excellence.
3.4 Increase involvement of undergraduate students in research and scholarly activities.
3.14 Provide career preparation and employment services that lead graduates to satisfying and productive careers and professions.

Related Measures
M 1: Laboratory Grades
Students must pass course-associated laboratories with a grade of D or higher. We will calculate the percent of students who pass these courses.

Source of Evidence: Academic direct measure of learning - other

Target:
For continued improvement in our core introductory Biology courses, our goal is that 80% of students will have a grade of C- or above in the 2013-2014 academic year. To determine the impact of the improvement initiative we will compare the new findings to the previous assessment findings. There are no conclusions at this time.

M 2: Scientific Method
Students will test various biological problems in order to learn and apply the scientific method in BSC laboratory courses. Calculate percent of students who receive a C or higher on the laboratory portion of courses.

Source of Evidence: Academic direct measure of learning - other

Target:
At least 70% of students will receive a grade of C- or higher.

Finding (2013-2014) - Target: Met
89% of students (n=1448) passed the laboratory sections of their courses with a C- or higher. We conclude that students are obtaining adequate knowledge of discipline specific material and the scientific method within our laboratory course offerings.

M 3: Senior Biology Majors Assessment Survey
Students will be asked if they found the laboratory experiences useful for developing an understanding of their field on the 2011-2012 Senior Biology Majors Assessment Survey.

Source of Evidence: Student course evaluations on learning gains made

Target:
Student opinion will be assessed via the senior survey.

M 4: Undergraduate Research and Instruction
As a department our goal is for at least 20% of all Biology majors to participate in BSC 398 Undergraduate Research and/or BSC 403 Introduction to BSC Instruction.

Source of Evidence: Academic indirect indicator of learning - other

Target:
For the 2013-2014 academic year we will increase the percentage of majors participating in BSC 398 and BSC 403 to 25%. To determine the impact of the improvement initiative we will compare the new findings to the previous assessment findings.

Finding (2013-2014) - Target: Not Met
For the 2013-2014 academic year a total of 208 undergraduate students were registered for BSC 398 and 28 students were registered in BSC 403. This is a total of 236 undergraduate students representing 19.7% of our undergraduate biology majors (1200 total). This is close to our original goal of 20% participation but it is short of this year’s goal of 25% participation. One thing that is apparent from the data is that participation by active research labs is uneven in the department. Incentives (i.e. some financial support for undergraduate research) to encourage faculty to accept undergraduate researchers into their labs may result in greater faculty participation leading to more opportunities for undergraduates to have a research experience at UA.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

Increase advertising of opportunities
Established in Cycle: 2011-2012
Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise ...

Advertising: look into additional funding incentives
Established in Cycle: 2013-2014
We will continue to advertise BSC 398 opportunities to our students. We will inquire about the possibility of obtaining funds f...

M 10: Assess for Level of Conceptual Knowledge
Pre-test/post-tests will be used in 100-level courses to assess the level of conceptual knowledge that students attain during the courses. We will consider a level of 70% of students passing at post-test acceptable.

Source of Evidence: Faculty pre-test / post-test of knowledge mastery

Target:
We will consider a level of 70% of students passing at post-test acceptable.

SLO 2: Scientific Inquiry, Critical Analysis and Communication
Students who complete this program will be involved in the process of scientific inquiry, critical analysis of data, and communication of scientific results.

Connected Document
Biology Undergraduate Curriculum Maps
**Relevant Associations:**

Student Learning Outcome #2 Improvement Action(s) to be advanced:

We will continue with the process of gathering data following current procedures. In light of our recent program review, the department is reviewing and developing a more standardized rubric for reporting of data regarding assessment of student learning at the 100-level.

**Standard Associations**

- **SACS 3.3.1**
  - 3.3.1.1 Educational programs, to include student learning outcomes

**Strategic Plan Associations**

- University of Alabama
  - 1.5 Effectively use course offerings and class size to support priorities.
  - 3.4 Increase involvement of undergraduate students in research and scholarly activities.
  - 3.8 Equip classrooms, libraries, and laboratories for state-of-the-art learning.

**Related Measures**

**M 4: Survey Question Regarding Writing**

Seniors will be asked whether they had an experience in independent study, active learning, service learning, undergraduate research or undergraduate teaching and if they found the writing requirement beneficial on the 2011-2012 Senior Biology Majors Assessment Survey. A minimum of 70% of seniors who agree or strongly agree will be considered acceptable.

**Source of Evidence:** Student course evaluations on learning gains made

**Target:**

A minimum of 75% of responding seniors who agree or strongly agree will be considered acceptable in the 2013-2014 academic year. To determine the impact of the improvement initiative we will compare the new findings to the previous assessment findings.

**M 4: Undergraduate Research and Instruction**

As a department our goal is for at least 20% of all Biology majors to participate in BSC 398 Undergraduate Research and/or BSC 403 Introduction to BSC Instruction.

**Source of Evidence:** Academic indirect indicator of learning - other

**Target:**

For the 2013-2014 academic year we will increase the percentage of majors participating in BSC 398 and BSC 403 to 25%. To determine the impact of the improvement initiative we will compare the new findings to the previous assessment findings.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the Details of Action Plans section of this report.

**Increase advertising and awareness**

*Established in Cycle: 2011-2012*

Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise...

**SLO 3: Content Knowledge**

Students who complete this program will have a broad understanding of biology with depth in one area.

**Relevant Associations:**

Student Learning Outcome #3 Improvement Action(s) to be advanced:

We will continue with the process of gathering data following current procedures. In light of our recent program review, the department is reviewing and developing a more standardized rubric for reporting of data regarding assessment of student learning at the 100-level.

**Related Measures**

**M 4: Undergraduate Research and Instruction**

As a department our goal is for at least 20% of all Biology majors to participate in BSC 398 Undergraduate Research and/or BSC 403 Introduction to BSC Instruction.

**Source of Evidence:** Academic indirect indicator of learning - other

**M 5: Course-embedded Assessment**

Students will take a pre-test in courses and questions will be embedded in all exams (post-test) throughout the semester to gauge student learning.

**Source of Evidence:** Faculty pre-test / post-test of knowledge mastery

**Target:**

For the 2013-2014 academic year, our goal is to implement pre-tests and post-tests in all core courses. To determine the impact of the improvement initiative we will compare the new findings to the previous assessment findings.

**M 6: Survey Question Regarding Depth**

Seniors will be asked whether they had courses that gave them a comprehensive understanding of biological principles on the Senior Biology Majors Assessment Survey. A minimum of 70% of seniors who agree or strongly agree will be considered acceptable. (measure addressing evaluation of improvement action, if any)
Source of Evidence: Student course evaluations on learning gains made

Target:
A minimum of 70% of seniors who agree or strongly agree will be considered acceptable. (measure addressing evaluation of improvement action, if any)

SLO 5: Depth of Knowledge
Students who complete this program will have a broad understanding of biology with depth in several areas.

Relevant Associations:

Standard Associations
SACS 3.3.1
3.3.1.1 Educational programs, to include student learning outcomes

Strategic Plan Associations
University of Alabama
1.1 Promote and enhance areas of academic, scholarship, and research excellence.
3.4 Increase involvement of undergraduate students in research and scholarly activities.

Related Measures

M 4: Undergraduate Research and Instruction
As a department our goal is for at least 20% of all Biology majors to participate in BSC 398 Undergraduate Research and/or BSC 403 Introduction to BSC Instruction.
Source of Evidence: Academic indirect indicator of learning - other

M 6: Survey Question Regarding Depth
Seniors will be asked whether they had courses that gave them a comprehensive understanding of biological principles on the Senior Biology Majors Assessment Survey. A minimum of 70% of seniors who agree or strongly agree will be considered acceptable. (measure addressing evaluation of improvement action, if any)
Source of Evidence: Student course evaluations on learning gains made

Other Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

OthOtnm 4: Sustain High Level of Recognized Quality
The program will improve and sustain a high level of recognized quality.

Relevant Associations:

Standard Associations
SACS 3.3.1
3.3.1.1 Educational programs, to include student learning outcomes

Strategic Plan Associations
University of Alabama
1.1 Promote and enhance areas of academic, scholarship, and research excellence.
4.1 Provide leadership in addressing economic, social, and cultural issues in Alabama through research and outreach activities.

Related Measures

M 7: Analyze Strengths
We will use the 8-year program review to analyze our strengths.

Source of Evidence: Evaluations

Target:
No target established.

Related Action Plans (by Established cycle, then alpha):
Make changes/improvements based on review
Established in Cycle: 2011-2012
Based on our review the department chair and faculty will implement recommended changes per our 2011-2012 program review.
For full information, see the Details of Action Plans section of this report.

M 8: Search for Opportunities for Improvement
We will use the 8-year program review to search for opportunities for improvement.
Source of Evidence: Evaluations

Target:
No target established.

M 9: Improvements Made as Result of Review
As a result of information received from program review, annual senior survey information and annual input from faculty we will address the needs of our students and make improvements to our curriculum.
Source of Evidence: Administrative measure - other

Target:
The majority vote of the faculty on the full integration of the new core courses (Ecology/Evolution, Cell Biology/Biochemistry and Genetics/Genomics).
**Finding (2013-2014) - Target: Partially Met**
Faculty retreats, weekly seminars, annual graduate picnic, annual welcome gatherings and monthly faculty meetings have improved the collaboration and communication among students, staff and faculty. A new building was recently completed (Science and Engineering Complex) to house most of the faculty in order to improve teaching and research infrastructure in the department. New implementation of DegreeWorks, the 2-year course planning chart and new faculty offering new courses have greatly improved the number and variety of courses offered by the department. New technological improvements such as clickers, tegrity, and the symposium system have greatly improved the technology available in our courses.

A new program review was completed recently and one of the actions for improvement recommended was the full integration of core courses such as Ecology/Evolution, Cell Biology/Biochemistry and Genetics/Genomics. This overhaul to our core curriculum is needed in order to improve integration of fundamental biological concepts without repetition of topics between courses and to highlight new advancements in biotechnology and the systems approach to biological sciences. We are in the process of designing these courses as a faculty. There are no conclusions at this time.

**Related Action Plans (by Established cycle, then alpha):**

Integration of core biology courses  
*Established in Cycle: 2013-2014*
As a faculty we are redesigning our core Biology curriculum in order to present a more integrated approach to modern biology to ...

For full information, see the Details of Action Plans section of this report.

**Details of Action Plans for This Cycle (by Established cycle, then alpha)**

**Increase advertising and awareness**

Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise these opportunities to students during advising, via emails to all Biology majors and through presentations at the Biology Honor society meetings (Tri-Beta). We are also in the process of developing an undergraduate teaching fellows program that will recruit students to BSC 403.

*Established in Cycle: 2011-2012*  
*Implementation Status: Planned*  
*Priority: High*

**Relationships (Measure | Outcome/Objective):**

Measure: Undergraduate Research and Instruction | Outcome/Objective: Scientific Inquiry, Critical Analysis and Communication

**Increase advertising and awareness**

Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise these opportunities to students during advising, via emails to all Biology majors and through presentations at the Biology Honor society meetings (Tri-Beta). We are also in the process of developing an undergraduate teaching fellows program that will recruit students to BSC 403.

*Established in Cycle: 2011-2012*  
*Implementation Status: Planned*  
*Priority: High*

**Increase advertising of opportunities**

Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise these opportunities to students during advising, via emails to all Biology majors and through presentations at the Biology Honor society meetings (Tri-Beta). We are also in the process of developing an undergraduate teaching fellows program that will recruit students to BSC 403.

*Established in Cycle: 2011-2012*  
*Implementation Status: Planned*  
*Priority: High*

**Relationships (Measure | Outcome/Objective):**

Measure: Undergraduate Research and Instruction | Outcome/Objective: Discipline Specific Knowledge

**Projected Completion Date: 06/2013**

**Make changes/improvements based on review**

Based on our review the department chair and faculty will implement recommended changes per our 2011-2012 program review.

*Established in Cycle: 2011-2012*  
*Implementation Status: Planned*  
*Priority: High*

**Relationships (Measure | Outcome/Objective):**

Measure: Analyze Strengths | Outcome/Objective: Sustain High Level of Recognized Quality

**Advertising; look into additional funding incentives**

We will continue to advertise BSC 398 opportunities to our students. We will inquire about the possibility of obtaining funds from the Department or College to support undergraduates doing research as an incentive for greater faculty participation.

*Established in Cycle: 2013-2014*  
*Implementation Status: Planned*  
*Priority: High*

**Relationships (Measure | Outcome/Objective):**
**Measure:** Undergraduate Research and Instruction | **Outcome/Objective:** Discipline Specific Knowledge

**Integration of core biology courses**

As a faculty we are redesigning our core Biology curriculum in order to present a more integrated approach to modern biology to our students. We expect to have these changes in place for approval within the next year. We will assess the impact of this improvement initiative by faculty review and vote of acceptance.

**Established in Cycle:** 2013-2014
**Implementation Status:** In-Progress
**Priority:** High

**Relationships (Measure | Outcome/Objective):**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Outcome/Objective</th>
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</thead>
<tbody>
<tr>
<td>Improvements Made as Result of Review</td>
<td>Sustain High Level of Recognized Quality</td>
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**Projected Completion Date:** 09/2015
Mission / Purpose

The Mission of the Department of Biological Sciences is to provide high quality instruction to students at the undergraduate and graduate levels with an emphasis on active learning and problem solving. The department is committed to the advancement of knowledge through research and scholarly activities. Our faculty participates in outreach to the state, nation and world through service to the university community, to public, governmental and industrial sectors, and to professional societies. Within its areas of expertise, the department supports the tripartite mission of the University in teaching, research, and service.

Student Learning Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 1: Discipline Specific Knowledge
Students who complete this program will apply skills used in biology laboratories and field research.

Connected Document
Biology Undergraduate Curriculum Maps

Relevant Associations:
Student Learning Outcome #1 Improvement Action to be advanced:

We will continue with the process of gathering data following current procedures. In light of our recent program review, the department is reviewing and developing a more standardized rubric for reporting of data regarding assessment of student learning at the 100-level.

Standard Associations
SACS 3.3.1
3.3.1.1 Educational programs, to include student learning outcomes

Strategic Plan Associations
University of Alabama
1.1 Promote and enhance areas of academic, scholarship, and research excellence.
3.4 Increase involvement of undergraduate students in research and scholarly activities.
3.14 Provide career preparation and employment services that lead graduates to satisfying and productive careers and professions.

Related Measures

M 1: Laboratory Grades
Students must pass course-associated laboratories with a grade of D or higher. We will calculate the percent of students who pass these courses.

Source of Evidence: Academic direct measure of learning - other

Target:
Grade of D- or above.

Finding (2012-2013) - Target: Met
Findings: 92% of students (n=1658) passed the laboratory sections of their courses with a D or higher. Interpretation / Conclusions: Overall, our students have demonstrated that they have obtained discipline specific knowledge in their biology courses.

M 2: Scientific Method
Students will test various biological problems in order to learn and apply the scientific method in BSC laboratory courses. Calculate percent of students who receive a C or higher on the laboratory portion of courses.

Source of Evidence: Academic direct measure of learning - other

Target:
Grade of C- or higher.

M 3: Senior Biology Majors Assessment Survey
Students will be asked if they found the laboratory experiences useful for developing an understanding of their field on the 2011-2012 Senior Biology Majors Assessment Survey.

Source of Evidence: Student course evaluations on learning gains made

Target:
Student opinion will be assessed via the senior survey.

Finding (2012-2013) - Target: Met
All graduating seniors (n=157) were assessed via the senior survey. Overall, students found their experiences...
within the biology major were positive particularly those who participated in undergraduate research. We conclude that our program is providing a positive experience for our undergraduates.

**M 4: Undergraduate Research and Instruction**

As a department our goal is for at least 20% of all Biology majors to participate in BSC 398 Undergraduate Research and/or BSC 403 Introduction to BSC Instruction.

Source of Evidence: Academic indirect indicator of learning - other

**Target:**

We will track the number of students participating in BSC 398 and BSC 403 each year.

**Finding (2012-2013) - Target: Met**

224 students (20% of all majors) participated in BSC 398 and in BSC 403 in the 2011-2012 academic year. Interpretations: Although the percentage of students participating remained the same the actual number of students in BSC 398 and BSC 403 increased.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the Details of Action Plans section of this report.

**Increase advertising of opportunities**

Established in Cycle: 2011-2012

Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise ...

**M 10: Assess for Level of Conceptual Knowledge**

Pre-test/post-tests will be used in 100-level courses to assess the level of conceptual knowledge that students attain during the courses. We will consider a level of 70% of students passing at post-test acceptable.

Source of Evidence: Faculty pre-test / post-test of knowledge mastery

**Target:**

We will consider a level of 70% of students passing at post-test acceptable.

**Finding (2012-2013) - Target: Met**

More than 70% of students passed the post-test examinations.

**SLO 2: Scientific Inquiry, Critical Analysis and Communication**

Students who complete this program will be involved in the process of scientific inquiry, critical analysis of data, and communication of scientific results.

**Connected Document**

*Biology Undergraduate Curriculum Maps*

**Relevant Associations:**

Student Learning Outcome #2 Improvement Action(s) to be advanced:

We will continue with the process of gathering data following current procedures. In light of our recent program review, the department is reviewing and developing a more standardized rubric for reporting of data regarding assessment of student learning at the 100-level.

**Standard Associations**

*SACS 3.3.1*

3.3.1.1 Educational programs, to include student learning outcomes

**Strategic Plan Associations**

University of Alabama

1.5 Effectively use course offerings and class size to support priorities.

3.4 Increase involvement of undergraduate students in research and scholarly activities.

3.8 Equip classrooms, libraries, and laboratories for state-of-the-art learning.

**Related Measures**

**M 4: Survey Question Regarding Writing**

Seniors will be asked whether they had an experience in independent study, active learning, service learning, undergraduate research or undergraduate teaching and if they found the writing requirement beneficial on the 2011-2012 Senior Biology Majors Assessment Survey. A minimum of 70% of seniors who agree or strongly agree will be considered acceptable.

Source of Evidence: Course student evaluations on learning gains made

**Target:**

A minimum of 70% of responding seniors who agree or strongly agree will be considered acceptable.

**Finding (2012-2013) - Target: Met**

Over 70% of the seniors participating in the survey found the writing component acceptable.

**M 4: Undergraduate Research and Instruction**

As a department our goal is for at least 20% of all Biology majors to participate in BSC 398 Undergraduate Research and/or BSC 403 Introduction to BSC Instruction.

Source of Evidence: Academic indirect indicator of learning - other

**Target:**

We will track the number of students participating in BSC 398 and BSC 403 each year.

**Finding (2012-2013) - Target: Met**

224 students (20% of all majors) participated in BSC 398 and in BSC 403 in the 2011-2012 academic year. Interpretations: Although the percentage of students participating remained the same the actual number of
students in BSC 398 and BSC 403 increased.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the Details of Action Plans section of this report.

**Increase advertising and awareness**
*Established in Cycle: 2011-2012*
Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise...

**SLO 3: Content Knowledge**
Students who complete this program will have a broad understanding of biology with depth in one area.

**Relevant Associations:**
Student Learning Outcome #3 Improvement Action(s) to be advanced:
We will continue with the process of gathering data following current procedures. In light of our recent program review, the department is reviewing and developing a more standardized rubric for reporting of data regarding assessment of student learning at the 100-level.

**Related Measures**

**M 4: Undergraduate Research and Instruction**
As a department our goal is for at least 20% of all Biology majors to participate in BSC 398 Undergraduate Research and/or BSC 403 Introduction to BSC Instruction.
Source of Evidence: Academic indirect indicator of learning - other

**M 5: Course-embedded Assessment**
Students will take a pre-test in courses and questions will be embedded in all exams (post-test) throughout the semester to gauge student learning.
Source of Evidence: Faculty pre-test / post-test of knowledge mastery

**Target:**
Pre-tests and post-tests will be administered in all 100-level courses.

**Finding (2012-2013) - Target: Met**
100% of all BSC 100-level courses have implemented pre-tests with questions embedded in all exams post-test.

**M 6: Survey Question Regarding Depth**
Seniors will be asked whether they had courses that gave them a comprehensive understanding of biological principles on the Senior Biology Majors Assessment Survey. A minimum of 70% of seniors who agree or strongly agree will be considered acceptable. (measure addressing evaluation of improvement action, if any)
Source of Evidence: Student course evaluations on learning gains made

**Target:**
A minimum of 70% of seniors who agree or strongly agree will be considered acceptable. (measure addressing evaluation of improvement action, if any)

**Finding (2012-2013) - Target: Met**
85% of seniors participating in the survey agreed.

**SLO 5: Depth of Knowledge**
Students who complete this program will have a broad understanding of biology with depth in several areas.

**Relevant Associations:**

**Standard Associations**
* SACS 3.3.1
  3.3.1.1 Educational programs, to include student learning outcomes

**Strategic Plan Associations**
University of Alabama
  1.1 Promote and enhance areas of academic, scholarship, and research excellence.
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**Related Measures**

**M 4: Undergraduate Research and Instruction**
As a department our goal is for at least 20% of all Biology majors to participate in BSC 398 Undergraduate Research and/or BSC 403 Introduction to BSC Instruction.
Source of Evidence: Academic indirect indicator of learning - other

**M 6: Survey Question Regarding Depth**
Seniors will be asked whether they had courses that gave them a comprehensive understanding of biological principles on the Senior Biology Majors Assessment Survey. A minimum of 70% of seniors who agree or strongly agree will be considered acceptable. (measure addressing evaluation of improvement action, if any)
Source of Evidence: Student course evaluations on learning gains made

**Other Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans**
OthOtom 4: Sustain High Level of Recognized Quality

The program will improve and sustain a high level of recognized quality.

**Relevant Associations:**

**Standard Associations**

**SACS 3.3.1**

3.3.1.1 Educational programs, to include student learning outcomes

**Strategic Plan Associations**

University of Alabama

1.1 Promote and enhance areas of academic, scholarship, and research excellence.

4.1 Provide leadership in addressing economic, social, and cultural issues in Alabama through research and outreach activities.

**Related Measures**

**M 7: Analyze Strengths**

We will use the 8-year program review to analyze our strengths.

Source of Evidence: Evaluations

**Target:**

No target established.

**Finding (2012-2013) - Target: Met**

Our program was reviewed by both internal and external reviewers. We are currently in the process of reviewing and implementing changes that were recommended for our program.

**Related Action Plans (by Established cycle, then alpha):**

**Make changes/improvements based on review**

*Established in Cycle: 2011-2012*

Based on our review the department chair and faculty will implement recommended changes per our 2011-2012 program review.

For full information, see the Details of Action Plans section of this report.

**M 8: Search for Opportunities for Improvement**

We will use the 8-year program review to search for opportunities for improvement.

Source of Evidence: Evaluations

**Target:**

No target established.

**Finding (2012-2013) - Target: Met**

Implementation of recommendations for program review is in progress. No conclusions at this time.

**M 9: Improvements Made as Result of Review**

Faculty retreats, weekly seminars, annual graduate picnic, annual welcome gatherings and monthly faculty meetings have improved the collaboration and communication among students, staff and faculty. A new building was recently completed (Science and Engineering Complex) to house most of the faculty in order to improve teaching and research infrastructure in the department. New implementation of DegreeWorks, the 2-year course planning chart and new faculty offering new courses have greatly improved the number and variety of course offered by the department. New technological improvements such as clickers, tegrity, and the symposium system have greatly improved the technology available in our courses.

Source of Evidence: Administrative measure - other

**Target:**

No target established.

**Finding (2012-2013) - Target: Met**

A new program review was completed recently. Actions for improvement are ongoing. There are no conclusions at this time.

**Details of Action Plans for This Cycle (by Established cycle, then alpha)**

**Increase advertising and awareness**

Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise these opportunities to students during advising, via emails to all Biology majors and through presentations at the Biology Honor society meetings (Tr-Beta). We are also in the process of developing an undergraduate teaching fellows program that will recruit students to BSC 403.

**Established in Cycle:** 2011-2012

**Implementation Status:** Planned

**Priority:** High

**Relationships (Measure | Outcome/Objective):**

**Measure:** Undergraduate Research and Instruction | **Outcome/Objective:** Scientific Inquiry, Critical Analysis and Communication

**Increase advertising and awareness**

Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise these opportunities to students during advising, via emails to all Biology majors and through presentations at the Biology Honor society meetings (Tr-Beta). We are also in the process of developing an undergraduate teaching fellows program that will recruit students to BSC 403.
|---------------------------------|-------------------------------|---------------|

**Increase advertising of opportunities**

Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise these opportunities to students during advising, via emails to all Biology majors and through presentations at the Biology Honor society meetings (Tri-Beta). We are also in the process of developing an undergraduate teaching fellows program that will recruit students to BSC 403.


**Relationships (Measure | Outcome/Objective):**

- **Measure:** Undergraduate Research and Instruction | **Outcome/Objective:** Discipline Specific Knowledge

**Projected Completion Date:** 06/2013

**Make changes/improvements based on review**

Based on our review the department chair and faculty will implement recommended changes per our 2011-2012 program review.


**Relationships (Measure | Outcome/Objective):**

- **Measure:** Analyze Strengths | **Outcome/Objective:** Sustain High Level of Recognized Quality
Mission / Purpose
The Mission of the Department of Biological Sciences is to provide high quality instruction to students at the undergraduate and graduate levels with an emphasis on active learning and problem solving. The department is committed to the advancement of knowledge through research and scholarly activities. Our faculty participates in outreach to the state, nation and world through service to the university community, to public, governmental and industrial sectors, and to professional societies. Within its areas of expertise, the department supports the tripartite mission of the University in teaching, research, and service.

Student Learning Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 1: Discipline Specific Methods
Students who complete this program will apply skills used in biology laboratories and field research.

Connected Document
Biology Undergraduate Curriculum Maps

Relevant Associations:
Student Learning Outcome #1 Improvement Action to be advanced:

We will continue with the process of gathering data following current procedures. In light of our recent program review, the department is reviewing and developing a more standardized rubric for reporting of data regarding assessment of student learning at the 100-level.

Standard Associations
SACS 3.3.1

3.3.1.1 Educational programs, to include student learning outcomes

Strategic Plan Associations
University of Alabama
1.1 Promote and enhance areas of academic, scholarship, and research excellence.
3.4 Increase involvement of undergraduate students in research and scholarly activities.
3.14 Provide career preparation and employment services that lead graduates to satisfying and productive careers and professions.

Related Measures

M 1: Laboratory Grades
Students must pass course-associated laboratories with a grade of D or higher. We will calculate the percent of students who pass these courses.

Source of Evidence: Academic direct measure of learning - other

Target:
Grade of D- or above.

Finding (2011-2012) - Target: Met
Findings: 92% of students (n=1658) passed the laboratory sections of their courses with a D or higher.

Interpretation / Conclusions: Overall, our students have demonstrated that they have obtained discipline specific knowledge in their biology courses.

M 2: Scientific Method
Students will test various biological problems in order to learn and apply the scientific method in BSC laboratory courses. Calculate percent of students who receive a C or higher on the laboratory portion of courses.

Source of Evidence: Academic direct measure of learning - other

Target:
Grade of C- or higher.

Finding (2011-2012) - Target: Met
90% of students (n=1658) passed the laboratory sections of their courses with a C- or higher. We conclude that students are obtaining adequate knowledge of discipline specific material and the scientific method within our laboratory course offerings.

M 3: Senior Biology Majors Assessment Survey
Students will be asked if they found the laboratory experiences useful for developing an understanding of their field on the 2011-2012 Senior Biology Majors Assessment Survey.

Source of Evidence: Student course evaluations on learning gains made
Target:
Student opinion will be assessed via the senior survey.

**Finding (2011-2012) - Target: Met**
All graduating seniors (n=170) were assessed via the senior survey. Overall, students found their experiences within the biology major were positive particularly those who participated in undergraduate research. We conclude that our program is providing a positive experience for our undergraduates.

M 4: Undergraduate Research and Instruction
As a department our goal is for at least 25% of all Biology majors to participate in BSC 398 Undergraduate Research and/or BSC 403 Introduction to BSC Instruction.

Source of Evidence: Academic indirect indicator of learning - other

**Target:**
We will track the number of students participating in BSC 398 and BSC 403 each year.

**Finding (2011-2012) - Target: Partially Met**
Findings: 173 students (20% of all majors) participated in BSC 398 and in BSC 403 in the 2011-2012 academic year.

Interpretations: The number of students participating in BSC 398 and BSC 403 is slightly lower than last year. This may be due to students lack of knowledge about opportunities for undergraduate research that are available.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the Details of Action Plans section of this report.

**Increase advertising of opportunities**
*Established in Cycle: 2011-2012*
Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise...

**SLO 2: Scientific Inquiry, Critical Analysis and Communication**
Students who complete this program will be involved in the process of scientific inquiry, critical analysis of data, and communication of scientific results.

**Connected Document**
Biology Undergraduate Curriculum Maps

**Relevant Associations:**
Student Learning Outcome #2 Improvement Action(s) to be advanced:

We will continue with the process of gathering data following current procedures. In light of our recent program review, the department is reviewing and developing a more standardized rubric for reporting of data regarding assessment of student learning at the 100-level.

**Standard Associations**
SACS 3.3.1

3.3.1.1 Educational programs, to include student learning outcomes

**Strategic Plan Associations**
University of Alabama
1.5 Effectively use course offerings and class size to support priorities.
3.4 Increase involvement of undergraduate students in research and scholarly activities.
3.8 Equip classrooms, libraries, and laboratories for state-of-the-art learning.

**Related Measures**

M 4: Undergraduate Research and Instruction
As a department our goal is for at least 25% of all Biology majors to participate in BSC 398 Undergraduate Research and/or BSC 403 Introduction to BSC Instruction.

Source of Evidence: Academic indirect indicator of learning - other

**Target:**
We will track the number of students participating in BSC 398 and BSC 403 each year.

**Finding (2011-2012) - Target: Partially Met**
Findings: 173 students (20% of all majors) participated in BSC 398 and in BSC 403 in the 2011-2012 academic year.

Interpretations: The number of students participating in BSC 398 and BSC 403 is slightly lower than last year. This may be due to students lack of knowledge about opportunities for undergraduate research that are available.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the Details of Action Plans section of this report.

**Increase advertising and awareness**
*Established in Cycle: 2011-2012*
Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise...

**M 5: Scientific Method in Lab**
Students will test various biological problems in order to learn and apply the scientific method in our laboratory courses. Calculate percent of students who receive a C or higher on laboratory courses.
Source of Evidence: Academic direct measure of learning - other

**M 6: Survey Question Regarding Writing**
Seniors will be asked whether they had an experience in independent study, active learning, service learning, undergraduate research or undergraduate teaching and if they found the writing requirement beneficial on the 2011-2012 Senior Biology Majors Assessment Survey. A minimum of 76% of seniors who agree or strongly agree will be considered acceptable.

Source of Evidence: Student course evaluations on learning gains made

**Target:**
Student opinion will be assessed using the senior survey.

**Finding (2011-2012) - Target: Met**
All graduating seniors were assessed via our senior survey. Specific data regarding benefits of undergraduate research, writing courses and other experiences were not assessed this year. Since 76% of our seniors rated the program as very good or excellent we can infer that these programs were beneficial.

**SLO 3: Content Knowledge**
Students who complete this program will have a broad understanding of biology with depth in one area.

**Connected Document**
Biology Undergraduate Curriculum Maps

**Relevant Associations:**
Student Learning Outcome #3 Improvement Action(s) to be advanced:

We will continue with the process of gathering data following current procedures. In light of our recent program review, the department is reviewing and developing a more standardized rubric for reporting of data regarding assessment of student learning at the 100-level.

**Standard Associations**
SACS 3.3.1
3.3.1.1 Educational programs, to include student learning outcomes

**Strategic Plan Associations**
University of Alabama
3.4 Increase involvement of undergraduate students in research and scholarly activities.
4.3 Produce scholars who will become academic and civic leaders in their disciplines.

**Related Measures**

**M 4: Undergraduate Research and Instruction**
As a department our goal is for at least 25% of all Biology majors to participate in BSC 398 Undergraduate Research and/or BSC 403 Introduction to BSC Instruction.

Source of Evidence: Academic indirect indicator of learning - other

**Target:**
We will track the number of students participating in BSC 398 and BSC 403 each year.

**Finding (2011-2012) - Target: Partially Met**
Findings: 173 students (20% of all majors) participated in BSC 398 and in BSC 403 in the 2011-2012 academic year.

Interpretations: The number of students participating in BSC 398 and BSC 403 is slightly lower than last year. This may be due to students lack of knowledge about opportunities for undergraduate research that are available.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the Details of Action Plans section of this report.

**Increase advertising and awareness**
Established in Cycle: 2011-2012
Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advert...

**M 7: Course-embedded Assessment**
Students will take a pre-test in courses and questions will be embedded in all exams (post-test) throughout the semester to gauge student learning.

Source of Evidence: Faculty pre-test / post-test of knowledge mastery

**Target:**
Pre-test and Post-tests will be used for assessment.

**Finding (2011-2012) - Target: Met**
Pre-tests and post-tests were used in our 100-level courses. On average across all courses, 65% - 70% of students scored higher on post-test. From this data we conclude that post-test assessment of student understanding is working though some material remains challenging to students.

**M 8: Survey Question Regarding Depth**
Seniors will be asked whether they had courses that gave them depth in one area of biological sciences on the 2011-2012 Senior Biology Majors Assessment Survey. A minimum of 70% of seniors who agree or strongly agree will be considered acceptable. (measure addressing evaluation of improvement action, if any)
Source of Evidence: Student course evaluations on learning gains made

Target:
Student opinion will be assessed using the senior survey.

Finding (2011-2012) - Target: Met
This was not specifically addressed this year though 76% of students surveyed reported that the Biology program was "very good" or "excellent" overall.

M 22: Assess for Level of Conceptual Knowledge
Pre-test/post-tests will be used in 100-level courses to assess the level of conceptual knowledge that students attain during the courses. We will consider a level of 70% of students passing at post-test acceptable.

Source of Evidence: Faculty pre-test / post-test of knowledge mastery

SLO 11: Depth of Knowledge
Students who complete this program will have a depth of understanding of biology in several areas.

Relevant Associations:

Standard Associations
SACS 3.3.1
3.3.1.1 Educational programs, to include student learning outcomes

Strategic Plan Associations
University of Alabama
1.1 Promote and enhance areas of academic, scholarship, and research excellence.
3.4 Increase involvement of undergraduate students in research and scholarly activities.

Related Measures

M 8: Survey Question Regarding Depth
Seniors will be asked whether they had courses that gave them depth in one area of biological sciences on the 2011-2012 Senior Biology Majors Assessment Survey. A minimum of 70% of seniors who agree or strongly agree will be considered acceptable. (measure addressing evaluation of improvement action, if any)

Source of Evidence: Student course evaluations on learning gains made

Other Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

OthOtm 4: Sustain High Level of Recognized Quality
The program will improve and sustain a high level of recognized quality.

Relevant Associations:

Standard Associations
SACS 3.3.1
3.3.1.1 Educational programs, to include student learning outcomes

Strategic Plan Associations
University of Alabama
1.1 Promotes and enhance areas of academic, scholarship, and research excellence.
4.1 Provide leadership in addressing economic, social, and cultural issues in Alabama through research and outreach activities.

Related Measures

M 4: Undergraduate Research and Instruction
As a department our goal is for at least 25% of all Biology majors to participate in BSC 398 Undergraduate Research and/or BSC 403 Introduction to BSC Instruction.

Source of Evidence: Academic indirect indicator of learning - other

M 9: Analyze Strengths
We will use the 8-year program review to analyze our strengths.

Source of Evidence: Evaluations

Target:
No target established.

Finding (2011-2012) - Target: Met
Our program was reviewed this past year by both internal and external reviewers. We are currently in the process of reviewing and implementing the recommendations for our program.

Related Action Plans (by Established cycle, then alpha):

Make changes/improvements based on review
Established in Cycle: 2011-2012
Based on our review the department chair and faculty will implement recommended changes per our 2011-2012 program review.

For full information, see the Details of Action Plans section of this report.

M 10: Search for Opportunities for Improvement
We will use the 8-year program review to search for opportunities for improvement.

Source of Evidence: Evaluations
Target:  
No target established.

Finding (2011-2012) - Target: Not Reported This Cycle
Implementation of recommendations for program review is in progress. No conclusions at this time.

M 11: Improvements Made as Result of Review
Faculty retreats, weekly seminars, annual graduate picnic, annual welcome gatherings and monthly faculty meetings have improved the collaboration and communication among students, staff and faculty. A new building was recently completed (Science and Engineering Complex) to house most of the faculty in order to improve teaching and research infrastructure in the department. New implementation of DegreeWorks, the 2-year course planning chart and new faculty offering new courses have greatly improved the number and variety of course offered by the department. New technological improvements such as clickers, tegrity, and the symposium system have greatly improved the technology available in our courses
Source of Evidence: Administrative measure - other

Finding (2011-2012) - Target: Not Reported This Cycle
A new program review was completed this year. Actions on recommendations are ongoing. No conclusions at this time.

OthOtcm 5: Sustain Optimal Level of Enrollment
The program will build and sustain an optimal level of annual program enrollments and degree completions.

Relevant Associations:

Standard Associations
SACS 3.3.1
3.3.1.1 Educational programs, to include student learning outcomes

Strategic Plan Associations
University of Alabama
1.1 Promote and enhance areas of academic, scholarship, and research excellence.
1.4 Align resources to most effectively support academic, scholarship, and research excellence priorities.
1.5 Effectively use course offerings and class size to support priorities.

Related Measures

M 12: Undergraduate Credit Hour Production
We will calculate the undergraduate semester credit hour production for the last three fall semesters.

Source of Evidence: Existing data

Target:
No target established.

Finding (2011-2012) - Target: Not Reported This Cycle
Did not assess this year.

M 13: Number of Undergraduate Courses and Sections
We will calculate the number of undergraduate courses and sections offered for the last three fall semesters.

Source of Evidence: Existing data

Target:
No target established.

Finding (2011-2012) - Target: Not Reported This Cycle
Did not assess this year.

M 14: Number of Students in Biological Science Undergraduate Majors
We will calculate the number of students in the undergraduate Biology/Microbiology/Marine Science majors for the last three fall semesters.

Source of Evidence: Existing data

Target:
No target established.

Finding (2011-2012) - Target: Met
There were 856 Biology/ Marine Science/ Microbiology majors in the summer and fall 2011 semesters and 841 combined majors in the spring 2012 semester. We conclude that our numbers of majors continues to be high though it does fluctuate.

M 15: Number of Degrees Awarded in Undergraduate Majors
We will calculate the number of degrees awarded in the undergraduate Biology/Microbiology/Marine Science majors for last three years (August, December, and May)

Source of Evidence: Existing data

Target:
No target established.

Finding (2011-2012) - Target: Met
170 students were awarded degrees in Biology, Marine Science or Microbiology in the 2011-2012 academic
year. An increase of 16 over last year. We conclude that our department continues to increase the numbers of students graduating with a Biology, Marine Science or Microbiology degree and that demand for these degrees remains high.

OthOtm 5: Program Highly Valued by Graduates
The program will be highly valued by its program graduates and other key constituencies it serves.

Relevant Associations:

Standard Associations
SACS 3.3.1
3.3.1.1 Educational programs, to include student learning outcomes
3.3.1.5 Community/public service within its educational mission

Strategic Plan Associations
University of Alabama
4.4 Produce graduates who will serve as effective leaders in Alabama’s government, businesses, educational systems, health care, the arts, and other professions, and who will be leaders in their communities.

Related Measures

M 16: Results from Graduating Senior Survey
We will analyze the results from the University-wide Graduating Senior Survey for senior Biology/Marine Science/Microbiology majors.

Source of Evidence: Document Analysis

Target:
Analysis of University-wide Graduating Senior Survey for senior Biology/Marine Science/Microbiology majors.

Finding (2011-2012) - Target: Not Reported This Cycle
This data is not available at this time.

M 17: Departmental Exit Survey
We will analyze the results from our departmental exit survey for graduating Biology/Marine Science/Microbiology majors.

Source of Evidence: Client satisfaction survey (student, faculty)

Target:
Analysis of the departmental exit survey for graduating Biology/Marine Science/Microbiology majors.

Finding (2011-2012) - Target: Met
76% of our majors rated the department as “very good” or “excellent”. This is slightly lower than last year and we attribute the lower numbers to our increasing enrollment which is causing our class sizes to increase.

M 18: Senior NSSE Results
We will analyze the results from most recent NSSE Biology/Marine Science/Microbiology senior majors

Source of Evidence: Academic indirect indicator of learning - other

Target:
Analysis of most recent NSSE Biology/Marine Science/Microbiology senior majors.

Finding (2011-2012) - Target: Not Reported This Cycle
This data is not available at this time.

OthOtm 7: Courses Stress Fundamental Knowledge
The Department will offer courses that foster an understanding of fundamental biological principles, their experimental foundations, and their interface with chemistry, physics and mathematics.

Relevant Associations:

Department Outcome #1 Improvement Action(s) to be advanced:

We will continue with the current processes and implementations. In light of our recent program review, the department is reviewing and developing a more standardized rubric for reporting of data regarding assessment of student learning at the 100-level.

Standard Associations
SACS 3.3.1
3.3.1.1 Educational programs, to include student learning outcomes

Strategic Plan Associations
University of Alabama
1.4 Align resources to most effectively support academic, scholarship, and research excellence priorities.
1.5 Effectively use course offerings and class size to support priorities.
3.4 Increase involvement of undergraduate students in research and scholarly activities.

Related Measures

M 19: Assess for Breadth and Depth
We will assess our course offerings and content for breadth and depth of coverage each year.

Source of Evidence: Evaluations
**Target:**
Assessment of course offerings and content for breadth and depth of coverage each year

**Finding (2011-2012) - Target: Not Reported This Cycle**
We continue to assess our course offerings in light of our recent program review.

**M 20: Assess for Course Demand**
During the pre-semester registration for Spring and Fall 2011 and 2012 courses, we will track courses to identify those that are filled to capacity. This assessment will provide us a semblance of student demand and need for courses.

Source of Evidence: Administrative measure - other

**Target:**
To identify courses filled to capacity

**Finding (2011-2012) - Target: Not Reported This Cycle**
Did not assess specific numbers this year.

**M 21: Senior Biology Majors Assessment Survey**
All graduating senior biology majors will complete a Senior Biology Majors Assessment survey asking whether they completed courses that incorporated this goal, and how well the courses provided these experiences. The goal of the Department is that 70% of the students will answer very good or excellent.

Source of Evidence: Student course evaluations on learning gains made

**Target:**
Provide to senior biology majors with a Senior Biology Majors Assessment survey and analyze the percentage of students answering very good or excellent

**Finding (2011-2012) - Target: Met**
76% of students rated the Biology program as "very good" or "excellent" as reported in the senior survey. We conclude that our program is highly valued by our students.

**M 22: Assess for Level of Conceptual Knowledge**
Pre-test/post-tests will be used in 100-level courses to assess the level of conceptual knowledge that students attain during the courses. We will consider a level of 70% of students passing at post-test acceptable.

Source of Evidence: Faculty pre-test / post-test of knowledge mastery

**Target:**
Analysis of pre-test/post-tests at 100-level courses targeting the percentage of students passing at post-test

**Finding (2011-2012) - Target: Met**
See findings and conclusions for measure 7.

**OthOtcn 8: Emphasize Knowledge in Diverse Subdisciplines**
The Department will offer courses that emphasize a conceptual knowledge of molecular and cellular biology, organismal biology, physiological principles, and population to ecosystem understandings.

**Relevant Associations:**
Department Outcome #2 Improvement Action(s) to be advanced:

We will continue with the current processes and implementations. We will revisit the content and usefulness of our rubric in light of our recent program review.

**Standard Associations**

SACS 3.3.1

3.3.1.1 Educational programs, to include student learning outcomes

**Strategic Plan Associations**

University of Alabama

3.4 Increase involvement of undergraduate students in research and scholarly activities.

**Related Measures**

**M 20: Assess for Course Demand**
During the pre-semester registration for Spring and Fall 2011 and 2012 courses, we will track courses to identify those that are filled to capacity. This assessment will provide us a semblance of student demand and need for courses.

Source of Evidence: Administrative measure - other

**Target:**
Identify those that are filled to capacity

**Finding (2011-2012) - Target: Not Reported This Cycle**
Did not assess this year.

**M 23: Assess for Breadth and Depth Using Rubric**
We will assess our course offerings and content for breadth and depth of coverage each year. The assessment will include a rubric of courses versus concepts that was constructed in our 2005-2007 departmental review.

Source of Evidence: Administrative measure - other
Target:
Assessment of course offerings and contents for breadth and depth each year

**Finding (2011-2012) - Target: Not Reported This Cycle**
A new program review was recently completed. The department is currently reviewing all recommendations.

M 24: Senior Survey Goals
All graduating senior biology majors will complete the Senior Biology Majors Assessment Survey asking whether they completed courses that incorporated this goal, and how well the courses provided these experiences. The goal of the Department is that 70% of the students will answer very good or excellent.

Source of Evidence: Student course evaluations on learning gains made

**Target:**
Provide to senior biology majors with a Senior Biology Majors Assessment Survey and calculate the percentage of students answering very good or excellent

**Finding (2011-2012) - Target: Met**
See findings and conclusions for measure #21.

OthOcm 9: Faculty Contributions
Biological Sciences faculty will build research programs that contribute to the discipline, will provide training opportunities for undergraduate and graduate students, will obtain grant funding and will publish.

**Related Measures**

**Relevant Associations:**
Department Outcome #3 Improvement Action(s) to be advanced (copied from 2010-11 report):

The chair will continue to implement current processes to further improve the grant and publication rate of the faculty

**Standard Associations**
SACS 3.3.1
3.3.1.1 Educational programs, to include student learning outcomes
3.3.1.4 Research within its educational mission

**Strategic Plan Associations**
University of Alabama
3.4 Increase involvement of undergraduate students in research and scholarly activities.

**M 25: Analysis of Faculty Activity Reports**
This outcome will be measured through analysis of annual faculty activity reports and annual faculty conferences with the department chair. The threshold level will be the mentoring of at least two undergraduate and two graduate students per faculty per year.

Source of Evidence: Administrative measure - other

**Target:**
Analysis of annual faculty activity reports and calculate the number of undergraduate and graduate students mentored as average per faculty per year

**Finding (2011-2012) - Target: Met**
100% of the faculty mentor at least 2 graduate students and 2 undergraduate students as reported in the faculty activity report. We conclude that all faculty take an active interest in both graduate and undergraduate education.

**M 26: Annual Faculty Conferences**
This outcome will be measured through analysis of annual faculty activity reports and annual faculty conferences with the department chair. The threshold level will be an average of 1 conference attended per faculty member per year.

Source of Evidence: Activity volume

**Target:**
Analysis of annual faculty activity reports and annual faculty conferences with the department chair to calculate the average number of grants submitted per faculty member per year

**Finding (2011-2012) - Target: Met**
On average 100% of the faculty participate in discipline specific meetings and conferences during the year as reported in the faculty activity reports.

**M 27: Faculty Publications**
This outcome will be measured through analysis of annual faculty activity reports and annual faculty conferences with the department chair. The threshold level will be an average of one publication per faculty per year.

Source of Evidence: Activity volume

**Target:**
Analysis of annual faculty activity reports and annual faculty conferences with the department chair in order to calculate the average number of publications per faculty per year

**Finding (2011-2012) - Target: Met**
Faculty averaged 2.1 publications per year in 2011-2012.

OthOtm 10: Faculty Services
Biological Sciences faculty will provide services to the university, discipline and profession.

Relevant Associations:
Department Outcome #n Improvement Action(s) to be advanced:

The chair will continue to implement current processes to further improve and expand the level of service of the faculty to the department, university, local community and profession.

Standard Associations
SACS 3.3.1
3.1.3 Educational support services

Strategic Plan Associations
University of Alabama
1.2 Increase the recognition of the University's service priorities that enhance the quality of life for all Alabamians.
4.1 Provide leadership in addressing economic, social, and cultural issues in Alabama through research and outreach activities.
4.2 Promote collaboration with business, non-profit, and governmental agencies to advance the economic, social, and cultural condition of Alabama.

Related Measures
M 28: Committee Membership
100% of the faculty will be expected to serve as members of university, community, or professional committees. Service will be assessed through analysis of annual faculty activity reports and annual faculty conferences with the department chair. All faculty will be expected to provide service at the department, university and/or professional level.

Source of Evidence: Activity volume

Target:
Analysis of the annual faculty activity report and annual faculty conferences with the department chair to calculate the percentage of faculty members providing service at the department, university and/or professional level committees

Finding (2011-2012) - Target: Met
100% of the faculty are involved in committee service at the department, university and/or professional level as reported in the faculty activity report.

M 29: Grant Review
100% of faculty will be expected to serve as reviewers of manuscripts and/or grants. Service will be assessed through analysis of annual faculty activity reports and annual faculty conferences with the department chair. All faculty will be expected to provide service at the department, university and/or professional level.

Source of Evidence: Administrative measure - other

Target:
Analysis of the annual faculty activity reports with the department chair in order to calculate the percentage of faculty providing service as reviewers of manuscripts and/or grants

Finding (2011-2012) - Target: Met
100% of the faculty served as reviewers on manuscripts and grants in 2011-2012 as reported in the faculty activity reports.

M 30: Faculty Leadership Positions
100% of faculty will be expected to hold leadership positions at the university, community, or professional levels. Service will be assessed through analysis of annual faculty activity reports and annual faculty conferences with the department chair. All faculty will be expected to provide service at the department, university and/or professional level.

Source of Evidence: Administrative measure - other

Target:
Analysis of the annual faculty activity reports with the department chair to calculate the percentage of faculty holding leadership position at the university, community, or professional levels.

Finding (2011-2012) - Target: Met
100% of the faculty have leadership positions at the university, community or professional level as reported in the faculty activity reports.

Details of Action Plans for This Cycle (by Established cycle, then alpha)

Increase advertising and awareness
Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise these opportunities to students during advising, via emails to all Biology majors and through presentations at the Biology Honor society meetings (Tri-Beta). We are also in the process of developing an undergraduate teaching fellows program that will recruit students to BSC 403.

Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High

Relationships (Measure | Outcome/Objective):
  Measure: Undergraduate Research and Instruction | Outcome/Objective: Content Knowledge

Increase advertising and awareness
Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise these opportunities to students during advising, via emails to all Biology majors and through presentations at the Biology Honor society meetings (Tri-Beta). We are also in the process of developing an undergraduate teaching fellows program that will recruit students to BSC 403.

Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High

Relationships (Measure | Outcome/Objective):
  Measure: Undergraduate Research and Instruction | Outcome/Objective: Scientific Inquiry, Critical Analysis and Communication

Increase advertising of opportunities
Since numbers of students participating in undergraduate research and teaching are lower, we will make an effort to advertise these opportunities to students during advising, via emails to all Biology majors and through presentations at the Biology Honor society meetings (Tri-Beta). We are also in the process of developing an undergraduate teaching fellows program that will recruit students to BSC 403.

Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High

Relationships (Measure | Outcome/Objective):
  Measure: Undergraduate Research and Instruction | Outcome/Objective: Discipline Specific Methods

Projected Completion Date: 06/2013

Make changes/improvements based on review
Based on our review the department chair and faculty will implement recommended changes per our 2011-2012 program review.

Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High

Relationships (Measure | Outcome/Objective):
  Measure: Analyze Strengths | Outcome/Objective: Sustain High Level of Recognized Quality
Curriculum Maps #1 (In which courses are Student Learning Outcomes Addressed)
Use “Introduce” when outcome is first address; “Reinforce” when outcome is reinforced; and “Master” when outcome is expected to be mastered.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Student Learning Outcome 1</th>
<th>Student Learning Outcome 2</th>
<th>Student Learning Outcome 3</th>
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<td>BSC 114 / 118</td>
<td>Introduce</td>
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<tr>
<td>BSC 115</td>
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<td>BSC 116 /120</td>
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<td>BSC 385</td>
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<td>Introduce</td>
</tr>
<tr>
<td>BSC 450</td>
<td></td>
<td>Master</td>
<td>Master</td>
</tr>
<tr>
<td>BSC 483</td>
<td></td>
<td>Master</td>
<td>Master</td>
</tr>
</tbody>
</table>
Curriculum Maps #2 (What assessment measures will be employed in which courses for each SLO)

Indicate which measure is being obtained in which course by typing “Measure n.n” in the appropriate cell. If you’d rather use a description of the measure, that is fine. Also, indicate the year/semester in which the measure will be obtained (e.g., Fall 2011). Student learning outcomes must be assessed at least once within a 2-year period. Note that a measure does not need to be obtained from every course in which an outcome is covered (see Map #1).

<table>
<thead>
<tr>
<th>Student Learning Outcome 1</th>
<th>Student Learning Outcome 2</th>
<th>Student Learning Outcome 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who complete this program will apply skills used in biology laboratories and field research.</td>
<td>Students who complete this program will have a broad understanding of biology with depth in one area that will allow them to compete successfully for jobs and entry into graduate school or professional school.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Measures</th>
<th>Measures</th>
<th>Measures</th>
</tr>
</thead>
</table>
| BSC 114/118 | 1. Pre-test and embedded assessment.  
| | 2. Group discussions and problem solving.  
| | 3. Laboratory reports.  
| | Measures will be obtained in Fall 2011 and Spring 2012. | 1. Group discussions and problem solving.  
| | 2. Laboratory reports.  
| | Measures will be obtained in Fall 2011 and Spring 2012. | |
| BSC 115 | 1. Pre-test and embedded assessment.  
| | 2. Group discussions and problem solving.  
| | 3. Laboratory reports.  
| | Measures will be obtained in Fall 2011 and Spring 2012. | 1. Group discussions and problem solving.  
| | 2. Laboratory reports.  
| | Measures will be obtained in Fall 2011 and Spring 2012. | |
| BSC 116/120 | 1. Pre-test and embedded assessment.  
| | 2. Group discussions and problem solving.  
| | 3. Laboratory reports.  
| | Measures will be obtained in Fall 2011 and Spring 2012. | 1. Group discussions and problem solving.  
| | 2. Laboratory reports.  
| | Measures will be obtained in Fall 2011 and Spring 2012. | |
| BSC 117 | 1. Pre-test and embedded assessment.  
| | 2. Group discussions and problem solving.  
| | 3. Laboratory reports.  
| | Measures will be obtained in Fall 2011 and Spring 2012. | 1. Group discussions and problem solving.  
| | 2. Laboratory reports.  
| | Measures will be obtained in Fall 2011 and Spring 2012. | |
| BSC 310 | 1. Discussions in class and problem solving.  
| | 2. Pre-test and embedded assessment.  
| | Measures will be obtained in Fall 2011 and Spring 2012. | 1. Discussions in class and problem solving. | |
| BSC 312 | 1. Laboratory reports  
| | Measures will be obtained in Fall 2011 and Spring 2012. | 2. Laboratory reports  
| | Measures will be obtained in Fall 2011 and Spring 2012. | |
| BSC 315 | 1. Group discussions and problem solving.  
| | 2. Pre-test and embedded assessment.  
<p>| | Measures will be obtained in Fall 2011 and Spring 2012. | 1. Group discussions and problem solving. | |
| BSC 385 | 1. Pre-test and embedded assessment. | 1. Pre-test and embedded assessment. | |</p>
<table>
<thead>
<tr>
<th>Course</th>
<th>Activities</th>
<th>Assessment Measures</th>
</tr>
</thead>
</table>
| BSC 300  | 1. Group discussions and problem solving.  
2. Pre-test and embedded assessment. | Measures will be obtained in Fall 2011 and Spring 2012                              |
|          |                                                                             | 1. Pre-test and embedded assessment.  
2. Pre-test and embedded assessment. | Measures will be obtained in Fall 2011 and Spring 2012                              |
|          |                                                                             | 1. Group discussions and problem solving.                                             |
| BSC 450  | 1. Pre-test and embedded assessment.                                         | Measures will be obtained in Fall 2011.                                              |
|          |                                                                             | 1. Discussions in class and problem solving.                                           |
|          |                                                                             | 1. Discussions in class and problem solving                                           |
| BSC 483  | 1. Group discussions and problem solving.  
2. Analysis and discussion of current scientific literature.  
3. Pre-test and embedded assessment. | Measures will be obtained in Spring 2012.                                             |
|          |                                                                             | 1. Analysis and discussion of current scientific literature.                         |
|          |                                                                             | 1. Group discussions and problem solving.  
2. Analysis and discussion of current scientific literature |