**Executive Summary**

(After completing the questions on the next few pages, please replace this area with a written executive summary of the questions that follow, including your data analysis, findings, action plan, and improvements you have already made. This will be the top sheet of your report. This summary should be at least a paragraph, and can definitely be longer if desired.)

For Biology 101:

Students are successfully achieving the CLO’s as well as the GELO’s. Throughout the semester students utilize the scientific method in the laboratory portion of the course to answer instructor derived scientific questions. Their work is submitted to the instructor in two different forms, a laboratory report and notebook. Students also write short essays during a formal laboratory exam period.

I’m also pleased with the 83% success rate of students who can demonstrate an understanding of how scientific discoveries affect human activity. The mass majority of students can explain how discoveries in molecular biology have influenced changes in the way some medical products are produced. In addition, most students successfully genetically engineer bacteria in the laboratory. They describe and perform the steps necessary to achieve a product and then isolate and quantify that product. I am especially pleased with the assessment tools employed. I have designed a tool in students must critically think their way through an experiment in order to determine what went wrong. They must determine the type of media for each experimental treatment based on differences in bacterial growth patterns. In order to be successful, students must fully understand the plasmid used in the experiment as well as the media used to select for transformants.

Some equipment has been purchased through our STEM grant to aid student success. Most recently, SME purchased light boxes for viewing some types of data acquired when performing experiments in molecular biology. The equipment has offered students that ability to take their data (gels) home for further analysis.

**Faculty Included in the Preparation and Sharing of this Report:**

(please replace this area with the names of all faculty that helped to prepare and provide input on this report. This includes faculty who were parts of draft discussions and conversations. Ideally, it is all faculty representing the core disciplines making up the degree or certificate.)

Catherine Greene

**Please provide a brief and cogent narrative in response to each of the following questions.**

1. Provide a quantitative analysis for each GELO your CLOs inform. Provide the total number of students who passed/total number of students assessed in each GELO column *and* the corresponding GELO passing rate as an aggregated percentage.

**GENERAL EDUCATION LEARNING OUTCOMES Students Passed/Assessed TOTAL RATE**

Natural Science

Demonstrate Proficiency in Natural Science by:

*1. Explaining how the scientific method is used to solve problems.* 42/50 84%

*2. Describing how scientific discoveries and theories affect human activities.* 40/48 83%

1. Reflect on, consider and analyze the data you have. ***What does your CLO data tell you about how your students are achieving GELOs?*** *Be detailed, descriptive and analytical* in this qualitative assessment of each GELO in relation to your CLO data. **Are your results satisfactory?**

For Biology 101:

Students are successfully achieving the CLO’s as well as the GELO’s. Throughout the semester students utilize the scientific method in the laboratory portion of the course to answer instructor derived scientific questions. Their work is submitted to the instructor in two different forms, a laboratory report and notebook, in addition to verbal answer and question period.

Students can not only explain how discoveries in molecular biology have influenced changes in the way some medical products are produced, they are able to genetically engineer bacteria in the laboratory to produce a product of interest. They can describe and perform the steps necessary to achieve a product and are also able to isolate and quantify that product. Their understanding is assessed by the instructor through a variety of means, such as successfully producing transformed colonies of bacteria. In addition, students have to critically think their way through an experiment in which plates were incorrectly labeled. In order to correctly label the plates, students must fully understand the plasmid used in the experiment as well as the media used to select for transformants. I am satisfied with the assessment tool and the results.

1. Your department and the college should be making improvements based on student learning outcomes assessment, and we need to continue to document and share the improvements and progress you have already made. Did you make any changes in your CLO statements or analysis during the last 4-year cycle? Did you receive funding for resources requests that were aimed to improve assessment results? Did you make any improvements in the areas of teaching and instruction processes, your courses, or your program? *Please explain your accomplishments and provide details about your efforts.*

No changes have been made to the CLO statements. Additional equipment was purchased using our STEM grant. It is important that students have data from their DNA fingerprinting experiment and PCR work that can be take home for analyze. That requires a gel drying machine and light tables for visualizing their gels. I was able to purchase both of these through the STEM grant.

1. **Action Plan.** Based on the assessments and analysis you have provided, please consider what changes or improvements you would like to make, which might include updating your CLO statements, modifying course outlines, rethinking instruction efforts, using different assessment instruments, asking for additional resources to improve assessment results, etc. ***Based on the analysis, provide an action plan for improvement that draws on your assessment results and efforts.***

No action is being taken at this time for I am satisfied with the results and the assessment tool used.