**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.)

The vast majority of students (95%) were able to achieve the GELO that reflects their ability to explain how the scientific method is useful in problem solving. The weekly laboratory sessions give students practical, hands-on experience using the scientific method. This component of our physics curriculum nicely correlates with the high score on this GELO. While this second GELO asks students to describe how scientific discoveries and theories affect human activities, this GELO is less relevant to our courses since the societal component of this GELO is not prominent in the physics curriculum. That being said, students achieved a 71% success rate on this GELO.

Many of the CLO’s in physics have been rewritten to reflect the changing nature of what a CLO truly means. The new CLO’s have not yet been assessed in this latest cycle.

With regards to funding for the physics program, it must be noted that $4000 - $5000 is needed annually to maintain the program.

With regards to improvements made, we have developed two courses in astronomy and physical science that specifically address the needs of our community of students as well as to take advantage of the new capabilities that the Science Community Center offers.

We are pleased with the measured success regarding the GELOs for the physics curriculum at MJC and have no plans at present to institute major changes.

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

Kenneth Meidl and Thomas Nomof

**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.* 178/187 95%

*2. Describing how scientific discoveries and theories affect human activities.* 129/182 71%

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?**

The vast majority of students (95%) were able to achieve this GELO. This GELO is assessed through the required laboratory work for physics courses as well as examinations to test comprehension of physical theory gleaned. Students are allowed to work in groups in lab sessions, be collaborative, and aid each other. The collaborative and more relaxed nature of lab work, compared to examinations, greatly aids the student. Since most students taking courses in physics are studying to be engineers, medical professionals, and scientists this GELO is relevant to much of the needed skills students develop in physical science courses. Our results are satisfactory.

The effect of scientific discoveries on society is not a topic that receives a lot of attention in our physics program as we are required to teach the theoretical concepts that are required for specific physical applications. We have not taught the science and society course (Science Matters) for many years, where this topic is far more relevant. But to the extent that we were able to assess this objective, we feel satisfied with the success rate.

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.*

We changed many CLO’s in physics in the summer of 2013 to reflect the changing nature of what a CLO meant. Initially we were instructed to create CLO’s that were very content specific and measurable. This resulted in an unrealistic number of CLOs to assess for our discipline (50-100). We changed many of the CLO’s to reflect a more general learning outcome. In the next cycle these revamped CLO’s will be assessed.

No, we currently have received no funding.

With regards to improvements made, we have developed courses specifically to address the needs of our community of students as well as to match curriculum to take advantage of the new capabilities that the Science Community Center offers. The newly instituted laboratory program in Astronomy 151 takes advantage of the modern equipment purchased through Measure E funding, while the newly developed Physical Science 180 hybrid course is designed to better meet the needs of our students who desire to pursue a career in K-6 education.

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.***

As stated previously we have updated our CLOs, but the new CLOs haven’t been assessed as of yet. Our lowest success rate as determined by our PLOs is in the area of problem solving. With the removal of the mandated problem-solving sessions with our students we can expect the success rates to be realistically lower in the future.