EQUIPMENT NEEDS ASSESSMENT APPLICATION
Fall 2015

Name of Person Submitting Request:	**Michael Lysak**
Program or Service Area:	**Physics/Astronomy/Engineering**
Division:	**Science**
Date of Last Program Efficacy:	**Spring 2011**
What rating was given?	**Continuation**
Equipment Requested	10 Wards Economy Force Tables # 160485 @ $209 = $ 2090
Amount Requested:	**$2090**
Strategic Initiatives Addressed: (See Appendix A: http://tinyurl.com/l5oqoxm)	Institutional Effectiveness and Resource Management; Student Success; Technology

NOTE: To facilitate ranking by the committee, submit separate requests for each item; however, multiple items can be submitted as one request if it is required that the equipment is packaged together.

Replacement ☐X Additional ☐

1. Provide a rationale for your request.

The present Physics/Astronomy labs are using equipment that is quite a number of years old, and, with increased use, more of this equipment is falling into disrepair. The present Force Tables that the Physics/Astronomy Department uses in its introductory Physics 101 Vector Addition labs are home-made, old, bulky, heavy, and difficult to use effectively. Further, none of our present labs use modern technology with respect to computerized data acquisition and analysis; although there is much inherent value in the students' using analog measurement methods with devices such as stopwatches, meter sticks, thermometers, calipers, micrometers, and balances, more of the labs should have digital data acquisition capabilities in order to introduce the students to more modern lab measurement methods, and, correspondingly, the introductory Physics labs should use more modern lab equipment such as these more accurate and reliable Force Tables. The newer Force Tables would be an asset for the Physics 101 labs, as the students could more effectively make measurements in the Physics labs involving studies and investigations in vector forces and equilibrium. These newer Force Tables, combined with the other data acquisition equipment that we presently use, would improve our overall laboratory program.

2. Indicate how the content of the latest Program Efficacy Report and current EMP data support this request. How is the request tied to program planning? *(Reference the page number(s) where the information can be found on Program Efficacy.)*

One of the goals of the Physics/Astronomy Department as stated in the EMP is to "Update the Physics/Astronomy labs and their related equipment needs". Further, on pg. 19 of the Physics/Astronomy Program Efficacy Report of Spring 2011, it states that "In our Physics/Astronomy labs, the department has begun to incorporate digital scales and digital electric multimeters to improve accuracy and facilitate learning; more equipment and lab updates are planned…", and "The department is continuing the exploration of the use of Fourier Systems Data Logging Kits in the Physics and Astronomy labs if funding becomes available." The Physics/Astronomy department has been slowly incorporating better, more modern equipment in

our advanced Physics for life-science and majors courses; the Department would like to expand the use of more modern lab equipment to our one-semester introductory Physics 101 courses/labs as well, so that, even at the beginning level, students will have the advantage of being able to make lab measurements in the Physics labs with more accurate and more reliable lab equipment. With these lab improvements, the Department will be in a better position to choose future appropriate equipment to be able to further update our Physics and Astronomy labs, both at the introductory and advanced course levels.

3. Indicate if there is additional information you wish the committee to consider *(for example, regulatory information, compliance, updated efficiency, student success data, planning, etc.).*

The Science Division had ranked this Equipment request as ninth of all the Science division equipment requests in Fall of 2015.

4. Evaluation of initial cost, as well as related costs (including any ongoing maintenance or updates) and identification of any alternative or ongoing funding sources (*for example Department, Budget, Perkins, Grants, etc.*).

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5. What are the consequences of not funding this equipment?

Without the new equipment, the Physics/Astronomy program will suffer as many of our labs will continue to be outdated, more present labs will fall into disrepair, and students will not have the opportunity to experience modern lab measuring and data acquisition techniques.