

BUDGET NEEDS ASSESSMENT APPLICATION

Name of Person Submitting Request:	Susan Bangasser
Program or Service Area:	Science Division
Division:	Science Division
Date of Last Program Efficacy:	NA
What rating was given?	NA
Amount Requested:	\$20,000 for maintenance of equipment
Strategic Initiatives Addressed:	Efficiency and student success

Replacement Growth

1. Provide a rationale for your request.

The programs in the Science Division are equipment-based. Some departments have a small amount of maintenance funds but not enough to complete the recommended maintenance for equipment students use in an instructional laboratory setting. For example, only some of the balances get calibrated every year in the chemistry labs; only a portion of the microscopes get maintained in the biology classes. This equipment is used nearly every day by all sections of chemistry and biology. The chemistry program also has received funds in the past to purchase expensive equipment that is considered integral to a twenty-first century instructional program, but never receives funds for routine maintenance to keep instruments functioning and calibrated. If these instruments, such as the Gas Chromatograph, the infrared spectroscope, the microscopes, are not maintained they will break down and need to be replaced, a more expensive alternative. For example, microscopes in general biology and anatomy and physiology were purchased around 1998 and will cost around \$540,000 to replace. The use of laboratory equipment is required for our courses to articulate to four-year institutions.

Additionally, chemistry has accepted donation of equipment, for example an instrument worth more than \$90,000. The Chemistry Needs Assessment states that “a tech. needs to set up the initial calibration and alignment.” They “have reached the point where the expertise within the department is no longer sufficient to maintain the FTIR (Fourier Transform Infra-Red) spectroscope used in organic chemistry and general chemistry. The GC (Gas Chromatograph) requires maintenance on the column that separates various constituent parts and is used in both organic chemistry and general chemistry classes.” The next year, the funds will support the maintenance of all the biology department’s microscopes. This is not a departmental request because maintenance needs are not necessarily annual, but every other or every third year. However, in the Division a rotation between these needs can be established to ensure consistent and functional equipment for instruction.

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.*)

The programs in the Science Division have received “continuation” in their last Program Review Efficacy Report. The departments that have the most equipment are Biology, Chemistry, Physics and Astronomy and Nursing. Each efficacy report and EMP includes support for student success

and increasing transfer in majors. Training on related equipment is imperative for successful transfer. The Chemistry Efficacy report from 2011, under Planning, page 15, states “Specific to the discipline, there is a trend nationally to focus on STEM (Science, Technology, Engineering, and Mathematics) education to fill the lack of qualified employees in scientific and technological fields.” The Chemistry Needs Assessment reports the following: “This request drives to the heart of the department’s mission (p. 10) to prepare students for transfer and the workforce. The cost is only to maintain the equipment so that students continue to have hands-on experiences expected by transfer institutions and employers.”

The Biology Efficacy Report, from 2012, states on page 18 that “The high cost of the initial acquisition and on-going maintenance of such technology must always be weighed against the technology’s pedagogical value in order to ensure prudent expenditure of our Program’s very limited funding.” Even with careful consideration, funding for maintenance has not increased as new equipment has been purchased. The Efficacy Report for Physics, 2011, on page 18, under challenges, states “Until budget allows proper funding, the department will continue to seek ways to increase the lifespan and efficiency of the equipment we have available and of the lecture/lab consumables without compromising the curriculum.” Additionally, the EMP reports for both Chemistry and Physics show an increase in FTES in 2012-2013, thereby putting more wear on the equipment.

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

Use of equipment in the science disciplines is required for students to succeed and progress to the next course. Our articulation agreements require use of equipment to accompany the laboratory experience. Even though nursing can purchase patient simulators through Perkins, they do not have funds for maintenance.

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 or Perkins).

The maintenance budget is requested to support current equipment. Science disciplines do not meet the requirements of Perkins and STEM grants do not support maintenance. Nursing is funded by Perkins, but for new equipment and not maintenance.

5. What are the consequences of not funding this budget request?

The equipment will either provide incorrect information or break down. Then money will be needed to repair or replace which will have higher costs than maintenance. For example, the maintenance cost of a Gas Chromatograph/Mass Spectrometer is approximately \$2500. The replacement cost for the instrument is \$65,000. This instrument needs calibration and service once every three years. Without the appropriate funding to do this, the institution has not been a good steward of state funds.