

EQUIPMENT NEEDS ASSESSMENT APPLICATION

Name of Person Submitting Request:	Todd Heibel
Program or Service Area:	Geology-Oceanography (Earth Sciences)
Division:	Science
Date of Last Program Efficacy:	Spring 2012
What rating was given?	Continuation
Equipment Requested	Six (6) Standard, Monocular Microscopes – Ranked Second
Amount Requested:	\$3,000 (6 Microscopes @ \$500 each)
Strategic Initiatives Addressed:	Access, Institutional Effectiveness, and Student Success

Replacement

Growth

1. Provide a rationale for your request.

At present, the Geology-Oceanography Department does not possess any microscopes. In order to develop a more rigorous summer oceanography laboratory exercise, for example, it was necessary to borrow a set of microscopes from the Biology Department. While borrowing equipment is certainly one strategy that can be employed, it is not practical for long-term planning and program success. In addition, this strategy can only be used on a very limited basis and transport of sensitive equipment from one area to another risks damage.

While this is unfortunate for any physical science program, it is especially problematic for this program. The course outline of record for all SBVC geology and oceanography laboratory courses implies the use of microscopes. Specifically, with recent curricular updates, the use of microscopes is central to Physical Geology, Historical Geology, Mineralogy, and Oceanography laboratories. It is disingenuous to offer these courses without proper microscope use and runs counter to the mission of the college and accreditation standards. Furthermore, deprived of the use of microscopes, students will be at a disadvantage when transitioning to four-year programs of study, as well as entry- and advanced-level geo-technician and geo-science careers.

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.*)

Within the Geology-Oceanography Program Efficacy report, please refer to the “Three-Year Plan” (p. 30) and “Challenges” sections (p. 31). Although not explicitly addressed, the incorporation of microscopes will allow the department to implement its three-year (and longer) plan and meet the challenges of teaching a full suite of rigorous lecture and laboratory courses.

Within the EMP document “Action Plan” section, both Geology and Oceanography programs include a need for additional equipment. Classroom microscopes are a central component within this equipment need. In addition, student success, retention, persistence, and access benefit with increased instructional integrity.

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.*).

As previously mentioned, the updated course outlines of record for all geology and oceanography laboratory courses imply the use of microscopes within laboratory exercises. To deprive students of hands-on use of microscopes runs counter to stated course objectives and course content. In addition, students who wish to transfer to four-year institutions will be expected to understand the basics of microscope use within upper-division geology, oceanography, environmental, and Earth science courses. Students who wish to enter the job market will also be expected to know how to use a microscope. Please refer to the labor market information below. These career opportunities will be foreclosed to students who are not properly prepared (including proper microscope use):

Occupation:	Mean Hourly Wage:	Annual Average Openings:
Geological and Petroleum Technicians	\$39.23	80
Geoscientists	\$46.63	260

Source: State of California Employment Development Department (2013).

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 cost estimate per microscope (\$500) is actually quite low and will purchase a basic, monocular microscope. In addition, only six (6) microscopes are requested. In order to address institutional effectiveness, students will share these microscopes in groups of four to six (depending on overall class size). Moreover, these microscope resources could be shared with the neighboring Geography Department, further extending their efficiency and utility.

It is anticipated that ongoing maintenance will be necessary in order to extend the life and cost effectiveness of the microscopes. It is estimated that three-year maintenance costs will average \$600 every three years (\$100 per microscope every three years).

Unfortunately, the current department budget is insufficient to support maintenance costs. It will need to be supplemented. Because Geology-Oceanography is not considered a CTE program, it does not qualify for Perkins funding. It is possible to solicit grant funds, but no grants have been identified for this purpose to date.

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

If these microscopes are not purchased and incorporated into the geology-oceanography curriculum, then the course outlines of record will be violated, students will not be appropriately prepared for transfer to four-year programs, and students will not qualify for well-paid positions within the geo-technical and geo-science sectors.