Program Review 2013-2014
Sciences and Mathematics

ANTHROPOLOGY
ASTRONOMY
BIOLOGY
CHEMISTRY
COMPUTER SCIENCE
ENGINEERING
ENVIRONMENTAL SCIENCE AND RESOURCE MANAGEMENT (ESRM)
GEOGRAPHY
GEOGRAPHIC INFORMATION SYSTEMS (GIS)
GEOLOGY
MATHEMATICS
MESA (MATH, ENGINEERING, SCIENCE ACHIEVEMENT)
MICROBIOLOGY
PHYSICS
PHYSIOLOGY

Program Review Outline

I.   Initiatives funded in 2012-2013

II. Process Overview

III. Initiatives Not Requiring Funding

IV. Requests for Resources:

        - Faculty

        - Classified Staff

        - Facilities

        - General Fund

        - Computer

        - Equipment Non-Computer

        - Other Equipment

        - No Resources Required

V.   Minority Opinions on Resource Requests

VI. Program Discontinuance

Initiatives Funded in 2012-2013

- **Anthropology:**
  - Replace broken and damaged specimens
  - Update closed captioning on videos
  - Complete construction of lab and install emergency shower
- **Astronomy** – No initiatives funded
- **Biology:**
  - Refurbish microscopes
  - Herbarium
  - Osteology storage area to preserve expensive specimens
  - x-ray viewer to augment bone and joint structure instruction
  - Fish chillers
  - Train lab techs to repair microscopes – not yet implemented
  - Ventilation project to ventilate cadaver room – not yet fulfilled
  - Par Score System – currently being piloted
- **Chemistry :**
  - Preventative maintenance contract for GC-MS
  - Computers, data projectors, visualizer and instructor computer for CHEM V20L
  - Supplemental Instruction

Initiatives Funded - Continued

- **Computer Science** – No initiatives funded
- **Engineering:**
  - Purchase three computers, one printer and install network cable
  - Polycarbonate shield for Universal Tester in the Engineering Lab
- **Environmental Science** – No initiatives funded
- **Geography:**
  - Annual software maintenance funded one time
  - Seating and lighting replacement in SCI-116
- **Geology** – No initiatives funded
- **Math** – No initiatives funded
- **MESA** – No initiatives funded
- **Physics:**
  - Hire one full-time Physics instructor

Process Overview

- Each discipline named above collaboratively created a list of initiatives based on SLO data.
- October 17 the department chairs for each area presented their initiatives. This meeting was facilitated by Susan Bricker and captured using Tegrity. It was then sent via email to every member of the division.
- On October 30 the compiled spreadsheet was sent out to all faculty in the division.
- On October 31 the division met to prioritize the initiatives.
- The completed program reviews and finalized spreadsheet of initiatives was emailed to all faculty in the division on November 12.

Initiatives Not Requiring Additional Funding

Anthropology:
- Strengthen the four fields (Biological/physical Anthropology, Cultural, Archaeology, Linguistics)
- Improve department inventory listings

Biology:
- Expand the use of D2L in Biology instruction
- Expand writing assignments in Biology
- Expand the use of Tegrity in the Biology classroom
- Investigate the reorganization of Biology laboratory scheduling
- Enhance biological awareness through campus wide biological science activities

Initiatives Not Requiring Additional Funding - Continued

Chemistry:
- Develop an ADT in Chemistry
- Increase the SI program

Computer Science:
- Align courses with C-id descriptors
- Develop an ADT in Computer Science

Engineering:
- Change prerequisite for ENGR V02
- Build a shield to be used with universal tester in the lab
- Improve critical thinking skills in ENGR V02
- Increase the number of degrees and certificates awarded
- Increase student success in solving engineering statics problems
- Review SLOs and rubrics for all courses
- Develop demons followed by hands-on problems for ENGR V12L
- Investigate holding a preterm workshop for Engineering students

Initiatives Not Requiring Additional Funding - Continued

Environmental Science:

  - Create ADT in ESRM

  - Create an ESRM lab course

  - Increase the number of sections offered in ESRM

Math:

  - Create a problem of the month for students

Mesa:

  - Conduct at least 3 transfer workshops each semester

Physics:

  Work with Counselors to reinforce prerequisite
    enforcement

  - Improve online preparedness in online Physics classes

  - Use cohort study groups

Requests for Resources - Faculty

Computer Science – Ranked High

Rationale:

- In Fall 2011 (latest data available) 248 VC students declared themselves to be CS majors.   This is 14th on the list of the top 50 majors at VC, yet we only offer two CS classes each semester.
- Computer Science courses are required for transfer in most STEM programs.
- We have no full-time faculty in this discipline
- ADT in CS is in the pipeline to be on the books in Fall 14

Faculty - Continued

Geology – Ranked High

Rationale:

- There is no full-time Geologist to oversee the department. All classes are taught by hourly faculty.
- TMC finalized in May 2011, but we need a Geologist to revise the curriculum to match the C-id and move a degree through the curriculum process.

Classified

Dean – Restore Instructional Lab Techs, MESA Director and Student Services Asst I in MESA to 12 months

Ranked Required

Rationale:

- It is a serious safety concern to offer laboratory classes using an unsupervised student worker to prepare labs
- If this is not funded, summer classes requiring labs cannot be offered
- We are out of compliance with the MESA grant RFA
- There will be no cost to the college to return the MESA Student Services Assistant to 12 months since the grant pays this salary

- Cost: $45,350

Classified - Continued

Dean– Clerical Assistant for the Math/Sci Division Office

Ranked High

Rationale:

- There is only one Administrative Assistant to run an office that was formerly staffed with two Admin Assistants and an Account Tech.
- We have student workers doing the job of a clerical assistant to keep the division running.

Cost: $60,000

Classified - Continued

Math/SCI– (TST1401) Increase Testing Center hours to 40 hours per week

Ranked High

Rationale:

- All departments in the division support the Testing Center initiative to increase the Testing Center support position to a 100% position.
- The courses offered as distance ed courses require this support for their courses.
- The availability of instructors to provide make-up testing is very limited.

Cost:

Request for Resources - Facilities

Anthropology – Replace non-functioning or missing doors on cabinets in MCE-225

Ranked Required

Rationale:

- These cabinets contain expensive specimens that are vital to the program and difficult to replace if broken or stolen.

Cost: $1,200

Facilities – Continued

- **Biology** – Cabinets and ventilation for toxic materials storage.

Ranked Required

Rationale:

- The current storage units are not vented and located in a hallway that is an escape route in the event of an emergency.
- It is a health hazard to have the flammables and acid in non-vented storage units.
- M&O is prepping a room that will be designated for this storage with ventilation designated for this room. This initiative will fund the purchase of cabinets to complete the job.

Cost: $6,676

Facilities – Continued

Dean – Upgrade the lighting to the student areas in SCI-116, 221, 222, and 313

Ranked: Required

Rationale:

- The lighting in these areas is grossly inadequate.

Cost: Unknown

Facilities – Continued

Dean – Upgrade the lighting to the whiteboard surfaces in SCI-114, 116, 118, and all laboratories in the Science Building

Ranked: Required

Rationale: Currently those surfaces are lit using track lighting. This creates bright and dark spots, and it is a distraction to any work done on the whiteboard.

Cost: Unknown

Facilities – Continued

Dean – Enclose the hallways to the faculty offices in the north end of the Science Building

Ranked Required

Rationale:

- Children of Marketplace patrons are commonly found playing unsupervised in the hallways and on the elevator creating a liability for the college.
- Vandalism has occurred in these hallways.
- Unlawful activity has been observed in these out of the way areas during the Marketplace hours of operation

Cost: Unknown

Facilities - Continued

Geosciences– Sunshade for first floor faculty offices

Ranked High

Rationale:

- The sun shines directly onto the wall and through the windows and doors of the faculty offices on first floor.
- These offices are not air conditioned, and there is no plan to air condition them.

- Cost: Unknown but estimated to be less than $2,500

General Fund

Dean – Yearly departmental budget increases for Anthropology, Chemistry, Engineering, and Geography

Ranked Required

Rationale:

- The costs of consumable items critical to instruction have been steadily rising, but the department budgets have not changed.
- If budgets are not increased, some laboratory experiments required by the COR may not be performed.

Cost: $8450 total (ANTH-$2500, CHEM-$4000, GEOG-$1000, ENGR-$950)

Anthropology – Purchase five hominid skulls to update the collection

Ranked High

Rationale:

- These items are critical to Biological Anthropology instruction.

Cost: $2098

General Fund - Continued

Geosciences/Physics – Separate department chair positions for ESRM/GEOG/GIS and AST/ENGR/PHYS

Ranked High

Rationale:

- The disciplines represented in the current structure are not well related.
- The current structure was done at a time when there were fewer courses and fewer faculty in these disciplines.

Cost: $11,500

General Fund - Continued

Geography – Field trip support

Ranked High

Rationale:

- The Geosciences are increasing the number of field trips offered.
- This funding will be used to provide transportation, necessary equipment, entry fees, etc. to support one overnight field trip per semester to benefit several classes.

Cost: $750

General Fund - Continued

Math – Late start courses

Ranked High

Rationale:

- These courses provide opportunities for underprepared students to drop back to a course more suitable to their skill level .
- The late start courses were offered in the past and were anecdotally found to increase student success for those who moved back.

- Cost: approximately $3000 per course (cost is dependent on the number of students who submit a change of section request versus pay the registration fees for the new section)

Computer

Dean – Technology Refresh

Ranked High

Rationale:

- Many instructional computers are running slow.
- Many projectors in the SCI building are dim and should be upgraded to be brighter and present sharper images than what is currently installed.
- This initiative is ranked high in the Geography, Math and Physics program reviews.

Cost: Unknown

Equipment Non Computer

Engineering – Purchase three metallurgical microscopes with USB digital cameras

Ranked High

Rationale:

- Important to enhance instruction and to give students hands on experience with this technology.

Cost: $5800

Other Equipment

Physics – Swivel lab chairs for the two Physics laboratories

Ranked Required

Rationale:

- The current chairs are 16 years old. They are breaking and showing signs of wear.
- This initiative was ranked required due to the possibility of injury when a chair breaks with a student sitting on it.

- Cost: $18,000

Other Equipment - Continued

- **Biology –** Two Microbiology media refrigerators and an ultra low freezer

Ranked High (The division agreed that this should be the highest priority in this category)

Rationale:

- The current freezer is not functioning properly and resulted in the loss of thousands of dollars of media cultures.
- This equipment will provide greater efficiency and reduce the cost of providing media for the Microbiology labs.

- Cost: $13,760

Other Equipment - Continued

Biology– New microscopes for the Microbiology lab

Ranked High

Rationale:

- Microscopes are critical to Microbiology instruction and the current scopes are antiquated and fail regularly.
- The new scopes will enhance Microbiology instruction.

Cost: $53,000

Other Equipment – Continued

Geography – Measuring devices used by geotechnical professionals for hands on laboratory work

Ranked High

Rationale:

- To enhance instruction and use tools that are common in the geotechnical industry.

- Cost: $2500

Minority Opinions on Resource Requests

- There were no differing opinions. There was consensus concerning ranking the initiatives requesting funding that were presented by the departments for ranking.

Program Discontinuance

- No programs in Math/SCI are recommended for discontinuance.