

Fall 2012 Program Review - Annual Update Profile

As of: 3/15/2013 02:17 AM EST

Program Review - Annual Update Included in this report:

- 1. Discipline/Program/Area Name
- 2. Year
- 3. Name of person leading this review.
- 4. Names of all participants in this review.
- 5. Please review the five year headcount, FTES, and student PT/FT enrollment data provided on the web link. Comment on trends and how they affect your program.
- 6. Using the student achievement data provided by web link, please comment on any similarities or differences in success, retention, and persistence between ethnic, gender, and location/method of delivery groups. Please comment on all three (success, persistence, and retention). Identify which trends and achievement gaps will be addressed in the current academic year.
- 7. Analyze changes in student achievement and achievement gaps over the past four years. Cite examples of using additional resources (e.g. human, facilities/physical, technology, financial, professional development) or making other changes that have resulted in improvements in student achievement.
- 8. Provide examples from your program where assessment results of Student Learning Outcomes (SLOs), Program Learning Outcomes (PLOs), and/or Operational Outcomes (OOs) were discussed and used to make budget decisions. This should include brief descriptions of assessment results, when the discussions occurred, who participated, and what, if any, budget items/resources resulted.
- 9. Analyze changes in SLO, PLO and/or OO assessment results over the past four years. Cite examples of using additional resources (e.g. human, facilities/physical, technology, financial, professional development) or making other changes that have resulted in the improvement of SLOs, PLOs and/or OOs this past year.
- 10. Review the program goals and objectives related to improving outcomes and/or student achievement identified in the most recent comprehensive self study and subsequent annual update(s). List program goals and objectives for this academic year, adding new ones if needed.
- 11. Identify changes in significant resource needs since writing the comprehensive self-study report. List new needs in rank order of importance and explain the connection to outcomes and/or student achievement.

Fall 2012 Biology Department (PR)

1. Discipline/Program/Area Name

Biology/ Majors Biology/Science

Biology covers courses for majors ,non-majors Biology, Microbiology and Anatomy/Physiology (A&P). The only program truly identified here is Majors Biology. The majority of the biology courses are entry level laboratory-accompanied courses to satisfy that graduation requirement, or transfer level courses designed to provide the background scientific information required for entry into health science programs.

2. Year

2011-2012 academic year, reviewed for October 2012 annual update deadline.

3. Name of person leading this review.

Dr. Anne Hemsley

4. Names of all participants in this review.

Dr. Anne Hemsley, Dr. Zia Nisani,

5. Please review the five year headcount, FTES, and student PT/FT enrollment data provided on the web link. Comment on trends and how they affect your... (The full text shows at beginning of the document)

Within the document repository, please find a Microsoft Excel spreadsheet detailing the statistics for Biology and containing derived data, including 5 year averages and a % of the five year average for the academic year 2011-2012.

The sections offered dictated the headcounts and the section count trends in Biology are identical in nature and scope to those seen for headcounts.

There appears, however, to be a discrepancy in some parts of the derived headcount data provided by IRS. Upon close examination of the annual figures, the sum of headcounts from all four semesters is significantly higher than the reported annual headcounts (by 300-400 each year). Using the IRS-provided derived data, the 2011-2012 headcount is 92.46% of the five year average. Using corrected headcounts, it is only 89.55% of the five year average. **The corrected data has been added into the spreadsheet and shown in red.** Very significant reductions in headcount for Summer and Intersession terms have been offset to an extent by enrollments in Fall and Spring semesters but numbers show that over five hundred fewer students had the opportunity in the past academic year to complete degrees or advance in their pre-nursing studies when compared to the 2009-2010 cycle, where growth was in evidence and budgetary cuts were not yet implemented. The number of degrees in Biology was 101% of the five year average but only 80% of the number awarded in 2009-2010.

Annual FTES for 2011-2012 were 96.57% of the five year average but only 87.33% of the figure observed during the unimpeded growth trend of the 2009-2010 academic year.

The 2011-2012 percentage of full-time students was slightly higher than the 5 year average (102.94%), with the increase being observed in the Fall semester.

The significant effect on the program of all these cuts has been a **reduction in our effectiveness in educating deserving students.** The impact on the program itself in this manner has been clearly outlined. **If other impacts need to be discussed, further clarification would be welcomed as to the type of detail desired.**

6. Using the student achievement data provided by web link, please comment on any similarities or differences in success, retention, and persistence b... (The full text shows at beginning of the document)

Persistence figures for both Fall to Spring and Spring to Fall are increased by 6-7% in the 2011-2012 cycle when compared with the five year average. With respect to individual success and retention trends (ethnicity, race, gender, location method of delivery), the results from the past cycle are very similar to those of the previous two years in almost every case. Exceptions might be the 6% drop in success of Native American students, and the 12% drop in Pacific Islander retention. Since these tend to be smaller populations of students, and since we were not provided with actual numbers, it is difficult to know whether this is truly a significant change. **The data themselves can be viewed by accessing the uploaded Xcel spreadsheet in WEAVE. Since there are no differences in this cycle of update, comments of a detailed type will be reserved for the major review which must be completed next year. Question 6 asks simply for comments on similarities and differences.** Data on success and retention on the Palmdale campus are compared over four years only, due to the recent development of this facility. There is a 6% higher success and retention rate at the Palmdale campus. This is likely because Palmdale does not host the more rigorous courses such as majors biology, physiology and microbiology. Only introductory biology courses are taught there. Section count by location data reveals that 10 sections were taught at Palmdale while 167 biology sections were offered at the Lancaster campus.

The *actual* success rates of different ethnic and racial groups do differ significantly, although each rate has remained relatively unchanged over the past five years and the rates are comparable to national statistical data. At the extremes, the Asian success rate is 74%, while the African American success rate is closer to 51%. **The data themselves can be viewed by accessing the uploaded Xcel spreadsheet in WEAVE. Since there are no differences in this cycle of update, comments of a detailed type will be reserved for the major review which must be completed next year. Question 6 asks simply for comments on similarities and differences and the context provided indicates a comparison with past years is what should be provided.**

7. Analyze changes in student achievement and achievement gaps over the past four years. Cite examples of using additional resources (e.g. human, faci... (The full text shows at beginning of the document)

The *actual* success rates of different ethnic and racial groups do differ significantly, although each rate has remained relatively unchanged over the past five years and the rates are comparable to national statistical data. At the extremes, the Asian success rate is 74%, while the African American success rate is closer to 51%. Many factors likely contribute to this difference but the conclusions from national studies strongly suggest that the biggest predictors of success in entry-level undergraduate Biology courses are high school GPA and success in high school chemistry(1).

Completion of higher level mathematics at the high school level has also correlated positively with successful transfer to a four year university (2). If we wish to enroll students who have a high chance of completing their courses successfully, attention to high school preparation *and* encouragement/ selection of students who achieve high high school GPA results will be key factors in the effective utilization of resources.

Steps being taken to close this achievement gap include outreach to Antelope Valley high schools where teachers may be desirous of input for updating both regular curriculum or advanced placement courses so that students will be as prepared as possible upon college entry. In addition, Antelope Vally College will host events which are part of the nationwide Science Olympiad. As summarized in the Science Olympiad home page "**Science Olympiad is a national non-profit organization dedicated to improving the quality of K-12 science education, increasing male, female and minority interest in science, creating a technologically-literate workforce and providing recognition for outstanding achievement by both students and teachers. These goals are achieved by participating in Science Olympiad tournaments and non-competitive events, incorporating Science Olympiad into classroom curriculum and attending teacher training institutes.**" Participation in the Antelope Valley will encourage and foster interest in the sciences and potentially increase networking, communication and collaborations between AVC and regional high schools. Further information is available at <http://www.soinc.org>

With respect to facilities and technology, Biology courses taught at the Lancaster campus are now offered within the state-of-the-art HS building. Equipment used in teaching labs has been replenished and the physical environment for teaching is very high quality, both in laboratories and lecture rooms. Computers, CD and DVD players and magnifying devices for allowing full classroom viewing of experimental results or samples are installed in all lecture and laboratory teaching rooms. Student study rooms are provided within the building as well as in the AVC library. There is increased ease of access to instructors during office hours with all faculty being cloistered close to their teaching rooms.

1. M. Singh (2009), "Student Performance and Success in Entry-Level Undergraduate Biology Courses". Texas State University
from www.nabt.org/websites/institution/File/.../SINGH_NABT_2009.pdf
2. National Center for Education Statistics (2012)
in nces.ed.gov/pubs2012/2012046/chapter4.asp - 28k

8. Provide examples from your program where assessment results of Student Learning Outcomes (SLOs), Program Learning Outcomes (PLOs), and/or Operation... (The full text shows at beginning of the document)

Assessment results of SLOs for ten courses in Biology have all been recorded for both Spring and Fall semesters of the 2011-2012 cycle, but this is the first year in which complete data has been gathered. Four courses (BIOL 104, 110, 120 and 201) have some assessment target results that were not met. Three courses (BIOL 100, 102 and 202) have partially met targets. Insufficient data is available at present to use any of the information for budgetary decisions. After several more years of data have been collected and the results could be considered statistically significant, there may be meaningful discussion and use of the gathered information. PLOs for for Biology majors have been recently completed. Data gathering is in preliminary stages.

Meetings at which data was discussed include the Welcome Back Day meeting, which occurs on the Friday before the Fall semester begins. A two hour meeting involving all faculty is held at that time. Records of discussions that contributed in a meaningful manner to the recording of SLO and PLO parameters can be uploaded into the document repository by simply scanning any of these documents and saving .pdf files of their contents. Email communications between faculty discussing SLO data may similarly be uploaded. At the last meeting (August 2012), the SLO facilitator from IR offered to place any relevant documents into the repository. In future, individual SLO facilitators may take over this role if necessary.

9. Analyze changes in SLO, PLO and/or OO assessment results over the past four years. Cite examples of using additional resources (e.g. human, facilit... (The full text shows at beginning of the document)

The results of the past four years are not usable/comparable at this time. Until last year, some courses assessed only one or two SLO, others with a large number of full-time and part-time instructors chose to assess different SLOs in different course sections. PLOs have only just been formulated for the Biology major. It will require diligent assessment results gathering for several more years to provide a statistically meaningful body of data. The 2011-2012 cycle alone is the beginning of this data gathering revision. From this time onwards, all faculty members are being required to assess all SLOs for their courses both in Spring and Fall semesters. This has been mandated now that faculty have more familiarity with the process. Department chairs have been particularly generous with their time. Thanks must also go to Aaron Voelcker for his helpful training sessions. Creating a Professional Development event at the Welcome Back Day at the beginning of the academic year has ensured that faculty become involved in the process.

10. Review the program goals and objectives related to improving outcomes and/or student achievement identified in the most recent comprehensive self ... (The full text shows at beginning of the document)

The PLOs established for the Majors Biology program have been uploaded into the document repository. They were established in May 2011. They were not developed at the time of the last comprehensive self study. Data collection for one year only has occurred so far. Since the majors courses (BIOL 110 and BIOL 120) are only offered once per year, there is insufficient data available at present to identify trends, analyze goal achievements etc. The beginnings of meaningful analysis may be anticipated in next year's comprehensive self study.

With the additional laboratory facilities provided in the new Health and Science Building, there is additional opportunity to develop the Majors Biology program. The lack of space that restricted the offerings of BIOL 110 and 120 to a single section offering per year has been remedied with the construction of laboratory space dedicated to the majors courses alone. There is a great need to offer both courses every semester, since students who might need a single course to complete their biology studies may at present have to wait an entire year for a course offering.

Majors Biology teaching faculty would like to see both courses offered in both semesters beginning Spring 2013.

11. Identify changes in significant resource needs since writing the comprehensive self-study report. List new needs in rank order of importance and e... (The full text shows at beginning of the document)

Biology has recently been generously endowed with new facilities and equipment with the completion of the construction and furnishing of the new Health and Sciences Building. The equipment needs outlined in last year's annual update have almost all been met, with the exception of those listed below:

Biology 120: (a) purchase of various animal skeletons to represent the diversity found in different niche dwellers (e.g. fossoreal, arboreal, marine) for a more hands-on approach in laboratory exercises exploring functional morphology. (SLOs 2, 3, 5)
(b) purchase of taxonomic charts to illustrate the concept of morphologically derived taxonomic levels (SLOs 2, 3, 5)

The cost of procuring human cadavers for Biology 201 has steadily increased in recent years, to about \$3400 each at the present time.

Although these specimens remain useful for 4-5 years, a male or female replacement is typically required every 2 to 3 years - a cost which severely impacts the limited supply budgets in biology.

Our most recent cadaver purchase was made possible by a generous community donation through the AVC Foundation.

However, Foundation support cannot be expected on a reoccurring basis and some designated allocation of district funds should be established to enable these essential acquisitions and thus mitigate the significant impact on regular biology supply budgets.

Fall 2012 Chemistry Department (PR)

1. Discipline/Program/Area Name

Chemistry

2. Year

2012

3. Name of person leading this review.

Jessica Harper, Calos Hernandez, Jeff Cooper, David Newman

4. Names of all participants in this review.

Jessica Harper, Calos Hernandez, Jeff Cooper, David Newman

5. Please review the five year headcount, FTES, and student PT/FT enrollment data provided on the web link. Comment on trends and how they affect your... (The full text shows at beginning of the document)

Since the peak of AVC's enrollment in 2008-2009 there has been a 26.1% decrease in annual enrollment. This decrease in enrollment is directly related to severe budget cuts and workload reductions across the state and is not indicative of a lack of community need for education. Though there were sever cuts to the

course offerings the demand for chemistry courses stay stagnant with a slight decrease of 1.4%. The percentage of full-time students have increased by 6% from fall 2008.

6. Using the student achievement data provided by web link, please comment on any similarities or differences in success, retention, and persistence b... (The full text shows at beginning of the document)

Interesting tidbit: In all cases, student success, retention, and persistence in chemistry is higher than for the division or district.

Generally speaking, both success rates and retention rates for the division and the district have remained remarkably constant during this five year time span with variation not exceeding +/- 2%. The greater variation in the chemistry data (+/- 6%) may be attributed to smaller sample size. It is difficult therefore, to determine if the few trends observed in the data are real, or simply artifacts of the variation in the percentages from year to year.

Regarding SUCCESS and RETENTION rates:
ETHNICITY:

While the division and district have similar success rates for the Hispanic/Latino group and those outside of this group, chemistry data show a slightly higher success for non-Hispanic students (77%) vs. (71%). This is similar for most of the science subject areas (geology is an exception which shows a 76% success rate for the Hispanic/Latino group compared to 72% for those outside the group), but not for math, which consistently has identical success rates for both groups.

In 2011-2012, retention rates for the Hispanic or Latino group were 89% and for those outside this group, 88%. For both groups, retention rate in chemistry after 2009 is higher than before. This correlates with the reduced course offerings due to budget cuts. Students who realize that it could be difficult to get into a chemistry class in another semester and are more likely to try to finish the course in which they are enrolled.

GENDER:

Although the 2011-2012 data show higher rates of success for women (76%) vs. men (70%), data through the years back to 2007-2008 shows fluctuation from year to year. Male success in chemistry ranges from 65% to 76%. Success for females in chemistry ranges from 66% to 78%. With no apparent reason for the fluctuations, the difference between the two groups this year does not seem significant.

Similar results are found for retention: Between 80 and 91% for females over the past five years, with 90% in 2011-2012. Between 83 and 89% for males, with 83% in 2011-2012.

LOCATION:

For location, it is tough to compare results as there are multiple variables. Because there is not yet a wet lab at the Palmdale location, students only had lecture, and in some cases small assembly section, at Palmdale. Chemistry lecture was first offered in Palmdale in the summer of 2010-2011 but has not been offered during summer at Lancaster. Only CHEM 101 is offered in Palmdale.

For the 2011-2012 year, the success rate for students in chemistry classes in

Lancaster was 74%, for Palmdale 71%. Retention rates were 88% (Lancaster) and 87% (Palmdale).

MODE OF INSTRUCTION:

For chemistry, the online course had a success rate of 47% in 2011-2012 while traditional mode has success of 75%. Success online is consistently about 30% lower than traditional mode. This is a greater disparity than for the division, which shows 54% success online vs. 67% traditional. The district has 58% online, 72% traditional.

Retention rates for courses with traditional instruction have remained about the same over the past five years and are now 88%. For online courses, retention rates have fluctuated year-to-year, but are now higher, 79% for 2011-2012 compared to 64% in 2007-2008.

RACE:

Black or African American students have had lower success in chemistry than students of other races. In 2007-2008, success was only 51%. But the success rate has improved each year, reaching 68% in 2011-2012. This is comparable to the rates in remaining categories: 71% for Mexican/Central or South American, 76% for Native American, 79% for White, 82% for Asian, 100% for Pacific Islander. For the "Other" group, success rate was 65%.

In the division, Black or African American students have not seen an increase in success over the past five years. The 48% in 2007-2008 has only inched forward to 52% in 2011-2012. When looking at success by race in the district, this group of students has only moved to 58% success, from 55% in 2007-2008, thus remaining at least 10% below any other group.

There has not been a targeted effort to increase the success of any group, but perhaps there are underlying factors that have contributed to increased success in chemistry. This is a trend that we could investigate further if needed.

Black or African American students in chemistry have also had a lower retention rate than students of other races. In 2007-2008, the rate was 71%. But in 2011-2012, retention rate for this group has increased to 85%. This is comparable to the remaining categories which in 2011-2012 had 89% for Mexican/Central or South American, 89% for White, 91% for Asian, 94% for Native American, 100% for Pacific Islander. The "Other" group has an 80% retention rate.

Regarding PERSISTENCE:

Persistence from fall to spring is consistently higher than spring to fall.

There is a slight upward trend in both so that fall 2010 to spring 2011 was 85%, and spring 2011 to fall 2011 was 74%. This compares to 78% (fall 2007 to spring 2008) and 67% (spring 2008 to fall 2008). For the division, both terms showed a 6% increase, leading to 79% and 68% in 2011-2012. For the district persistence increases by 9% to 71% and 61%.

7. Analyze changes in student achievement and achievement gaps over the past four years. Cite examples of using additional resources (e.g. human, faci... (The full text shows at beginning of the document)

The answer to question six has already analyzed observed trends in achievement. Discussions among faculty have concluded variations over the last few years are largely due to random fluctuation.

The College has recently begun offering Chemistry courses at the Palmdale site. Data collected over many years has shown that AVC needs to offer a wide range of courses in all the communities served by the district, not just at the Lancaster site. Many resources have been directed toward this goal. Development (currently underway) of a wet lab at the Palmdale site will require human, facilities/physical technological and financial resources.

8. Provide examples from your program where assessment results of Student Learning Outcomes (SLOs), Program Learning Outcomes (PLOs), and/or Operation... (The full text shows at beginning of the document)

During spring 2012 the full time Chemistry faculty and several adjunct Chemistry faculty attended a 2YCCC conference near San Diego. Follow up discussions revealed that we were all very impressed with the latest Spartan software produced by Wave Function. This software will find applications in most, if not all, Chemistry courses. It was mentioned in the action plan for CHEM 110 SLO 3 for spring 2012. The goal for SLO 3 was met during spring 2012, but we had fallen a little short of the goal during all previous assessment cycles. The need to update the Spartan software had been identified by Dr. Newman in the action plan for CHEM 220 SLO 5 during the 2009/2010 cycle. The goal for CHEM 220 SLO 5 had been met during spring 2012, although we had failed to meet the goal in all previous cycles. The software was purchased using grant funds.

During the fall 2012 semester all Chemistry faculty were involved with a discussion of the need to place large periodic tables in the new H&S building. The tables were needed in all rooms used for Chemistry lectures or laboratories. They were present in the previous chemistry facilities. This need was identified in the action plan for CHEM 110 SLO 2 for spring 2012. The periodic tables in the old buildings have helped us meet the goals of SLO 2 in all cycles. The tables were purchased using grant funds.

9. Analyze changes in SLO, PLO and/or OO assessment results over the past four years. Cite examples of using additional resources (e.g. human, facilit... (The full text shows at beginning of the document)

As a department, all or most of us, have met at different times during the fall 2011 semester. We made some revisions in the SLOs, so the 101 SLO assessment would be standardized throughout the department. The other chemistry classes already had standardized assessment. We also discussed lab practicals for assessment in classes other than 101. In some miscellaneous discussions, we have discussed the implementation of technology, in the analytical lab, the financial crisis and writing grants to remedy that situation and making the connection between what the students are doing in their chemistry classes and what they will be doing in the real world.

Several instructors from the chemistry department went to the 2YC3 (Committee on Chemistry in the Two-Year Colleges) conference in San Diego during the spring of 2012. We went to the POGIL workshop. We have had multiple discussions on student learning, understanding and achievement. The purpose for going to the conference was just that. We also spoke with several vendors selling analytical equipment, textbooks, online resources and the like. All of this was for the purpose of improving the student learning and attempting to connect the student learning with improving achievement, problem solving and connecting with real world activities in a career in science.

10. Review the program goals and objectives related to improving outcomes and/or

student achievement identified in the most recent comprehensive self ... (The full text shows at beginning of the document)

Goal 1: Develop a community advisory board (from 2010 comprehensive program review)

Objectives: Ensure that the college is responsive to needs of the community. Inform the community of current college offerings and potential degree program. Open doors for students to have work/internship experiences with local employers.

Time Frame: Ongoing, starting in 2011-2012

Justification: The community and the college are integrally linked. Communication is the key to maximize mutual benefit for these parties and students.

Goal 2: Establish an AS in Chemistry Degree (from 2010 comprehensive program review)

Objective: Improve articulation of lower division coursework with bachelor's degree granting institutions.

Time Frame: 2011-2012

Justification: To support the implementation of SB1440; an AS in Chemistry will afford students the opportunity to transfer seamlessly to an institution that offers a bachelor's degree in chemistry.

Goal 3: Develop a Chemistry Technician Program (from 2010 comprehensive program review)

Objective: Establish a certificate program, which would be recognized by employers as excellent preparation for laboratory technicians

Time Frame: 3-5 years

Justification: To support community partners who need highly qualified laboratory technicians

Goal 4: Improve student success

Objective: Incorporate active learning teaching methods into courses

Time-frame: 3-5 years

Justification: Research indicates that student success increases when engaged in active learning.

11. Identify changes in significant resource needs since writing the comprehensive self-study report. List new needs in rank order of importance and e... (The full text shows at beginning of the document)

In reviewing the last annual update, the chemistry department received the analytical balances. However, there is still an apparent need for pH meters, gas chromatograph, lab computers, mass spectrometers and UV-Vis spectrometers.

Fall 2012 Earth Science Department (PR)

1. Discipline/Program/Area Name

Earth Science Department

2. Year

2012

3. Name of person leading this review.

Mike Pesses

4. Names of all participants in this review.

Mike Pesses, Rich Coffman, Rick Balogh

5. Please review the five year headcount, FTES, and student PT/FT enrollment data provided on the web link. Comment on trends and how they affect your... (The full text shows at beginning of the document)

We have seen a decline in students, though this makes sense in light of budget cuts and an overall reduction in FTES at AVC. It is unfortunate, because we do turn away students who want the classes. We still make up over 15% of the students taking Math, Science, Engineering (MSE) Division courses. We also have a higher percentage of full-time students than the district counts and are typically at or above the MSE counts. The decline in students does not seem to show any changes in our SLO assessments.

6. Using the student achievement data provided by web link, please comment on any similarities or differences in success, retention, and persistence b... (The full text shows at beginning of the document)

Retention by ethnicity and by gender have shown growth in the case of geology or has remained steady. Retention by mode shows that online classes are improving, but always slightly lower than the traditional class. Retention by race shows no discernible difference by racial category.

Success seems to be consistent with ethnicity. We see more success with females in Earth Science and Geography classes, but that seems to be limited to just the 2011-2012 year. Success by mode shows improvement in geography, and last year the online courses had greater success than the traditional mode. Success by race shows that Black/African American students have consistently lower success rates in all of the subjects.

Persistence has shown fluctuations from year to year, but it has been at or above the district percentages. Understanding this fluctuation requires further discussion to come up with a proper assessment method.

7. Analyze changes in student achievement and achievement gaps over the past four years. Cite examples of using additional resources (e.g. human, faci... (The full text shows at beginning of the document)

We have seen a decline in students completing the Geographic Information Systems (GIS) certificate. Last year only saw one graduate. While convincing students of the merits of taking non-GE courses has been challenging, the biggest obstacle has been in getting our equipment to work. We have struggled with server issues that ITS was never able to rectify, which led to computers crashing often during classes. Many new students were frustrated with this and few wanted to keep taking the classes to work towards a certificate.

As far as other, non-GIS courses go, we have been able to see where students have been struggling and have attempted to change our courses to address this (see question 8 for an example).

8. Provide examples from your program where assessment results of Student Learning Outcomes (SLOs), Program Learning Outcomes (PLOs), and/or Operation... (The full text shows at beginning of the document)

The Geography 101 lab had historically been somewhat detached from the content of the lecture course. Students focused on map reading while the lecture class covered subjects like the creation of mountains, river erosion, and earthquakes. Students were not meeting SLOs in many of these areas, so we began to develop labs that would connect with the lecture material. Preliminary assessment showed that students completing labs on geomorphology scored higher on test questions on that material in the lecture class. Discussions among geography faculty in Fall 2011 led to the request of new materials for the lab such as a stream table to hopefully boost student success further. The table will be incorporated into labs hopefully in the next semester. This semester, Rich Coffman and Mike Pesses have also discussed pooling lab resources between geography and geology so faculty aren't doubling work and students can get a well-rounded introduction to the Earth's processes.

9. Analyze changes in SLO, PLO and/or OO assessment results over the past four years. Cite examples of using additional resources (e.g. human, facilit... (The full text shows at beginning of the document)

We have used SLOs to work with lab activities to improve student performance in the Geography 101 lecture class. With the move to the new building, we have obtained more equipment to help demonstrate the Earth's processes in a hands on manner. Data are being collected to see if this is making a difference.

10. Review the program goals and objectives related to improving outcomes and/or student achievement identified in the most recent comprehensive self ... (The full text shows at beginning of the document)

We are continuing to develop an associates degree in geography as well as one in geology. These programs will comply with SB 1440.

11. Identify changes in significant resource needs since writing the comprehensive self-study report. List new needs in rank order of importance and e... (The full text shows at beginning of the document)

While we have received new equipment since our last report, but we still need another full time faculty position to help with the fourteen sections of geography courses and to help with the GIS certificate and forthcoming AA-T in Geography. The bureaucratic side of running programs (SLOs, PLOs, Advisory meetings, updating CORs, public outreach to attract new students and job opportunities for current students, etc.) is overwhelming and often competes with teaching responsibilities.

Fall 2012 Engineering Department (PR)

1. Discipline/Program/Area Name

Engineering

2. Year

2012-2013

3. Name of person leading this review.

Richard Colgren/Christos Valiotis

4. Names of all participants in this review.

Richard Colgren/Christos Valiotis

5. Please review the five year headcount, FTES, and student PT/FT enrollment data provided on the web link. Comment on trends and how they affect your... (The full text shows at beginning of the document)

Significantly the AVC engineering program has shown constant growth over the previous 5 years (2007-2012). There are several factors causing this growth despite the poor economy and the state budget cuts. The first is the high average age of engineers within the Antelope Valley (in the low 50s) and the amount of high technology projects in the area (at Edwards AFB, NASA Dryden, Lockheed-Martin, Northrop-Grumman, et cetera). This has led to a shortage of engineers and to very good salaries for engineering positions. This in turn has led to increasing numbers of students entering into this field of study. DOE grants have also provided incentives that are bringing more students into this field. Transfer agreements into 4 year engineering programs within the Antelope Valley, such as the CSU-LB ME and EE programs at the LUC, have also increased the number of students entering engineering. Looking at the actual numbers from 2007-2012 for the Fall and Spring semesters of these years, give the FTES numbers for the Fall semesters as: 18.99, 24.74, 27.27, 27.95 and 28.22, and for the Spring semesters as: 16.84, 25.76, 25.51, 25.90, 24.56. Thus the overall growth rate over the last five years has been slightly over 10% per year.

6. Using the student achievement data provided by web link, please comment on any similarities or differences in success, retention, and persistence b... (The full text shows at beginning of the document)

Head counts in Engineering have been improving over the last five years while the overall AVC trend for all disciplines has shown a drop due to Intersession/Summer cuts. Only one summer course in Engineering has been offered on main campus (Engr 230). Increases in FTES and two DOE grants have led to the hiring of a full-time engineering faculty member (Dr. Richard Colgren). There is some data to suggest a slight improvement in success and efficiency at a rate of about 1% per year. Some potentially statistically significant trends were observed in the data for the last five years in terms of gender (although only about 15% of engineering students are female making numbers statistically insignificant), retention (actually increasing NTES of 10% per year), success (an increase of about 1% per year), and location (although only main campus offered Engineering classes) in Engineering. Some trends in ethnicity were observed but note that the data contains low numbers of enrollments of Hispanic and Latino students. So Engineering classes have only a few students belonging to an ethnic background (Hispanic or Latino). Given this Hispanic or Latino students have shown a consistent improvement in student success over the last four years of about 5% per year, while no improvement trend has been seen for non- Hispanic or Latino students. Budget cuts severely limit our ability to plan and make significant changes to the programs. We are anticipating further cuts to classes supporting the Engineering program, but not specifically to Engineering classes. We are planning for future growth to the Engineering program due to the two DOE grants and a transfer agreement with CSU-LB and their program at the LUC.

7. Analyze changes in student achievement and achievement gaps over the past four years. Cite examples of using additional resources (e.g. human, faci... (The full text shows at beginning of the document)

Hispanic or Latino students have shown a consistent improvement in student success over the last four years of about 5% per year, while no improvement has been seen for non-(Hispanic or Latino) students.

8. Provide examples from your program where assessment results of Student Learning Outcomes (SLOs), Program Learning Outcomes (PLOs), and/or Operation... (The full text shows at beginning of the document)

While all engineering course have SLOs, assessment and evaluation has been slow due to the retirement of the only FT faculty in 2009. In 2012 the division has hired a new FT faculty member who is spearheading the effort to assess all SLOs and

develop appropriate PLOs. We anticipate partial assessment results by the end of Fall 2012, and full assessment results by the end of Spring 2013.

Discussions have led to proposals which lead to 2 DOE grants which are providing faculty and funding resources to improve SLOs, PLOs, and OOs. These resources are recent enough not to be clearly reflected in the SLO, PLO, and/or OO data.

9. Analyze changes in SLO, PLO and/or OO assessment results over the past four years. Cite examples of using additional resources (e.g. human, facilit... (The full text shows at beginning of the document)

The lack of systematic assessment of SLOs in engineering over the last 3 years makes it impossible to do a full assessment analysis of SLO results. As stated in item 8 above, we anticipate partial assessment results by end of fall semester 2012 and full results by the end of spring semester 2012.

10. Review the program goals and objectives related to improving outcomes and/or student achievement identified in the most recent comprehensive self ... (The full text shows at beginning of the document)

The department has worked tirelessly for the last three to accomplish two major goals: (1) Hire a FT engineering faculty, and (2) Align the AVC engineering curriculum with the local CSULB engineering bachelor's programs in ME and EE. In 2012, AVC hired a new FT engineering instructor made possible by federal funding through the US Dept. of Ed. In a short time interval, significant progress has been made to develop new courses that align with CSUB engineering and revise existing course to better align the two curricula. As soon as the new courses get approved by the AVC AP&P committee, goal 2 will be very close to be accomplished also. At that time we will have a better idea about PLOs and how to assess them. PLO development has been slowed due the anticipation of the development of the state wide Transfer Model Curriculum degree which is currently vetted at the state level.

11. Identify changes in significant resource needs since writing the comprehensive self-study report. List new needs in rank order of importance and e... (The full text shows at beginning of the document)

The main change in funding sources has been a very positive one. In 2011 AVC was awarded two Title V STEM Articulation grants for a total of over \$2 million per year for the next 5 years. The department's current needs are: (1) Fully equip the Circuits and Dynamic labs, (2) Develop a fully functional MATLAB computer lab, and (3) Fully support the expansion of the two engineering related clubs-the AVC Physics club, and the AVC Rocket club.

Fall 2012 Physics/Astronomy/Physical Science (PR)

1. Discipline/Program/Area Name

Math, Science, and Engineering

All courses under Physics, Astronomy, Physical Science

2. Year

2012

3. Name of person leading this review.

Alex Schroer-Physical Science

Mark McGovern-Astronomy/Physics

Joe Towe-Astronomy/Physics

Christos Valiotis

4. Names of all participants in this review.

Alex Schroer
Mark McGovern
Joe Towe
Christos Valiotis

5. Please review the five year headcount, FTES, and student PT/FT enrollment data provided on the web link. Comment on trends and how they affect your... (The full text shows at beginning of the document)

All disciplines saw a dramatic drop (30 - 70%) in headcount and FTES over the last five years. This is primarily due to cuts in classes especially in summer and intersession. Cuts were due to decreased budgets. In astronomy, a significant drop in enrollment occurred in 2009-2010 because the discipline added a MATH 102 pre-requisite.

No changes were observed for any discipline in PT/FT enrollment data over the last five years.

Decreased enrollments and budget cuts do not allow the programs to properly develop.



6. Using the student achievement data provided by web link, please comment on any similarities or differences in success, retention, and persistence b... (The full text shows at beginning of the document)

Online courses in physical science were eliminated in 2008. This decision was based on the observation that a traditional lecture class had a higher rate of success and retention (89-91%) compared to the online modality (61-78%). Section counts in all disciplines saw a drastic drop over the last five years (intersession/summer cuts). Only physical science offers a summer course at the Palmdale Center and there is no data to suggest a difference in success and efficiency.

No statistically significant trends were observed in the data for the last five years in terms of gender, retention, success, and location in all disciplines.

Some trends in ethnicity were observed but dramatic changes in data were simply due to low numbers of enrollment. Classes might have only a few students belonging to an ethnic background (Hispanic or Latino) so having a single student drop would result in a significant drop in percentages however with respect to the entire class the drop is insignificant.

Budget cuts severely limit our ability to plan and make significant changes to the programs. Instead of planning for future growth we are anticipating further cuts to classes.

7. Analyze changes in student achievement and achievement gaps over the past four years. Cite examples of using additional resources (e.g. human, faci... (The full text shows at beginning of the document)

Physical Science sees many student lacking in basic skills. This is seen in assessment data for SLO 1. For the last two years SLO 1 has not been met. This SLO measures the ability of students to solve simple mathematical equations. As a result, the instructors are trying to incorporate more example and activities to improve student success in this area. Physical science has requested funding to support tutors/SI leaders at the learning center. In summer 2012, the Learning Center offered tutoring for the Palmdale physical science course. This proved to be extremely successful with one of the highest success and retention rates. As a result, we feel that funding for tutors to support physical science courses is crucial to increased success.

Physics and Astronomy also would greatly benefit from funding for tutors/SI leaders. PHYS 101 especially would benefit because there are no pre-requisites for the course and basic skills are an issue with many of the students.

Mr. Valiotis has successfully procured two Title V grants for developing STEM based courses at AVC. These have been partially used to develop conceptual based learning curricula for all course in physical sciences. As the SLO data suggest, student have benefited from courses taught using this approach. The money from these grants have also been used to improve laboratory courses at both campuses by the inclusion of better equipment and new technology.

8. Provide examples from your program where assessment results of Student Learning Outcomes (SLOs), Program Learning Outcomes (PLOs), and/or Operation... (The full text shows at beginning of the document)

Over the last two years, physical science faculty (Mark McGovern, Alexandra Schroer, Joe Towe, Christos Valiotis, Rick Balogh) have met at both Welcome Back Meetings and at various division meetings to discuss trends in SLO findings. One direct result from these meeting was the identification of a strong need for additional funding for tutor/SI leader in all disciplines. Additionally, based on these discussions specific needs for the laboratories have identified.

Physics has asked for the purchase of new spectrometers for PHYS 211 which will be used for several laboratory activities. Astronomy would also benefit from the purchase of these spectrometers. Additionally, SLO data suggest that more modern telescopes and computer equipment can improve student success and retention.

We feel that these assessment results are valuable and accurate because assessment occur at the start and end of the each semester for each individual course taught. Result from the beginning of the course are compared to results at the end and the Hake gain is computed to properly see increases and aid in the proper development of action plans.

9. Analyze changes in SLO, PLO and/or OO assessment results over the past four years. Cite examples of using additional resources (e.g. human, facilit... (The full text shows at beginning of the document)

In 2009, after a full time faculty member was hired for physical science SLOs were reviewed and revised. A new SLO has been developed (SLO1) that measures mathematical skills prior to taking physical science. Assessment data is suggesting that student lacked basic skills in the area of mathematics. As a result of this change, faculty are better able to address basic skills concerns in lecture.

Physics and Astronomy have both used SLO assessment results to continually revise SLO assessment tools to better reflect the way that instruction is being conducted. This has resulted in assessment data in recent years better reflecting what is being done in the classroom. Nothing in the assessment data for physics and astronomy has prompted faculty to make any changes to the SLOs themselves.

11. Identify changes in significant resource needs since writing the comprehensive self-study report. List new needs in rank order of importance and e... (The full text shows at beginning of the document)

The new Health and Sciences building that became operational in September 2012, solved all physical space needs for the Physics/Astronomy/Physical Science discipline. There are separate lab for Physics and Physical Science and the current capacity would accommodate the scheduling of at least one half more number sections. There is astronomy observation deck that greatly facilitates the deployment of telescopes for night observation although light pollution is still a problem.

The most immediate need is the equipping of the Virtual Science center with state of the art projection system so that instructors and students can take full advantage of the Virtual Science facility. Preliminary estimates bring the cost for the projector system to about \$800,000. We are currently exploring the possibility of funding the purchase through Measure R funds. In addition, the AVC Foundation is working diligently to raise private funds. The need for the projection system has been identified in the discussion about SLOs.

Fall 2012 Water Treatment (PR)

1. Discipline/Program/Area Name

Water Treatment

2. Year

2012-2013

3. Name of person leading this review.

Dr. Les Uhazy

4. Names of all participants in this review.

Dr. Les Uhazy

5. Please review the five year headcount, FTES, and student PT/FT enrollment data provided on the web link. Comment on trends and how they affect your... *(The full text shows at beginning of the document)*

Since the peak of AVC's enrollment in 2008-2009 there has been a 26.1% decrease in annual headcount. This decrease in headcount is directly related to severe budget cuts and workload reductions across the state and is not indicative of a lack of community need for education. Similar to AVC Water Treatment has seen a decrease of 41% in headcount going from 99 in 08-09 to 58 in 11-12.

6. Using the student achievement data provided by web link, please comment on any similarities or differences in success, retention, and persistence b... *(The full text shows at beginning of the document)*

The program has only been available for two years and in that time student success has been near the low 60's which is much lower than the AVC average.

The retention rates have been similar to the campus in the 80% range. Notably, retention in females has more than doubled increasing from 44% in 10-11 to 100% in 11-12. In contrast, males have decreased from 87% in 10-11 to 80% in 11-12. This shift in retention has been major across races, specifically in African Americans which has more than doubled in a year. These numbers may have a wide variance due to the size of the student population.

7. Analyze changes in student achievement and achievement gaps over the past four years. Cite examples of using additional resources (e.g. human, faci... *(The full text shows at beginning of the document)*

At this point there have been no student achievements related to SLO findings. Further action planning will occur in the near future to increase student success.

8. Provide examples from your program where assessment results of Student Learning Outcomes (SLOs), Program Learning Outcomes (PLOs), and/or Operation... *(The full text shows at beginning of the document)*

Greg Dluzak, Toby Taube, and Dr. Les Uhazy meet on a semester basis to discuss the department goals, industry standards, and coursework. So far, there have not been any discussions on SLO findings and budget requests related to SLO findings, however there is anticipation for the discussions to occur in spring 2013.

9. Analyze changes in SLO, PLO and/or OO assessment results over the past four years. Cite examples of using additional resources (e.g. human, facilit... *(The full*

text shows at beginning of the document)

One semester of data has been collected and would be premature to draw any conclusions regarding the data findings.

10. Review the program goals and objectives related to improving outcomes and/or student achievement identified in the most recent comprehensive self ... (The full text shows at beginning of the document)**Goal 1: Rebuild and convene the Water Treatment Advisory Committee.**

Completed

Goal 2: Complete the conversion of the non-credit water treatment courses to credit courses and

determine if additional courses are required.

Ongoing

Goal 3: Explore the creation of a degree program in water sciences.

Ongoing and being planned with emphasis on a practical lab experiences including water chem and micro biology

New Goals

1. Develop a practicum which provides a practical lab experiences

2. Hire full-time faculty member to coordinate the program and assure current drinking and waste water standards are maintained

11. Identify changes in significant resource needs since writing the comprehensive self-study report. List new needs in rank order of importance and e... (The full text shows at beginning of the document)**Human Capital**

Full-time faculty

Facilities

Laboratory space for WT courses

Equipment

Small chem lab for the laboratory

Storage place for lab equipment (e.g., pipes)