**Section I – Accomplishments and Status of 2014 Program Review Report**

1. **Last Year’s Initiatives**

Laboratory Technician Contract (CHEM1401) was funded to extend our laboratory technician’s contract to 12 months, rather than the shortened 10. This allows us to offer a full complement of laboratory classes during the summer session in 2015. It has also allowed us to offer additional laboratory sections in impacted courses to increase student enrollment.

Supplementary Instruction (SI) and increased tutoring for ChemV01A (CHEM1302) was partially funded by adding some SI support to a few ChemV01A sections and continuing SI support for ChemV20 sections. Data from the Title V—Velocidad Team has shown an increase in both success and retention rates in ChemV20, as well as a closing of the achievement gap between Hispanic groups and other students. However, the LRC Tutoring Center continues to be short of qualified chemistry tutors and the financial support necessary to hire and retain them, particularly for our transfer-level courses where the student need is greatest.

Replacement Equipment Allocation/Increase in Supply Budget (CHEM1403) was not funded, and we continue to be dangerously short in chemicals and equipment and unable to replace non-functional laboratory pieces. While some extra funding did cover continual cost inflation on necessary purchases which allowed some experiments to be reintroduced to the laboratory curriculums, it was not enough to cover restoration of both equipment and supplies lost over the last few years needed to be able to run our laboratory sections.

Increase standardization of student assessment in multi-section classes (CHEM1304) has been an on-going process. The 5-year rotational SLO assessment plan has been implemented, and dialogue has been created between instructors between sections to ensure a consistent and coherent student educational experience. Department policies have been collaboratively developed and implemented to continue this effort.

Develop an AS in Chemistry degree (CHEM1405) is still in progress. The TMC for chemistry is due to be approved February 1, 2015 and will be developed locally for approval by the department.

NMR purchase (CHEM1406) was not funded last year.

Full-time Faculty Hire (CHEM1407) was funded last year. Our first hiring process in Spring 2014 was unsuccessful in finding a qualified candidate; the process was repeated successfully in Fall 2014 and a new growth faculty member joined our staff for Spring 2015. As a result, the department was able to offer four new sections for our spring 2015 schedule in response to student demand as well as increase our ratio of full-time to part-time sections taught.

1. **Updates/accomplishments pertaining to any of the Student Success or Operating Goals from last year’s report.**

Last year the department set goals to maintain its three-year average retention and success rate and to exceed the college’s three year average retention and success rate. This has remained true; the department increased its retention rate and success rate by 2% and 1%, respectively, over the three-year average, and continues to exceed the college’s three year average by 1% and 4% respectively. The department also continues to exceed the district’s goal of a 525 WSCH/FTEF ratio at 574. Inventory of the department’s instructional equipment was taken and maintenance contracts were found for some instrumentation. The department also continues to be active in improving its curriculum according to the discussions initiated via the SLO assessment process.

**Section II - Description**

1. **Description of Program/Department**

Students participating in the Chemistry Program will be able to apply the scientific method to analyze and interpret data in order to draw valid conclusions, relate observable macroscopic properties to underlying microscopic principles, communicate scientific ideas effectively in a logical and understandable manner, both verbally and in writing, and become proficient in current chemical laboratory safety and skills. Students may participate in both lecture and laboratory courses designed to prepare them for majors such as nursing, environmental studies, biology and many others at Ventura College or a four-year institution. In addition, students will find careers in such fields as medicine and pharmaceuticals, petroleum, nanotechnology, business, and education.

 **Degrees/Certificates**

N/A

1. **Program/Department Significant Events (Strengths and Successes), and Accomplishments**

Over the last year faculty have rewritten the laboratory manuals for ChemV01BL, ChemV12AL, and ChemV12BL and made these required materials free to and more accessible for students. These manuals even incorporate multimedia, including photo and video demonstrations of techniques and set-ups, and enhance the student laboratory experience. Faculty have also been continuing to work closely with CSUCI and UCSB on a variety of grants, including utilizing their remote NMR facilities, recruiting to and supporting VC students into the schools’ undergraduate research programs, and increasing transfer rates to these institutions. Faculty have met with other chemistry faculty at Moorpark and Oxnard Colleges to increase cohesion between the programs in the district. We have formalized a five-year rotational plan for SLO implementation and continue to assess and collect data in order to initiate discussions about promoting student learning. Faculty are also involved in the Leadership Team for the Title V—Velocidad grant at Ventura College, including working with the Supplementary Instruction (SI) program and other resources to reduce the achievement gap between Hispanic students and those of other ethnic groups.

The department’s courses continue to have very full enrollment every term. Despite this, our budget for our classified staff lab technician and other supplies has decreased, making it difficult to service our high volume of students and maintain the quality of our courses for articulation.

1. **2013-2014 Estimated Costs/Gainful Employment – for Certificates of Achievement ONLY**

N/A

1. **Criteria Used for Admission**

Students must meet prerequisites for individual courses.

1. **College Vision**

Ventura College will be a beacon of learning—a source of inspiration and guidance—for our students and community.

1. **College Mission**

At Ventura College, we transform students’ lives, develop human potential, create an informed citizenry, and serve as the educational and cultural heart of our community. Placing students at the center of their learning experience, we serve a highly diverse student body by providing innovative instruction and student support, focusing on associate degree and certificate completion, transfer, workforce preparation, and basic skills. We are committed to the sustainable continuous improvement of our college and its services.

1. **College Guiding Principles** **-** At Ventura College we believe that students come first and all else follows.  We strive to create a campus environment that fosters collaboration, communication, and mutual respect.  We are committed to these Guiding Principles in all that we do:
* Embrace the strength of diversity
* Listen with intensity and compassion
* Communicate with integrity and patience
* Design student-centered solutions
* Spark self-confidence and a sense of discovery
* Pursue our vision and goals with passion
1. **Organizational Structure**

**President:** Greg Gillespie

 **Executive Vice President:** Patrick Jefferson

**Dean:** Dan Kumpf

**Department Chair**: Malia Rose

 **Faculty/Staff**:

|  |  |
| --- | --- |
| **Name** | **Joy Kobayashi** |
| Classification | Professor |
| Year Hired  | 1985 |
| Years of Work-Related Experience |  |
| Degrees/Credentials | B.A., M.S. |

|  |  |
| --- | --- |
| **Name** | **Michelle Hagerman** |
| Classification | Associate Professor |
| Year Hired  | 2007 |
| Years of Work-Related Experience |  |
| Degrees/Credentials | B.S., M.S. |

|  |  |
| --- | --- |
| **Name** | **Malia Rose** |
| Classification | Assistant Professor |
| Year Hired  | 2009 |
| Years of Work-Related Experience |  |
| Degrees/Credentials | B.S., M.S. |

|  |  |
| --- | --- |
| **Name** | **Joe Selzler** |
| Classification | Professor |
| Year Hired  | 2004 |
| Years of Work-Related Experience |  |
| Degrees/Credentials | B.S., M.S. |

|  |  |
| --- | --- |
| **Name** | **Kristin Clark** |
| Classification | Assistant Professor |
| Year Hired  | 2015 |
| Years of Work-Related Experience |  |
| Degrees/Credentials | B.S., M.S., Ph.D. |

**Section IIIa – Data and Analysis**

1. **SLO Data**

Over the last year (Fall 2012, Spring 2013) the department has assessed CSLOs for ChemV01A/V01AL, ChemV01B/V01BL, and ChemV12A/12AL. The CSLO for ChemV01A revealed that many students seemed underprepared, particularly in the math preparation area, and might do better taking ChemV20 first instead or having more access to greater support and tutoring. The lack of math preparation was especially apparent in ChemV01B due to its heavy integration of algebra required to solve chemical equilibria problems. Outside resources, including tutoring, SIs, or other support could help students be better prepared and achieve higher. In addition, department faculty are continuing in discussions about how to add in topic repetition during lecture while still adhering to schedule, as well as establishing more consistency between the various sections.

In the lab courses, the CSLO assessments revealed that having the resources to allow students to do multiple trials in an experiment, or even an experiment over from the beginning, could have a drastic improvement on student achievement. Quite often the students were simply lacking in repetition; they didn’t have the time or the resources available to truly master techniques. The latter was very much due to the cut in the department’s lab technician’s contract as well as cuts to student workers. Labs had to be scaled down so that all the department’s varying sections could be covered, and this prevented students from being able to make mistakes—a natural occurrence and essential to the learning experience—in lab and then, most importantly, correct them in their next trial.

The department has also put great effort into revising the laboratory manuals to address some of this for ChemV01BL, ChemV12AL, and ChemV12BL to make it more affordable and accessible to our students, as well as more enhancing of their educational experience. The lab manuals are being written by the department’s faculty specifically tuned to our resources for clarity as well as using chemicals that are safer and more environmentally-friendly. They are also tailored to our students’ level and the material and techniques that they specifically need to learn for each course.

Last semester (Spring 2013) the department met, organized, and established a five-year rotational plan for SLOs with the help of a facilitator. All courses were mapped to one ISLO, and all CSLOs, assessment tools, and the previous year’s findings were input to TracDat. This semester (Fall 2013) the department is preparing to assess those courses indicated in our five-year rotational plan, and has already met to set assessment tools, performance goals, and dates to complete the scheduled assessments.

1. **Performance Data**
2. **Retention – Program and Course**

The retention rate for the department continues to exceed the college’s average at 87%, a 2% increase over the department’s three-year average. Given the academic rigor of the courses offered by the department, this is remarkable. The department’s retention rate has continued to gradually increase in recent years and continues to exceed expectations.

Throughout the department’s courses, there is a noticeable difference in retention between Hispanic and White students, the two largest ethnicities represented in the program. Currently faculty are working with the Title V—Velocidad grant to utilize Supplementary Instructors and other resources to address this in the targeted ChemV20, Elementary Chemistry course. Other classes could benefit from these additional resources, including SIs, additional tutoring, and laboratory equipment and supplies as well to help decrease this gap.

1. **Success – Program and Course**

The department’s success rate continues to exceed the college’s average, being reported at 74%. This is also a 1% increase over the department’s three-year average. In comparison to recent years, the department’s success rate continues to remain constant. Given the academic rigor and level of the coursework offered, this is remarkable and continues to exceed expectations.

The ChemV01A, General Chemistry I course has the lowest success rate in the department, being 57% this year. This is expected, as this class is the first that students take from their chemistry requirements, as well as often being taken during their first semester after high school. Additional tutoring or Supplementary Instructors would help identify and assist struggling students early to instill the study and math skills that are often the greatest barriers for students in this course.

Much like the retention rates, the success rates for the department show a noticeable gap between Hispanic and White students. The department will continue to work closely with the Leadership Team on the Title V—Velocidad grant to develop techniques and resources that may help to decrease this.

The grade distribution for the department is on par with the college averages, though this is only true when looking at the department as a whole. Typically for lectures, grade distributions are more “normal”, meaning that most students receive B’s and C’s and a smaller percentage receiving A’s. Laboratory classes, however, have significantly higher percentages of students receiving A’s than all other letter grades. This is mostly due to the group-work nature of the course, as well as a large percentage of the required assignments being done in class with direct instructor supervision.

1. **Program Completion – for “Programs” with Degrees/Certificates Only**

Not applicable.

1. **Operating Data**
2. **Demographics - Program and Course**

The department continues to serve a primarily Hispanic and White student population, with 44% and 35% respectively. However, the percentage of Hispanic students has noticeably increased over the previous three-year average by an additional 4%, while the percentage of White students has decreased by 3%. The other ethnicities have remained relatively constant, as well as the distribution by gender and average age.

The department’s average of Hispanic students is noticeably below that of the college, being 7% different, and the other ethnicities relatively similar. There is not a clear reason for this.

1. **Budget**

🗹 Program members have reviewed the budget data.

☐ No comments or requests to make about the budget

Despite serving a significantly greater number of students as our sister college in Oxnard, our department employs only one laboratory technician to prepare and supply all the various laboratory sections offered. Our technician’s contract has been reduced from twelve months to an eleven month contract. This has prevented her from adequately preparing samples and equipment for lab classes, as well as being present while classes are meeting to assist instructors. This has had a dramatically negative effect on student learning as students are limited in the amount of analyses and trials they can do, delayed by needing to share equipment and supplies, and reducing instructors’ ability to interact directly with the students as they often have to help setting up the labs. If our technician’s contract is not increased back to twelve months, the department will be unable to offer the same number of lab sections.

The budget for student workers has also been regularly cut. Not only does the opportunity to be trained and employed in a working laboratory setting greatly enhance the individual student’s education and occupational experience, but it also helps the laboratory technician by having trained staff on hand to meet the department’s needs.

Increasing both of these parts of the budget would tremendously impact student learning for the good.

1. **Productivity – Program and Course**

The department has maintained a productivity factor well above the college average and the district goal, at 574 overall. This progress continues to be remarkable as the department’s lab courses are all capped at a maximum of 28 students due to space and safety concerns. Despite this, many of the lab courses average very close to the district goal of 525. All courses, and especially the extra-large lectures, continue to have very full enrollment which helps to bolster the department’s productivity.

The current 574 number is a decrease from the previous three-year average of 593, which could be attributed to the college’s overall decrease in enrollment. It also seems that students are waiting to enroll in classes later than usual, which can cause them scheduling problems as certain sections fill faster than others. Individually almost of the department’s courses have maintained their previous levels of productivity.

The Chem21/Chem21L courses’ productivity dramatically increased over the last year by 20 and 25% respectively. This is most likely due to the addition of a second section of Chem21L which allows students to take the lecture and lab components simultaneously.

The Chem12BL’s productivity is below the district goal at 203. This is due to the class being a specialized, upper division course that only particular majors and programs, are required to take. Though the productivity is low, this class is absolutely essential for many students to complete the chemistry coursework before transferring, is a required co-requisite with the full lecture component, and cannot be reduced or its scheduling altered.

1. **Resources**
2. **Faculty**

The department’s FTEF for last year was 2.51, a -39% change from the previous three-year average. This was due to a faculty member taking load-bank leave in Fall 2012, one faculty taking sabbatical during Spring 2013, and another taking medical leave and sabbatical in Spring 2013 through Fall 2013. It is expected, however, that all four of the department’s current full-time faculty will be teaching in Spring 2014. Due to these leaves, the department hired a one-semester temporary full-time faculty for Fall 2013. One of our current adjuncts was selected and is teaching this term. As a result, the department was able to offer its full set of courses and sections to students. Using the three-year average instead of the unusual FY13 number, the department is at 44% for its full-time faculty and 56% for its part-time, which is equivalent to the college averages.

Due to the department’s high enrollment and numerous class sections, it can often be a struggle to find enough adjunct instructors to cover all the sections offered. Fortunately we have not had to cancel any sections due to lack of staff, but with turnover, we are often hiring new part-time faculty for our pool to ensure we can still offer all of our sections, and probably will be again in the near future.

1. **Classified Staff**

The department currently has one classified staff laboratory technician. This single technician is responsible for maintaining all four of the chemistry laboratory rooms and keeping them up to proper safety guidelines, as well as preparing, setting up, and then cleaning up all materials required for every experiment scheduled for each class throughout the week. The technician also manages the stockroom and is responsible for inventory, maintaining, and ordering the many supplies and equipment that the department owns and utilizes for instructional purposes. The technician is also supposed to be available while labs are in session to help assist and support the instructors in case supplies run out, errands have to be run, etc., so that students are not left alone in the laboratory.

Despite this heavy amount of responsibility, the contract for our laboratory technician was cut from twelve months to eleven. This has sometimes not allowed the technician to be present while a laboratory class was meeting or be able to thoroughly prepare the experiments due to the hours being cut. This has had severe effects on our laboratory sections, causing adjustments to the curriculum to avoid needing too many things to be prepared, which in turn prevents students from performing multiple trials and perfecting techniques. We will be requesting a restoration of our technician’s contract to the original twelve months.

1. **Inventory**

The department owns a great deal of equipment used in our laboratory sections, including computerized sensors for pressure, temperature, pH, etc., electronic balances, and specialized glassware such as burettes. It is integral to the lab curriculum and students’ learning experience that they be exposed to and taught how to use this laboratory equipment in a hands-on environment. Due to constant use in multiple sections, some equipment will break down over time and can no longer be used for instructional purposes. The department would like to request an allocation for replacing broken equipment each year to ensure we have enough for each section and each student.

1. **Facilities or other Resource Requests**

The department will not be making any requests for facilities or other resources.

1. **Combined Initiatives**

The department will be making an initiative to address the restoration of our laboratory technician’s contract to twelve months, as mentioned in the Budget, SLO, and Classified Staff sections.

The department will be making an initiative to address the expansion of our laboratory supply budget for the renewal and replenishment of our exhausted inventories, as mentioned in the Budget and Inventory sections.

1. **Other Program/Department Data**

The department has no outside data to report.

**Section IIIb – Other Program Goals and Initiatives**

The department will be requesting the purchase of a new NMR instrument to enhance the learning experience for students in ChemV12AL, ChemV12BL, and ChemV05. The ability to teach students hands-on techniques using this equipment are vital to the students’ experience in these laboratory courses and will help emphasize topics and information taught in all three courses. This is especially true for ChemV12AL/V12BL, as the organic chemistry laboratory sequence requires students to learn how to interpret NMR spectra, which for now are simply print-outs and not actual measurements of their actual samples.

The department will also be setting an initiative to establish an AS degree to help with students’ transfer.

**Section IV – Program Vitality (Academic Senate Approved Self-Evaluation)**

The department’s score on the self-evaluation sheet was 22. This means that the department is right on track with its productivity, student retention and success rate, and SLO assessment goals. As was stated on the evaluation, the low score in the enrollment section is somewhat misleading; even sections that are not completely full by the start of the term are usually only a few empty seats short of being full. Even these are few and far between, as most of the department’s sections are completely impacted to the point of having to turn many waitlisted and “crashing” students away.

**Section Va – Findings**

 Finding 1

The Chemistry Department needs to continuously maintain its laboratory equipment and supplies, as well as update it to current standards when necessary.

*Aligns with the College’s Educational Master Plan Goal 4.*

*Aligns with the District’s Strategic Goal 3.*

Finding 2

The Chemistry Department is meeting its learning, student success, and operating goals. Sections are full and students are completing courses to successfully move on to further science courses and transfer to four year universities.

*Aligns with the College’s Educational Master Plan Goal 1, 3, and 4.*

*Aligns with the District’s Strategic Goals 2 and 3.*

Finding 3

The Chemistry Department needs to continuously improve its curriculum and operations. The program should acquire new technologies to keep current with advances in chemical and educational technologies.

*Aligns with the College’s Educational Master Plan Goals 1 and 4.*

*Aligns with the District’s Strategic Goals 1 and 3.*

Finding 4

The Chemistry Department needs to continue efforts to decrease the achievement gap between Hispanic and other student groups, as well as to increase its retention and success rates for all students in “barrier” courses.

*Aligns with the College’s Master Plan Goals 1 and 2.*

*Aligns with the District’s Strategic Goals 1.*

**Section Vb - Initiatives**

**R** = Required – mandated or unavoidable needs (litigation, contracts, unsafe to operate conditions, etc.)

**H** = High – Approximately 1/3 of the total program/department/division’s initiatives by resource category

**M** = Medium – Approximately 1/3 of the total program/department/division’s initiative by resource category

**L**  = Low – Approximately 1/3 of the total program/department/division’s initiatives by resource category

1. **Initiative:** Supplementary Instruction (SI) and increased tutoring

**Initiative ID:** CHEM1302

**Link to Data:** Success Rate (57% for course versus 74% for department for FY14 versus 60% three-year average), Retention Rate (80% for course versus 86% for department for FY14 versus 77% for three year average)

**Links to Finding:** Finding 4 - The Chemistry Department needs to continue efforts to decrease the achievement gap between Hispanic and other student groups, as well as to increase its retention and success rates for all students in “barrier” courses.

**Initiative Finding Link**: CHEMF1504

**Expected Benefits:** Increased performance on CSLO assessments, retention, and student success, increase in student learning and support

**Goal:** Implement an SI program for ChemV01A courses ($4,000) and increase the budget for chemistry-specific tutors at the LRC ($2,000)

**Performance Indicator:** Increased student performance on CSLO assessments

**Timeline:** 2014-2015

**Funding Resource Category:** Staffing Funds

**Ranking:** H

1. **Initiative:** Replacement Equipment Allocation/Increase in Instructional Supplies and Materials fund

**Initiative ID:** CHEM1403

**Link to Data:** Supplies Budget (FY11 $16502, FY12 $16228, FY13 $16710, FY14 $17400, FY15 $22500), Equipment Budget (FY 11 $14154, FY12 $10,521, FY13 $1819, FY14-15 $0) Section Productivity (180 students Fall 2013, 130 students Spring 2014, additional 2 sections scheduled for Spring 2015)

**Link to Finding:** Finding 1 - The Chemistry Department needs to continuously maintain its laboratory equipment and supplies, as well as update it to current standards when necessary.

**Initiative Finding Link:** CHEMF1501

**Expected Benefits:** Increased student learning, adherence to expected laboratory curriculum for articulation. The department’s supply budget has not been increased in the last five years and has been depleting our inventories of chemicals, glassware, and other consumables. Our inventories are at critically-low levels, and without augmentation to the budget, the department will be unable to supply certain experiments and some lab sections may need to be canceled as a result. There are also particular classes, such as ChemV01BL and ChemV12AL/V12BL, that require specialized equipment and glassware that is in severely limited supply; the department does not even have enough to outfit a single 24-seat section so that all students may start on the experiment without unnecessary delay. As a result, students are either working in groups, come in at different times, or don’t finish experiments. The department is also continuing to try to add new sections to our labs, as these classes with their legally-mandated small student caps are in constant demand. Not getting a seat in lab often puts students severely behind with their academic progress, and thus the department needs an increase in funds to match the increase in enrollment demand.

**Goal:** Allocation of funds to replace broken equipment each year to keep the amount of functional pieces available for instructional purposes constant, increase in supply budget to ensure enough resources for all students in the laboratory sections to perform the full spectrum of experiments. ($12000)

**Performance Indicator:** Enough functional equipment available to allow each student in the department’s lab sections to use it, enough supplies to be able to allow students to work individually without delays

**Timeline:** 2014-2015

**Funding Resource Category:** Supply Funds

**Ranking:** H

1. **Initiative:** Increase standardization of student assessment in multi-section classes.

**Initiative ID:** CHEM1304

**Link to Finding:** Finding 3 -The Chemistry Department needs to continuously improve its curriculum and operations. The program should acquire new technologies to keep current with advances in chemical and educational technologies*.*

**Initiative Finding Link:**CHEMF1503

**Expected Benefits:** Students would have a similar classroom experience and have similar preparation for more advanced classes

**Goal:** To align curriculum, requirements, and expectations between instructors ($0)

**Performance Indicator:** Similar results in individual SLO assessments between different instructors for the same course

**Timeline:** 2014-2015

**Funding Resource Category:** No new resources needed

**Ranking:** L

1. **Initiative:** Develop an AS-T in Chemistry degree

**Initiative ID:** CHEM1405

**Link to Finding:** Finding 3 - The Chemistry Department needs to continuously improve its curriculum and operations. The program should acquire new technologies to keep current with advances in chemical and educational technologies.

**Initiative Finding Link:**CHEMF1503

**Expected Benefits:** Increase in students’ ability to transfer or find employment with the AS degree ($0). The TMC in chemistry was recently approved by the state.

**Goal:** Establish an AS degree in Chemistry in the department to allow students to graduate with it

**Performance Indicator:** Program completion and graduation rates

**Timeline:** 2015-2016

**Funding Resource Category:** No new resources needed

**Ranking:** L

1. **Initiative:** NMR purchase

**Initiative ID:** CHEM1406

**Link to Finding:** Finding 3 - The Chemistry Department needs to continuously improve its curriculum and operations. The program should acquire new technologies to keep current with advances in chemical and educational technologies.

**Initiative Finding Link:** CHEMF1503

**Expected Benefits:** Hands-on experiential learning for students in ChemV12AL and ChemV12BL, ability to offer ChemV05, Quantitative Analysis. Interpreting NMR spectra is a required learning outcome in the organic chemistry laboratory sequence, which for now is done through print-outs and copies of known compounds. Actually having an NMR instrument in the department will allow students to test their own isolated samples, have unique unknowns to determine, and to learn how to use the NMR instrument itself as a requisite to the class

**Goal:** Purchase and maintain an NMR instrument ($125,000) for use in the above courses

**Performance Indicator:** Students’ increased learning in the organic chemistry laboratory sequence, ability to offer ChemV05

**Timeline:** 2015-2016

**Funding Resource Category:** Equipment-non computer

**Ranking:** M

1. **Initiative:** Add ChemV12A/12AL and ChemV12B/12BL for off-sequence students

**Initiative ID:** CHEM1501

**Link to Data:** Supplies and Equipment Budget (FY11 $30206 total, FY12 $26749 total, FY13 $18529 total, FY14 $17400 total, FY15 $22500 total)

Section Productivity (180 students Fall 2013, 130 students Spring 2014, additional 2 sections scheduled for Spring 2015)

ChemV01B Enrollment (59 in Fall 2013)/ChemV12A success (71% in Fall 2013)

**Link to Finding:** Finding 2 -The Chemistry Department is meeting its learning, student success, and operating goals. Sections are full and students are completing courses to successfully move on to further science courses and transfer to four year universities.

**Initiative Finding Link:** CHEMF1502

**Expected Benefits:** Currently we offer ChemV12A, Organic Chemistry I lecture and lab, only in fall, and ChemV12B, Organic Chemistry II lecture and lab, only in spring. Both are courses required for many majors, including chemistry, pre-medical, biology, some nursing, and others. Due to the sequential nature of ChemV01A/V01B, V12A/V12B (four semesters), students who for any reason, including not successfully passing a course, taking time off, not beginning the sequence right away, or enrolling in the preparatory ChemV20 course before ChemV01A, often have to wait an entire term or sometimes an entire year before being able to enroll in ChemV12A. Being able to offer ChemV12A/12AL and ChemV12B/12BL both fall and spring semesters will enable students more flexibility of scheduling, a higher chance of success due to not having to take time off from cumulative courses, and easier times meeting transfer requirements. Due to the specialized nature of organic laboratory equipment, additional purchases will need to be made to offer these extra sections.

**Goal:** Add ChemV12A/12AL sections to Spring, ChemV12B/12BL sections to Fall ($22,000)

**Performance Indicator:** Higher enrollment, more successful transfer rates for students

**Timeline:** 2015-2016

**Funding Resource Category:** Supply Funds

**Ranking:** M

1. **Initiative:** FT-IR Purchase

**Initiative ID:** CHEM1502

**Link to Data:** Supplies and Equipment Budget (FY11 $30206 total, FY12 $26749 total, FY13 $18529 total, FY14 $17400 total, FY15 $22500 total)

Section Productivity (180 students Fall 2013, 130 students Spring 2014, additional 2 sections scheduled for Spring 2015)

ChemV12AL/V12BL Enrollment (45 in 12AL, 33 in 12BL)

**Link to Finding:** Finding 1 - The Chemistry Department needs to continuously maintain its laboratory equipment and supplies, as well as update it to current standards when necessary.

**Initiative Finding Link:** CHEMF1501

**Expected Benefits:** Identifying their synthesized and purified unknowns is an essential skill for any student successfully completing the organic laboratory sequence. Currently the department owns one working FT-IR, requiring all students in class to share this single instrument for the majority of their experiments. Due to the timed, procedural nature of the course, this often leads to huge delays for students as they must wait until other students prepare the instrument, take their spectra, and then clean it before they can, which continually prevents students from completing the experiments during the assigned class period. A second instrument would not only allow students to complete the experiments in the allotted time, but should one be nonfunctional for whatever reason (which often happens), it will allow students to still complete the experiments in lab.

**Goal:** Purchase and maintain a second FT-IR instrument ($20,000) for use in the above courses

**Performance Indicator:** Students’ increased learning in the organic chemistry laboratory sequence

**Timeline:** 2015-2016

**Funding Resource Category:** Equipment-non computer

**Ranking:** H

1. **Initiative:** Increase in Student Worker Budget

**Initiative ID:** CHEM1503

**Link to Data:** Student Hourly Budget (FY11 $5217, FY12 $4913, FY13 $5,524, FY14 $4886, FY15 $4893)

Section Productivity (23 lab sections Fall 2014, 24 sections + 2 additional sections in spring 2015)

**Link to Finding:** Finding 1 - The Chemistry Department needs to continuously maintain its laboratory equipment and supplies, as well as update it to current standards when necessary.

**Initiative Finding Link:**CHEMF1501

**Expected Benefits:** With the addition of another full-time faculty member and new sections of courses being offered in spring 2015, our need for laboratory staff has increased to maintain our chemicals, equipment, supplies, and samples. Helping with this, as well as ensuring that there is always a lab staff on hand whenever lab classes are being run to support instructors and add to safety, is an essential duty of student workers who also benefit from the educational experience. The recent state increase in minimum wage as well as the additional demand on our laboratory staff’s time and resources requires an increase in our budget to pay our student workers.

**Goal:** Increase our budget to match state-mandated pay increases as well as increase the students’ hours in support of our laboratory staff.

**Performance Indicator:** Students’ increased learning and adherence to safety protocols in all laboratory sections ($1000)

**Timeline:** 2015-2016

**Funding Resource Category:** Staffing Funds

**Ranking:** L

1. **Initiative**: Additional Laboratory Technician

**Initiative ID**: CHEM1504

**Link to Data**: Section Productivity (23 lab sections Fall 2014, 24 sections + 2 additional sections in spring 2015, 91.7 total FTE in S14)

**Link to Finding**: Finding 1 - The Chemistry Department needs to continuously maintain its laboratory equipment and supplies, as well as update it to current standards when necessary.

**Initiative Finding Link**: CHEMF1501

**Expected Benefits**: With the addition of another full-time faculty member and new sections of courses being offered in spring 2015, our need for laboratory staff has increased to maintain our chemicals, equipment, supplies, and samples. Helping with this, as well as ensuring that there is always a lab staff on hand whenever lab classes are being run to support instructors and add to safety, is an essential duty of laboratory technicians. It is an ACS suggestion that there be at least two laboratory technicians for five or more full-time faculty, and having two laboratory technicians would match our sister college at Moorpark, given our comparable size and number of laboratory students.

***This was funded in Fall 2014.***

**Goal**: Hire an additional laboratory technician for the chemistry department ($100,000)

**Performance Indicator**: Students’ increased learning and adherence to safety protocols in all laboratory sections

**Timeline**: 2015-2016

**Funding Resource Category**: Staffing Funds

**Ranking**: Click here for options

**Section VI – Process Assessment**

1. **How have the changes in the program review process this year worked for your area?**

Having the data separately rather than embedded in the document has made it a much more streamlined process. The directions given in each section were very clear and easy to follow. The “fill in” style format of the Word document made it extremely convenient to complete the report.

1. **How would you improve the program review process based on this experience?**

Provide copies of the previous year’s program review for reference. Definitions of the acronyms in the data (i.e., FTES vs. FTEF) as a separate document or instructions sheet would be helpful. While the Word document format made it easy to work on the document, the formatting was difficult and hard to keep consistent. More drop-down menus or fillable areas would make it easier for inputting data and analysis.

1. **Appeals**

After the program review process is complete, your program has the right to appeal the ranking of initiatives (i.e. initiatives that should have been ranked high but were not, initiatives that were ranked high but should not have been), the division’s decision to support/not support program discontinuance, or the process (either within the department/program or the division) itself.

If you choose to appeal, please complete the Appeals form (Appendix E) that explains and supports your position. Forms are located at the Program Review VC website.

The appeal will be handled at the next higher level of the program review process.

**VII – Submission Verification**

**Program/Department:** Chemistry

**Preparer:** Malia Rose

**Dates met (include email discussions):** E-mail discussion: Oct. 15-, Meeting: Oct. 17, Feb. 6

**List of Faculty who participated in the program Review Process:**

Malia Rose, Joe Selzler, Joy Kobayashi, Michelle Hagerman, Kristin Clark, Adeline de Haan, Erin Brocker

☐ **Preparer Verification:** I verify that this program document was completed in accordance with the program review process.

☐ **Dean Verification:** I verify that I have reviewed this program review document and find it complete. Dean may also provide comments (optional):