2015/2016 Full Program Review
Discipline: _Biology/Allied Health

Program Overview

I. Program Definition – *describe the unique qualities that define the importance of your program. *Data available on the Data Dashboard.*

The faculty and staff of the Biology Program are dedicated to providing the public with the highest quality education possible. We serve the community as teachers, advisors, and experts in our particular areas of expertise. We are committed to providing a friendly, respectful learning environment and student retention in our courses is high. Broadly defined, we serve six groups of students: biology transfer students, allied health transfer students, students completing their general education requirements, students interested in completing our unique Natural History Certificate Program which focuses on field courses, students interested in completing the Environmental Science certificate, and community members interested in learning something new in the life sciences arena. In practice we emphasize modern scientific theoretical models, processes, practices and environmental stewardship. Finally, our curriculum is well-integrated with as well as dependent on the curricula of the entire college.

(Note that within the Life and Earth Science Department, we have other areas that have their own program descriptions: the Natural History Program, the Environmental Science Program, the Geography Program and the Geology Program.)

II. Program Purpose

☐ Basic Skills ☐ English as a Second Language ☐ Career/Technical Education	X Associates Degree X Transfer ☐ Cultural Enrichment X Lifelong Learning

Briefly describe how your program fits into the pathways you have chosen.

Our overall purpose is to offer a broad range of classes in a timely and predictable way, enabling students to reach their goals in a timely manner. Surveys have shown that in the same class, we often have students whose goals are degree/transfer, career/work training and lifelong learning. Biology Transfer, Allied Health, Environmental Science and Natural History programs offer the classes needed for transfer in a manner in which students can complete their requirements in two years in either a morning/afternoon or evening program. Student progress in our department is interrupted only when classes are cancelled in the biology, chemistry, or mathematics disciplines. As a basic aid district, both our students and faculty feel that these course cancellations cannot be reasonably justified. We have added sections to all of our allied health courses to keep up with the demand in career training. In addition, when we have been asked to add sections of allied health courses, we are not given an increase in units. This significantly reduces the offerings in our transfer and general education programs affecting students in both of these programs tremendously.

III. Students Served – *briefly describe what students are served in your program.*
**Data available on the Data Dashboard.*

The College of Marin Biology Program offers a broad diversity of classes that serve students with many different goals. More specifically, our curricula include the following: biology transfer, allied health, environmental science, field biology, and natural history. In addition, we serve many students taking classes in our department to fulfill biology units after transferring to four-year institutions, to complete general education requirements, to broaden their areas of expertise, and to learn something they are interested in to improve their lives. Our Environmental Science and Natural History Programs are outlined specifically under separate program reviews.

IV. Program History – *briefly describe the recent history of your program.*

In the Twenty-First Century, the role of the sciences in society continues to be a pivotal one. Unfortunately, in the past, College of Marin has gained the reputation of not supporting the sciences, including biology, as much as have neighboring institutions. Thus it has not been able to take full advantage of an important area of growth. However, through extraordinary efforts by faculty and staff, the biology program has managed to maintain or increase enrollments over the last few years, even though college-wide enrollments have tended to decrease. Furthermore, students enrolled in biology classes tend to be those that take the largest number of total units at the college. Demand for classes in the sciences in general and in biology in particular, has been and is predicted to remain strong. We have responded to this demand by adding and modifying courses often to reflect the needs of the students and the community. In order to meet future student needs in the sciences, the college must send a clear message that it wants to be a strong competitor in the regional market. It must emphasize excellence in the sciences by increasing the number of full-time faculty, ensuring adequate support staff, guaranteeing adequate supplies and equipment, maintaining facilities and publicizing its programs.

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Faculty and Staff

1. Full Time Faculty Members *(Please add rows as needed)*

Name	Courses Taught (since last full PR)
Agudelo-Silva, Fernando	Biology 100, 107, 110, 110L, 112B, 160, 162, 240,
Brown, Becky	Biology 107, 110, 110L, 112A, 120, 224
Christensen, Tina	Biology 110, 110L, 120
DaSilva, Paul	Biology 110, 110L, 112B,
Deneris, Jamie	Biology 240
Egert, David	Biology 120, 224
Mueller, Joe	Biology 110, 169A, 169B, 171

2. Part Time Faculty Members *(Please add rows as needed)*

Name	Courses Taught Recently (since last full PR)
Boyce, Sima	Biology 110, 110L
Chin, Jett	Biology 120
Cunningham, James	Biology 110L
Gamal, Arif	Biology 120, 108A
Gearhart, Anne	Biology 99, 110, 110L, 108A
Harms, Sharon	Biology 100
Mahmoud, Eiman	Biology 120, 240
Rodriguez, Elena	Biology 110L
Shaw, Brieanna	Biology 110, 110L
Smith, Vic	Biology 110, 110L, 162
Waldman, Les	Biology 120, 224
Wenck-Reilly, Brennan	Biology 110L
Werlin, Rebecca	Biology 110L, 112C, 109
Williams, Jeannine	Biology 224, 240

3. Non-Instructional Support Staff *(Please add rows as needed)*

Name	% FTE	Areas of Responsibility
Enty, Aftab	100% 12 months	Biology
Martinez, Deidre	100% 11 months	Microbiology
Leiberman, Zach	50% 12 months	Science Museum

Facilities

What are the existing facilities issues that impact student access and success in your program? Focus on how existing facilities meet your program needs (or not).

(Note: Please use school dude work orders to solve routine maintenance issues, such as, temperature control, lighting repair, etc. as well as health and safety concerns).

We have settled in for most part into the new Science, Math and Nursing, and have worked out most of the bugs. Each of the laboratory classrooms seems to facilitate effective teaching and learning.

One very important obstacle for our department and Biology enrollment in the future is the loss of one entire laboratory classroom from our previous facilities, from 5 laboratories in the Austin Science Center to 4 laboratories in the new SMN building. This loss of a laboratory classroom was brought up again and again by our department during the planning process of the new SMN building. We were told that the current enrollment numbers (which were much lower at that time the building was first being planned than current enrollment) and other calculations for state matching funds did not allow our department the same amount of laboratory classrooms as we currently were using in the Austin Science Center. We currently have both daytime and evening sections offered, along with some weekend classes, but could possibly expand our weekend offerings. That would not necessarily be optimal for student access, and we would need to increase the hours of our laboratory technician staffing. We have had full classes with waiting lists for many of our classes for a number of years now, so the need for more sections of classes and units allotted is current. Our department wishes that there was more long-term planning and forward thinking when the new SMN building was in the planning stages.

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Student Access and Success

I. Access – Based on the enrollment numbers and demographic breakdown for your courses (available through the Data Dashboard), what significant factors or barriers are influencing student **access** to your courses or program? Factors could relate to issues at COM, outside of COM, or to the students' lives.

Based on looking at enrollment numbers and other demographic information, the most significant factors and barriers that influence student access is the lack of extra sections of the Majors Biology courses that fill and have waitlists that could easily fill another section. Our low unit allocation that doesn't match the demand of our Biology classes 112A, 112B, 120, 224, and 240 hinders student access. Some students have to wait a number of semesters before actually getting a spot in these courses. There are some COM students who get frustrated by this problem and go to other community colleges to take classes.

Using Data Dashboard, snapshot comparisons and trends were analyzed for the semesters of Fall 2012 and Fall 2015. Even though the overall enrollment was higher in Fall 2012, the number of declared Biology majors has more than doubled (58 Biology majors in F12, 123 Biology majors in F15). There was a minimal increase of 5% in the Allied Health (registered nursing) majors from F12 to F15. Other majors within our department disciplines also showed an increase from Fall 12 to Fall 15 (Natural History, Environmental Sciences, Geography and Geology).

Even with the number of declared Biology majors doubling over a three-year period, our department has not had any extra units allocated to serve this growing population of students. Instead we have had our units cut. Biology majors do not have the option of taking any of our majors' series (Biology 112A, Biology 112B, and Biology 112C) during a given semester, since they are on a rotation basis. The data also shows that there has been an increase in Biology majors enrolling in more classes in our other disciplines in our department (Natural History, Environmental Sciences, Geology and Geography) thus helping to strengthen enrollment in those areas.

We are a small college; we can't be everything to everyone. We have many unique programs offered at COM (for example, the Natural History and Environmental Sciences programs), that attract students to come to COM vs. another community college, along with strengthening the foundation for our Biology majors. We should make sure that our existing programs are taken care of as far as unit allocations, supplies, staffing, and equipment to ensure quality programs for the students that we serve. Until that is done, it seems unwise for COM to start any new programs (that are already offered by many nearby community colleges) that will utilize even more funding for faculty, staff, and unit allocation.

II. Student Success – based on course completion rates and grades in your courses (available on the Data Dashboard), and more importantly, based on you and your colleagues experiences in class, what do faculty in your discipline feel are significant factors or barriers influencing student **success** in your courses or programs?

You could begin with: "Students who don't succeed often struggle with _____," and then analyze what you think are the reasons behind their difficulties which could range from socio-economic factors to issues more directly related to course work or presentation.

Based on myself and my colleagues' experiences in our classes, we are finding more and more students who don't succeed often struggle with mathematical understanding and critical thinking skills. The increasing demand for community colleges to offer more and more basic skills sections in math and English leads one to believe that this problem is statewide and starts early in the students' education. For example, there was a fairly recent decision by the State of California to remove Algebra from the 8th grade curriculum requirement http://collegeinsurrection.com/2013/02/ca-schools-give-up- teaching-algebra-in-8th-grade/. Whether or not one agrees with this move that is in line with the Common Core Standards, it lowers the standards for students and leaves them more underprepared for college. Since critical thinking skills and problem-solving skill are connected, it makes sense that we are seeing more students with these difficulties.

When underprepared students enroll in our classes, not only does it have a negative impact on the underprepared student by not being able to succeed, it also has a negative impact on the entire class as a whole. Also, this could put our part-time faculty in a difficult situation, since a lot of their performance evaluation is based on student evaluations, along with the entire faculty might unwittingly tend to lower the standards of the course. Many times underprepared students may blame the instructor on their own failings and go to the dean to complain. It would be more productive to have the student discuss their complaints with their instructor first before contacting the dean.

Improving Student Success and Retention – please check off which of the following student support services your students have used:

x Bookstore
x Computer Labs for Student Use
x Counseling
x Student Accessibility Services
x Financial Aid
x Job Placement Center
x Library
x Transfer Center
x Tutoring
☐ Other

Comments:
From communicating with the students, it seems that all these services are being provided to the satisfaction of the students. Our faculty continue to work with all of these services to provide the best services available to our students.

IV. How do you make sure your students are able to get through your program in a timely fashion?

We have a number of classes that have increasing waitlists: 112A, 112B, 112C, 120, 224, and 240. There are students who have to wait a number of extra semesters before they can get a spot in the class, not being able to pursue their educational goals in a timely manner. With our limited unit allocations, we cannot provide more student access to these classes.

We also have just recently, with the help of the Counseling Department and Dean Hernandez, started to look more at the master schedule, to make sure there are not a lot of needed classes scheduled at conflicting times. We don't have any data to look at yet, but are hopeful that these scheduling changes will help students enroll in the classes that they need to take.

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Curriculum

1. What is the focus of your program? Check all that apply.
□ Basic Skills □ ESL □ Career Technical Education x COM Degree/Transfer x Lifelong Learning

2. Have there been any changes in the field that might impact your course offerings or degrees? Please explain.
No

3. Are you planning on changing, updating, or revising degree or certificate requirements? Please explain.
The department reviews the degrees and certificates offered in our department on a regular basis, and updates as needed.

4. If available, have you created a "degree for transfer" in your discipline according to SB 1440? If so, please list.
The creation of the AST-Biology is currently being looked at to see if the unit allotment and double counted units fall with the parameters of the AST degree.

5. Have you prioritized your courses according to department goals? **(Please attach blueprint)**
Yes

6. Have all courses been updated in the last 5 years? If not, please list all outdated courses and your plans for revising or deleting them.
Yes

7. Do you plan to develop any new courses or degrees? If so, please describe briefly and explain. **NOTE**: If you will need additional units in order to offer these courses, please fill out the additional units section of this Program Review.
We are currently looking at if we will be able to develop the AS-T Biology degree.

8. Are you collaborating (or thinking about collaborating) with other departments to develop joint curriculum or make other programmatic changes? If so, please describe briefly and explain.
There has been some early discussion about cross-listing and revising Biology 143 Ethics in Science with philosophy. We are also in constant communication with the Physical Sciences Department to make sure that there are minimal scheduling conflicts to ensure that the Biology majors can take their required classes at times that don't conflict with each other.

9. Do you plan to develop any new Distance Ed courses or develop Distance Ed versions of existing courses? If so, please describe briefly and explain.
No, not at this time.

10. Please list materials fees currently in place. Do you plan to add or increase your material fees for any of your classes? If so, please list the classes and the proposed new or revised material fees for the respective classes.
Biology 165L has a materials fee of $45, to cover the cost of lab and collecting materials. This cost is currently sufficient for the lab needs.

11. Have you reviewed your pre-requisites and co-requisites in the last 5 years?
Yes

Student Learning Outcomes

I. General Education / College Wide Outcomes

1. Did you use the shared assessment rubrics and if so which one(s)?
x Critical Thinking and Problem Solving Combined ☐ Scientific Reasoning--Physical Sciences and Math X Scientific Reasoning--Life/Earth/Social Sciences ☐ Revised Written Communication ☐ Visual Communication (Fine Arts - 2014) ☐ Information Literacy ☐ Modern Language Oral Presentation ☐ Modern Language Written Composition ☐ Modern Language Critical Thinking ☐ Speech/Communication Performance Assessment Student Feedback Sheet (2013)

2. If you used your own assessments or rubrics, please describe.
BIO108A: I refocused the language on the combined Critical Thinking and Problem Solving rubric to help direct my students responses better. BIO/GEO99: I created my own rubric. Different rubrics were used in the varied classes that were assessed, but the shared assessment rubric that was used was the Scientific Reasoning- Life/Earth/Social Sciences rubric.

3. Which courses were assessed?
Some of the courses assessed were: Biology 99, Biology 100, Biology 107, Biology 110, Biology 112A, Biology 112B, Biology 112C, Biology 120 and Biology 224. There are more courses to be assessed this semester and in future semesters. Bio108A was assessed 3 times using the same rubric over the course of the semester. Bio/Geo99 was assessed once at the end of the semester

4. What did you learn from the analysis of your results?
Bio108A: I seemed to learn that students were not necessarily growing in their ability to do the task of critical thinking/problem solving over the course of the semester. This may have had to do with the assign tasks themselves, as they id not present the students with a uniform problem to solve with expected outcomes. The tasks involved students reflecting on their own lives and applying their content knowledge to their experiences. The difficulty was that it seemed that stronger students with better experience in writing did better on these tasks; they weren't learning new skills in the class itself. BIO/GEO99: Students come to this class with a variety of skill. As I did not evaluate them more than once on these skills explicitly, I did not have a large chance to see growth.

5. What do you plan to change in the curriculum, pedagogy, course outline, etc. as a result of what you have learned? Or what have you already changed?
One approach to improve student learning in that area is to take some extra time in the lecture/lab course to review the mathematical steps of the exercise, so all the students understand along the way through the explanation. The plan of more explanation of mathematical steps will be implemented and assessed this semester. Other improvements based on the example above was to spend more time in the laboratory correlating the steps of the scientific method with the lab activities students perform in the lab, to enhance student understanding and learning. We have also recently added English and Math pre-requisites to our General Biology courses Biology 110 and 110L. These pre-requisites take effect Fall 2016, and are hoping that these changes will help with student success and retention. In both Bio108A and Bio/Geo99, students seem to not be getting into the text. For both classes, I have developed reading guides to help them focus on key content. With both classes, I am trying a more directed focus to address the SLOs first, and using the course content as a means to help address those SLOS.

6. Will these changes require new resources or a reallocation of resources?

For both Bio108A and Bio/Geo99 I am utilizing library instruction. Sarah Frye has worked wonderfully with my Bio/Geo99 students this past semester, and I am planning to use similar strategies with my Bio108A students this semester. I don't yet know if this work will require better access to academic journals for my Bio108A classes.

I am also applying the techniques from Reading Apprenticeship to this task. Funds to support workshops and training in this area for myself and my peers (for better discussion!) would be helpful.

Photocopy load may also increase as I move forward. Students will be engaging in some in-class reading exercises using non-textbook materials.

7. How have previously made changes affected student learning? Use qualitative and /or quantitative data to support your response.

In the past, I made changes by reflecting on what seemed to work or not work with students. Was their resistance to an activity or poor performance on an assessment due to lack of familiarity with the process or a disconnect to the content? I would try different things, see how the students responded both emotionally (telling me that they felt more confident) and academically (quality of response or outcome). Typically, I have found that scaffolding so that students could build skill in how to respond or making question formatting clear so that they what was needed for a complete response was helpful. This semester I am working to help them mine content from the text so that lecture time can be spent on discussions; these kind of skills will be necessary if they move on to flipped classrooms in the future, and other instructors may not provide support.

BIO/GEO99 has been trickier, because, as a basic skills science class, students are coming in with deficits. While I have not done a skills pre-assessment at the start of the semester beyond a computer workshop, I typically see that I have to adjust every semester. The class is usually small enough that I can pair strong and weak easily, and work with students in small groups to provide assistance and follow-up instruction. I also find it difficult to proceed with y content when students are doing their part of reading or preparing; a common problem with this population, it seems.

II. Course Level Student Learning Outcomes:

1. What Student Learning Outcomes have you assessed from your course outlines over the last year? Describe the assessment(s) and summarize the results.
BIO108A: This semester I gave students a base-line assessment where I made one simple, open ended, question about each of the SLOs. I will collect these and re-assess them on the same questions as their final exam. They do not know that they just say their final exam!! While the SLOs have been woven throughout my content, and exam questions have addressed them in the past, this is the first time that I will be examining them directly. Other SLO's were assessed in the various Biology courses. One SLO that examines analyzing data from scientific studies was tested in 112A and 224. One homework assignment was handed out where the students were given a scientific study, and they had to analyze if the study followed the steps of the scientific method, and if not what changes would be needed to the study to comply with the scientific method. Later in the semester, another similar assignment (of the same level of difficulty) with a different scientific study was given. The comparison between the pre and post assignments scores did show a marked improvement.

2. What specific strategies have you implemented or do you plan to implement in the future based on the results of your SLO assessment?
Many of the faculty in our department constantly looking at the increasing number of multimedia sources to help student understanding and learning, thus SLOs. The increase in the number of smart classrooms available to the instructors really helps to teach to students with varying learning styles. Also, having modern equipment and supplies used in the laboratory classes is vital for student learning and success. BIO108A: In the past, my assessment of SLOs has been woven through the regular exams, and examined in a somewhat superficial way. However, even from this I have learned that students were not learning the names, location and function of reproductive organs, and could not generalize how cultural differences lead to different perspective on sexual practices and were able to apply course content to their lives in only a superficial way. This semester I will be posting the SLOs in my classroom when I teach, along with theme-by-theme essential questions which help them to unfold the content understanding. Some other improvements based on the example above was to spend more time in the laboratory correlating the steps of the scientific method with the lab activities that students perform in the lab, to enhance student understanding and learning, and thus, success.

Overall Program Assessment

I. Program Excellence (Best Practices):

Please address any of the following areas: Overall Program structure, contextualized learning/learning communities, reputation of faculty, faculty collaboration, staff, retention and success, how you maintain a supportive environment, how you address issues of diversity, any specific student learning outcomes.
The faculty and staff of the Biology Program are dedicated to providing the public with the highest quality education possible. We serve the community as teachers, advisors, and experts in our particular areas of expertise. We are committed to providing a friendly, respectful learning environment and student retention in our courses is high. Broadly defined, we serve six groups of students: biology transfer students, allied health transfer students, students completing their general education requirements, students interested in completing our unique Natural History Certificate Program which focuses on field courses, students interested in completing the Environmental Science certificate, and community members interested in learning something new in the life sciences arena. In practice we emphasize modern scientific theoretical models, processes, practices and environmental stewardship. Finally, our curriculum is well-integrated with as well as dependent on the curricula of the entire college. (Note that within the Life and Earth Science Department, we have four other areas that have their own program descriptions: the Natural History Program, the Environmental Science Program, the Geography Program and the Geology Program.) The re-implementation of the Biology Lab Coordinator position has been a tremendous help to our General Biology lab course Anatomy lab courses. Both these courses have many sections, and have benefitted greatly by the updating and coordination that has been done by Tina Christensen, who is our current Biology Lab Coordinator.

II. Program Improvement

Beyond specific SLOs, what (qualitative and/or quantitative) data-driven coordinated planning has your department done to improve enrollment, student learning, access and success over the last two years? **Data available on the Data Dashboard.*
The move into the new SMN building has improved student learning and success by holding lectures and laboratories in updated, modern classrooms that are more efficient. Consequently, other aspects of student access have been hindered by moving into the new SMN building, with the loss of an entire laboratory classroom. We continue to expect (along with low unit allocations for our department) that many students will continue to register for Biology classes, only to end up on a waitlist and not getting in to the class. The only thing that our department can do in these cases is to continue to bring up these problems of student access and success to the various audiences at COM. We have also have had discussions and planning to increase advertising and awareness of our courses.

III. Assessment of previous Program Reviews:

1. What resources have you been granted from your previous program reviews?
We have been awarded a set of stereoscopic microscopes that are used by many of our Biology lab classes, along with some document cameras to also use in the lab.

2. Please assess how these resources have been used to improve access, learning outcomes and student success in your program? **Overall data available on the Data Dashboard.*
It would be difficult to look at the data in Dashboard and correlate any changes seen to these new resources. We do have a lot of anecdotal evidence that these resources have allowed students to learn more efficiently and have a deeper understanding of the lab material that they are studying. Most students are visual learners and these resources have helped with overall student learning, and our department is appreciative to have had these resources granted.

3. What changes have you implemented based on previous program reviews?
We have added math and English pre-requisites to Biology 110 and 110L, and are currently looking at our other courses we offer to see if any pre-reqs, advisories, and co-reqs need revising.

4. What results have you found? **Overall data available on the Data Dashboard.*
It is still too early to valid and correlate any changes that we see in Data Dashboard to changes that we have implemented.

Plans for Improvement

1. Pick one or two things that you will do to improve your program over the next 2-3 years. Outline your strategies for improvement. (*Note: You will be asked to comment on this plan for improvement in your next review in two to three years. Please save your responses so that you will have comparative evidence and data to submit at that time.)*

One thing that we plan do is to continue to improve on lecture techniques, laboratory exercises and continue to request equipment and supplies that are needed for student learning to occur in the laboratory.

There have been discussions within the department and with Anna Pilloton about increasing our outreach to boost enrollments in some of our certificate classes, Geology and Geography classes.

The move into the new SMN building has improved student learning and success by teaching lectures and laboratories in updated, modern classrooms and laboratories that are more efficient. Consequently, other aspects of student access have been hindered by moving into the new SMN building, with the loss of an entire laboratory classroom. We continue to expect (along with low unit allocations for our department) that many students will continue to register for Biology classes, only to end up on a waitlist and not getting in to the class. The only thing that our department can do in these cases is to continue to bring up these problems of student access and success to the various audiences at COM.

2. Detail any resources you will need to achieve this improvement and explain what SLOs or student access issues you hope to address.

Since our Biology courses rely on the use of equipment, models, slides, specimens, etc., we will continue the request of these items needed for student learning.

The microbiology laboratory could use an increase in the yearly supply budget by 500.00 to 1000.00. This increase will cover the increase in the cost of materials and supplies, the fuel surcharges, etc. This amount could also help to slowly replace items that are not too expensive. The current budget barely allows for the items that are needed to run the laboratory exercises.

We also need to get our marine aquarium up and running again, ever since a former faculty member kept turning off the chiller and killed all the animals and plants in the aquarium. This will require a permit from the California Fish and Wildlife to replace the invertebrates for our aquarium. The permit fee is approximately $420 not including the faculty time required to complete the permit process. Please also see the Natural History PR.

Long Term Budget/Unit requests

I. Additional Teaching Units (add rows if necessary)

Class	Campus	Fall Units	Spring Units	Summer Units	Total Units
Biology 112ABC	KTD				7.98 TU every third semester

For each request above, please explain how these additional units will address scheduling needs, student access or success, and/or new graduation requirements. **Please show how these units work on your attached discipline blueprint.**

We are seeing a constant increase in students enrolling in our majors Biology series, Biology 112A, 112B, and 112C. Currently we only are offering two of the three courses in the series each semester, with a rotation schedule. There have been quite a few students on the wait list that aren't able to get into the needed classes in a timely manner. We would like to start off offering all three in the series during the same semester every third or so semester. That way the Biology majors could catch up with the courses they need to take to eventually transfer, and not have to stay at COM an extra semester. Adding this additional section will also require extra staffing for the lab set-up, and funding for extra supplies.

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Department Chairs and Division Managers:
Please work together to evaluate your various department or discipline non-personnel accounts and create a current + three year forecast for each account (restricted and unrestricted as applicable). This should cover any relevant operating account including instructional supplies (43000), other supplies (45000), etc.

Managers can pull this information for your department out of the "budget builder" tool in the intranet and copy it into an excel spreadsheet. **Please attach or turn in this completed spreadsheet with this program review. For any increases (or decreases) please justify below.**

Understanding account numbers:
http://www.marin.edu/fiscal/accounting.html#chartofaccounts
http://www.marin.edu/WORD-PPT/Accounts_05-15-13.pdf

Justification for any increases requested for these accounts.

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Department Chair Comments

1. Please make any comments on Student Access and Success, Facilities, Curriculum and SLO sections.
I concur with the review in these areas.

2. Please comment on the Plans for Improvement section.
I concur with the comments written in this section.

3. For Instructional/ Student Services PR: What are your priorities if asked to make reductions? (Please be specific and address staffing, units/classes, supplies, service contracts, etc.) What reductions have already been implemented in recent years?
Since the most recent cuts in units over the past few years, our offerings are only down to transfer classes and certificate classes. So if we were reduce more units, students taking Biology classes to transfer or to obtain a certificate will be negatively impacted regarding student access and student success. If I had to make unit reductions in our department, I would choose to forgo the IVC Biology classes. The laboratory classroom has many flaws and is substandard for a Biology laboratory. There were many things promised to improve the laboratory classroom, but have not been done. We concurrently offer the same class at KTD, so we would be saving the costs of a separate lecture instructor, a separate lab tech, and separate supplies ordered and used. Also, most students that enroll in the IVC Biology in the summer are not CTE students. The initial reason to offer an IVC Biology section was to have the CTE students enroll in this class. In the past few summers, the enrollment has consisted of Novato students and Novato high-school students.

4. Other comments
Thank you for taking the time to read this program review. We have a lot of dedicated faculty and staff in our department that want to ensure student success, but we need the units and resources in order to have student success happen. We realize that our department is expensive for the College to run, but that is the nature of sciences programs. The College should ensure that the *existing* programs have what they need to be successful to serve students with quality programs and education.

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Area Directors and Deans Comments

1. Please make any comments on Student Access and Success, Facilities, Curriculum and SLO sections.
It's clear from the program review that the biology faculty members are passionate content area experts. The Biology Department works collaboratively to revise curriculum periodically and have recently updated their blueprint to better serve our students. I worked with the department chair to create a more student friendly schedule that will hopefully result in greater enrollment. We have large waiting lists in some of our core courses, but laboratory space is a barrier. This is not an uncommon problem among STEM programs at community colleges. Since these courses require specific laboratory equipment, ordinary classrooms will not work; therefore classroom space becomes a barrier. We will continue to be creative in our course offerings to better serve our students.

2. Please comment on the Plans for Improvement section.
The enrollment numbers support the expansion of our majors' biology series. These are core classes for Biology majors and our pre-med students. In order to respond to the demands of the students and expand our STEM pipeline, we should consider expanding our core biology classes. In addition to expanding our outreach effort to increase interest in Geography and Geology, we also revised the schedule for next fall and spring to better meet the needs of our students. This will hopefully lead to a boost in enrollment. We will also be offering a DE course in Geography and Geology next fall for the first time. We will analyze enrollment numbers over the next couple of years to determine if our efforts have lead to increases in student participation, enrollment, persistence, and student success.

3. For Instructional/ Student Services PR: What are your priorities if asked to make reductions? (Please be specific and address staffing, units/classes, supplies, service contracts, etc.) What reductions have already been implemented in recent years?
All of our classes serve a particular need; transfer, degree, or certificate. If asked to make reductions, we would need to consider rotating some of the elective courses more often. Although, some courses are only offered every two years. As previously mentioned we are at a point were expansion of our core biology classes are essential for student access. Therefore the preservation of these courses would be a priority.

4. Other comments