### I. Team Members

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<td>Jamie Deneris</td>
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### II. Program Review Committee

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<td>Educational Planning Committee</td>
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### III. Vice President of Academic Affairs

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Program Overview—Introduction
BIOL-2009

Instructions: Use this form to quickly outline your program at College of Marin. Briefly answer each of the questions and use bullet points whenever possible. Provide any attachments that substantiate or expand on the questions below.

I. Program Definition
Outline the unique qualities that define the importance of your program.

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 five other areas that have their own program descriptions: the Natural History Program, the Allied Health Program, the Environmental Science Program, the Geography Program and the Geology Program.)

II. Program Purpose
Pathway:
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 recently to keep up with the demand in career training. The addition of funds to teach these classes has been difficult to get and then only after months of frustration. This makes it impossible to fulfill our secondary goal. In addition, when we are 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 outline what students are served in your program.

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 Allied Health, Environmental Science and Natural History Programs are outlined specifically under separate program reviews.

**IV. Program History**

Briefly outline 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, the 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.

**Attachments:**

List and briefly describe any attachments
Program Overview–Introduction
Allied-Health-2009

Instructions: Use this form to quickly outline your program at College of Marin. Briefly answer each of the questions and use bullet points whenever possible. Provide any attachments that substantiate or expand on the questions below.

I. Program Definition
Outline the unique qualities that define the importance of your program.

Many of our students are taking biology classes with the intention of entering a variety of medical and health-related professions. They enroll in what are commonly considered 'prenursing' classes - in particular Human Anatomy, Human Physiology, and Microbiology, as well as Nutrition and Human Biology - along with all the associated prerequisites.

II. Program Purpose
Pathway:
Briefly describe how your program fits into the pathways you have chosen.

The subset of biology courses we are grouping under 'Allied Health' are designed to give students a strong grounding in the fundamentals of human, as well as pathogen, physiology and anatomy that will serve as a foundation as they continue on in programs in health-related fields, as well as other biologically related subject areas.

III. Students Served
Briefly outline what students are served in your program.

These students primarily move on to a variety of two-year, four-year, and masters entry programs in Nursing, as well other health-related areas, such as Emergency Medical Technician, Radiology Assisting, Dentistry, Traditional Chinese Medicine, and Medical School Programs. These classes also serve students who are taking these classes for transfer to four-year schools in majors such as biology or psychology. Additionally, some students take classes like Human Anatomy for a better understanding of the human body to further their careers in such areas as Art and Dance.

IV. Program History
Briefly outline the recent history of your program.

Over the past few years, there has been a dramatic increase in students wanting to take prenursing classes and we have responded by greatly increasing our offerings in Human Physiology, Human Anatomy and Human Physiology to accommodate this demand. In comparing this current academic year (Fall/Spring/Summer 2007-08) to the 2001-2002 academic year, our offerings of prenursing classes has more than doubled - Physiology has increased from 3 to 7 sections/year; Human Anatomy has increase from 5 to 11 sections/year; Microbiology has increased from 3 to 4 sections/year; and Human Biology, which we added to our curriculum in 2002, now fills 2 sections/year. Human Nutrition has remained constant at 5 sections/year. These classes include Summer offerings as well as evening and weekend classes. These classes are typically fully enrolled, usually with waiting lists. This comes out to over 350 additional students and 94 corresponding additional teaching units in Biology per year dedicated to Allied Health! In a time when College of Marin in struggling with declining enrollments, this is one of areas where our college is experiencing strong growth.

Attachments:
List and briefly describe any attachments
Five Pathways
A description of how you serve students in the five pathways as described in the Educational Master Plan.
BIOL-2009

I. Please refer to the table of estimates of how many students are in each pathway for your program/discipline over the past four years.

1. Basic Skills
Students on the Basic Skills pathway seek to improve day-to-day functioning, enhance job performance, enter new careers, and/or acquire pre-collegiate fundamental skills in order to successfully complete college level courses. The Basic Skills pathway includes English as a Second Language courses offered in both credit and non-credit divisions as well as courses in developmental mathematics and English as well as basic skills courses in computers and Library.

Our program serves students in this pathway: Some students

2. Career and Technical Education
Students on the Career and Technical Education pathway pursue knowledge, technical and skill training necessary for career placement, career advancement and career changes or for creative endeavors that require technical skills. Their educational goals are either an associate degree or certificate. For some degrees/ certificates, such as Nursing, the course of study is defined by external professional regulations or licensing criteria.

Our program serves students in this pathway: A good proportion of the students, but not a clear majority

3. Cultural Enrichment
Students on the Cultural Enrichment pathway focus on acquiring and expanding aesthetic abilities. Students broaden their intellectual and artistic skills through participation in creative opportunities including exhibitions, performances, or publishing work.

Our program serves students in this pathway: A good proportion of the students, but not a clear majority

4. Lifelong Learning
Students on the Lifelong Learning pathway focus on intellectual and physical enrichment. Some Lifelong students may have already completed degrees and/or may be in significantly advanced positions in their careers.

Our program serves students in this pathway: A good proportion of the students, but not a clear majority

5. Transfer
Students on the Transfer pathway seek successful matriculation from College of Marin to four-year institutions, universities, colleges or specialized educational institutions by completing courses that fulfill requirements for the baccalaureate degree or admission to specialized programs such as nursing. In the process of completing transfer requirements, these students may also earn an associate degree.

Our program serves students in this pathway:
Transfer GE: To a great extent/ a majority of the students
Transfer Major: A good proportion of the students, but not a clear majority

II. What are your program’s goals for each pathway?

Goals
Basic Skills
Our main goal here is to get students to the level they need to be able to complete successfully the entry-level course in our department.

**Career and Technical Education**
Our main goal here is to help students acquire skill sets that will be useful to them and recognized in the community as they seek to work as employees or volunteers in specific capacities.

**Cultural Enrichment**
Our main goal here is to assist students in getting the most out of the natural environment of Marin and our of the world of biology as they strive to become more complete and satisfied human beings.

**Lifelong Learning**
Our main goal here is similar to that for Lifelong Learning, with the exception that students are usually trying complete externally-defined requirements in the form of specific courses as pre-requisites for admission to nursing school, graduate school, and the like.

**Transfer**
Our main goal here is to help students meet requirements for transfer to baccalaureate programs in biology.

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**III. How does your program/discipline help students meet these goals?**

**Basic Skills**
We have one Basic Skills class, Biology/Geology 99 -- Introduction to Science. We hope to include other science departments and disciplines in this class in the future. It is designed for students not ready for the entry-level science classes (majors' or non-majors'). We have made it a late-starting class to better serve students who only discover that they are not ready for the other classes some time after the semester starts.

**Career and Technical Education**
Our main certificate programs (Natural History and Environmental Science) are described in their own program reviews. However, several basic biology courses (e.g. Biology 110) are fundamental to these programs.

**Cultural Enrichment**
The fundamental way the biology program meets the cultural enrichment goal is by stressing the relevance of multiple topics in the program to human beings in everyday life -- something made possible by the fact that all of our students are alive!

**Lifelong Learning**
Many of our courses, particularly the non-majors' (Biology 110) and majors' (Biology 112ABC) biology courses are prime pre-requisites for a multitude of programs at many institutions.

**Transfer**
Our biology major is available to help guide students seeking to transfer in biology. In addition, we have a wide range of transfer agreements for many of our courses.

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**IV. How do you measure your success?**

Success is measured in the basic skills area by the number of students successfully completing Bio/Geo 99 and moving on to other courses in our program. Success is measured in the transfer program by the number of students successfully completing the majors' sequence as well as by the number of degrees awarded, by number of students successfully completing transfer, as well as by how well students do after transferring. Success in enrichment and lifelong learning is measured by questionnaires that faculty distribute to students in these courses.

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

We have been having regular meetings for some time with our colleagues in the
Departments of Mathematics and Physical Sciences to maintain and adhere to a master matrix that strives to avoid time conflicts among courses required by majors. As much as possible, we also try to offer courses at different times and on different days. We offer morning, afternoon and evening classes, seven days a week.
Student Access and Success
BIOL-2009

I. Access
Based on the enrollment numbers and demographic breakdown for your courses, what significant factors or barriers are influencing student access to your courses or program?

Enrollment numbers have been steadily increasing, and we have all major demographic groups represented in the program as a whole. The main barriers to continued growth and access are 1) lack of more lecture and laboratory space, 2) lack of laboratory technicians, 3) lack of permanent certificated staff and 4) lack of funds for equipment and supplies. Given these constraints, increase in enrollment is resulting in less care and attention per student, which is addressed in the next section.

Additional publicity could further increase enrollment, but given our current constraints, this may not be wise.

II. Student Success
Based on the student success and retention rates breakdown for your courses, what significant factors or barriers are influencing student success in your courses or program measured by completion of course and grade earned?

Note: Success Rate is the percentage if students who received a passing grade of A, B, C, or P at the end of the semester.

Note: Retention Rate is the percentage of students retained in a class at the end of the semester. In Progress and Report Delayed grades are excluded. Cancelled classes and classes with no grades shown are excluded.

Student success rates are near the average for the college, but we can always try to do better! The four major barriers to student success are 1) lack of placement guidance 2) lack of preparation 3) diminishing care and attention per student and 4) lack of updating of some curriculum.

Most faculty agree that there should be a placement test for biology, as there is for English and Chemistry. Tests do exist at other institutions, and we could modify these for use at COM.

Lack of preparation involves basic reading skills, basic math skills, and some lack of basic life skills. We support all of the basic skills initiatives at this at other institutions for this reason.

Diminishing care and attention per student, as mentioned above, is the result of increasing enrollment without concomitant improvement in staff, space, supplies and equipment.

Lack of updating of curriculum was most noticeable in our majors' biology curriculum, which had not been updated in over 40 years. Fortunately, many faculty are engaged in a thorough revision of this curriculum to reflect best practices and student input.

III. Student Retention
Based on the student success and retention rates breakdown for your courses, what significant factors or barriers are influencing the ability for the student to succeed at more advanced courses for which your course is a prerequisite.

For the most part, student retention in more advanced courses is excellent. To a large extent, this reflects a different demographic in these courses. The only exception is the majors' sequence, which as mentioned above, is being changed.

http://programreview.marin.edu/ASReport.jsp
IV. Improving Student Success and Retention
What key factors would further improve your student success and retention or support your current level of success? Please check any applicable statements below and then provide additional details/explanation on your choices below.

- Access to student support services (counseling, tutoring, etc.)
- Curriculum change
- Course scheduling for students needs
- New offerings/additional sections
- Articulation for transfer or COM GE
- Recruitment/outreach
- Student/job market demand change
- Faculty availability
- Facilities & technology
- Professional development

Other:
Classified staff in the form of laboratory technicians is key to any science program. We have dropped from four permanent laboratory technicians to one. We are now in a danger zone. Obviously, student access to materials, equipment and other learning resources has greatly diminished. Furthermore, there are increasing hazards to students in the form of fires, equipment malfunctions, toxic gas exposure and the like.

V. Please explain and provide additional details regarding your choices above:
All of these would improve student success and retention, with the possible exception of recruitment and outreach, since attracting more students in our current situation of low resources would mean less attention for each one.
Facilities Questionnaire
BIOL-2009

What are the existing facilities issues that impact student access and success, or health and safety? (address any of the following: Size, location, conditions, maintenance, features, a/c, lighting, adjacencies, other.)

TEACHING

AND RESEARCH FACILITIES The Life and Earth Science Department at the College of Marin has four modern teaching and research facilities, the Bolinas Marine Station, the U.S. Department of Agriculture Soils Laboratory, the Biology/Geology Museum, and our Greenhouse and Garden. These facilities contribute greatly our success as a department and as a faculty, we are very proud of them and put in many hours to maintain them. No permanent personnel have ever been assigned solely to our facilities. Individual faculty and staff members have taken it upon themselves to do what needs to be done. The existence of these facilities is testimony to the interest and dedication of many people throughout the history of the Life and Earth Science Department. More detailed explanations of these facilities and their use are described below.

We currently offer 93 courses in the Life and Earth Science Department. Of these 17 use the Marine Station, 35 the Soil Laboratory, 41 the Museum, and 40 the Greenhouse and Garden. These facilities directly help to fulfill the college mission statement in the following ways: 1. Our transfer students are much better prepared to get into four-year and professional schools. 2. These facilities are used to train individuals entering the work place as biology technicians and field scientists, environmental science technicians, biotechnology technicians, and as allied health professionals. 3. They improve the basic skills of our Biology/Geology 99 students. 4. Our field courses and our campus-based courses that have a field component and require the direct involvement of students are extremely popular.

BOLINAS MARINE STATION The Bolinas Marine Lab is a resource for both majors and natural history courses in the Life Sciences Department. Most notably, in the spring semester, four-unit Marine Biology Course has traditionally met every Friday for the last forty years -- until the recent closure, which deprived our students of an important learning resource.

Additionally, local high schools, field study programs, the Bolinas Summer Program, and docent training programs for several environmental education and stewardship programs have used the laboratories. The College of Marin is in an unparalleled position as a community college on the west coast of California. The marine lab facility sits directly on a seasonal estuary (the Bolinas Lagoon) that has been designated as a Wetland of International Importance under the Ramsar Convention of 1971. The Bolinas Lagoon is the only wetland with this designation in California, and one of only 17 in the United States. The Army Corps of Engineers has been tasked with only two ecological restoration projects in its history. One of them is the Florida Everglades, the other the Bolinas Lagoon. In addition, BML is proximal to Duxbury Reef, Point Reyes National Seashore, Tomales Bay, and organizations such as the Point Reyes Bird Observatory, Audubon Canyon Ranch, Slide Ranch, The Pacific Coast Learning Center, and others. The area also employs ecologists, biologists, and interns through Marin Municipal Water District, Department of Fish and Game, National Park Service, Gulf of the Farallones National Marine
Sanctuary, Golden Gate National Recreation Area, California State Parks, and many local environmental education and conservation groups. A full [75%] of the population of California lives on the coast. Development pressures, the impact of foot traffic on natural coastal resources, water quality issues, ramifications of introduced invasive species, shrinking wetland habitat, and disappearing coastal biodiversity are all found in the microcosm in which the marine lab is situated. The need to educate coastal residents and visitors, students, potential teachers, and future scientists and naturalists about the unique and fragile landscape of our remaining coastal habitats is more important than ever before. Programs that teach sustainable practices, ecoliteracy, and living bioregionally have come of age. The College of Marin, through the Bolinas Marine lab, has a unique opportunity to step in as a role player in the shaping of a vibrant marine ecology and education program at the community college level.

BIOLOGY
AND GEOLOGY MUSEUM. The current museum collections are the result of efforts of faculty, students and staff that date back to the College's founding in 1926. They are a major teaching and community resource. Unfortunately, current facilities do not adequately separate storage and exhibit spaces. Thus the collections can neither be maintained adequately nor made available for optimal college and community use. Despite this, they are used by hundreds of students per year, all of whom are now well-acquainted with the insufficiency of the facilities. The College of Marin Museum collections are an integral part of its inheritance, its reputation and its educational resources. They are one of the most important features that distinguish it from other community colleges in the state. They enrich the teaching process and contribute to community involvement. New exhibits must be designed and implemented to maintain excellent teaching.

The museum collections are used for teaching courses in the department which constantly use certain specimens and supporting material for lecture and laboratory work. These classes add to the collections as they progress through our curriculum. The largest group of students using the collections are the non-majors biology students which serves about 500 students per year. We use a seven-part changing exhibit the illustrates basic concepts of ecology and evolution using specimens from the collection. Finally, community members use our museum as a resource for the study of local natural history and human prehistory.

U.S.D.A.
SOIL LABORATORY In addition to providing material for the courses counted above, the soil laboratory currently has three on-going reseach projects: a project on the development of Hawaiian soils, a project on the composition of Hawaiian soils, and a project involving local soil/plant comparisons. In addition, the following equipment is stored and used in this facility: map cabinets, a computer with GIS capability, a thermocycler, petrographic and light microscopes, a DNA sequencer, a thin section machine. Most of this equipment was donated, obtained with grant money, or money from faculty pockets. Driven by absolute necessity, the study of soil science has become paramount in the fields of general biology, microbiology, ecology, environmental science, geology, and geography. Soil is one of the most complex geological and biological communities on Earth and we know very little about its physical, chemical, and biological development and properties. All living organisms on the planet are ultimately dependent on it. To claim that the courses in the Life and Earth Science Department are current, they must contain a soils component. The soils laboratory also allows students to participate in faculty directed research projects. Currently we have three projects going which allow students to participate in studies on soil structure, soil evolution, and soil ecology. For the record, faculty members are not paid for these activities.
GREENHOUSE
AND COLLEGE OF MARIN BOTANICAL GARDEN
It is impossible to learn the systematics, taxonomy, evolution, or structure and function of plants without live specimens to study. These concepts are taught and reinforced throughout our curriculum.
To continue to teach our curriculum, the department must have convenient access to fresh living plants. Currently the Department's greenhouse is barely functional. The existing greenhouse is out of order and is too small to support the classes that need fresh plant material. We need an adequate greenhouse. Furthermore, because some of the plants are large and occupy large areas, we require a properly fenced piece of land of approximately 2,500 square feet. Our students have been an integral part of the planning and implementation of this garden. This past year we restructured our majors series from two to three semesters. Our need for these facilities will increase greatly next semester.

LABORATORY
TECHNICIAN PREPARATION ROOMS. We require three rooms for our technicians to prepare laboratory exercises for all of our laboratory courses and to prepare and maintain the materials and equipment used in them, which themselves represent a notable patrimony and investment by the people of Marin. In addition to laboratory bench space, these rooms are also used for chemical, supply and reference book storage and display for easy access as well as the following equipment: chemical hood, biological hood, stile, sinks with wet tables 6 refrigerators, 3 incubators, an autoclave, and two desks.

STORAGE FACILITIES We require five storage rooms which serve the following functions: 1. Laboratory Supply Storage This space is used to store supplies that will be needed throughout the year. We need this room because we must buy our supplies in bulk for three reasons. First, we save close to half of the costs when purchasing. Second, we cannot rely on supplies arriving on time if they are ordered on a monthly or even a semester basis. Three, we must spend all of our funds by the end of the College of Marin fiscal year. 2. Multimedia Equipment and Library and Skeleton Storage The Biology Department has purchased multimedia equipment from our budget that is in almost constant use and must be stored in an easily accessible manner. We also have a rather extensive multimedia library. Finally we need a separate locked space to store our extremely expensive skeletons and models. 3. Cadaver and Formalin Preserved Specimens Room Our cadavers and preserved specimens are kept in an separate, locked room that students do not have independent access to as formalin is toxic when not handled properly. 4. Field Equipment Storage The Life and Earth Science Department needs a room to keep equipment for our field trips (stoves, lanterns, propane takes, cooking gear, water jugs, etc.). We also need an outdoor space with potable water to clean and re-pack equipment before and after field trips. 5. Freezer and Incubator Room Our freezers, including a minus 70 degree celcius freezer, and incubators live here. We use this equipment to store reagents and specimens and for on-going experiments.

STUDENT
STUDY ROOM Finally, we need a space in which our students can get together and study. The Science Center is in use on weekends and long after the rest of the campus shuts down. This space would also be used to hold tutoring sessions. Students that study together with faculty available for questions do have been shown to achieve much greater success.
Because

a great many of our classes have hands-on, laboratory components, it is vital
that our facilities are adequate to support our current and projected course
offerings. Lab classes are specialized and must be held in particularly
outfitted labrooms, and also require support spaces to prepare and store
material for labs. Examples include having an adequate greenhouse to maintain
plants for a large variety of our classes and an anatomy lab that can vent
toxic cadaver fumes and not endanger teachers and students, as well as a museum
that is integrated into our curriculum and provides opportunities for students
to directly experience biological concepts. While, we are dedicated to creating
classrooms and labs that are inviting, our primarily goal is safety, since we
regularly use infectious agents such as human blood and urine, and pathogenic
bacteria, as well as a variety of toxic substances, preserved specimens, and
open flames in our labs.

BENEFIT TO STUDENTS. Students in The Life and Earth Science Department do

science rather than read about it. We demand that our students think through
problems and are then given the opportunity to observe and/or to design
experiments to come to conclusions about these problems. Our facilities are
critical to maintaining this approach. In addition, entrance into four-year
institutions and professional schools requires that students have been involved
in some form of research. In addition, these facilities allow professors to
keep proficient in their individual specialties so that we can train the next
generation of scientists.

We

have developed and distributed our own questionnaires to survey students about
their learning experiences in our facilities. Most of the responses have been
positive but also indicate clearly that there is room for improvement.

Our

students are in high demand. Four-year schools, professional programs, and
employers accept or put to work almost all of our students. Many students state that
much of their success is do to our emphasis on a "hand-on," "direct experience'
approach that relies on good facilities. The data we have are at this point
qualitative, but all of our faculty ask students to call or email
them to let us know how they are faring once they leave the College of Marin.
Most of our students do. We would be extremely pleased if the college would
collect quantitative data for future planning. If this occurs, we are confident
that our funding and administrative support will increase significantly.

NEW CONSTRUCTION

We are all aware that there is an ongoing construction program at COM. We have
participated in some of the design process, but we all know that the program as a
whole was imposed upon the campus community rather than being a result of an organic
process directed by it. What will result from this flawed procedure? It appears that
the new construction procedure will include some good elements. However, one part of
the program -- the demolition of the current Austin Science Center -- makes no
sense. The new Science, Math, Central Plant Complex includes no lecture hall and has
insufficient laboratory space to accommodate our classes and students. Thus we join
with our colleagues in the Department of Physical Sciences in demanding the retention of the current Austin Science Center, at least until the year 2020, when it will be clear how the transition to the new construction has gone.
Curriculum
BIOL-2009

1. Course Outlines of Record must be updated every 5 years to remain current for content, texts, student learning outcomes as well as for articulation purposes. Are you aware of the dates on your course outlines? If not, contact OIM to check. If you have courses that are over 5 years old, are you planning on updating them? Please list.

We have encouraged a continuous course outline revision process and are happy to expedite revision of any outlines needing immediate attention. We have been awaiting the online availability of all course outlines to facilitate revisions.

2. Are you planning on changing, updating or revising and degree or certificate requirements? If so, please explain how it will improve student learning, student success and/or access.

In 2010 we expect to implement the recommendations of the majors' biology curriculum revision process begun in 2000. This process was based on extensive research including student surveys and visits to transfer institutions. The main goals are to increase student retention, improve student learning and align our course topics more closely with the curriculum proposed by the statewide California majors' biology curriculum study group.

3. Are you collaborating (or thinking about collaborating) with other departments to develop joint curriculum for learning communities? If so, please describe briefly and explain how it will improve student learning, student success and/or access.

We have had some discussion with other faculty to implement an across-campus sustainability group.

4. Do you plan to develop any new curriculum? If so, please describe briefly and explain how it will improve student learning, student success and/or access.

We do not have immediate plans to develop new curriculum this year.

5. 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 how it will improve student learning, student success and/or access.

There has been some interest on the part of faculty in developing a distance education version of our Biology 110 course.

6. 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.

We do not plan to change materials fees for classes, but we are aware that existing materials fees for some of our courses, as shown in course outlines, have not been collected.
Student Learning Outcomes
BIOL-2009

Five College Learning Outcomes:
1. Written, Oral and Visual Communication: Communicate effectively in writing, orally and/or visually using traditional and/or modern information resources and supporting technology.
2. Scientific and Quantitative Reasoning: Locate, identify, collect, and organize data in order to then analyze, interpret or evaluate it using mathematical skills and/or the scientific method.
3. Critical Thinking: Differentiate between facts, influences, opinions, and assumptions to reach reasoned and supportable conclusions.
4. Problem Solving: Recognize and identify the components of a problem or issue, look at it from multiple perspectives and investigate ways to resolve it.
5. Information Literacy: Formulate strategies to locate, evaluate and apply information from a variety of sources - print and/or electronic.

I. Degrees and Certificates
1. What degrees and certificates does your discipline offer?

We offer the Biology A.S. degree.

2. Keeping in mind the five College Learning Outcomes above as well as what your discipline specifically requires of your graduating students, what should students be able to do when they have completed your discipline's requirements for each degree or certificate?

In most basic terms, students completing the Biology A.S. degree requirements should be able to think like biologists. They should have a good working knowledge of basic biological principles, should understand the methods of generation and application of biological knowledge, should be able to access biological information and process biological data, and should have mastered basic biological field and laboratory techniques.

3. How do students in your program demonstrate that they meet each of the college-wide learning outcomes? What courses, activities, and/or projects are students required to complete that relate to each outcome?

i. Written, Oral and Visual Communication

Students take multiple-choice and essay examinations, write laboratory and field reports, read and critique research papers and present their own reports in written and oral form.

ii. Scientific and Quantitative Reasoning

Students take multiple-choice and essay examinations, write laboratory and field reports, read and critique research papers and present their own reports in written and oral form.

iii. Critical Thinking

Students take multiple-choice and essay examinations, write laboratory and field reports, read and critique research papers and present their own reports in written and oral form.

iv. Problem Solving

Students take multiple-choice and essay examinations, write laboratory and field reports, read and critique research papers and present their own reports in written and oral form.

v. Information Literacy
Students take multiple-choice and essay examinations, write laboratory and field reports, read and critique research papers and present their own reports in written and oral form.

II. General Education:
1. Does your discipline offer any classes which count for general education requirements?

2. Which General Education courses in your discipline address the each of the five College Learning Outcomes? Please list courses for each of the following:
   i. Written, Oral and Visual Communication
   ii. Scientific and Quantitative Reasoning
   iii. Critical Thinking
   iv. Problem Solving
   v. Information Literacy

III. Course Level Outcomes:
1. Do all of your Course Outlines of Record include Student Learning Outcomes? If not, are you revising them?

2. What percentage of faculty members in your discipline include SLOs in their course syllabi?

3. Assessment:
   i. How often do you assess these SLOs?

3. Assessment:
   ii. In the last two years every discipline developed SLOs specifically related to College Learning Outcome #3: Critical Thinking. Have you assessed this or any of the stated Student Learning Outcomes in your course outlines over the last year? If so, please summarize the results.

3. Assessment:
   iii. What improvements have you made or do you plan to make in the future?

3. Assessment:
   iv. What do you plan to assess this year? Who will you assess? How will you assess?
Instructional Equipment
BIOL-2009

This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Instructional Equipment Committee, IPC and Budget. Please enter items that will be used over a period of semesters BY STUDENTS. (Note: These should be NEW items that you are requesting one time only - not ongoing or consumable. Ongoing and consumable requests go under "Other Instructional Equipment". Technology-related requests should go under "Technology Requests".

Select whether the item is less than or more than $200 each. If you are a large discipline with several areas, please include which area this item is for. Include Tax, Shipping and Handling in the total cost for each item.

I. Instructional Equipment/Materials Requirements

<table>
<thead>
<tr>
<th>Priority</th>
<th>To Support</th>
<th>Category</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>27 Classes</td>
<td>Over $200 Each</td>
<td></td>
</tr>
</tbody>
</table>

Description and part number for ordering:
pH Meters

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<th>Tax:</th>
<th>Shipping:</th>
<th>Total:</th>
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<td>$100.00</td>
<td>$2,100.00</td>
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</table>

One-time expenses: (e.g. construction, electrical, installation)
No special construction, electrical or installation is required.

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)
Unit would be maintained and care for by current staff. No additional staffing or upgrades would be needed.

Item to be shared with the following Department/Program: (Include any shared expenses)
Enviromental Landscaping and Geology Department.

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)

1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

   A This item has been requested 3 times now.

   These items would be shared with the Environmental Landscaping program as well as the Geology program. A growing number of courses has forced upon us the need for additional pH meters to keep up with the various number of labs that require them for the proper education of our students. These are small expenditures that have a great deal of impact on the quality of learning in the labs.

2. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)
3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this item:

I. Instructional Equipment/Materials Requirements

<table>
<thead>
<tr>
<th>Priority</th>
<th>To Support</th>
<th>Category</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>24 Classes</td>
<td>Over $200 Each</td>
<td></td>
</tr>
</tbody>
</table>

Description and part number for ordering:
Leica microscopes for General biology labs

<table>
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<th>Qty.</th>
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<th>Tax:</th>
<th>Shipping:</th>
<th>Total:</th>
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<td>$5,346.00</td>
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</table>

One-time expenses: (e.g. construction, electrical, installation)
No special construction, electrical or installation is required.

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)
Annual maintenance is necessary to keep instruments functioning at optimal levels.

Item to be shared with the following Department/Program: (Include any shared expenses)
This item is for Biology 110L and introductory biology course taken by many students to fulfill their requirement of a biology lab. This item is crucial to all students that attend COM for their general education.

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)

1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

A This item has been requested 3 times now.
These items would serve 24 sections of General Biology labs with a minimum of 20 students each which equals over 400 students annually. The microscopes currently in use are over 35 years old and many don't even properly function. This is a large but crucial expenditure needed to teach general biology to our students. Without microscopes our students will lack the proper education they expect from the Biology program at College of Marin.
2. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?
Current equipment being used is over 35 years old and cost more in the long run to maintain and service due to old parts that are hard to come by.

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?
This will greatly benefit the students by easing their frustrations and anxieties of a Biology lab. Many of the 440 plus students are using this equipment while taking courses to meet their general education requirements.

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this item:

I. Instructional Equipment/Materials Requirements
Priority: To Support: Category Discipline Area
01 48 Students Over $200 Each

Description and part number for ordering:
PROCELL (complete) with power supply.

<table>
<thead>
<tr>
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<th>Tax:</th>
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<th>Total:</th>
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</thead>
<tbody>
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<td>$0.00</td>
<td>$125.00</td>
<td>$884.00</td>
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</table>

One-time expenses: (e.g. construction, electrical, installation)
No special construction, electrical or installation is required.

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)
There would be no on-going expenses. This unit is required to replace an old power source and gel chamber that is well over 10 years old.

Item to be shared with the following Department/Program: (Include any shared expenses)
This item is crucial to the Biology 115 course in which the students are asked to do an electrophoresis at least 4 times a semester. That equates to eight labs minimum a year that rely on this piece of equipment to function properly. Many items in the biology program need to be slowly replaced and this is definitely one of those items. It is vital to the education of the students to perform an electrophoresis during their education in the Biology program.

Do you have space for this
Justification for Item (See Rating Rubric)

1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

This item is crucial to the life of the discipline. It is equipment that is used repeatedly throughout the semester by the biology majors. Without this equipment the students will be ill prepared for later biology courses in their educational career.

2. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
   Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?
   The quality would be greatly improved. Currently students play a guessing game as to how long the experiment might last (1.5 hrs - 2.5hrs) due to an old and weak power supply that doesn't maintain a standard power throughout.

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?
   Students would benefit greatly from the addition of new equipment. The equipment currently being used is over 10 years old and does not provide consistent results.

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?
   Use of this equipment would prepare students to succeed at 4-year institutions and in industry.

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this item:

I. Instructional Equipment/Materials Requirements

<table>
<thead>
<tr>
<th>Priority</th>
<th>To Support:</th>
<th>Category</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>300 Students</td>
<td>Over $200 Each</td>
<td></td>
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</tbody>
</table>

Description and part number for ordering:

Various Models for Instruction.

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<td>$1,385.00</td>
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<td>$200.00</td>
<td>$1,703.00</td>
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</table>

One-time expenses: (e.g. construction, electrical, installation)

No construction or electrical installation is required.
On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)
No repairs or annual maintenance is required.

Item to be shared with the following Department/Program: (Include any shared expenses)
Used among all biology classes

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)
1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.
   B

   These models are required for the continued education and instruction of our Anatomy students. Students continue to attend from other institutions and this would only help attract more future student to the College.

2. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
   Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this item:

I. Instructional Equipment/Materials Requirements

<table>
<thead>
<tr>
<th>Priority</th>
<th>To Support</th>
<th>Category</th>
<th>Discipline Area</th>
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</thead>
<tbody>
<tr>
<td>02</td>
<td>96 Students</td>
<td>Over $200</td>
<td>Each</td>
</tr>
</tbody>
</table>

Description and part number for ordering:
GasPak Jar

<table>
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<th>Qty.</th>
<th>Unit Cost:</th>
<th>Tax:</th>
<th>Shipping:</th>
<th>Total:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>$800.00</td>
<td>$0.00</td>
<td>$150.00</td>
<td>$1,750.00</td>
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</table>

One-time expenses: (e.g. construction, electrical, installation)
No special construction, electrical or installation is required.

**On-going Expenses:** (e.g. maintenance, repairs, staffing, and/or upgrades)
These items don't require annual maintenance or staffing.

**Item to be shared with the following Department/Program:** (Include any shared expenses)

Do you have space for this equipment? Yes

**Justification for Item (See Rating Rubric)**

1. Indicate how important this item is to the life of your discipline.
   - ’A’ means that your discipline cannot teach your course(s) without the requested equipment.
   - ’B’ means that your course(s) would be greatly enhanced with the requested equipment.
   - ’C’ means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

   B

Currently the old GasPak jars are getting brittle and starting to crack, which defeats their purpose. These are used in an array of labs in Microbiology where cultures need to be maintained in an anaerobic environment. The jars are made of a polymer that tends to get brittle and crack over time. This replacement is a necessity for the Microbiology labs to function.

2. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)

Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

**Additional Justification for this item:**

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**I. Instructional Equipment/Materials Requirements**

<table>
<thead>
<tr>
<th>Priority</th>
<th>To Support:</th>
<th>Category</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>144 Students</td>
<td>Over $200 Each</td>
<td></td>
</tr>
</tbody>
</table>

**Description and part number for ordering:**
Spectronic 20+ spectrophotometers.

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<tr>
<th>Qty.</th>
<th>Unit Cost:</th>
<th>Tax:</th>
<th>Shipping:</th>
<th>Total:</th>
</tr>
</thead>
<tbody>
<tr>
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<td>$2,250.00</td>
<td>$0.00</td>
<td>$130.00</td>
<td>$4,630.00</td>
</tr>
</tbody>
</table>
One-time expenses: (e.g. construction, electrical, installation)
No special construction, electrical or installation is required.

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)
These items over time need light sources replaced which is conducted by current staff. No additional support is required for these items.

Item to be shared with the following Department/Program: (Include any shared expenses)

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)
1. Indicate how important this item is to the life of your discipline.
   • ‘A’ means that your discipline cannot teach your course(s) without the requested equipment.
   • ‘B’ means that your course(s) would be greatly enhanced with the requested equipment.
   • ‘C’ means that you would like this piece of equipment for your course(s) but can wait for a future academic year.
   B

Need to replace one that is well over tens years old and no longer functions. Need the second one to keep up with the capacity of labs that are currently using this equipment. Number of course offerings are increasing, and as such the demand for equipment increases. This purchase would help better serve the labs and students.

2. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this item:

I. Instructional Equipment/Materials Requirements

<table>
<thead>
<tr>
<th>Priority</th>
<th>To Support</th>
<th>Category</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>28 Classes</td>
<td>Over $200 Each</td>
<td></td>
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</tbody>
</table>

Description and part number for ordering:
12L Digital water bath, 115V.
One-time expenses: (e.g. construction, electrical, installation)
No special construction, electrical or installation is required.

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)
These items don't require annual maintenance or staffing. We currently have a few, but require more due to the increase in demand from a number of labs.

Item to be shared with the following Department/Program: (Include any shared expenses)
Items will be shared between Microbiology, Biology 110, and Biology 115.

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)
1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.
   B

   Due to the high demand from multiple labs being offered during the same time blocks, additional water baths are required to continue to serve our students.

2. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
   Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this item:

I. Instructional Equipment/Materials Requirements
Priority: To Support: Category Discipline Area
02 96 Students Over $200 Each

Description and part number for ordering:
Antibiotic Disk Dispensers

<table>
<thead>
<tr>
<th>Qty.</th>
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<th>Tax:</th>
<th>Shipping:</th>
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<td>$0.00</td>
<td>$200.00</td>
<td>$2,200.00</td>
</tr>
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</table>

One-time expenses: (e.g. construction, electrical, installation)
No special construction, electrical or installation is required.

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)
These items don't require annual maintenance or staffing.

Item to be shared with the following Department/Program: (Include any shared expenses)

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)
1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.
   B this has been requested at least two times now.

Currently two are being used by 24 students in a lab. This is a safety issue when one has a group of students waiting to use just two pieces of equipment in the whole lab. To rectify this problem we need to purchase three more and bring the ratio of students to equipment from 12:1 down to approximately 5:1. This would make for a safe and efficient lab environment.

2. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
   Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?
   This would make for a safer lab environment and reduce our ratio of students to equipment from 12:1 to 5:1.

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this item:

I. Instructional Equipment/Materials Requirements
**Priority:** To Support: 03 180 Students Under $200 Each

**Category Discipline Area**

**Description and part number for ordering:**

Ohaus Electronic Balances

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<th>Shipping: $75.00</th>
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**One-time expenses:** (e.g. construction, electrical, installation)

No special construction, electrical or installation is required.

**On-going Expenses:** (e.g. maintenance, repairs, staffing, and/or upgrades)

Unit would be maintained and care for by current staff. No additional staffing or upgrades would be needed.

**Item to be shared with the following Department/Program: (Include any shared expenses)**

These items would be shared with Environmental landscaping

**Do you have space for this equipment?**

Yes

**Justification for Item (See Rating Rubric)**

1. **Indicate how important this item is to the life of your discipline.**
   - 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   - 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   - 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.
   
   C

   These items would be shared with the Environmental Landscaping program. A growing number of courses has forced upon us the need for additional balances. With the addition of the Soils class as well as new labs developed for Biology 116, there is a growing need for more equipment to be able to better serve the students.

2. **Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)**

   Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. **How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?**

4. **How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?**

5. **What student learning or other outcomes are expected? Is it important to the achievement of student goals?**

6. **How will these outcomes be measured for future planning? What data or evidence supports your request?**

**Additional Justification for this item:**
I. Instructional Equipment/Materials Requirements

<table>
<thead>
<tr>
<th>Priority:</th>
<th>To Support:</th>
<th>Category:</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>04</td>
<td>200 Students</td>
<td>Over $200 Each</td>
<td></td>
</tr>
</tbody>
</table>

Description and part number for ordering:
Orbital Shaker

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<th>Qty.</th>
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<td>$124.00</td>
<td>$3,855.00</td>
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</table>

One-time expenses: (e.g. construction, electrical, installation)
No special construction, electrical or installation is required.

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)
These items don't require annual maintenance or staffing.

Item to be shared with the following Department/Program: (Include any shared expenses)
Would be used by both Microbiology and Biology 115 (biology for majors).

Do you have space for this equipment?

Justification for Item (See Rating Rubric)

1. Indicate how important this item is to the life of your discipline.
   - 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   - 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   - 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

   B

   This equipment would help further students education and knowledge of current laboratory procedures in the Biological science industry. Use of this equipment would allow students to perform new labs that would help update the current lesson plan.

2. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
   Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this item:
I. Instructional Equipment/Materials Requirements

Priority: To Support: Category Discipline Area
04 750 Students Over $200 Each Biology, Natural History, and Geology

Description and part number for ordering:
Hepa Filter Vacuum System

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Unit Cost:</th>
<th>Tax:</th>
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</tr>
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<tr>
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<td>$413.00</td>
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<td>$528.11</td>
<td>$976.22</td>
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</table>

One-time expenses: (e.g. construction, electrical, installation)
None

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)
None

Item to be shared with the following Department/Program: (Include any shared expenses)
Biology, Natural History, and Geology

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)
1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

   System would be used to maintain and care for current collections that serve numerous students, classes and programs.

2. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
   Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this item:
I. Instructional Equipment/Materials Requirements

Description and part number for ordering:
Museum of Life posters

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Unit Cost:</th>
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</tr>
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<tbody>
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</table>

One-time expenses: (e.g. construction, electrical, installation)
No construction, electrical or installation expenses.

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)
No annual maintenance, repairs or upgrade expenses.

Item to be shared with the following Department/Program: (Include any shared expenses)
Biology classes

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)

1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

   B

   Posters would aide as a teaching tool for students involved in Biology 116. These posters would help students better understand concepts and ideas learned during lecture and lab.

2. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
   Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?
I. Instructional Equipment/Materials Requirements

<table>
<thead>
<tr>
<th>Priority</th>
<th>To Support:</th>
<th>Category</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>05</td>
<td>10 Classes</td>
<td>Over $200 Each</td>
<td>Biology, Geology and Geography programs</td>
</tr>
</tbody>
</table>

These items would be shared between the Biology, Geology and Geography programs.

Description and part number for ordering:
2 (15 passenger vans) 1 4wd Pick-up truck

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Unit Cost:</th>
<th>Tax:</th>
<th>Shipping:</th>
<th>Total:</th>
</tr>
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<tbody>
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<td>$60,000.00</td>
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One-time expenses: (e.g. construction, electrical, installation)
No special construction, electrical or installation is required.

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)
Maintenance would be conducted at IVC. Gas expenditure would be charged to students. Insurance would be required to operate vehicles.

Item to be shared with the following Department/Program: (Include any shared expenses)
These items would be shared between the Biology, Geology and Geography programs.

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)
1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

   B

   By purchasing this equipment it would reduce the current cost of field courses for students by only charging them for maintenance and gas rather than a fee for rental vehicles. This purchase would also increase safety due to familiarity with the same vehicles rather than different vehicles every time. By reducing the cost to students the courses with a field component would become more attractive to students.

2. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
   Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

5. What student learning or other outcomes are expected? Is it important to the achievement
of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this item:
Technology Requests

Part II: Hardware for Lab and Classroom

BIOL-2009

I. Technology Requests-Hardware for Lab and Classroom or other student use

This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget.

<table>
<thead>
<tr>
<th>Priority</th>
<th>To Support:</th>
<th>Category</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>260 Students</td>
<td>Other</td>
<td>Other</td>
</tr>
</tbody>
</table>

Description and part number for ordering:

Updated Powerlab LabChart Systems. These are a vital part of our Physiology labs here at COM (as well as many other institutions). They are also used in student research projects in physiology, as well as in physiology units in our Majors Biology labs. They allow students to experience a variety of physiology and medical concepts first-hand.

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Unit Cost:</th>
<th>Tax:</th>
<th>Shipping:</th>
<th>Total:</th>
</tr>
</thead>
<tbody>
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<td>$3,650.25</td>
<td>$200.00</td>
<td>$50,950.25</td>
</tr>
</tbody>
</table>

Type College-wide Discipline-Specific

New None None

If this is an upgrade or replacement, please briefly describe your existing equipment in terms of age and capability or lack thereof:

Item to be shared with the following Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)

1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

In addition, how many times have you requested this item, but you have not received it?

A

The powerlab systems have been a vital part of our physiology lab program for over ten years. Our current systems are starting to fail, and are no longer supported. In addition, we currently only have five systems, which severely limits our ability to serve students since we must split each lab, with half the students doing an abbreviated lab with the powerlabs and the other half doing another lab in another room, and then swapping.

These new systems will update our systems and dramatically increase our ability to serve the whole classes at once in greater depth, as well as give us the ability to perform labs in muscle physiology and electroencephalography that are currently not possible with our current equipment.

Allied Health is one of the very robust and growing segments of our college, and human physiology is a key class in our Allied Health offerings. These powerlabs will insure that our classes remain rigorous, relevant, and maintain a high level of quality
2. Is this hardware required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this Item:

I. Technology Requests-Hardware for Lab and Classroom or other student use
This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget.

<table>
<thead>
<tr>
<th>Priority:</th>
<th>To Support:</th>
<th>Category</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>40 Students</td>
<td>Other</td>
<td>Other</td>
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</tbody>
</table>

Description and part number for ordering:
Epson perfection 4990 Photo scanner

<table>
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<tr>
<th>Qty.</th>
<th>Unit Cost:</th>
<th>Tax:</th>
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<th>Total:</th>
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<td>$100.00</td>
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</table>

Type
New

Discipline-Specific
Open Lab
Lab use

If this is an upgrade or replacement, please briefly describe your existing equipment in terms of age and capability or lack thereof:

Item to be shared with the following Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)
1. Indicate how important this item is to the life of your discipline.
   • ‘A’ means that your discipline cannot teach your course(s) without the requested equipment.
   • ‘B’ means that your course(s) would be greatly enhanced with the requested equipment.
   • ‘C’ means that you would like this piece of equipment for your course(s) but can wait for a future academic year.
In addition, how many times have you requested this item, but you have not received it?

B

This item would help modernize the way students deal with, and view results from
2. Is this hardware required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?
This item would help modernize the way students deal with, and view results from electrophoresis

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this item:
Unit would be maintained and care for by current staff. No additional staffing or upgrades would be needed.

I. Technology Requests-Hardware for Lab and Classroom or other student use
This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget.

<table>
<thead>
<tr>
<th>Priority</th>
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<th>Category</th>
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<tbody>
<tr>
<td>03</td>
<td>250 Students</td>
<td>Other</td>
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Description and part number for ordering:
LCD Projector

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Type
New

College-wide
Open Lab

Discipline-Specific
Lab use

If this is an upgrade or replacement, please briefly describe your existing equipment in terms of age and capability or lack thereof:

Item to be shared with the following Department/Program: (Include any shared expenses)
Geology and Human Physiology classes

Justification for Item (See Rating Rubric)

1. Indicate how important this item is to the life of your discipline.
• 'A' means that your discipline cannot teach your course(s) without the requested equipment.
• 'B' means that your course(s) would be greatly enhanced with the requested equipment.
‘C’ means that you would like this piece of equipment for your course(s) but can wait for a future academic year.
In addition, how many times have you requested this item, but you have not received it?

B

Lcd projector is needed in the Computer lab for use by the above mentioned classes. This would also benefit any other classes using the Science Center computer lab.

2. Is this hardware required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this item:

I. Technology Requests-Hardware for Lab and Classroom or other student use
This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget.

<table>
<thead>
<tr>
<th>Priority</th>
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<th>Category</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
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<td>Other</td>
<td>Other</td>
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Description and part number for ordering:
Trimble Juno ST

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Type

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<tr>
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College-wide

<table>
<thead>
<tr>
<th>Discipline-Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab use</td>
</tr>
</tbody>
</table>

If this is an upgrade or replacement, please briefly describe your existing equipment in terms of age and capability or lack thereof:

Item to be shared with the following Department/Program: (Include any shared expenses)
Geography and Geology classes

Justification for Item (See Rating Rubric)

1. Indicate how important this item is to the life of your discipline.
   ‘A’ means that your discipline cannot teach your course(s) without the requested equipment.
• ‘B’ means that your course(s) would be greatly enhanced with the requested equipment.
• ‘C’ means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

In addition, how many times have you requested this item, but you have not received it? B

Handheld units used to assist in the collection of data for GIS use.

2. Is this hardware required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
   Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

5. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this item:
I. Consumable Instructional Operating Supplies

This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget.

Note: Please group requests into broad categories of items required to teach a class. Make ONE entry for each category.

Note: These are generally ongoing costs. One-time items go under Instructional Equipment.

Priority: To Support: Discipline Area
01 1000 Students

Broad Category (for example in Chemistry - "Chemicals")
Slide set for Biology courses.

<table>
<thead>
<tr>
<th>Annual Cost</th>
<th>Previous Cost</th>
<th>Amount of Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>2500.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Type How Long?
New New/Will be Recurring

Item to be shared with the following Department/Program: (Include any shared expenses)
These are replacements for slides that are used on a regular basis by over 1000 students annually. Over time glass slides are dropped by students and some slowly deteriorate over time. Many of the slides are well of 15 years old and are cracked and broken through repeated student abuse. These need to be replaced to better serve and educate our students in the Biology program.

Justification for Item (See Rating Rubric)
1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.
   In addition, how many times have you requested this item, but you have not received it?
   A

2. Is it necessary for students to succeed in a series of courses?

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

5. How will these outcomes be measured for future planning? What data or evidence supports your request?

These slides are crucial to the continued education of our students in the General Biology (BIOL110), Biology for majors (BIOL115 & BIOL116), Human Anatomy (BIOL120), and Microbiology (BIOL240).

I. Consumable Instructional Operating Supplies

This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget.

Note: Please group requests into broad categories of items required to teach a class. Make ONE entry for each category.

Note: These are generally ongoing costs. One-time items go under Instructional Equipment.

Priority: To Support: Discipline Area
01 1200 Students Biology

Broad Category (for example in Chemistry - "Chemicals")
Biology

<table>
<thead>
<tr>
<th>Annual Cost</th>
<th>Previous Cost</th>
<th>Amount of Increase</th>
</tr>
</thead>
<tbody>
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<td>7671.0</td>
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</table>
Item to be shared with the following Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)

1. Indicate how important this item is to the life of your discipline.
   • ‘A’ means that your discipline cannot teach your course(s) without the requested equipment.
   • ‘B’ means that your course(s) would be greatly enhanced with the requested equipment.
   • ‘C’ means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

   In addition, how many times have you requested this item, but you have not received it?

   A

   11100-22301-040100-23000 PT Class Student Hourly $3,850 U
   11100-22301-040100-23200 PT Class Non-Student Hourly $3,850 U
   11100-22301-040100-43000 Instructional Supplies $3,378 U
   11100-22301-040100-43100 Instructional Supplies - Summer $770 U
   11100-22301-040100-45000 Other Supplies $1,650 U
   11100-22301-040100-56200 Maintenance Contracts, Repairs $3,877 U
   11100-22301-040100-56700 Other Contract Services $7,343 U
   11100-22301-040100-64000 Furniture Fixtures Equipment $880 U
   12400-22301-040100-43000 Instructional Supplies $16,440 Prop 20

   Biology Supplies Total $42,038

   All accounts should be in non-restricted accounts. If Prop. 20 funds are used, they need to be in accounts by July 1st to allow purchases for Fall Semester.

   Additional Justification for this item:

   Supplies needed to run biology classes in academic year 2009-2010 plus summer session, 2009 (since supplies for summer must be purchased in May, 2009).

2. Is it necessary for students to succeed in a series of courses?

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

5. How will these outcomes be measured for future planning? What data or evidence supports your request?
Non-Instructional Requests
Part II : Other Non-Instructional Costs/Contract Services
This section will be filled out by the Department Chair
BIOL-2009

II. Other Non-Instructional Costs
This section will be filled out by the Department Chair and reviewed by the Area Dean, IPC and Budget.
Note: Service Contracts: maintenance, repairs, laundry, hazardous waste removal, etc.

<table>
<thead>
<tr>
<th>Category</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Contracts</td>
<td>Previously funded with cost increase</td>
</tr>
</tbody>
</table>

Description and part number for ordering:
Increase in funds for Contract Services Agreement in the Biology program.

<table>
<thead>
<tr>
<th>Annual Cost</th>
<th>Previous Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>14174.0</td>
<td>11000.0</td>
</tr>
</tbody>
</table>

Justification
Please comment on request in terms of how it benefits your program, faculty and/or students:

Shared With:
The items that would receive servicing from these funds are used by a number of programs including Geology, Geography, Environmental Landscaping and occasionally Chemistry.

One-time Expense:
There are no construction, electrical, or installation expenses. This is a request for funds for the Contract service agreement account to pay for the cost of upkeep on equipment already purchased in the Biology program.

On-going Expenses:
The funds would be used to help service various pieces of equipment. Some of the equipment would include newly acquired microscopes that need to be properly maintained to continue to function. Maintenance is also required on older microscopes (over 30 years old to be precise) to keep them barely functioning at the current level. A long term solution would be the acquisition of new microscopes; which is reflected under the Instructional Equipment request. Annual service is also conducted on the autoclave which is a vital tool required for the function of the Microbiology classes. There are also a number of balances that need to be calibrated, without this service all these expensive pieces of equipment are useless.
# Faculty Members
## BIOL-2009

## I. Program Faculty
### List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agudelo-Silva</td>
<td>Fernando</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Status:
- Shared W/other program(s):
- Full-time, probationary: Yes

<table>
<thead>
<tr>
<th>Summer 2009 TU</th>
<th>Fall 2009 TU</th>
<th>Spring 2010 TU</th>
<th>Reassigned (Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>00.000</td>
<td>00.000</td>
<td></td>
</tr>
</tbody>
</table>

#### Years of Service:
- 8

#### Specialty:
- Biology, microbiology, horticulture, engineering, public health, ecology

#### Leadership: List involvement in committees or other service
- Chair of facilities planning committee for more than two years. With other com.
  members develop master list of facilities, criteria to rank facilities requests,
  establish computer driven system to track maintenance requests.
- Without formally reassigned units, have been instrumental in assisting coordination of
  Environmental Landscaping program.
- I have submitted two proposals to the Educational Excellence Innovation and obtained
  funding to establish sustainable garden. This garden is used to support teaching of
  various classes including nutrition.
- Proposed Irrigation Center which led to creation of partnerships with Marin Water
  District, California Landscape Contractors Association nd Marin County Supervisors.
- Obtained grant from Bay Area Biotech group to purchase laboratory supplies and
  equipment.
- Assembled team that won award at the San Francisco Flower and Garden Show.
- Sponsor of Land Sustainability Club.

## List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boyce</td>
<td>Sima</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Status:
- Adjunct, ETCUM: No

<table>
<thead>
<tr>
<th>Summer 2009 TU</th>
<th>Fall 2009 TU</th>
<th>Spring 2010 TU</th>
<th>Reassigned (Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>00.000</td>
<td>00.000</td>
<td></td>
</tr>
</tbody>
</table>

#### Years of Service:
- 3

#### Specialty:
- List all areas of specialty and/or equivalency

#### Leadership: List involvement in committees or other service

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown</td>
<td>Becky</td>
<td>L</td>
<td></td>
</tr>
</tbody>
</table>

#### Status:
- Shared W/other program(s):
- Full-time, probationary: No

<table>
<thead>
<tr>
<th>Summer 2009 TU</th>
<th>Fall 2009 TU</th>
<th>Spring 2010 TU</th>
<th>Reassigned (Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

#### Years of Service:
- 3

#### Specialty:
- Human Anatomy, Human Physiology, Ecology, Zoology, Field Biology

---

http://programreview.marin.edu/TUReportFaculty.jsp

2/23/2010
Leadership: List involvement in committees or other service
Curriculum Committee
Various Hiring Committees
Technical Review Committee
User group for new science building

List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bruce</td>
<td>Douglas</td>
<td>A</td>
<td></td>
</tr>
</tbody>
</table>

Status: Shared W/other program(s):
Adjunct, ETCUM No

Summer 2009 TU Fall 2009 TU Spring 2010 TU Reassigned (Total)
8 0 00.000

Years of Service: Specialty:
Majors general biology, intro biology, entomology, evolution, field biology, genetics, physiology, nutrition
2

Leadership: List involvement in committees or other service

Full-time professor at Dominican University of California (and member of several governance committees there)

List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cunningham</td>
<td>James</td>
<td>B</td>
<td></td>
</tr>
</tbody>
</table>

Status: Shared W/other program(s):
Adjunct, ETCUM No

Summer 2009 TU Fall 2009 TU Spring 2010 TU Reassigned (Total)
10 0 00.000

Years of Service: Specialty:
Ornithology, Ecology, General Biology
21

Leadership: List involvement in committees or other service

Have served on Curriculum Committee, Instructional Equipment Committee, Calendar Option Committee, Sabbatical Leave Committee, Educational Master Plan Committee, Environmental Landscaping Advisory Committee, Environmental Science Advisory Committee, numerous Hiring Committees

List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired</th>
</tr>
</thead>
<tbody>
<tr>
<td>da Silva</td>
<td>Paul</td>
<td>G</td>
<td></td>
</tr>
</tbody>
</table>

Status: Shared W/other program(s):
Full-time, tenured No

Summer 2009 TU Fall 2009 TU Spring 2010 TU Reassigned (Total)
33 3 0 3

Years of Service: Specialty:
Entermolology, Ecology, Environmental Science, Plant Science, History of Science
11

Leadership: List involvement in committees or other service

Have served on Curriculum Committee, Instructional Equipment Committee, Calendar Option Committee, Sabbatical Leave Committee, Educational Master Plan Committee, Environmental Landscaping Advisory Committee, Environmental Science Advisory Committee, numerous Hiring Committees

List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deneris</td>
<td>Jamie</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Status: Shared W/other program(s):
Full-time, tenured

Summer 2009 TU Fall 2009 TU Spring 2010 TU Reassigned (Total)
40.500 0 00.000

http://programreview.marin.edu/TUReportFaculty.jsp
### Years of Service: 14

**Specialty:** Microbiology, Molecular and Cell Biology, Evolutionary Biology, Field Biology and Ecology

### Leadership: List involvement in committees or other service
- Health and Safety Committee
- Sabbatical Leave Committee
- Guest lecturer in other departments on campus most semesters
- Point Reyes National Seashore
- Hawaii Volcanoes National Park
- Great Basin National Park
- Northern California Biotechnology Consortium

### List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egert</td>
<td>David</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Status: Full-time, tenured

- Shared W/other program(s): No

- Summer 2009 TU: 34
- Fall 2009 TU: 3
- Spring 2010 TU: 34
- Reassigned (Total): 3

### Years of Service: 8

**Specialty:** Human Physiology and Anatomy, Neurobiology, Systems & Control Theory, Engineering

### Leadership: List involvement in committees or other service
- Institutional Planning Committee
- Life and Earth Sciences Department Chair
- Various Hiring Committees (Biology and Chemistry faculty, as well as Science Center Computer resource person)

### List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamal</td>
<td>Arif</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Status: Adjunct, ETCUM

- Shared W/other program(s): No

- Summer 2009 TU: 16
- Fall 2009 TU: 00.000
- Spring 2010 TU: 16
- Reassigned (Total): 00.000

### Years of Service: 7

**Specialty:** Human Anatomy and Physiology, Human Sexuality

### Leadership: List involvement in committees or other service

### List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gearhart</td>
<td>Anne</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Status: Emergency Hire

- Shared W/other program(s): No

- Summer 2009 TU: 11
- Fall 2009 TU: 00.000
- Spring 2010 TU: 11
- Reassigned (Total): 00.000

### Years of Service: 1

**Specialty:**

### Leadership: List involvement in committees or other service

### List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glazebrook</td>
<td>Catriona</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Status: Emergency Hire

- Shared W/other program(s): No
<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired</th>
<th>Status</th>
<th>Shared W/other program(s):</th>
<th>Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harms</td>
<td>Sharon</td>
<td></td>
<td></td>
<td>Adjunct, ETCOM</td>
<td>No</td>
<td>Environmental Policy</td>
</tr>
<tr>
<td>Lenarz</td>
<td>William</td>
<td></td>
<td></td>
<td>Adjunct, ETCOM</td>
<td>No</td>
<td>Nutrition</td>
</tr>
<tr>
<td>Mahmoud</td>
<td>Eiman</td>
<td></td>
<td></td>
<td>Emergency Hire</td>
<td>No</td>
<td>Fisheries biology, population ecology</td>
</tr>
<tr>
<td>Messana</td>
<td>Benedict</td>
<td></td>
<td></td>
<td>Adjunct, ETCOM</td>
<td>No</td>
<td>Anatomy</td>
</tr>
</tbody>
</table>

Leadership: List involvement in committees or other service

- Harms Sharon is liaison with Environmental Education Council of Marin
- Lenarz William
- Mahmoud Eiman
- Messana Benedict
### List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mueller</td>
<td>Joe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Status:** Shared W/other program(s): Full-time, tenured

**Summer 2009 TU** | **Fall 2009 TU** | **Spring 2010 TU** | **Reassigned (Total)**
44                  | 00.000         |

**Years of Service:** 19

**Specialty:** Marine biology, ornithology, mammalogy, ecology, environmental science, field biology, aquatic biology, human sexuality, animal behavior, zoology, extended field studies, Alaska/Pacific Northwest/Southwest/Yellowstone, herpetology, marine mammals, marine ecology field studies.

**Leadership:** List involvement in committees or other service

- Senator and Academic Senate
- Various hiring committees
- Coordinated and revitized Bolinas Marine Lab (12 years)
- Faculty advisor for COM Environmental Action Club (16 years)
- Hiring committees for Marin County Parks and Open Space
- Senior Member Bolinas Lagoon Technological Advisory Committee (12 years)
- Curriculum Advisor for Environmental Forum of Marin
- Lecturer/Speaker every two weeks for one or more: Marin Audubon So, Audubon Canyon Ranch, Hungary Owl Project, Environmental Forum of Marin, Local State, Federal and County parks docent/nature education programs and ranger training, Educator Point Reyes Field Seminars, Point Reyes National Seashore, Parallones National Marine Sanctuary
- Cares for 50 animals (llams to lizards) used for nature education.

### List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richards</td>
<td>Sandy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Status:** Emergency Hire

**Summer 2009 TU** | **Fall 2009 TU** | **Spring 2010 TU** | **Reassigned (Total)**
0                  | 00.000         |

**Years of Service:** 3

**Specialty:** Nutrition

**Leadership:** List involvement in committees or other service

### List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rodriguez</td>
<td>Elena</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Status:** Emergency Hire

**Summer 2009 TU** | **Fall 2009 TU** | **Spring 2010 TU** | **Reassigned (Total)**
5                  | 00.000         |

**Years of Service:** 3

**Specialty:** List all areas of specialty and/or equivalency

**Leadership:** List involvement in committees or other service

### List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schinkse</td>
<td>Jeff</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Status:** Temp Pool

**Summer 2009 TU** | **Fall 2009 TU** | **Spring 2010 TU** | **Reassigned (Total)**
2.5                | 00.000         |
### List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith</td>
<td>Victor G</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Status: Shared W/other program(s):
- Temp Pool: No

#### Summer 2009 TU | Fall 2009 TU | Spring 2010 TU | Reassigned (Total) |
- 10 | 0.000

#### Years of Service: 2

### List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waldman</td>
<td>Leslie R.</td>
<td>R.</td>
<td></td>
</tr>
</tbody>
</table>

#### Status: Adjunct, ETCUM: No

#### Summer 2009 TU | Fall 2009 TU | Spring 2010 TU | Reassigned (Total) |
- 24 | 0.000

#### Years of Service: 3
- Specialty: Neuroscience, Human Physiology and Anatomy, Zoology, Evolutionary Biology

### List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Williams</td>
<td>Jeannine D.</td>
<td>D.</td>
<td></td>
</tr>
</tbody>
</table>

#### Status: Adjunct, ETCUM: No

#### Summer 2009 TU | Fall 2009 TU | Spring 2010 TU | Reassigned (Total) |
- 16 | 0.000

#### Years of Service: 4
- Specialty: Microbiology, Physiology, Virology, and Immunology, Zoology

### Leadership: List involvement in committees or other service

### Additional Teaching Unit Requests

**III. FT Faculty Needs** (Please fill this out ONLY if you are stating a need for new full time faculty in your area.)

1. Please indicate if there are NO FT faculty in your discipline. Please provide data regarding the length of time this discipline has been without a full time instructor.

2. Non-availability of part-time instructors in a subject area. Please provide evidence demonstrating the difficulty in finding part-time instructors to teach in the subject area. The ratio of part-time to full-time instructors has grown over the past few years. When the ratio gets too high, it may produce unreliability and instability in staffing and unpleasant conditions for the students. During the past year, we had an unfortunate example. A part-time emergency hire abandoned his laboratory section in the middle of the class, walked out the door, and was never seen again. While the vast majority of our part-time instructors are excellent and reliable, last-minute scrambles to staff classes could be avoided by hiring more full-time instructors.

3. RETCUM Faculty: How many FT faculty have retired in the past ten years. How many units are now taught by RETCUM faculty each year?
Ruth Nash was the last person to retire in the biology program to retire, last teaching classes approximately five years ago. (Jim Locke retired more recently from the Life and Earth Sciences Department, but not from the biology program). We currently have no RETCUM faculty.

4. New FT Faculty: How many NEW FT faculty have been hired in past 10 years? Please list each faculty name and the year of employment. If this instructor is shared with another department, please list the equivalent FTE% for your department. Please list instructional equivalencies as necessary and if faculty member was the result of retreat rights.

Fernando Agudelo Silva (shared with Environmental Landscaping) was hired eight years ago.
Becky Brown was hired five years ago.

5. Reduction in department TUs as a result of FT Faculty retirements or other significant causes? Please provide data that illustrates a change in teaching unit allocation as a direct result of FT faculty retirements within your department and how this may change in the coming year(s).

6. Other reasons: Have there been other causes for a reduction in units in your discipline? If so, please explain and provide evidence.

7. Changes in Student Demand: Recent or forthcoming growth as a result of added sections due to enrollment demands. Provide evidence that illustrates the need for additional faculty due to increased student demand such as numbers of sections added and/or courses with waitlist totals showing a need for additional sections. What is the % of FTEF for this increase in units? If there has been a decline in student growth, please explain why.

Enrollment increases in the basic biology program have mostly been in the non-majors’ courses. Enrollment in Biology 110 and Biology 110L have each been on the order of 20%. Other enrollment increases in the allied health courses have affected courses taught in the biology program, because some instructors teach in both programs. Overall increase in FTEF is approximately 1.0.

8. Current of forthcoming changes that illustrate the immediate need of additional FT faculty within this department. Please outline all relevant circumstances that justify the priority of a FT hire in addition to those already outlined above. Consider changes in the field, changes in the job market and population shifts.

9. Program Review Findings: Indicate what trends you identified in your last program review that support the need for full time faculty hires. Tie these to the department and college mission.

10. Other considerations: Include such information as matriculation needs, changes in student demand or community and job market needs, response to legislation, or rapid growth of the discipline.

11. Shared Resources: If you have requested FT faculty that will be used by more than one department, please indicate here. Please indicate which disciplines and/or departments and the number of combined students/faculty or classes he/she would serve. Please indicate how it will improve access or outcomes and if it is needed for health and safety concerns or required by law.
Non-Instructional Support Staff  
BIOL-2009

I. Current Support Staff  
List of Support Staff  

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Purpose</th>
<th>Hours/Week</th>
<th>To support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aftab Enty</td>
<td>Full-Time</td>
<td>Lab Tech</td>
<td>40</td>
<td>1000 Students</td>
</tr>
</tbody>
</table>

Leadership: List involvement in committees or other service  
Aftab has volunteered for the Instructional Equipment Committee and has helped in planning new biology spaces in the campus modernization program.

II. Request for additional support staff  (clerical, lab tech, IS, comp tech, tutor, etc.)

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Type</th>
<th>Approx. hours per week</th>
<th>To support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Assistant</td>
<td>Hourly</td>
<td>40</td>
<td>1000 Students</td>
</tr>
</tbody>
</table>

Justification: Please address the following areas as applicable. How will it be used? How will instruction be improved for student learning and success? How will access be improved? What student learning outcomes are expected? How will the outcomes be measured? What data or evidence is supplied to support your justification?

Increased enrollment in biology classes has led to a drop in the level of routine cleaning activities. Increased help by student or non-student hourly employees is one way of maintaining essential hygiene.

Shared Resources: If you have requested additional staff that will be used by more than one department, please indicate here. Please indicate which disciplines and/or departments and the number of combined students/faculty or classes he/she would serve. Please indicate how it will improve access or outcomes and if it is needed for health and safety concerns or required by law.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Type</th>
<th>Approx. hours per week</th>
<th>To support</th>
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</thead>
<tbody>
<tr>
<td>Lab Tech</td>
<td>Full-Time</td>
<td>40</td>
<td>6 Classes</td>
</tr>
</tbody>
</table>

Justification: Please address the following areas as applicable. How will it be used? How will instruction be improved for student learning and success? How will access be improved? What student learning outcomes are expected? How will the outcomes be measured? What data or evidence is supplied to support your justification?

Effects of the departure of the permanent microbiology laboratory technician in 2009 were ameliorated by the hiring of a full-time interim replacement until the end of the 2009-2010 academic year. It is essential that a microbiology laboratory technician be working prior to the start of the 2010-2011 academic year, or the highly-demanded microbiology classes will not be able to be offered.

Shared Resources: If you have requested additional staff that will be used by more than one department, please indicate here. Please indicate which disciplines and/or departments and the number of combined students/faculty or classes he/she would serve. Please indicate how it will improve access or outcomes and if it is needed for health and safety concerns or required by law.
<table>
<thead>
<tr>
<th>Purpose:</th>
<th>Type</th>
<th>Approx. hours per week:</th>
<th>To support:</th>
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</thead>
<tbody>
<tr>
<td>Lab Tech</td>
<td>Full-Time</td>
<td>40</td>
<td>1000</td>
</tr>
<tr>
<td>Students</td>
<td></td>
<td></td>
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</tbody>
</table>

**Justification:**
Please address the following areas as applicable. How will it be used? How will instruction be improved for student learning and success? How will access be improved? What student learning outcomes are expected? How will the outcomes be measured? What data or evidence is supplied to support your justification?

The biology/geology museum/materials laboratory technician position has been vacant since May, 2006. Since that time, in a series of meetings among faculty and administrators, all have repeatedly agreed that it is unwise to leave this position vacant any longer.

At the end of the last Program Review, this position was given the highest priority, but apparently was not funded.

Since then, students have suffered reduced service, and the department has experienced two incipient fires, ten probable toxic chemical releases and continued deterioration of materials, resulting in a damaged learning environment and risks to health and safety.

**Shared Resources:** If you have requested additional staff that will be used by more than one department, please indicate here. Please indicate which disciplines and/or departments and the number of combined students/faculty or classes he/she would serve. Please indicate how it will improve access or outcomes and if it is needed for health and safety concerns or required by law.

Staff will be shared by two programs within the same department, biology and geology. Furthermore, although specific job capabilities must differ among the different laboratory technicians within our department, the fact is that all can have some basic knowledge of where equipment and supplies are kept, general departmental laboratory procedures, and common health and safety principles. This should allow a combined 3-person laboratory technician staff to maintain an essential campus presence during the roughly 100 hours per week that classes are in session.
Program Summary
BIOL-2009

Instructions: after reviewing your data and reports from all other sections of your program review, use this form to briefly summarize all of the information you have provided by closing with your concluding remarks (e.g. an executive one-page summary) for your entire program review.

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.

1. Approach to Teaching Science.
Our students do rather than read about science. Our students succeed because we have high standards and do everything we can to help students attain them. In addition, we believe that the only way to truly understand science is through an interdisciplinary approach. We collaborate with professors and community members both within and outside of our department.

2. Community Involvement.
All of our faculty members are active members of our community. Our participation includes the following types of organizations: high schools, colleges and universities, non-profit community organizations, and state and federal parks to name a few.

3. Transfer Program.
The vast majority of our transfer students are accepted into the schools of their choice. Department faculty informally track our student's progress and career accomplishments and we are proud of our department graduates.

4. Natural History/Field Program.
Our Natural History Certificate/field program is unique, popular, and extremely successful. Our students truly understand the basic tenants which govern the natural world. Many are retired life long learners that are working on a second career and using their Natural History Certificate to teach sustainability and other environmentally important concepts to K-12 student throughout the Bay Area.

5. Faculty Research.
All of our full time faculty members are conducting research in their areas of specialty. Our preparation/laboratory spaces are invaluable in allowing us to investigate the natural world and to involve and share this knowledge with interested students.

6. Facilities
Our greenhouse and garden, Bolinas marine laboratory, soils laboratory and museum are great assets to our students and to our community. Their attributes are detailed in other sections of this document.

7. Job Training.
Students who choose offered vocations are ready to start working as docents, biotechnology technicians, or environmental science technicians when they graduate from College of Marin.

8. Interdisciplinary Approach to Curriculum and Resources.
Biology, the study of life, is inextricably interconnected with sister fields such as chemistry and physics, as well as with the environment in which life is found. Our curriculum reflects this intertwining by having intimate connections with other disciplines such as Geology, Geography, and Environmental Landscaping - offering classes that cross disciplines in our department and in other departments. Our resource use also reflects this connection, with overlaps ranging from field gear to the greenhouse and museum. As we continue to develop curriculum, in particular relating to Environmental Science, Sustainability, and Restoration, it will become more and more vital that we sustain and nurture these connections.

9. Attitude.
All members of our department are respectful and considerate of each other and of our students. It is a pleasure for us to come to work and, judging from their reactions, a pleasure for students to take classes in our department.
II. Program Resources (Responsiveness)

Briefly summarize examples of key resources required for your program to meet or exceed the college goals (as cited in this review).

1. Staffing.
   Key classified and certificated staff needs are outlined in "Staffing" section above.

2. Faculty Preparation and Laboratory Space.
   We need this space to work out new experiments and to maintain our research program for majors. Many of our field courses are instrument/tool intensive and preparatory rooms provided allow us to organize our tools/study skins/specimens and other field project materials.

3. Vans.
   Our department needs vans to transport students on field trips. We are the only community college with a Natural History Program and that runs field trips that continuously rents vans. Having College of Marin Biology/Geology Department transportation would make our trips safer, significantly more convenient for instructors, administrative assistants and administrators and much less expensive for students taking our courses. This would allow faculty who must teach and organize, field trips to spend more time teaching and less time on transportation logistics.

4. Student Study Area.
   Our students are often on campus late into the night because we offer classes in the evening to accommodate students that work or have other obligations during the day. They need a place where they can study and get something to eat.

5. Counselor.
   Our students need a counselor dedicated to science and math students. As counselors are not trained in the sciences, many of our counselors find this (understandably) daunting.

6. Funds.
   We need equipment, equipment maintenance, supply, and field trip transportation funds we can count on. Without a known budget it is impossible for us to plan and offer a coherent curriculum.

III. Moving Forward Objectives (Planning)

Please summarize any data-driven coordinated planning has your department done to improve enrollment, student learning, access and success?

In the biology program, we have undertaken data-driven planning with respect to courses, curriculum and facilities. Departmental surveys have allowed us to improve educational experiences within courses and to restructure curriculum. Attention paid to waiting lists and student concerns has allowed us to add sections of popular classes and to optimize scheduling. A building-wide survey has allowed us to reach some conclusions about our overall facilities. Constant informal communication with our students has helped us improve the atmosphere of our program and department.

1. Changes to Courses and Curriculum. We must maintain, expand and restructure our offerings to keep our department curriculum broad, current, and meaningful; and so that students can move through our curriculum as a cohort. This includes supporting a diverse set of field course offerings and to include a field component in as many of our courses as possible. We also have begun the design of new courses and course components, including microbial ecology and wildlife conservation courses and adding soil components to many other classes. The revamping of our majors' biology sequence is another major achievement. There is consensus that addition of courses in the pre-nursing area should not force out courses in other areas.

1. Location. A survey revealed that the majority of the current occupants of the Austin Science Center do not want to see any net loss of space as part of the District Modernization program. They realize that the program was not data-driven and was not part of a democratic planning process. After spending the last few years working closely, in good faith, with the District Modernization process, dealing with many phases of the plan with project managers, architects, and meeting with a variety of other science faculty who have gone through a similar process at other colleges, many faculty have concluded that the process has ultimately been disappointing, frustrating and costly, and we have strong doubts that the planned new Science Center will actually serve our programs as well as, let alone better, than the building we prefer.

http://programreview.marin.edu/PSReport.jsp

2/23/2010
currently have. It not clear that the present Austin Science Center cannot be improved at less cost than that of building a new structure. Our current programs cannot be maintained if we are forced into a smaller space. In addition, as the Life and Earth Science Department is keenly aware of true environmental issues, we cannot in good conscience support demolishing our present structure and sending it to a landfill.

2. Atmosphere. We should keep doing what we do best and what sets us apart from other departments and institutions. We should keep meeting regularly as a faculty preferably over food, coffee, and/or beer. Completing this program review has reinforced our dedication to our students, to the department and to each other.

IV. Assessment of 2008 Program Reviews:
1. What resources have you been granted from your previous program reviews?
2. Please assess how these resources have been used to improve access, learning outcomes and student success in your program?
3. What changes have you implemented based on previous program reviews?
4. What results have you found?

   We expect this Program Review to result in a better understanding of our curriculum both within and outside of our department and among administrators, and to be used to provide us the resources we require to maintain our extremely successful programs.

V. Fall 2009 Requests Summary:
1. Please summarize the main requests you have made in this program review in order of your priority starting with the most important one.
2. Summarize briefly why you want each one.
3. Summarize your overall rationale.

   1. Biology/Geology Laboratory Technician. Lack of filling of vacancy has led to serious effects on students and threats to health and safety.

   (Total permanent technician staff in the department has been reduced from four to one in the face of enrollment increases, greater use of modern equipment and increased operating hours. One technician cannot have three different skill sets and work 100 hours per week.)

   2. Supplies and Equipment. Supplies and equipment are essential to run laboratory classes. Budgets must be in place by July, 2010 in order to have supplies arrive by beginning of Fall, 2010, semester. Equipment requested is to replace defective and/or outmoded equipment.

VI. Other concluding remarks.

The College of Marin needs to maintain a vibrant and diverse science program to fulfill its role as a good place for students to study. Biology is key to many diverse programs, including those in human and environmental health. The biology program also plays an important role in the transfer and general education needs of one of the largest groups of COM students. Past efforts by many people have laid an excellent foundation, but lack of support in the last few years has led to serious risks. Investment in the key areas mentioned in this review will yield impressive dividends now and in the years to come.
Area Directors and Deans Comments
BIOL-2009

1. Please make any comments on the Five Pathways, Student Access and Success, Facilities, Curriculum and SLO sections.

2. Please comment on the instructional equipment requests, technology requests and other instructional materials requests sections. Please comment especially on any specific priorities without which this program cannot function.

3. Please comment on the faculty and staff sections.

4. Please itemize expenses currently covered by external funds that may revert back to general funds.

5. Other comments

Thanks to the faculty in biology for submitting this information. I agree with the statement that "We need equipment, equipment maintenance, supply, and field trip transportation funds we can count on." The biology supply budget is primarily from lottery funds, a soft-money source that is dangerous to continue. Further, the discipline is underfunded and utilizes laboratory equipment that is embarrassingly out-of-date. A new laboratory technician in microbiology is a top priority, as well as funding for a position to maintain the museum.