Life Science 2014-15 Department Plan

Long Beach City College
Dept_Plan - Life Science

Mission: The department has a multi-fold mission of (1) transfer preparation; (2) preparing students to attain an associate degree; and (3) helping students satisfy biological science prerequisite requirements for various programs at LBCC and other colleges. Students who have matriculated through our programs will be immersed in the scientific method, gain an appreciation for the environment, and become aware of the vital roles of science in our lives. Our courses will also help them become better "consumers" of scientific information and increase awareness of biology and the environment. We also hope to motivate students to engage the community through volunteer work; faculty routinely inform students of such opportunities.

Description: Life Science courses that are offered include General Biology, Anatomy, Physiology, Microbiology, Wildlife Biology, and Marine Biology. Various field biology courses are also offered. Courses in the biology portion of the Life Sciences department satisfy prerequisites for biological sciences bachelor's degrees, registered nursing, licensed vocational nursing, radiology, physical therapy, dental hygienist, paramedic, human services, nutrition/dietician, and physician assistant programs. In addition, the biology courses fulfill the science requirement needed for transfer to a 4 year college or university. Lastly, life science courses fulfill the requirement for the completion of an associate degree.

Summary of Access (see Help for details): Based on the program data, there has been a 12% increase in sections offered during the last three years, with Anatomy increasing by 30% over the past 2 years.

Summary of Efficiency (see Help for details): WSCH/FTEF (Fall 2013) is 797 for Biology and 810 for Anatomy and Physiology as compared to a college-wide load of 561. A slight drop from Fall 2012, but instructors continue to "overfill" their high demand classes.

Summary of Effectiveness (see Help for details): Success rates averaged 42% for Anatomy, 63% for Biology, and 63% for Physiology.

Summary of Equity (see Help for details): Female enrollment is steady at 61%, Hispanics increased by 10%, and Whites and Asians decreased. Success rates have declined for both gender and ethnicity especially Black/African Americans and Hispanics.

Additional Analyses (Optional): In terms of access, the Life Science Department continues to enroll more females (61%) than males. This could possibly be due to the prerequisites for nursing, a profession that has traditionally attracted more females than males. The Hispanic enrollment went up by 10% over the past 3 years while White and Asian went down (2% and 4% respectively). This possibly reflects the changing demographics of Long Beach and surrounding cities. In terms of success, males are slightly higher than females although both declined slightly. Black/African Americans and Hispanics remain the lowest and declined by 6% and 5% respectively. This corresponds to an overall drop by all ethnic groups. This is a trend that the department will address.

Internal Conditions (see Help for list): We currently have six high demand classes in the biological sciences: ANAT 1 (Human Anatomy), ANAT 41 (Anatomy & Physiology), PHYSI 1 (Human Physiology), BIO 2 (General Microbiology), BIO 41/41L (Contemporary Biology), and BIO 60 (Human Biology 1). BIO 41 and 41L are taken to satisfy a general education science requirement. Many of the students enrolled in ANAT 41 are preparing to enter the Diagnostic Medical Imaging program. Increasing numbers of students enrolling in ANAT 41 are preparing for careers in nutrition/dietetics, social services, physical therapy, physician assistant, and human services. The other three classes primarily enroll pre-nursing students (both vocational and registered). A lack of additional laboratory space limits our ability to offer additional sections of ANAT 1, ANAT 41, PHYSI 1, and BIO 2. Based on waiting list numbers, we could easily enroll students in at least 5 more ANAT 1 sections, 2 more BIO 2 sections, 2 more PHYSI 1 sections and 1 more ANAT 41 section. We also have difficulty finding adjunct faculty members for these classes, especially for anatomy and microbiology.

The department currently has 10 full-time and 21 part-time faculty members. As a result of hiring a new general biologist in spring 2014, we are able to offer BIO 11 (Environmental Problems of Man) and BIO 5 (Plant Biology) on a regular basis at PCC and LAC. We are still in need to hire another full-time faculty member who will teach ANAT 1, BIO 41, and update curriculum for BIO 60L. Currently only 45% of ANAT 1 and 40% of BIO 41 sections are taught by full-time faculty. Adding another full-time faculty would improve student success by increasing their access to full-time instructors with office hours, and is critical to updating the curriculum for the BIO 60 Laboratory student experience.

In response to the request by the administration, our department initially added BIO 41 lecture and lab to the PCC in a newly constructed lab (EE211). Since then we have added BIO 5 lecture and lab, BIO 11 lecture, and BIO 60 lecture. The design of the
room limits enrollment to 24 laboratory students. Despite this limitation, the classes in the facility are overenrolled posing safety and resource issues. Lectures are also conducted in this lab space, which is problematic due to the arrangement of computers and other laboratory equipment. A dedicated Life Science lecture room at PCC would provide an appropriate lecture setting for the students and will free up space to offer additional lab sections.

In our previous Department Plan we indicated the need for three additional laboratory classrooms at the LAC, properly equipped, with tables and chairs to increase offerings of our high demand classes. These additional lab rooms are now planned as part of the D building remodel. Although faculty provided initial design input to the Bond Construction team, the department has not been consulted since then on the design of the planned labs. Because laboratory classrooms require discipline-specific needs, faculty input should be sought to ensure a design that will provide a positive impact to student success and safety.

A revised Biology 41L curriculum continues to be implemented. Fourteen sections of this lab class are now taught every semester.

The availability of student workers has decreased dramatically. Our student workers help in our Life Science stockroom and are responsible for dishwashing, labeling of materials, material inventory and other tasks essential for the presentation of our laboratory sections. Historically, we have had 7-8 student workers per semester. This year, we are down to an all-time low of six. We need more student workers in order to support our lab classes. There are over 50 lab sections scheduled for Fall 2014; with this number of sections, the student workers are essential for coordination of our laboratory activities.

Two years ago we lost one 40% and one full time classified position. As a result we had to close our Life Science Learning Center. The department feels that the closing of this student resource has dramatically lowered student success. This fall we hired a 40% Science Laboratory Technician (shared with the Physical Science) to support the laboratory facility at the PCC. Two years ago their contract was reduced from 12 months to 10. This makes it impossible for them to prepare for the laboratory experiences in advance for the start of the Fall and Spring semesters. These delays negatively impact student success. In addition, this has made offering winter and summer classes a challenge. Restoring their contract to 12 months will better support student success and year-round class offerings.

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**External Condition- Industry & Labor Market Trends:**
The demand for educated and trained individuals in life sciences is high, especially in California. The U.S. Department of Labor reports that ten of the twenty fastest growing occupations are health care related. Among them include the greatest staffing need for clinicians, nurses, microbiologists, dieticians, and environmental scientists in both the public and private sectors. Community-based efforts are also being made to address the needs of underserved populations (Latinos, AA and NA). These circumstances are compounded by the current economic challenges, high demands for life science courses, long waiting lists and staffing shortages. The demand is expected to grow within the next ten years.

Because of the current economic situation, many people have returned to school to start or complete classes allowing them to obtain jobs or advance in the medical field. This interest has led to a very high demand for many biology classes (see the list above). These classes have large waiting lists which persist even though additional class sections have been added.

**Faculty & Staff:**
Currently the department has 10 full-time faculty, 21 part-time faculty, 3 10-month full time classified staff, 1 10-month 40% (shared with Physical Science) classified staff, and 6 student workers. We lost the equivalent of 1.4 full-time classified staff three years ago.

**Names & Titles of Dept Planning Participants:**
Mehrzad Akhavan, Professor; Robyn Arias, Assistant Professor; Dipt Burbridge, Associate Professor; Chris Davison, Associate Professor; John Downey, Professor; Heather Dy, Associate Professor; Dave Gayle, Associate Professor; Elizabeth Nash, Assistant Professor; Daniel Nigro, Associate Professor and Department Head; Joan Zuckerman, Professor.

**2011-2012 Accomplishments:**
Two additional BIO 41 laboratory exercises have been developed to replace old, outdated curriculum. These two new labs were piloted in Fall 2011 and Spring 2012.

Materials needed for the new MDAB lab have arrived at the warehouse. The challenge will be to set up the lab with the limited classified personnel which remain.

A Pepsi Grant was awarded to the department and used to purchase demonstration microscopes with cameras.
### 2012-2013 Accomplishments:

The final lab revisions for BIO 41 are being completed. Two new lab exercises will be piloted in Fall 2013.

The PCC general biology lab was opened in Spring 2013. Both lecture and lab sections of general biology are being taught. Additional lecture and lab sections are planned for the future.

After 10 years, Plant Biology has been added back into the schedule.

A Bio41 honors course has been developed and offered.

The first annual science night was successfully piloted and well attended.

Life science and nursing student scholarships were awarded to several students in the amount $10,000.

Anatomy clay models were purchased through an innovation grant through FPD.

Six Life Science and Chemistry students successfully completed the CSU, Long Beach Bridges to Baccalaureate summer research program in 2013.

### 2013-2014 Accomplishments:

The department was awarded 3 separate ASB grants, which were used to purchase Anatomy models, purchase native plants for the demonstration garden, and to support Science Night.

Diep Burbridge received an Inspirational Teacher Award.

Heather Dy, Robyn Arias, Diep Burbridge, and Mehrzad Akhavan received an EOPS Care Recognition Award.

John Downey received the NISOD Award.

Mehrzad Akhavan received Educator Recognition from UCI.

8 students were awarded Life Science Scholarships.

6 students were accepted to and completed the CSU, Long Beach Bridges to Baccalaureate summer research program in 2014.

A new Evolution and Biological Diversity lab were developed for BIO 41L.

John Downey Presented at a state wide ASCCC leadership symposium.

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<tr>
<th>Project/Strategy</th>
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<th>Project/Strategy Progress Updates</th>
<th>Impact of resource received &amp; Follow-Up</th>
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</thead>
<tbody>
<tr>
<td>Dept_Plan - Life Science - Update and Revise the Life Science Department Web Site - We wish to provide students with current information about our courses and our faculty. EMP GOAL: supported (hold CTRL to select multiple)*:</td>
<td>Resources: CMS Training (see note below)</td>
<td>Project/Strategy Progress Updates</td>
<td>Impact of resource received &amp; Follow-Up</td>
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<tr>
<td>EQUITY - B. Equitable Student Access</td>
<td><strong>Resource Requested Category:</strong> Department-wide Training or Professional Development beyond what is normally available</td>
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<tr>
<td>STUDENT SUCCESS - A. Student Preparedness</td>
<td><strong>Additional Comments:</strong></td>
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<tr>
<td>Start Date (use 8/1/year - see help text): 05/17/2012</td>
<td>Unfortunately, the faculty members have been unable to take required CMS training that is offered at the same time on two consecutive days. They could each complete one day of the course but they have been told that is unacceptable. The faculty members will continue to request that some accommodation be made so that the web site can be designed and be implemented. Progress on this goal has unfortunately stopped.</td>
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<tr>
<td>End Date (use 7/31/year - see help text): 09/30/2015</td>
<td>Responsible party (Diep Burbridge) was scheduled to attend the CMS training over the Summer of 2013. Both sessions were cancelled without advance notice. This has occurred for three years in a row.</td>
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<td><strong>Project/Strategy Status:</strong> In Progress</td>
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<td><strong>Rationale:</strong> Students rely on internet resources to make decisions regarding their education. We want to make it easier to disseminate information regarding our courses. We also wish to update faculty contact information so students can call a specific faculty member for information.</td>
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<tr>
<td>Responsible Parties: Dan Nigro and Diep Burbridge</td>
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<tr>
<th>Projects/ Strategies</th>
<th>Resources Needed &amp; Additional Comments / Resources Needed</th>
<th>Project/ Strategy Progress Updates</th>
<th>Impact of resource received &amp; Follow-Up</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>10/04/2014 - Employee profiles are being gathered and will be sent to IT to be added to existing website. Still waiting for CMS training. <strong>Project/ Strategy Status:</strong> Continue working on project/ strategy <strong>Decision re Resource Request:</strong> Decision pending on resource requested</td>
<td></td>
</tr>
<tr>
<td>Dept_Plan - Life Science - Native Plant Landscaping - The purpose of this interdepartmental project is to create a native plant identification garden to restore the desolate current landscape surrounding Building D. This project is of value to both the Horticulture and Life Science departments. This project will establish a resource of living native California plant specimens to facilitate student learning in classes offered by the each of the departments. The first step in this project is to establish an irrigation system. Since the system and the plantings will be installed by horticulture students as part of their class work, it will serve as valuable work force skill development and provide teachable moments for the students. Implementation of this project will provide cost saving in irrigation and labor.</td>
<td>10/04/2014 - Many of the plants from the original planting have died. Had meeting with Paul Creason and Alfred from grounds to discuss plans to change landscape design and expand to north side of D building. Department was awarded ASB grant to purchase some additional plants. <strong>Project/ Strategy Status:</strong> Continue working on project/ strategy <strong>Decision re Resource Request:</strong> No resources requested</td>
<td>04/21/2013 - During the summer and the fall of 2012 irrigation was installed and/or modified. Approximately 15 drought tolerant California native plants were planted by the Horticulture Department. Additional plants, plant identification signs, and walking pathways need to be installed.</td>
<td></td>
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</tbody>
</table>
### EMP GOAL supported (hold CTRL to select multiple)*:
EQUITY - A. Student Success

### Start Date (use 8/1/year - see help text):
05/01/2012

### End Date (use 7/31/year - see help text):
12/31/2015

### Project/Strategy Status:
In Progress

### Rationale:
The Life Science and Horticulture Departments are in need of an educational garden that will provide students with a living laboratory for identification of native California vegetation. This also facilitates student learning in irrigation and landscaping courses in the Horticulture department. Life Science faculty has developed a list of prospective plantings. This project can be completed with minimal cost to the district; costs can not be estimated at this time. Costs may be covered by grant(s) from groups such as the Native Plant Society, the Long Beach Municipal Water Company, and the Natural Conservation group.

### Responsible Parties:
John Downey (Life Science), Dan Nigro (Life Science), Elizabeth Nash (Life Science), Jorge Ochoa (Horticulture) with Alfred Garcia (Grounds Supervisor)

### Campus supported by this goal/project/strategy:
Both

### Specify if project/strategy is for dept or program:
Department

### Other Area impacted by this goal/project/strategy:
Facilities

### If Other select above, please specify:
Facilities/Grounds Maintenance

### Resources Needed & Additional Comments / Resources Needed

<table>
<thead>
<tr>
<th>Resources</th>
<th>Itemized Description of Resources</th>
</tr>
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<tbody>
<tr>
<td>New chairs (both desk and bench heights) with 5 casters</td>
<td>156 desk height and 91 taller laboratory bench height chairs are needed.</td>
</tr>
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</table>

### Resource Requested Category:
Replacement of classroom furniture (entire classroom)

### Additional Comments:
Costs unknown at this time; specifications

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### Dept_Plan - Life Science - Replacement of unstable, dangerous, laboratory classroom chairs
- Most of our laboratory classrooms have wooden chairs that have high failure rates. Over time, the chair backs bend and the chairs become difficult to sit in. Students fall out of these chairs every semester. We have replaced some of these chairs over the past four years but there are significant numbers of these chairs in our laboratory classrooms (D201, D212, D208, D227, D211, D214, D215, and D217). A total of 156 desk height and 91 taller lab bench height chairs are needed.

### Resource Requested Category:
Replacement of classroom furniture (entire classroom)

### Additional Comments:
Costs unknown at this time; specifications
replacement chairs are needed. There are a significant safety hazard and, at some point, a student may become seriously injured. We send chairs to the warehouse for disposal almost monthly. About eight years ago, we purchased some green plastic chairs with casters in an attempt to backfill for failing wooden chairs. Unfortunately, these chair have not been able to tolerate heavy use and their hydraulics are failing. Just this month we sent two wooden chairs and one green chair to the warehouse for disposal.

**EMP GOAL supported (hold CTRL to select multiple)**:
- RESOURCES - C. Facilities and Technology Plans

**Start Date (use 8/1/year - see help text):**
04/01/2012

**End Date (use 7/31/year - see help text):**
06/30/2015

**Project/ Strategy Status:**
In Progress

**Rationale:**
We have repeatedly requested that the chairs be replaced; we sometimes send two or three at a time every few weeks to the warehouse for disposal. They cannot be repaired because the metal bar supporting the chair back becomes permanently bent. The hydraulics can not be repaired on the green chairs.

**Responsible Parties:**
Joan Zuckerman, Mumtaz Hasan

**Campus supported by this goal/project/strategy:**
LAC

**Specify if project/strategy is for dept or program:**
Department

**Other Area impacted by this goal/project/strategy:**
Facilities

**Resources Needed & Additional Comments / Resources Needed**
change over time and new cost estimates need to be obtained from Bond Management personnel/facilities.

**Project/ Strategy Progress Updates**

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
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<tbody>
<tr>
<td>10/04/2014</td>
<td>Most of the chairs have been replaced. We were told that the few remaining old chairs will be replaced.</td>
</tr>
<tr>
<td><strong>Project/ Strategy Status:</strong></td>
<td>Continue working on project/ strategy</td>
</tr>
<tr>
<td><strong>Decision re Resource Request:</strong></td>
<td>Decision pending on resource requested</td>
</tr>
<tr>
<td>10/22/2013</td>
<td>Chairs have been replaced in many of our classrooms. Several areas did not receive new chairs; we were told that additional chairs would be ordered at a later date.</td>
</tr>
<tr>
<td><strong>Project/ Strategy Status:</strong></td>
<td>Continue working on project/ strategy</td>
</tr>
<tr>
<td><strong>Decision re Resource Request:</strong></td>
<td>Decision pending on resource requested</td>
</tr>
<tr>
<td>04/22/2013</td>
<td>We continue to remove broken wooden and green chairs for disposal on a monthly basis. We cannot continue to serve our students without proper seating.</td>
</tr>
<tr>
<td><strong>Project/ Strategy Status:</strong></td>
<td>Continue working on project/ strategy</td>
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<tr>
<td><strong>Decision re Resource Request:</strong></td>
<td>Decision pending on resource requested</td>
</tr>
<tr>
<td>10/14/2012</td>
<td>As this update is being , three of the chairs have already been removed from classrooms and will be sent for disposal. Anatomy 1 tables are taller than most others and there are not enough tall chairs available in the classroom. None of the tall chairs remain in out dissection room. Students have been dragging desk height chairs from our student waiting area into the Anatomy classroom to provide enough seating. These chairs are not the appropriate height for the tables.</td>
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<tr>
<td><strong>Project/ Strategy Status:</strong></td>
<td>Continue working on project/ strategy</td>
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<tr>
<td><strong>Decision re Resource Request:</strong></td>
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</table>

**Dept_Plan - Life Science - Regaining Life Science Learning Center Support** - Because of budget cutbacks, the Life Science Learning Center was closed at the end of Spring 2012. This is a significant loss to our students and will probably impact student success in many of our classes. The Center is used by a wide variety of students. The Center is used by a wide variety of students. The Center is used by a wide variety of students.

**Resources:**
- Two Instructional Aides to allow the Center to reopen.

**Itemized Description of Resources:**
- Approximately $15,000 per year for Instructional Aides ($15/hour x 16 hours per week x 32 weeks per
students, particularly in general biology classes, nursing prerequisite classes, and a DMI prerequisite class. Its services are unique, not duplicated in any other campus facility.

**EMP GOAL supported (hold CTRL to select multiple)**:

STUDENT SUCCESS - C. Quality of Academic Programs and Services

| Start Date (use 8/1/year - see help text): | 08/01/2012 |
| End Date (use 7/31/year - see help text): | 07/31/2015 |

**Project/ Strategy Status:**

In Progress

**Rationale:**

We monitored student use via Tutor Trac and gathered 8 semesters worth of student use data. On average, over 634 students used the center every semester with 2898 total visits and 3386 hours of use. About 40% of the student use was from two of our GE courses, namely Biology 60 and Biology 41. Anatomy 1 and Anatomy 41 students accounted for approximately 25% of the remaining usage. The anatomy students appreciated the additional time for review of models, review of histology slides, and the opportunity to ask questions of staff. The staff members also set up mini practice practicums for each of the anatomical systems. This was quite popular and helped the students prepare for the in-class exam. It helped them resolve the anxiety associated with timed exams. Most of the visits to the center were by individual students but study groups also met in the center to review materials together and to prepare for exams.

We surveyed the students and they were appreciative of the center's resources. In fact, they overwhelmingly requested additional hours, especially at nights or on weekends. When students were asked about the center and its impact on them, they stated that it was an important factor in their success in their respective Life Science class. They were shocked when they were told that the Center might close.

The recent elimination of the 16-hour instructional aide position and the recent classified staff reductions led to the closing of the Center. We requesting that the Center be allowed to reopen sometime in the future with one or two instructional aides, each at a 40%

**Resource Requested Category:**

New Positions (Faculty, Classified, Management)

**Estimated Cost:**

15000

**Additional Comments:**

In the past year we have lost one Full-Time Classified person and one 16 hour Classified person (originally this 16 hour position was 40 hours split by 2 people) due to lay offs. These staff reductions have forced us to close the Life Science Study Center, which has served virtually all Health Education, Biology, Anatomy, and Physiology students. A Study Center usage peak (2009) with stable, full-time staffing and night hours coverage showed 3434 student visits for 3811 hours of instruction. Upon looking at Biology 60 SLO #2 assessment it was noted that the closure of the 'Life Science Learning Center' impacted the success rate as it is an integral part of the student experience and means of study.

We envision the need for two 16 hour Classified Staff replacements (for the 56 classified work hours lost in Spring 2012) in order to bring back student accessibility to the success related Life Science Study Center at LAC.

10/04/2014 - To date there has been no progress on this project. The department is still in need to re-open the Life Science Learning Center, but repeated requests for needed resources have been denied.

**Project/ Strategy Status:**

Continue working on project/ strategy

**Decision re Resource Request:**

Decision pending on resource requested

10/22/2013 - No activity has occurred on this project. A meeting will be scheduled with Dr. Eva Bagg to discuss this facility and its importance to our students.

**Project/ Strategy Status:**

Continue working on project/ strategy

**Decision re Resource Request:**

Decision pending on resource requested

04/21/2013 - The Life Science Learning Center was much smaller in the 1990's when it was open for 60 hours per week. During the 2010-2011 school year it was only open for 37 hours or less. During that year it served 1188 students who made 5842 visits for a total of 6950 hours of use. In previous years we recognized the importance of this Learning Center to our students and requested additional classified staff. Unfortunately,
### Projects/Strategies

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<tr>
<td>Dept_Plan - Life Science - Increase General Biology Course Availability - There has been a 33% decrease in General Biology sections over the past 9 years due to faculty retirements and an increase in the sections of pre-nursing courses. The Life Science Department would like to resume offering these classes.</td>
<td>the Center is now closed, a consequence of the budgetary problems experienced by the college. The Center offered unique services not available elsewhere on campus. We believe we already beginning to see the impact of this closure on student success in a variety of our courses. We will submit a research request to examine if this is occurring.</td>
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<tr>
<td>EMP GOAL supported (hold CTRL to select multiple)*: RESOURCES - A. Human Resources STUDENT SUCCESS - C. Quality of Academic Programs and Services</td>
<td>Project/Strategy Status: Continue working on project/strategy</td>
<td></td>
</tr>
<tr>
<td>Start Date (use 8/1/year - see help text): 08/01/2010</td>
<td>Decision re Resource Request: Decision pending on resource requested</td>
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<tr>
<td>End Date (use 7/31/year - see help text): 06/30/2015</td>
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### Rationale:

Since 2003 the number of Full-Time Faculty has been reduced from 15 to 12. This situation is compounded by the transition in curriculum and resources to teach the increased student demand for Anatomy, Physiology, and Microbiology lecture/laboratory courses, which are now required by the State of California. Teaching loads have necessarily been increased in these areas, thus limiting the number of faculty available to teach General Biology. The result is a 33 percent decrease in General Biology sections over the last 9 years. As a consequence we are unable to offer the wide diversity of biology courses traditionally available at LBCC as well as other Biology Departments statewide. Data reveals a continued high demand for

### Resources:

- Hiring of a second new general biology instructor

### Resource Requested Category:

- New Positions (Faculty, Classified, Management)

### If requesting faculty, specify number:

- 1

### List Faculty requests by priority & discipline:

- General Biology (Bio 41, Bio 11, field biology courses, new curricula)

### Estimated Cost:

- 100000

### Additional Comments:

Although more general biology sections have been added, the transfer model curriculum recommends nursing majors take General Biology. This may require adjustment of section numbers offered. Additional biology courses have not been taught routinely; a second new faculty member would allow us to offer a full range of biology courses and plan for the future.

The Hiring Priorities Committee has approved the hiring of a General Biologist for the Spring 2014. Hiring efforts are currently in progress.

### School/VP Decision re Resource Needed:

- Not funded

10/04/2014 - A new faculty member started in Spring 2014. She is primarily located at the PCC, but teaches a few sections at the LAC.

### Project/Strategy Status:

- Project completed/Strategy implemented

### Decision re Resource Request:

- Resource request approved and funded (describe impact

10/04/2014 - The department now offers BIO 5 and BIO 11 on a more regular basis. More sections of BIO 41 and BIO 41H are offered. Plans are being made to start teaching some of the field classes that are in the catalog, but have not been offered in many years.
general biology courses (and other departmental courses) with over 200 students added to waitlists each semester over the past 5 years. Students have informed us that they have been turned away from biology courses sometimes for 3 to 4 semesters. This definitely impedes a fluid pathway to success. A review of "Success Rate Data" for biology courses shows that we have been unable to raise the success rate above 65.82% over the last 3 years. We interpret this as a result of larger class sizes due having only one dedicated General Biology Instructor.

In response to a request by administration, the department added a general biology lab and lecture class in a new laboratory facility at the PCC in Spring 2013. In addition, administration has asked the department to assign a full-time faculty member to teach and hold office hours at the PCC. A dedicated full-time faculty member at the PCC would help serve the demand for general biology and need for the return of Botany class as requested by current Horticulture students and the Horticulture professor at the PCC.

### Responsible Parties:
Department Head, Dean of the School of Health, Science, and Math

### Campus supported by this goal/project/strategy:
Both

**Specify if project/strategy is for dept or program:**
Department

**Name of program or area of concentration:**
General Biology

**Other Area impacted by this goal/project/strategy:**
Human Resources

### Resources Needed & Additional Comments / Resources Needed

<table>
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<th>Resources:</th>
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<tr>
<td>Purchase 10 new microscopes for student use</td>
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### Project/ Strategy Progress Updates

**Project/ Strategy Status:**
Continue working on project/ strategy

**Decision re Resource Request:**
Decision pending on resource requested

04/22/2013 - We have slightly increased the number of general biology sections by utilizing our new laboratory facility at the PCC. Budget permitting, we will be adding additional courses and sections of courses in the future. We wish to hire a new faculty member to coordinate these efforts.

With the increase in classes, we will need an increase in our budget to support these efforts. In the 2010 - 2011 school year we experienced a 13% decrease in our budget, mostly impacting the instructional supply and materials category. We need these funds to be restored and then augmented.

**Project/ Strategy Status:**
Continue working on project/ strategy

**Decision re Resource Request:**
Decision pending on resource requested

04/22/2013 - The department continues to request that the Hiring Priorities Committee approve a general biologist position.

**Project/ Strategy Status:**
Continue working on project/ strategy

**Decision re Resource Request:**
Decision pending on resource requested

10/22/2013 - The Hiring Priorities Committee approved the hiring of a faculty member teaching non-majors biology who will start in Spring 2014. This individual will be primarily be located at the PCC.

We will be placing a request for a second biology faculty member to be located at the LAC. This will help us offer the entire range of courses that we display in our catalog and allow us to develop new curriculum. The current version of the TMC for nursing students (vetted but not yet finalized) recommends that students take a general biology class before attempting to complete the three prerequisite science classes (microbiology, anatomy, physiology). This recommendation may lead to an increase in the number of students enrolling in our non-majors biology courses.

**Project/ Strategy Status:**
Continue working on project/ strategy

**Decision re Resource Request:**
Decision pending on resource requested
<table>
<thead>
<tr>
<th>Projects/ Strategies</th>
<th>Resources Needed &amp; Additional Comments / Resources Needed</th>
<th>Project/ Strategy Progress Updates</th>
<th>Impact of resource received &amp; Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>student engagement. A department committee is meeting usually weekly to assess curriculum, identify needs, and design new curriculum.</td>
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<tr>
<td>EMP GOAL supported (hold CTRL to select multiple)*:</td>
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<tr>
<td>EQUITY - A. Student Success</td>
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<tr>
<td>Start Date (use 8/1/year - see help text): 08/01/2009</td>
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<tr>
<td>End Date (use 7/31/year - see help text): 06/30/2015</td>
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<tr>
<td>Project/ Strategy Status: In Progress</td>
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<tr>
<td>Rationale: The present curriculum is outdated and lacks hands-on and interactive activities. Completing this goal should help retain students and ensure currency in this lab class.</td>
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<tr>
<td>Responsible Parties: Dan Nigro, Chris Davison, Liz Nash</td>
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<tr>
<td>Campus supported by this goal/project/strategy: Both</td>
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<tr>
<td>Specify if project/strategy is for dept or program: Department</td>
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</tbody>
</table>

| Resources: 20 plastic skeletons (approx. 2 ft tall); enough for 40 students; teacher's guide with worksheets | | |  |
| Itemized Description of Resources: 20 plastic skeletons with clay and tools Teacher workbook | | |  |
| Resource Requested Category: New equipment | | |  |
| Estimated Cost: 8200 | | |  |
| Additional Comments: This is a one-time only purchase and this equipment may be used by 9-10 sections of anatomy per semester. | | |  |

Resources:
- An additional 10 microscopes are needed for this class; the older microscopes are failing after years of use and are no longer repairable. The need is critical.
- Additional 10 microscopes are needed for this class; the older microscopes are failing after years of use and are no longer repairable. The need is critical.

10/05/2014 - A new biodiversity lab was developed and will be piloted in the Fall 2014 semester. A new evolution lab was piloted in the Spring 2014 semester. We were told that 10 new microscopes will be purchased to support this project.
- Project/ Strategy Status: Continue working on project/strategy
- Decision re Resource Request: Decision pending on resource requested

10/22/2013 - Two new laboratory exercises, focusing on diversity and on evolution, are being developed and will be piloted next year.
- Project/ Strategy Status: Continue working on project/strategy
- Decision re Resource Request: No resources requested

04/22/2013 - The majority of the project has been completed. Several laboratory exercises have been revised, including Genetics, The Cell, The Microscope, Cell Division, Enzymes, and The Scientific Method. Two new laboratory exercises have been developed (Ecology and Photosynthesis).
- Project/ Strategy Status: Continue working on project/strategy
- Decision re Resource Request: No resources requested

04/22/2013 - The majority of the project has been completed. Several laboratory exercises have been revised, including Genetics, The Cell, The Microscope, Cell Division, Enzymes, and The Scientific Method. Two new laboratory exercises have been developed (Ecology and Photosynthesis).
- Project/ Strategy Status: Continue working on project/strategy
- Decision re Resource Request: No resources requested

Dept_Plan - Life Science - Usage of Musculoskeletal Models to Teach Anatomy - Anatomy students currently dissect cats to learn muscle names and locations. However, cat and human muscles are not identical. We propose to use an additional approach to the study of human muscles which involves modeling muscles using clay.
- EMP GOAL supported (hold CTRL to select multiple)*:
- EQUITY - A. Student Success
- STUDENT SUCCESS - C. Quality of Academic Programs and Services
- Start Date (use 8/1/year - see help text): 08/01/2012
- End Date (use 7/31/year - see help text): 06/30/2015
- Project/ Strategy Status: In Progress
- Rationale: The present curriculum is outdated and lacks hands-on and interactive activities. Completing this goal should help retain students and ensure currency in this lab class.
- Responsible Parties: Dan Nigro, Chris Davison, Liz Nash
- Campus supported by this goal/project/strategy: Both
- Specify if project/strategy is for dept or program: Department

Resources:
- 20 plastic skeletons (approx. 2 ft tall); enough for 40 students; teacher's guide with worksheets
- Itemized Description of Resources:
  - 20 plastic skeletons with clay and tools
  - Teacher workbook
- Resource Requested Category: New equipment
- Estimated Cost: 8200
- Additional Comments: This is a one-time only purchase and this equipment may be used by 9-10 sections of anatomy per semester.
<table>
<thead>
<tr>
<th>Project/ Strategy Status:</th>
<th>Completed</th>
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</thead>
<tbody>
<tr>
<td>Rationale:</td>
<td>Many colleges are teaching musculoskeletal anatomy with the use of skeleton models and clay. This is a kinesthetic approach to learning muscles which has been proven to lead to higher student performance in assessments. We would like to introduce this learning system to our students. Each student will use a half skeleton. These modeling systems can also be used to study other organ systems, which can also be modeled using different colors of oil-based clay.</td>
</tr>
<tr>
<td>Responsible Parties:</td>
<td>Department Head and Anatomy faculty, Life Science</td>
</tr>
<tr>
<td>Campus supported by this</td>
<td>LAC</td>
</tr>
<tr>
<td>goal/project/strategy:</td>
<td>Program</td>
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<tr>
<td>Specify if project/strategy is for dept or program:</td>
<td>Program</td>
</tr>
<tr>
<td>Name of program or area of concentration:</td>
<td>Anatomy</td>
</tr>
</tbody>
</table>

**Resources Needed & Additional Comments / Resources Needed**

10/22/13 We currently have 5 plastic skeletons that are being used in 5 sections of anatomy in Fall 2013. We plan to acquire 10 more plastic models. This should cost approximately $4000 plus $500 for clay, model stands, and plastic trays.

**School/ VP Decision re Resource Needed:**

Not funded

**Project/ Strategy Progress Updates**

10/05/2014 - The department was awarded an FPD grant to purchase the remaining models.

**Project/ Strategy Status:**

Project completed/ Strategy implemented

**Decision re Resource Request:**

Resources requested no longer needed

10/05/2014 - Clay modeling has generated much enthusiasm and engagement among the students. This project has promoted teamwork and discussion, which has enhanced the synergy of the learning groups. Many students commented that the clay models helped them to learn the layering and origin/insertion of the muscles. Both instructor and student feedback have been overwhelmingly positive.

10/22/2013 - An Innovation Grant, funded by FPD, was applied for and received. Five models were ordered with the funds received. Each model can be divided in half and a group of students can work with it, building the layers of muscles out of clay. These models can also be used to build other organ systems. The models were purchased in the summer of 2013 and five faculty members had a chance to work with one of the models in preparation for the upcoming semester. Four of the instructors elected to use the models in class in the Fall; the fifth was teaching in the summer and felt as if he hadn't had enough time to prepare for the Fall semester. He and another instructor will take the models home with them over the winter break and integrate the models into their Spring 2014 curriculum. The instructors who worked with the models in the summer were excited about their use in the classroom and were emailing photos of their models to other instructors. The models are currently in use in the anatomy classroom.
The classroom and the students love working with them. They feel as if the models make it much easier to learn muscle anatomy. The level of student engagement is tremendous! Unfortunately, we need to purchase 10 more models to have an optimal student to model ratio and to have demo models. These models are too expensive to purchase on instructional supply funds. Another grant, this time a Pepsi Grant, will be submitted to allow the purchase of more models. Approximately 1000 anatomy students per year will be impacted by this new activity.

**Project/Strategy Status:**
Continue working on project/strategy

**Decision re Resource Request:**
Decision pending on resource requested

04/22/2013 - Several anatomy instructors have expressed an interest in this project. An Innovation Grant is being written in order to provide funding for a limited number of skeletons for use in a pilot project. This project has become more important because of the requested return of our human cadaver to UCSD (Cadavers are now only lent to institutions for about three years).

**Project/Strategy Status:**
Continue working on project/strategy

**Decision re Resource Request:**
Decision pending on resource requested

### Dept_Plan - Life Science - Update the Web-based Component of Health Education Courses

- **We plan to make all 3 unit Health Education courses web-enhanced with some or all of the following features:** access to course syllabi, relevant web link, homework updates, access to grades.
- **EMP GOAL supported (hold CTRL to select multiple):**
  - EQUITY - B. Equitable Student Access

**Start Date (use 8/1/year - see help text):**
08/01/2009

**End Date (use 7/31/year - see help text):**
08/31/2013

**Project/Strategy Status:**
Dropped

**Rationale:**
Course websites increase effective communication with students, providing additional resources, updates, and access to grades and other course information on an as-needed basis. All 3-unit Health Education courses satisfy the Area E requirement; thus, this

10/02/2013 - The health education program has been moved to kinesiology department. This goal is no longer applicable to the Life Science department.

**Project/Strategy Status:**
Dropped

**Decision re Resource Request:**
No resources requested

10/10/2012 - This goal was thought to be completed, however the faculty members attended Dreamweaver classes. E-zone is now being used instead of Dreamweaver by the college and the faculty members need to attend this training and revise the web pages accordingly.
Dept_Plan - Life Science - Develop Pathways to Student Success - The purpose of this goal is two-fold: to stimulate student interest in science (current and prospective students) and to help students prepare for science classes.

**Rationale:**
It is often stated that the US has fallen behind in science education. We would like to implement two new approaches to getting students interested in science and helping them prepare for the rigors of Life Science courses. The first is the initiation of a yearly Science Night. Such an event could strengthen relationships between LBCC and the surrounding schools, as well as attract current students to the Life Science world. This part of the goal supports the college-wide Promise Pathway goal. A committee of faculty members will volunteer to organize activities, do lab set-ups, provide educational materials and be available to talk and connect with visiting students. Students of all ages will be invited to attend. The faculty members will also discuss opportunities for study and careers in the Life Sciences and discuss specific departmental courses. This event may also be extended to the Physical Science department.

**Resources:**
Audio equipment for music, funding for food and drinks, posters, community fliers, decorations, etc

**Itemized Description of Resources:**
These materials will be needed to promote and fund activities for “Science Night”

**Resource Requested Category:**
Advertising (beyond normal budget)

**Estimated Cost:**
2000

**Additional Comments:**
Primarily need and advertising budget and coverage for food expenses.

<table>
<thead>
<tr>
<th>Date</th>
<th>10/05/2014 - A second Science Night was held in May 2014. Multiple departments were involved and was attended by many LBCC students.</th>
<th>10/05/2014 - Many LBCC students and potential students visited the D building on Science Night. The department was able to highlight its programs and hopefully get more students interested in science.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project/Strategy Status:</strong></td>
<td>Continue working on project/strategy</td>
<td>Decision re Resource Request: Resource request approved and funded (describe impact of resources received)</td>
</tr>
<tr>
<td><strong>Additional Comments:</strong></td>
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</tbody>
</table>
A second part of this goal would be to enhance student preparation for and success in Anat 1, Bio 2, and Physi 1. We would like to initially suggest that students be recommended to enroll in Bio 60 if they have not had a previous human biology course. Most of the local colleges require an college-level introductory course in general biology or chemistry before students enroll in the life science prerequisites for nursing. A faculty committee will meet and develop an introductory course to help students get ready for anatomy, physiology, and microbiology.

**Responsible Parties:**
Paul Creason, Robyn Arias, departmental faculty

**Campus supported by this goal/project/strategy:**
Both

**Specify if project/strategy is for dept or program:**
Department

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### Dept_Plan - Life Science - Revise Biology 60 Laboratory Curriculum

- **The current Biology 60 curriculum has had limited revision since the 1990's. In the past, this laboratory course represented the only laboratory course that the pre-nursing students had to take. Now, pre-nursing students enroll in three separate laboratory courses instead of Bio 60 and 60L. The lab course needs to be revised to match the needs of the current student population.**

**EMP GOAL supported (hold CTRL to select multiple):**
- EQUITY - A. Student Success
- STUDENT SUCCESS - C. Quality of Academic Programs and Services

**Start Date (use 8/1/year - see help text):**
08/01/2012

**End Date (use 7/31/year - see help text):**
07/31/2015

**Project/Strategy Status:**
In Progress

**Rationale:**
Bio 60 and 60L (lecture and lab) are now taken to satisfy a general education requirement in the sciences. Students studying dietetics, medical assisting, and social welfare are required to take this course. The lab needs revision to increase interactivity and include current issues in order to increase student success.

**Responsible Parties:**

---

### Project/Strategy Progress Updates

- **to the eminent release of the TMC for pre-nursing classes. There is some confusion over imposing a requirement for a Chemistry and/or Biology prerequisite. The curriculum is currently being vetted and the final TMC document will influence our efforts.**

**Project/Strategy Status:**
Continue working on project/strategy

**Decision re Resource Request:**
No resources requested

**04/22/2013 - The first Science Night has been scheduled for May 2013. Life Science, Physical Science, and Health Education faculty members will participate.**

**Project/Strategy Status:**
Continue working on project/strategy

**Decision re Resource Request:**
Resource request approved and funded (describe impact of resources received)

04/22/2013 - An 2012-2013 ASB Grant will fund the Science Night efforts.

---

### Dept_Plan - Life Science - Revise Biology 60 Laboratory Curriculum

- **The current Biology 60 curriculum has had limited revision since the 1990's. In the past, this laboratory course represented the only laboratory course that the pre-nursing students had to take. Now, pre-nursing students enroll in three separate laboratory courses instead of Bio 60 and 60L. The lab course needs to be revised to match the needs of the current student population.**

**Start Date (use 8/1/year - see help text):**
08/01/2012

**End Date (use 7/31/year - see help text):**
07/31/2015

**Project/Strategy Status:**
In Progress

**Rationale:**
Bio 60 and 60L (lecture and lab) are now taken to satisfy a general education requirement in the sciences. Students studying dietetics, medical assisting, and social welfare are required to take this course. The lab needs revision to increase interactivity and include current issues in order to increase student success.

**Responsible Parties:**

---

### Project/Strategy Progress Updates

- **10/05/2014 - No progress has been made on this project because the responsible parties have been busy developing other curriculum. We would like to hire additional full-time faculty members who can contribute to this project.**

**Project/Strategy Status:**
Continue working on project/strategy

**Decision re Resource Request:**
No resources requested

**10/22/2013 - The first laboratory exercise is almost completed and a second exercise will be developed. The project is running slightly behind because the adjunct faculty member has been working on lectures and labs for a Botany class and lectures for an Honors Biology class.**

**Project/Strategy Status:**
Continue working on project/strategy

**Decision re Resource Request:**
No resources requested

**04/22/2013 - Elizabeth Nash recently received a Foundation Grant to fund these efforts. One laboratory exercise is 50% completed. Work will resume over the summer.**

**Project/Strategy Status:**
Continue working on project/strategy

**Decision re Resource Request:**
No resources requested
<table>
<thead>
<tr>
<th>Projects/ Strategies</th>
<th>Resources Needed &amp; Additional Comments / Resources Needed</th>
<th>Project/ Strategy Progress Updates</th>
<th>Impact of resource received &amp; Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elizabeth Nash, department members</td>
<td><strong>Campus supported by this goal/project/strategy:</strong> LAC</td>
<td><strong>10/16/2012</strong> - This project was initiated during summer 2012. Faculty members met every week or every other week and prepared a student power point and identified initial student activities. Case studies are being developed as part of the activities. A Foundation Grant was recently submitted to fund these efforts. <strong>Project/ Strategy Status:</strong> Continue working on project/ strategy <strong>Decision re Resource Request:</strong> Decision pending on resource requested</td>
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<tr>
<td>Specify if project/strategy is for dept or program: Department</td>
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<tr>
<td>Dept_Plan - Life Science - Enhance student preparation for and success in Anatomy 1 and 41, Physiology 1, and Microbiology (BIO2) - This goal would be to enhance student preparation for and success in Anat 1, Bio 2, and Phys 1. We would like to initially suggest that students enroll in Bio 60 if they have not had a previous human biology course. Most of the local colleges require a college-level introductory course in general biology or chemistry before students enroll in the life science prerequisites for nursing. A faculty committee will meet and develop an introductory course to help students get ready for anatomy, physiology, and microbiology. <strong>EMP GOAL supported (hold CTRL to select multiple)*:</strong> STUDENT SUCCESS - C. Quality of Academic Programs and Services <strong>Start Date (use 8/1/year - see help text):</strong> 10/02/2013</td>
<td><strong>10/05/2014</strong> - A departmental work group will be formed to explore options. <strong>Project/ Strategy Status:</strong> Continue working on project/ strategy <strong>Decision re Resource Request:</strong> No resources requested</td>
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<td><strong>End Date (use 7/31/year - see help text):</strong> 10/31/2015</td>
<td><strong>10/22/2013</strong> - The most recent version of the TMC for nursing students recommends that students take a biology class before attempting the science prerequisite classes. Students can elect to take BIO 41 or perhaps take a short course aimed at getting them ready for A&amp;P. There is an excellent workbook available that can be used for such a course. A subgroup of faculty will meet to discuss this option. <strong>Project/ Strategy Status:</strong> Continue working on project/ strategy <strong>Decision re Resource Request:</strong> No resources requested</td>
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<td><strong>Project/ Strategy Status:</strong> In Progress</td>
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<td><strong>Rationale:</strong> Based on Program Review (2012) data and instructor analysis, we have seen an even greater deficit in preparation of basic scientific preparation and skills necessary for success in more advanced Biology (Anatomy, Physiology, and Microbiology) courses. The goal of this project is to increase success in classes listed above. <strong>Responsible Parties:</strong> Current Life Science Faculty who teach Anatomy, Physiology, and/or Microbiology <strong>Campus supported by this goal/project/strategy:</strong> Both</td>
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</table>

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<table>
<thead>
<tr>
<th>Specify if project/strategy is for dept or program:</th>
<th>Dept Plan - Life Science - Reception for Life Science Scholarship Recipients - Life Science Scholars Award recipients are selected based on their academic performance, with an emphasis on their science course grades. The scholarships are awarded when students submit proof of transferring the following semester to a 4-year university to continue their science degrees. Nursing Scholar’s Award recipients are selected based on their academic performance, with an emphasis on their science course grades. These students will have completed their pre-nursing program at the time of being selected, and receive their scholarship upon submitting proof that they have entered a nursing program. A reception would be held to celebrate the recipients of both the life science and nursing scholarships and promote the Life Science department and its courses.</th>
<th>Resources: Funding needed for reception Itemized Description of Resources: Possible Grants from Foundation, ASB, or perhaps Pepsi Grant Resource Requested Category: Other (please provide details in &quot;additional comments&quot; section) Estimated Cost: 1000 Additional Comments: Funding would cover reception costs School/ VP Decision re Resource Needed: Not funded</th>
</tr>
</thead>
</table>

**EMP GOAL supported (hold CTRL to select multiple):**
COMMUNITY - A. Internal Community of Students, Faculty and Staff
STUDENT SUCCESS - B. Student Goal Attainment

| Start Date (use 8/1/year - see help text): | 10/02/2013 |
| End Date (use 7/31/year - see help text): | 07/31/2015 |

| Project/ Strategy Status: | Dropped |

| Rationale: | This project would have a dual purpose in that it would offer opportunities to showcase the Life Science department to friends and family of scholarship recipients and celebrate the achievements of our students. |

The 2013 Recipients received the following:
Life Science Scholars – 5 students / $4,000 total in scholarships
Nursing Scholar’s Award – 6 students / $4,000 total in scholarships

| Responsible Parties: | Mehrzad Akhavan |
### Campus supported by this goal/project/strategy:
LAC

### Specify if project/strategy is for dept or program:
Department

**Dept_Plan - Life Science - Improve Student Success** - For our high demand anatomy and biology classes the department would like to rely less on hourly instructors and to provide students access to more full-time faculty. Part of this project also involves updating BIO 60L curriculum to modern standards, which also supports another departmental goal (Revise Biology 60 Laboratory Curriculum).

**EMP GOAL supported (hold CTRL to select multiple)**:
- RESOURCES - A. Human Resources
- STUDENT SUCCESS - C. Quality of Academic Programs and Services

**Start Date (use 8/1/year - see help text):** 08/01/2015

**End Date (use 7/31/year - see help text):** 07/31/2016

**Project/Strategy Status:** NEW

**Rationale:**
Success rates in anatomy have been consistently low (42%, 43%, 39%) over the past three years. Department wide success rates during the same period declined from 60% to 57%. This drop in success rates is seen in all ethnic groups and genders. The primary reason is that students entering our classes are underprepared to succeed in a science course. Nonetheless, we feel that there are strategies that can be implemented to improve student success once they are enrolled in our classes.

Since 2003 the number of full-time faculty in the Life Science Department has been reduced from 15 to 10. This reduction has made the department more reliant on part-time faculty to teach some of our highest demand classes. During the Fall 2014 semester only 45% of our ANAT 1 classes and 40% of BIO 41 classes were taught by full-time faculty. Adding another full-time faculty would improve student success by increasing their access to full-time instructors with office hours and with a larger presence on campus and engagement in SLOs.

### Resources Needed & Additional Comments / Resources Needed

**Resources:**
- Hiring of an instructor who will teach Anatomy and General Biology

**Resource Requested Category:**
- New Positions (Faculty, Classified, Management)

**If requesting faculty, specify number:**
- 1

**List Faculty requests by priority & discipline:**
1. Anatomy and General Biology (ANAT 1, BIO 60/60L, BIO 41, new curricula)

**School/VP Decision re Resource Needed:**
- NEW

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Part-time instructors are limited in their ability to aid in the SLO process. Adding another full-time faculty will improve the process of assessing SLOs, analyzing the results, and devising actions to address the results. We feel that this is a crucial step to improve student success.

Another step is to lower class sizes by expanding the number of sections offered. Currently the WSCH/FTEF is 810 for anatomy and physiology and 797 for biology compared to the college wide load of 561. This indicates that instructors commonly overfill high demand classes to alleviate long wait lists. Although the number of sections is currently limited by lab space availability, there are plans for expanding lab space on the first floor (D building) once the Math Department moves to their new facility. We will need a new faculty in place to be prepared for that expansion.

Part of this strategy is to update the BIO 60L curriculum. With the limited number of full-time faculty we rely solely on part-time instructors to teach this lab. As a result there have been few curriculum updates since 1975. A new faculty member would be able to begin the curriculum development process, which will ultimately improve student learning and success.

**Responsible Parties:**
Department Head, Dean of Health, Science, Kinesiology, and Math
**Campus supported by this goal/project/strategy:**
Both
**Specify if project/strategy is for dept or program:**
Department
**Name of program or area of concentration:**
Anatomy and Biology
**Other Area impacted by this goal/project/strategy:**
Human Resources

| Dept Plan - Life Science - On-line Bio60 course | Resources: |
| Create an on-line class for the Human Biology (BIO 60) course | Access to college course management system |

**EMP GOAL supported (hold CTRL to select multiple)**:

**Itemized Description of Resources:**
Training and access to the moodle system used by the college is needed in order to create an on-
<table>
<thead>
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<td>STUDENT SUCCESS - B. Student Goal Attainment</td>
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<td>STUDENT SUCCESS - C. Quality of Academic Programs and Services</td>
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<td>Start Date (use 8/1/year - see help text):</td>
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<td>End Date (use 7/31/year - see help text):</td>
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<tr>
<td>Project/ Strategy Status:</td>
<td>NEW</td>
<td></td>
<td></td>
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<tr>
<td>Rationale:</td>
<td>The creation of web-based Human biology course promotes student success and retention, by offering a new format by which students can remotely take the course. By offering a web-based course, the department will be able to capture a student population not served by face-to-face class offerings. In addition, this 4 unit course satisfies the prerequisites for the licensed vocational nursing program and a general science requirement for all students. Thus, this goal supports successful transfer and goal completion for our students.</td>
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<tr>
<td>Responsible Parties:</td>
<td>Heather Dy and Diep Burbridge</td>
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<tr>
<td>Campus supported by this goal/project/strategy:</td>
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<td>Specify if project/strategy is for dept or program:</td>
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<td>Other Area impacted by this goal/project/strategy:</td>
<td>Distance Learning</td>
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<td>Resource Requested Category:</td>
<td>Other (please provide details in &quot;additional comments&quot; section)</td>
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</tr>
<tr>
<td>Estimated Cost:</td>
<td>0</td>
<td></td>
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</tr>
<tr>
<td>Additional Comments:</td>
<td>Faculty responsible for the project will need to be trained on the college's electronic course management system and access will need to be granted in order to create the web-based course.</td>
<td></td>
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</tr>
<tr>
<td>School/ VP Decision re Resource Needed:</td>
<td>NEW</td>
<td></td>
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</tr>
<tr>
<td>Resources:</td>
<td>Video equipment</td>
<td></td>
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</tr>
<tr>
<td>Itemized Description of Resources:</td>
<td>Video equipment to record lectures for on-line viewing will need to be purchased.</td>
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<tr>
<td>Resource Requested Category:</td>
<td>New equipment</td>
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<tr>
<td>Estimated Cost:</td>
<td>500</td>
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<tr>
<td>School/ VP Decision re Resource Needed:</td>
<td>NEW</td>
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