



Welcome to Program Review

Merritt College - 2019

BIOL - Instruction

Annual Program Update

Program Overview

Please verify the mission statement for your program. If your program has not created a mission statement, provide details on how your program supports and contributes to the College mission.

Biology Department Program Mission: The mission of the Biology Department is to provide, using evolution as our paradigm, a supportive, challenging, and stimulating environment in which students are able to acquire a strong foundation in biology. This foundation is to include instruction, development of critical thinking skills, and training on cutting-edge equipment so as to prepare students for transfer to 4-year institutions or provide access to fulfilling careers in medical, nursing, radiological sciences and other biology-related areas. We also wish to promote natural history both locally and internationally. The Mission of the Natural History Certificate of Proficiency and the forthcoming Natural History and Resources Certificate of Achievement (in development) is to educate students about the biodiversity and natural resources of the Bay Area and beyond in order to create an enlightened community of residents and naturalists. We pledge to do this in an inclusive and equitable way, and we commit to ensuring nature's long-term future.

Program Total Faculty and/or Staff

Full Time

Arja McCray
John Rodriguez
Maria Suarez Rodriguez
Steven Scott
Nancy Rauch

Part Time

Bradley Balukjian
Brian Rowning
Christoph Muhlinghaus
Carol Rooker
Edwin Ochong
Em Segmen
Ranjeeta Lal
Irina Krylova
Jennifer DeAngelis
Javier Silva
Jessica Dame Carroll
Jameze James
Karen Bloom
Victor Asemota
Nadia Fouladian Tabriz
Ronald Felzer

The Program Goals below are from your most recent Program Review or APU. If none are listed, please add your most recent program goals. Then, indicate the status of this goal, and which College and District goal your program goal aligns to. If your goal has been completed, please answer the follow up question regarding how you measured the achievement of this goal.

The BIOL Dept. will review and revise all SLO'S in active courses and assess 100% of SLO's in active courses on a 3-year cycle. We will discuss assessment results among all department members on a regular basis to encourage development and sharing of innovative and effective teaching strategies. Assessment will be a standing agenda item for our department meetings.

Status

In-Progress

If Completed, What evidence supports completion of this goal? How did you measure the achievement of this goal?

College Goal

Equity: Reduce the achievement gaps for African-American, multiethnic and male students.

District Goal

Advance Student Access, Equity, and Success

The BIOL Dept. will perform content review of all active biology courses on a 3-year cycle. We will use assessment results and student surveys to determine if new curriculum or changes in advisories or prerequisites should be pursued.

Status

In-Progress

If Completed, What evidence supports completion of this goal? How did you measure the achievement of this goal?

College Goal

Completion: Increase number of degrees and certificates by 20% over the next 5 years.

District Goal

Develop and Manage Resources to Advance Our Mission

The BIOL Dept. will, using data collected by the college and district, and with the help of the college curriculum specialist, develop a BIOL AS-T degree, if possibly within the confines of the Transfer Model Curriculum template for the AS-T in Biology.

Status

In-Progress

If Completed, What evidence supports completion of this goal? How did you measure the achievement of this goal?

College Goal

Transfer: Increase transfers to CSU and UC by 6% annually.

District Goal

Build Programs of Distinction

The BIOL Dept. will use assessment results to identify resources and facilities needed in the classroom and for faculty work environment to enhance student learning and improve teaching.

Status If Completed, What evidence supports completion of this goal? How did you measure the achievement of this goal?
In-Progress

College Goal
Completion: Increase number of degrees and certificates by 20% over the next 5 years.

District Goal
Develop and Manage Resources to Advance Our Mission

The BIOL Dept. will use assessment results and student surveys to identify challenges to student learning. We will request resources from the campus, if needed, to develop strategies to improve student success by 2% in all courses that have had student success values lower than 70% in the last 3 years. (BIO 10, 20a, 24, 3 AND 4).

Status If Completed, What evidence supports completion of this goal? How did you measure the achievement of this goal?
In-Progress

College Goal
Equity: Reduce the achievement gaps for African-American, multiethnic and male students.

District Goal
Advance Student Access, Equity, and Success

The BIOL Dept. will continue to maintain its existing partnerships to enrich student learning, enhance curriculum, and increase funding resources to support student learning. As new opportunities become available, the department will use assessment results and student survey results to determine ways to use these partnerships to benefit the needs of our student population to support their specific learning needs, when appropriate.

Status If Completed, What evidence supports completion of this goal? How did you measure the achievement of this goal?
In-Progress

College Goal
Completion: Increase number of degrees and certificates by 20% over the next 5 years.

District Goal
Develop and Manage Resources to Advance Our Mission

The Biology Department will develop and promote the new Certificate of Achievement in Natural History and Resources.

Status
In-Progress

If Completed, What evidence supports completion of this goal? How did you measure the achievement of this goal?

College Goal
Completion: Increase number of degrees and certificates by 20% over the next 5 years.

District Goal
Build Programs of Distinction

Describe your current utilization of facilities, including labs and other space

Members of the Biology department occupy cubicle and office spaces in the Barbara Lee Science building (S building). For instruction we currently use 2 general biology lab classrooms (S 417 and S 421), 1 microbiology lab (S 403), 2 anatomy labs (S 202 and S 208) and 1 physiology lab (S 210), 2 stock/wet prep rooms (S 404 and S 419), 1 cadaver classroom (S 204), and 1 storage room (S 213). We also use a number of different lecture rooms on campus including S 449, S 455, P 307, P208, and S 211. In order to bring critical lab materials from the stockrooms on the fourth floor to the lab classrooms on the second floor, we need regular use of the east end elevator.

Program Update

Semester End Enrollment/Usage Pattern

Review your Semester End Enrollment by setting the filter to your college and subject



Using the dashboard, review and reflect upon the data for your program. Describe any significant changes and discuss what the changes mean to your program. Consider whether performance gaps exist for disproportionality impacted students. Focus upon the most recent year and/or the years since your last comprehensive program review. Cite data points from the dashboard to support your answer.

Our retention rates appear to have increased slightly this past year compared to previous years. Performance gaps persist among students reporting as Black/African American (course completion rates of 67% compared to whites 87%), Pacific Islander (67%) and Hispanic/Latino (68%). Completion rates were lowest for African American students (80%) compared to the white students (89%). This is a problem we would like to invest more energy and collaboration with other groups on campus to address, particularly Student Learning Center and Student Services. There also seems to be a gap between students in the Student Accessibility Services (formerly DSPS), and this aligns to our observation that there are not enough counselors and support college-wide accessibility services. Examples of ways to improve might include training for faculty (sharing best practices/pedagogy training), increasing alternative testing support hours in distraction-free environments, offering monetary or stipend compensation to adjunct instructors to administer accommodations for 1.5 and 2 times exam length.

Describe the department's progress on Student Learning Outcomes (SLOs) and/or Administrative Unit Outcomes (AUOs) since the last Program Review/APU. If your discipline offers a degree or certificate, please describe the department progress on Program Learning Outcomes (PLOs).

The department continues to work on assessing course level student learning outcomes. Each faculty member assesses at least one student learning outcome per course per semester.

Describe the outcomes and accomplishments from previous year's funded resource allocation request.

Brief description of funded request	Source (any additional award outside your base allocation)	Total Award Amount	Outcome/Accomplishment
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In the boxes below, please add improvement actions and resource requests that are directly related to the questions answered in this section. If there are no improvement actions or resource requested in this area, leave blank.

Improvement Action

Improvement Action

Action Item	Description	To be completed By	Responsible Person
Maintain lab instruction supplies and materials	Replenish lab materials and consumable supplies before end of fiscal year		Faculty and Lab Staff

Resource Request

Supplies	Instructional Supplies and Materials	
Description/Justification		Estimated Cost
Consumables, chemicals, live organisms for BIOLOGY 020A, 020B, 002, 004, 010, 024 Microbiology consumables, chemicals, bacterial growth media, and other lab supplies. We cannot run microbiology labs without these supplies for BIOL 003 (n 2018 FY we spent \$22,162.53 for biology supplies and \$7,156.37 for microbiology supplies)		29400

Resource Request

Supplies Instructional Supplies and Materials

Description/Justification

iClickers requested from instructors in Natural History and Sustainability Program

Estimated Cost

4000

Field supplies for Natural History and Sustainability Program

Resource Request

Technology and Equipment

Replacement

Description/Justification

Our anatomy classes use human cadavers in their labs to enhance learning experience. Per vendor's request, we need to return one cadaver every year, and we replace it with the new cadaver.

Estimated Cost

3000

Improvement Action

Action Item

Description

To be completed By

Responsible Person

Replenish Office Supplies needed by faculty and staff in ...

Faculty and Lab Staff

Resource Request

Supplies

Noninstructional Supplies and Materials

Description/Justification

Office supplies: we are in constant need of ink cartridges for our printers, and printing paper for our staff and faculty offices, as well as whiteboard markers, whiteboards cleaner, etc. We are requesting \$2,000 per fiscal year.

Estimated Cost

2000

For lab practicals: MaxGear Acrylic Sign Holder 8.5" X 11" Slant Back Design Ad Frame Plastic Display Stand " Clear, for lab examination image display. The plastic covering prevents students from marking the images or making imprints in the images which could give away the answer to other students. 32 of these signs requested by John Rodriguez

Improvement Action

Action Item

Description

To be completed By

Responsible Person

Update Physiology Software

To maintain instruction that is modern and prepares students properly for allied health fields, we need to update computer software used for physiological data capture

Lab Staff, Merritt IT

Resource Request

Supplies	Software	Estimated Cost
Description/Justification Physiology software updating.		2000

Improvement Action

Action Item	Description	To be completed By	Responsible Person
Replace broken models and acquire enough new ones t...	Models break with repeated use and we also need to bring number up to levels needed for student learning in each classroom		Lab Staff

Resource Request

Technology and Equipment	New	Estimated Cost
Description/Justification We need enough models so that each group of students (4 per group) can have a model at each table (7 tables per room) for each room in S building where we offer laboratory activities involving such models.		49000

Resource Request

Technology and Equipment	Replacement	Estimated Cost
Description/Justification The replacement of broken equipment (models, scales, hot plates, pipettes) is an ongoing cost of running the biology department curriculum in anatomy and general biology		5000

Improvement Action

Action Item	Description	To be completed By	Responsible Person
Maintain/service and repair equipment	Autoclave and microscope maintenance and repair		Repair technicians, Lab Staff

Resource Request

Other	Other
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<p>Description/Justification FOR BIOL 001, 002, 020A, 020B, 024, 004: Microscope maintenance is an ongoing cost of department functions FOR MICROBIOLOGY (BIOL 003) The amount requested is for maintenance/repair of 2 autoclaves, 1 glass washer and 24 microscopes</p>	<p>Estimated Cost 18000</p>
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Improvement Action

<p>Action Item Update computers and printers</p>	<p>Description Computers and printers in the laboratories</p>	<p>To be completed By</p>	<p>Responsible Person Campus IT</p>
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Resource Request

Technology and Equipment	New
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<p>Description/Justification Our computers that have physiology software on them (physioex, ECG, EEG), are getting old and need to be updated soon (within the next 3 - 5 years). Preferably we should aim for getting 20 laptops (our current computes are being constantly moved among rooms S202, S208, and S210), and a gate security system at the door of each of the biology labs on the second floor in S building. The estimated cost of laptops and security system would be \$30,000 -\$35,000.</p>	<p>Estimated Cost 35000</p>
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Improvement Action

<p>Action Item Personnel</p>	<p>Description Support learning in the classroom and program development</p>	<p>To be completed By</p>	<p>Responsible Person Faculty and Administration (hiring)</p>
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Resource Request

Personnel	Student Worker
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<p>% Time 20</p>	<p>Description/Justification 3 student IAs will assist in the laboratory or lecture classroom or serve as embedded tutors, in support of improving student success in the lab classroom. And 1 Student worker to assist the lab coordinator and the lab tech with the basic lab work.</p>	<p>Estimated Annual Salary Costs 5000</p>	<p>Estimated Annual Benefits Costs</p>
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Total Costs
 5000

Resource Request

Personnel	Part-time Faculty		
% Time	Description/Justification	Estimated Annual Salary Costs	Estimated Annual Benefits Costs
0.3	We need a pool of adjunct instructors hired as SUBSTITUTE instructors, to provide stability in instruction in case of illness or other leave. These instructors may also assist with administering laboratory practical exams for SAS students requiring extra time on examinations. The campus and district hiring process takes 6 months. We need individuals ready to sub at a moment's notice and cleared to work by HR.	12000	
Total Costs			
12000			

Resource Request

Personnel	Part-time Faculty		
% Time	Description/Justification	Estimated Annual Salary Costs	Estimated Annual Benefits Costs
0.25	We need a part time instructor specifically to serve as the Program Director or Coordinator of the Natural History and Sustainability Program. This position is currently funded by Strong Workforce funds but we need this to be institutionalized.	10000	
Total Costs			
10000			

Improvement Action

Action Item	Description	To be completed By	Responsible Person
Professional Development	Conferences, meetings and training for pedagogy and STEM		Various individuals and organizations

Resource Request

Professional Development	Individual/personal PD needed
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Student Worker	20	3 student IAs will assist in the laboratory or lecture classroom or serve as embedded tutors, in support of improving student success in the lab classroom. And 1 Student worker to assist the lab coordinator and the lab tech with the basic lab work.	5000	5000
Part-time Faculty	0.3	We need a pool of adjunct instructors hired as SUBSTITUTE instructors, to provide stability in instruction in case of illness or other leave. These instructors may also assist with administering laboratory practical exams for SAS students requiring extra time on examinations. The campus and district hiring process takes 6 months. We need individuals ready to sub at a moment's notice and cleared to work by HR.	12000	12000
Part-time Faculty	0.25	We need a part time instructor specifically to serve as the Program Director or Coordinator of the Natural History and Sustainability Program. This position is currently funded by Strong Workforce funds but we need this to be institutionalized.	10000	10000
Sub-Total: \$27000				

Professional Development Type	Description/Justification	Estimated Cost
Individual/personal PD needed	Our faculty should be able to participate in workshops and trainings offered by different vendors/organizations to learn about new equipment, techniques, technologies, etc., in all fields of biology, depending on the needs and interest of individual members of the dept. It is essential to keep up with new technologies in all biology fields, so all these updates can be shared with students during labs. We would like to request about \$5000 to cover travel, registration, etc. of such workshops and trainings.	5000
Sub-Total: \$5000		

Technology and Equipment Type	Description/Justification	Estimated Cost
Replacement	Our anatomy classes use human cadavers in their labs to enhance learning experience. Per vendor's request, we need to return one cadaver every year, and we replace it with the new cadaver.	3000
New	We need enough models so that each group of students (4 per group) can have a model at each table (7 tables per room) for each room in S building where we offer laboratory activities involving such models.	49000

Replacement	The replacement of broken equipment (models, scales, hot plates, pipettes) is an ongoing cost of running the biology department curriculum in anatomy and general biology	5000
New	Our computers that have physiology software on them (physioex, ECG, EEG), are getting old and need to be updated soon (within the next 3 - 5 years). Preferably we should aim for getting 20 laptops (our current computes are being constantly moved among rooms S202, S208, and S210), and a gate security system at the door of each of the biology labs on the second floor in S building. The estimated cost of laptops and security system would be \$30,000 - \$35,000.	35000

Sub-Total: \$92000

Supplies Type	Description/Justification	Estimated Cost
Instructional Supplies and Materials	Consumables, chemicals, live organisms for BIOLOGY 020A, 020B, 002, 004, 010, 024 Microbiology consumables, chemicals, bacterial growth media, and other lab supplies. We cannot run microbiology labs without these supplies for BIOL 003 (n 2018 FY we spent \$22,162.53 for biology supplies and \$7,156.37 for microbiology supplies)	29400
Instructional Supplies and Materials	iClickers requested from instructors in Natural History and Sustainability Program Field supplies for Natural History and Sustainability Program	4000
Noninstructional Supplies and Materials	Office supplies: we are in constant need of ink cartridges for our printers, and printing paper for our staff and faculty offices, as well as whiteboard markers, whiteboards cleaner, etc. We are requesting \$2,000 per fiscal year. For lab practicals: MaxGear Acrylic Sign Holder 8.5" X 11" Slant Back Design Ad Frame Plastic Display Stand " Clear, for lab examination image display. The plastic covering prevents students from marking the images or making imprints in the images which could give away the answer to other students. 32 of these signs requested by John Rodriguez	2000
Software	Physiology software updating.	2000

Sub-Total: \$37400

Facilities
No Resources found for this category

Library Type	Description/Justification	Estimated Cost
Library materials	Gale Interactive Human Anatomy " for use by students in the library - Requested by Nancy Rauch and Arja McCray	1700

Sub-Total: \$1700

Other Type	Description/Justification	Estimated Cost
	FOR BIOL 001, 002, 020A, 020B, 024, 004: Microscope maintenance is an ongoing cost of department functions FOR MICROBIOLOGY (BIOL 003) The amount requested is for maintenance/repair of 2 autoclaves, 1 glass washer and 24 microscopes	18000

Models and microscope slides for use in the Science learning lab in Learning Center	10000
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Sub-Total: \$28000

Sign and Submit

Please provide the list of members who participated in completing this program review.

Arja McCray
Nancy Rauch
Christoph Muhlinghaus
Kinga Sidzinska
Brad Balukjian

Please enter the name of the person submitting this program review.

Arja McCray