INSTRUCTIONAL EQUIPMENT REQUEST

2021-2022

LPC ADMINISTRATIVE SERVICES - REQUISTION INFORMATION PAGE

Internal Use

IE #:2021 -16

Total $: 2,804.04

Requester Name: Michal Shuldman, Jason Maxwell **Division Name:** STEM

The equipment is: ☐ **A Replacement** ☐ **An Upgrade** ■ **New Equipment/Technology**

SECTION 1: EQUIPMENT DESCRIPTION

Describe the specific equipment requested and how it will be used to replace, upgrade or provide new technology to LPC from what is currently in place:

Bright Line Hemacytometer Kit.

This is new technology to LPC. The hemacytometer will be used to calculate the density of algae, bacteria and cells to support biology labs that require accurate and repeatable results. This is standard equipment that will be used to calculate the concentration of algae, bacteria, and cells for biology labs.

Equipment Location Building: 1850 **Room:** 1856

Location Comments:

SECTION 1: EQUIPMENT DESCRIPTION (continued)

If applicable, describe the legal requirement, mandate, or safety concern for purchase of this equipment, making specific reference to the legal requirement or regulation:

Not applicable.

SECTION 2: LPC MISSION STATEMENT AND LPC PLANNING PRIORITIES

LPC MISSION STATEMENT:

Las Positas College provides an inclusive, learning-centered, equity-focused environment that offers educational opportunities and support for completion of students' transfer, degree, and career-technical goals while promoting life-long learning.

LPC PLANNING PRIORITIES:

- **Implement the integration of all ACCJC standards throughout campus structure and processes.**
- **Establish a knowledge base and an appreciation for equity; create a sense of urgency about moving toward equity; institutionalize equity in decision-making, assessment, and accountability; and build capacity to resolve inequities.**
- **Increase student success and completion through change in college practices and processes: coordinating needed academic support, removing barriers, and supporting focused professional development across the campus.**

Specify how the equipment supports *LPC's Mission Statement* and *Planning Priorities*:

Mission: Our program has a high transfer rate to CSU and UC. We have inclusive class offerings of a wide variety of courses in biology that draw on different student populations. These courses support biology majors and other pre-professional transfer students. The courses also satisfy specific degree and certificate requirements, fulfill general education requirements, and provide intellectual enrichment. As a program we try to stay abreast of rapidly moving technology. Proper equipment is needed for students to learn laboratory skills. This new equipment will provide the students with skills, which will help them to get internships and jobs locally and at their transfer institutions. Just last semester one of our students started a job at Sandia National Lab in their histology lab.

Planning Priorities: (1) Best practices for science classes involves active learning with hands-on experience. The main way we accomplish this is with experiments and independent research projects. This equipment is needed to ensure we can build up our program's biotechnology skills. We are implements new curriculum and course content that involves biotechnology skills, such as algae culturing. These skills (e.g. culturing organisms) have been identified by our Bioscience Advisory Board as being important skills for careers in the biotechnology and related industry in the Tri-Valley. This equipment may also be used in our Allies Health classes for counting bacterial or blood cells.

SECTION 3: EDUCATIONAL ITEMS – PROGRAM REVIEW

Specify the educational programs this equipment supports:

Biology
Biology 1A, Botany
Biology 7B, Physiology
Biology 7C, Microbiology
Future Biology Courses
Honors Projects
Independent Study

The equipment would directly support biology labs, primarily Biology 1A. The student algae cultures grown in botany require continued density measurements, and the hemacytometer would allow students to count the number of cells or particles in a specific volume of fluid, and thereby calculate the concentration of cells in the fluid overall.

Will this equipment be a part of your upcoming Program Review or was it included last year? Please explain using the exact words from your Program Review. If not, explain why.

This exact equipment is not included in our previous program review because we are developing new labs for Biology 1A that incorporate biotechnology skills. We are piloting these new labs this spring in Biology 1A. This piece of equipment is especially critical for the new biotechnology labs we are adding to Bio 1A, however, it will benefit the biology program more broadly and improve our ability to culture organisms used in many classes. It will be included in our program review for this year because it is also needed in other classes.

SECTION 4: TEACHING AND LEARNING

In detail describe evidence and data that equipment provides much needed benefit and enhancement to teaching beyond current capabilities.

- Biology 1A, calculating algae growth density, creating dilutions, supporting microscopy and micropipetting skills
- Biology 7B, calculating blood cells density, creating dilutions, supporting microscopy and micropipetting skills
- Biology 7C, calculating bacteria density, creating dilutions, supporting microscopy and micropipetting skills

Describe in detail the impact this equipment will have on learning:

Lectures can be effective at disseminating information, but they often are not effective for students learning, retaining, and being able to apply that content. For students to learn, they need to be actively engaged in an authentic context. Lab courses are an effective way to engage students in an authentic context, where students learn and use the equipment and techniques used by professionals in the field. The skills students learn impacts their future employment in science settings. The biotechnology skills we are working on infusing throughout our program are all at the recommendation of the Bioscience Advisory Board. This piece of equipment in particular will help students learn how to do cell counts. In Bio 1A they will also learn how to correlate cell counts with spectometer readings (which are a different way to calculate density). Using regression analysis they will be able to convert spectometer readings into cell counts.

Each academic year, this equipment will impact: 22 **____ # of classes/sections** 528 **____ # of students**

SECTION 5: OUTCOMES (SLOs)

Using your documented SLOs, specify how the equipment will enable student learning outcomes to be achieved beyond current capability.

This directly relates to one of our PSLOs: Upon successful completion of an AS-T in Biology OR the AA in Biology:Allied Health, students are proficient in standard biology lab techniques and lab safety procedures. The second goal is to increase the student's ability to be actively engaged in hand-on learning.

The ability to use appropriate lab equipment is also a critical component of our course level SLOs. For Bio 1A- Botany, Bio 1B - Zoology, and Bio 1C - Molecular Biology :

• Students should be able to conduct a research project, take measurements, keep accurate records, analyze and draw conclusions, and communicate experimental results in a standard format for scientific research
• Students will have attained hands-on experience with and demonstrated proficiency in standard biological techniques, using industry-level biology laboratory equipment and/or discipline-specific computer hardware and software.

For Bio 7C - Microbiology:
• Upon completion of BIO 7C, students will acquire and demonstrate competency in laboratory safety and in routine and specialized microbiological laboratory skills applicable to microbiological research or clinical methods, including accurately reporting observations and analysis.

SECTION 6: TOTAL COST OF OWNERSHIP (FINANCIAL & SUSTAINABILITY)

What is the potential life span of the requested equipment?

10 to 20 years.

If new storage is needed what are the storage requirements, location requirements, and costs associated with the new equipment: (NOTE: Specific storage costs should be detailed in the "*Part A: Initial Start-up Costs*" section below.)

The hemacytometer's will be stored, maintained in the biology prep room. No additional storage costs are associated with this purchase.

If this equipment replaces old equipment but the old equipment will not be retired, are there on-going storage requirements, location requirements, and costs associated with the old equipment? If so, provide details.

N/A

What will be required to maintain the equipment, such as regular servicing or upkeep? (Specific on-going costs should be detailed in the "*Part B: On-Going Annual Operating Costs*" sections below as applicable.)

The hemacytometer's do not have any annual cost to regularly service or upkeep it.

Explain how this equipment meets or exceeds basic sustainability efforts and/or provides renewable resources to the college:

The hemacytometer's have a relatively long functional life span, which reduces resource use. It can be used for many years. Additionally, the equipment can be used in determining optimal growth rates for cultures.

Part A: Initial Start-up Costs

Item	Cost	Comments
Equipment or Materials	2543.34	
Taxes (9.5%)	260.69	
Shipping or Delivery Charge		
Installation Costs *		
Miscellaneous Costs:		
Facilities Modifications		
Operator Training		
Maintenance & Repair Training		
Storage		
Other:		
Vendor Discount		
Grand Total:	2804.03	

Part B: On-Going Annual Operating Costs

Item	Cost	Comments
Annual Service or Maintenance	0	
Estimated Parts Replacement Per Year	0	
Outside Standardization or Calibration Costs	0	
Storage Costs	0	
New Supply Costs	0	
Maintenance & Repair Labor	0	
Licensing or Software	0	
Other:		
Annual Operating Costs:	**0.00**	

Indicate the source of funding for on-going annual operating costs:

Part C: Incremental Labor Costs

OPERATOR:

Indicate the key operator: Students, Lab Technicians

Is this in their current scope of duties? Yes

Indicate cost to train key operator (include in Initial Start-up Costs above): $0

Indicate amount of time per month key operator will use equipment: 10-15 hours

MAINTENANCE & REPAIRS:

Indicate the person performing maintenance and repairs: Lab Technicians

Is this in their current scope of duties? Yes

Indicate cost to train for maintenance and repairs: $0

Indicate amount of time per month maintenance will be required: 0-1 hours

SIGNATURE APPROVALS_

Funded requesters will be expected to respond to a brief RAC feedback survey by a requested deadline.

v ***Requests for computer-related equipment and printers will be reviewed by the LPC TT Department.***

REQUESTOR

Michal Shuldman — Digitally signed by Michal Shuldman Date: 2022.01.06 10:26:03 -08'00'

Date

DIVISION DEAN/MANAGER

Nan Ho

Date 1/11/22

ADMIN SERVICES, VP

Date

Admin Services will route as needed

IT MANAGER

Date

M&O DIRECTOR

Walter Blevins — Digitally signed by Walter Blevins DN: cn=Walter Blevins, o, ou, email=wblevins@clpccd.org, c=US Date: 2022.02.04 16:09:23 -08'00'

Date

LAS POSITAS COLLEGE

(Wait 5-10s)

Reset Submit

Office of Administrative Services

Requisition Request Form

R_____-_____

Fiscal Year	Vendor ID #	Vendor Name	Date Required
21-22	1739	Carolina Biological Supply Co.	2/7/2022

Deliver To	Room #	Return Copy of Requisition To
Gary Wilkes	1856	Gary Wilkes

Seq	Item #	Description	Qty	Unit Price	Extended Cost
1	700720	Bright Line Hemacytometer Kit	6	$ 423.89	$ 2,543.34
2					$ 0.00
3					$ 0.00
4					$ 0.00
5					$ 0.00
6					$ 0.00
7					$ 0.00
8					$ 0.00
9					$ 0.00
10					$ 0.00
11					$ 0.00
12					$ 0.00
13					$ 0.00
14					$ 0.00
15					$ 0.00

Comments		
	Subtotal	$ 2,543.34
	10.25% Tax	$ 260.69
	Shipping	
	Total Cost	$ 2,804.03

FOAP to be Charged	%	Amount
- - -	100	
FUND ORG ACCOUNT PROGRAM		
- - -		
FUND ORG ACCOUNT PROGRAM		

Jason M. Maxwell 12/10/21

Requestor (print name) *Date*

Nan Ho Digitally signed by Nan Ho Date: 2022.01.11 17:47:52 -08'00'

Dean (signature) *Date*

Coordinator/Manager (signature) *Date*

Vice President (signature) *Date*

OFFICE OF ADMINISTRATIVE SERVICES USE ONLY

Reviewed:_____ Verified:_____ Approved:_____

Administrative Services *Administrative Services Officer* *VP, Administrative Services*

PO Number:_____ Budget Transfer #:_____ Entered:_____

TR 4/6/20

SALES QUOTATION

CAROLINA
World-Class Support for Science & Math

Telephone: 1-800-334-5551
Fax: 336-538-6330

QUOTE NUMBER	497381 SQ	QUOTE EXPIRES	02/28/22
DATE:	12/02/21	**Reference: PHONE REQUEST**	
Shipment can be Made Within 14-25 DAYS After Receipt of Your Order Unless Otherwise Stated.			
TRANSPORTATION METHOD BEST WAY		PAYMENT TERMS: NET 30 **	

BILL TO ACCOUNT: 145320
LAS POSITAS COLLEGE
GARY WILKES
3000 CAMPUS HILL DR
LIVERMORE CA 94551-7623

SPENCER HINDMAN
QUOTATION SPECIALIST

CATALOG NUMBER	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	EXTENDED PRICE
700720	BRIGHT LINE HEMACYTOMETER KIT	EA	6	423.89	2,543.34
FREIGHT	FREIGHT AND HANDLING	EA	1	* FREE *	* FREE *

Please refer to our quote # when placing your order.
Attn: JASON MAXWELL
Em: jmaxwell@laspositascollege.edu
Ph: 925-424-1331

Carolina Biological Supply Company
2700 York Road, Burlington, NC 27215-3398
www.carolina.com

SUB TOTAL	**$**	**2,543.34**
10.25 %	**TAX**	**260.69**
TOTAL	**$**	**2,804.03**

CFR LIVERMORE CA

WE TRULY APPRECIATE THE OPPORTUNITY TO PROVIDE YOU WITH THIS QUOTE. THANK YOU!