LAS POSITAS COLLEGE

(15)

INSTRUCTIONAL EQUIPMENT REQUEST

Due in Dean/Unit Head's Office on September 19, 2011 (FALL) and March 1, 2011 (SPRING)

The Definition of Instructional Equipment can be found in the California Community College's Budget and Accounting Manual. A copy of these definitions is on the PBC webpage: http://grapevine/pbc/InstructionalEquipment.php

Name of Requestor: Barbara Zingg

Division/Unit MSEPS

Brief title of request (equipment or materials being requested must be similar, related or part of a system. Electronic Micro-incinerators

Request amount (unit cost and total cost including tax and shipping. Please include all costs including installation, modification to existing facilities to accommodate new equipment, etc.): This should come from the vendor quote.

Attach copy of quote(s), estimate(s) and requisition(s): (Must attach quote & requisition; absence of either will delay processing)

Item(s) Cost	$ 3,939.48
Tax (0.0875)	$ 344.70
Shipping	$ 0.0
Installation	$ 0.0
Facilities Modification	$ 0.0
Other	$ 0.0
	$
Total Cost	$ 4,284.18

Brief description of specific equipment or materials requested and what they will be used for: (include the # pieces being requested; i.e.: 10 crayola crayons, sky blue, etc. in 250 words or less)

12 Electronic Micro-incinerators

In modern microbiological practice, electronic micro-incinerators are used to sterilize metal loops and needles without using an open flame, which eliminates aerosolizing microorganisms. The infrared heat produced by the incinerator is safer than traditional Bunsen burners as it requires no gas to operate and does not generate a flame. The stability of these small bench-top incinerators is ensured by a tripod base and suction cup feet. After quickly reaching 815 □C, an inserted metal loop or needle turns red. The heating element is protected by a perforated stainless steel cover. The proposed micro-incinerator has an ergonomic design that will reduce hand fatigue by allowing the user to access the burner from multiple positions. This feature is particularly important, since two students will be sharing the same incinerators during the lab period.

Is this in your Program Review? Yes ☑ No ☐

Our request clearly supports three aspects of the Biology Program Review. One objective is to repair, replace, or update broken or outdated equipment, teaching materials, furniture, and technology. Another goal is to "Purchase equipment and supplies as needed to meet high program teaching standards and lab prep efficiency." The Biology Program Mission is to provide excellent teaching and opportunities in learning for a wide variety of course and career goals in biology. Students in career technical transfer, and majors students will be using the micro-incinerators to safely complete their lab assignments, and by using the electronic micro-incinerators instead of the traditional Bunsen burners we will be providing a safer classroom environment that is commensurate with this mission.

Is it a replacement? Yes ☐ **Upgrade?** Yes ■ **New technology?** Yes ■

Please explain?

This is not a replacement, but an upgrade introducing new technology. As stated above, the request for purchase of micro-incinerators is a result of safety concerns. The LPC microbiology laboratory is a relatively small room in which 24 students work at the same time. The use of open flames is a constant safety risk because of the potential for burns or fire caused by ignition of lab coats, hair, clothing, or alcohol used for Gram staining and cleaning of microscopes and slides. Frequent sterilization of inoculating loops and needles, however, is a basic necessity in any microbiology laboratory and cannot be avoided. This can only be accomplished either by using an open flame (provided by a Bunsen burner), or preferably through the use of an electronic micro-incinerator.

Following is the evaluation criteria; please see corresponding Instructional Equipment Rubric.

Instructional and Service Impact

How will this item have a positive impact on instruction and/or teaching and learning in the classroom? Is this for use by the Instructor or students, or both?

The use of electronic micro-incinerators will have a positive impact in the Biology and Microbiology classrooms because students, technicians, and instructors will have more access to essential equipment needed for preparing slides to analyze bacterial cultures, as well as transferring bacteria for isolation, growth and maintenance. These procedures are a standard component of a teaching laboratory and are currently performed using open flames from Bunsen burners. Micro-incinerators will make this procedure safer all around. For example, students will use the micro-incinerators during almost every laboratory session to sterilize their inoculating loops and needles.

Impact on Enrollment

Will the equipment impact enrollment, attract or increase the number of students participating in a course or program?

By creating a maximally effective learning environment that is safe for both students and support personnel, all biology courses, and in particular the Microbiology and Cell Biology courses, will continue to be attractive. Many students are required to take these courses, so year after year they are filled to capacity, usually with many more students wanting to add. Well equipped laboratories that provide safe hands-on learning to all students bring recognition to our programs and therefore enhance the image of the College in the community.

Access

How does this item promote the principles of universal design, by providing opportunities for under-represented populations & accommodate students with diverse learning styles?

The proposed micro-incinerators are consistent with universal design. They are easy to set up and handle, and have ergonomic features that ensure optimal use by all students, even beginning learners in microbiology techniques.
In order to encourage visual and kinesthetic learning, a core component of any Microbiology or Cell Biology course is cultivating and analyzing bacteria in a laboratory setting. Sterile loops and needles are the tools used for handling bacterial cultures. The use of micro-incinerators instead of open flames is easier and safer for the students, and tolerance for error is much higher. Aerosolizing potential pathogens is a safety concern which can be reduced greatly by using electronic micro-incinerators.

Outcomes

How will this equipment enable or enhance SLOs? What are the consequences related to learning outcomes if request is not funded?

The Student Learning Outcome for all Biology courses with a laboratory component is "Gain hands-on experience with and demonstrate proficiency in standard biological techniques, using industry-level biology laboratory equipment and/or discipline-specific computer hardware and software."
The students need this practical experience in cultivating, transferring, and analyzing live microbial cultures. They need to be able to prepare microscope slides of bacteria. For this purpose sterile loops and needles must be used. Sterilizing loops and needles with an electronic micro-incinerator is considerably safer than using an open flame.
The consequences of not funding this request are the risk of pathogen contamination through aerosolization and fire, both of which could potentially harm students, instructors, science lab personnel, and college facilities.

Total Cost of Ownership (This is an attempt to identify what the ongoing costs of purchasing this equipment will be to the institution)

a) **What is the lifespan of the equipment? 5 years? 10 years? 20 years?**
b) **Is there sufficient current/planned space available for the storage and use of this equipment? If so, where will it be housed? If not, is there a proposed location and are there any costs associated with installation or modifications to the space?**
c) **Are there operating costs and how will they be covered by the department?**
d) **What will be required to maintain the equipment, such as regular servicing or upkeep? Who will perform maintenance, and what will the estimated costs be?**

a) Micro-incinerators have an indefinite life span with adequate care.

b) Because these are small units that do not take up more space than the currently used Bunsen burners, there is ample space for the micro-incinerators.

c) There are minimal operating costs. The units run on electricity through standard 120V outlets. The amount of electricity needed is quite low. No parts should have to be replaced.

d) The maintenance of the micro-incinerators will be minimal. They do not need to be cleaned because they are self-sterilizing.

Visibility/Profile within Community

Is this a "flagship" item that will bring recognition/notoriety to the College or raise the stature of the program? Will it attract students and/or enhance the image of the College in the community because of its rare, one-of-a-kind status?

This is not a flagship item; however, state of the art, safely equipped laboratories that provide hands-on learning to all students will enhance the image of the College in the community, bring recognition to the Biology Program, and attract students. Recently, Dr. Paul Park of the California Department of Public Health and Ms. Kristine Montgomery, Select Agent Laboratory Coordinator from LLNL came to share their knowledge with my Microbiology students. Both were impressed by the quality of our laboratory and by the work and types of experiments the students are able to perform. Increasing work place safety is an ongoing major concern in industry, and implementing micro-incinerators in the teaching laboratory would greatly enhance safety and therefore student learning.

Commitment to Sustainability

How does this equipment exceed basic sustainability goals and encourage renewable resources at the College? Is the design/operation of this item in keeping with the College's commitment to sustainable practices?

Micro-incinerators conform to industry standards for emission. They are UL and CE approved. Electricity needed is minimal and the overall gas use for the microbiology course will be considerably reduced.

Health, Safety & Security

Does this equipment address any health, safety & security concerns? If so, please explain below.

Our students are beginners in microbiology techniques and poor techniques in the flaming of inoculating loops can result in the spread of infectious agents.
Sterilization of inoculating loops or needles in an open flame generates small-particle aerosols, which may contain viable microorganisms. While there are techniques to reduce or even prevent the spatter and release of droplets or aerosols when using flame sterilization, the use of electronic micro-incinerators is much less permissive compared to open flames in causing aerosolization of infectious agents.
Use of open flames in a teaching laboratory also has inherent dangers, such as igniting alcohol used in sterilization, lab coats, or clothing, and causing skin burns.
An important issue that goes beyond the inherent danger of using flame sterilization is gas leaks in the laboratory, something that we have recently been dealing with. The use of electronic micro-incinerators would dramatically reduce the need for flammable gas in the teaching laboratory.

Signatures (<u>required</u>)

(If requesting computer-related equipment/software, LPC IT Department Review is **<u>required</u>**.)

IT Department Signature

Requested by B. Zingg **Dean/ Unit Head** Neal Ely **Vice President** Malony 9/26/11

LPC VP Business/President _____ **LPC Business Office Use (Account Number)** _____

LAS POSITAS COLLEGE Equipment, Apparatus and Service Requisition

#R

#P

Track #

FOR REIMBURSEMENT: List payee name & ssn. TAX ID#

SUGGESTED VENDOR: **VWR (1-800-932-5000)**

FOR OFFICE USE ONLY

NAME OF STAFF MEMBER	DATE WRITTEN	DATE REQUIRED	DIVISION/ DEPARTMENT	For inventory purposes include Room # where equipment will reside:	RETURN COPY of REQUISITION TO:
B.Zingg	**19-Sep-11**		MSEPS - Sciience		L.Camino

DESCRIPTION (PRODUCT, TYPE, SIZE, COLOR, STOCK NUMBER)		UNIT	QTY	UNIT PRICE	Air
VWR Microcinerator 120V V3011	Product # 80094-500	EA	12	$ 328.29	$ 3,939.48
					$ -
					$ -
VWR Quotation No. 411834 (Attached)					$ -
					$ -
					$ -
					$ -
					$ -
					$ -
					$ -
					$ -
INSTRUCTIONAL EQUIPMENT - FALL 2011					$ -
					$ -
					$ -
					$ -
		Subtotal			$ 3,939.48
		Tax		$ 0.0875	$ 344.70
		Shipping (if available):			

Comments:

BT#

Original invoices and receipts must be attached for payment. Include current taxes unless incorporated in price.

TOTAL COST $ 4,284.18

ACCOUNT # _____
FUND ORG ACCT PROGRAM

Business Office

APPROVALS

Neal Ely 9/19/11
Dean Date

Mary Malony 9/26/11
VP / President

VWR INTERNATIONAL

QUOTATION: 4111834 PAGE: 1

1-800-932-5000 http://www.vwr.com

Prepared for:
Customer #: 2715356
LAS POSITAS COLLEGE
3033 COLLIER CANYON RD

LIVERMORE, CA 94551-979700

Prepared by:

VWR International, LLC
3745 Bayshore Boulevard
Suite D
Brisbane, CA 94005

Date: 9/14/2011

Requestor : Gerry Gire
Phone: 925 373 5800
Fax: 9254430742
E-Mail: ggire@laspositascollege.edu

Customer Reference:
VWR Quote #: 4111834

Want to view your quotes on-line?
Please visit our website at www.vwr.com. If you do not have a profile, go to the login area and register.

VWR Line#	Cust Line#	Qty	UOM	Product	List	Disc	Sell	Total Sell
1		12	EA	80094-500 VWR MICROCINERATOR 120V V3011	$451.41	27.27%	$328.29	$3,939.48

1-800-932-5000 http://www.vwr.com

TO PLACE YOUR ORDER, PLEASE CALL
TEL: 1-800-932-5000
FAX: 1-866-329-2897

PLEASE REFER TO
VWR QUOTATION NO: 4111834

MERCHANDISE VALUE:	$3,939.48
TOTAL WEIGHT:	76.2
TOTAL VOLUME:	6.72
GRAND TOTAL	$3,939.48

THANK YOU FOR THE OPPORTUNITY TO EARN YOUR BUSINESS.

QUOTATION VALID UNTIL: 10/13/2011

QUOTED BY

P.O. ORIGINATOR

P.O. NUMBER

Ask us about Equipment and Instrument Services! For more information on our Validation and Calibration service call 1-888-793-2300