Science 2011-12

P.R.O.F.I.C.I.E.N.T. Preventing Risk of Flame Injury Conjoined with Increasing Expertise of Necropsied Tissues

Summary:

This initiative requests funds to purchase 8 Bacti-Cinerator IV Heat Chambers and 1 Leica DM750 Microscope with integrated ICC50 HD camera system. The equipment will be used in the A&P/Microbiology courses that are prerequisites for many Health Professions programs.

Description

The purchase of the Bacti-Cinerator IV Heat Chambers will address an ongoing safety issue in the microbiology course. Currently, when bacterial cultures are grown, or isolated in microbiology lab, students use gas Bunsen burners to flame their inoculating loops. While flaming works great to sterilize the loops it also presents risk of injury and/or fire. This risk has increased due to increased class size. Microbiology is a prerequisite course for the majority of Health Professions students. The Science Division offers 10 sections of Microbiology annually, serving approximately 240 - 270 students. As demand has led to an increase in class size, available laboratory work space has decreased. Thus, students are working in closer proximity to each other and to their inoculating flames. The Bacti-Cinerator IV Heat Chambers are an electronic heat source that eliminate hazards from gas and open flames. The purchase of the 1 Leica DM750 Microscope with integrated ICC50 HD camera system will allow for image capture of prepared tissue slides for use in classroom lecture and online learning. It will also allow for the creation of an in-house histology image library and development of open source histology materials.

Questions and Answers

How is the initiative linked to the Unit Plans most recently submitted?

1. **How does it continue the achievement of those goals?**
2. **If this is a continuation of an initiative started last year, make sure that relationship is clear.**

How is this initiative linked to the efficiencies and productivities plans you had last year?

1. **How does it continue the achievement of these plans?**
2. **If this is a continuation of an efficiency or productivity plan started last year, make sure that relationship is clear.**

This initiative continues the achievement of the two themes in the FY2011-12 Science Division Unit Plan which have been consistent over the past three years. This initiative also supports Lane's strategic directions for optimal student preparation, progression and completion and for a safe learning and working environment.

A) Optimizing sustainable access for students and options for quality learning

B) Optimizing the curricula and resources we already have.

Specific goals and activities are:

- Provide adequate technology: hardware, software, staffing to support online learning and educational resources

  #10. Maintain and improve technology for student learning. Provide adequate, stable staffing for supporting technology and provide professional development for technology use.

- Adequate EQUIPMENT funding to support instructional excellence and growth

  #13. Provide capital outlay or equipment funding to replace worn or inoperative science equipment; and to purchase equipment to meet functional current standards.

Lastly, even though it is not a stated, explicit goal of the Unit Plan, preventing students from catching fire is certainly an implicit goal.

Increasing numbers of students seeking careers in the health professions has placed an additional strain on classroom space. Purchase of the Bacti-Cinerator IV Heat Chambershelps maintain a safe learning environment, while supporting student success in accurate identification of microbes. An understanding of bacteriology is a foundational career skill of CTE students entering the Health Professions programs. An understanding of histology is another foundational career skill of CTE students entering the Health Professions programs. The purchase and implementation of the Leica DM750 Microscope with integrated ICC50 HD camera system into our classroom will allow students to develop a better understanding of histological concepts.

This is a not a continuation of last year's request.

Describe the resources needed:

8 Bacti-Cinerator IV Heat Chambers@ 326.27 each ($2,611)

1 Leica DM750 Microscope with integrated ICC50 HD camera system ($4,100)

What specific measurable program outcomes do you expect to achieve with this initiative? The outcomes should be specific enough to be measurable. Also, outline the method that will be used to determine the results.

The equipment requested by this proposal will help maintain a quality learning environment for the ~ 400 students that the Anatomy and Physiology/Microbiology discipline serves. The majority of our students are applying to, entering or enrolled in the Health Professions Programs.

Outcomes:

1) Safe learning environment

   a) Decreased fire hazard risk

   b) Decreased gas hazard risk

2) Increased understanding of histological concepts

3) Increased access to histology learning materials for in-class or online students

Department Priority:

10

Unit Resources:

Priority ranking for this initiative was determined by SAC members drawing numbers randomly. All the initiatives are valuable to the Division and to the proposing disciplines; all have the support of the Division.

The 8 Bacti-Cinerator IV Heat Chambers and Leica DM750 Microscope with integrated ICC50 HD camera system will be stored in the class room and maintained by the Anatomy and Physiology/Microbiology faculty and support staff.

Funding Request: Carl Perkins

Is this a Career & Technical Education program approved by the state and offered through Lane for credit?

No

If not a Career & Technical Education program, does your request provide considerable support for students enrolled in these programs?

Yes

Do you have an advisory committee that meets 2-3 times per year?

No

If request is for personnel, will funds be used to replace an existing position?

How will funding this initiative increase or sustain the academic achievement and technical skills attainment (GPA of 2.0 or better) of Career and Technical Education students?

Students will benefit from the laboratory equipment in the following ways:

Acquisition of the 8 Bacti-Cinerator IV Heat Chambers will allow for the safe culturing, growing and isolation of bacteria. By culturing, growing and isolating bacteria, CTE students will have gain a greater understanding of bacteriology and the roles of microbes in the pathogenesis of disease. The ability to accurately identify methods to decrease the transmission of pathogens and prevent noscomial infections is a foundational career skill for CTE students entering or enrolled in the health Professions Programs. The purchase of the Leica DM750 Microscope with integrated ICC50 HD camera system will allow students to develop a better understanding of tissue components.

How will funding this initiative increase or sustain the number of CTE students that graduate or receive a one year certificate from Lane and help prepare the students for employment?

The number of CTE students that apply to and graduate from Health Professions Programs is limited by the number of slots available for the particular program. These programs are highly competitive and Perkins funding is essential in allowing each and every student the opportunity to gain a strong foundational understanding of Microbiology and Human Anatomy and Physiology. The graduation rates from Health Professions Programs are extremely high. The enrichment of our learning environment will positively impact our community as Lane Community College continues to provide competent, highly trained health care professionals.

The Microbiology course in the Science Division serves 240 - 270 students annually.

EQUIPMENT $

COMPUTER HARDWARE $

COMPUTER SOFTWARE $

MATERIALS & SUPPLIES $

6711

CURRICULUM DEVELOPMENT (Hours)

PART-TIME FACULTY $

TIMESHEET STAFF $

TRAVEL $

Can this initiative be partially funded?

Yes

EQUIPMENT $

(E) Explanation of effect of partial funding:

COMPUTER HARDWARE $

(CH) Explanation of effect of partial funding:

COMPUTER SOFTWARE $

(CS) Explanation of effect of partial funding:

MATERIALS & SUPPLIES $

2611

(MS) Explanation of effect of partial funding:

With partial funding we would purchase only the 8 Bacti-Cinerator IV Heat Chambers@ 326.27 each. This would accomplish only the fire and gas hazard outcomes of the initiative. We would not purchase the Leica DM750 Microscope with integrated ICC50 HD camera system. We would not be able to demonstrate real-time tissue exploration in the classroom or develop an in-house histology library to support open source on-line learning.

CURRICULUM DEVELOPMENT (HOURS)

(CD) Explanation of effect of partial funding:

PART-TIME FACULTY $

(PF) Explanation of effect of partial funding:

TIMESHEET STAFF $

(TS) Explanation of effect of partial funding:

TRAVEL $

(T) Explanation of effect of partial funding:

Funding Request: Curriculum Development

Funding Request: Technology Fee