

Investment Fund for the Future (IF2) – Entry #110

A. PROPOSAL SUMMARY

Title: Supporting Expansion and Academic Success of Biology Service Courses

Project Lead Name: Bernardo Ortega
Biology

Project Lead email address: bortega@brockport.edu

Amount Requested: 54872.459999999999

This proposal is cross-unit; It will be managed by more than one school and/or division.

This proposal includes cost sharing.

Name of Sponsor 1: Jose Maliekal
Science & Mathematics

Name of Sponsor 2: Mark Kittleson
Health & Human Performance

Name of Sponsor 3: Jose Maliekal
Science & Mathematics

A-1. Description of the Initiative

Project justification: Over the last five years, service courses imparted by the Department of Biology have experienced a continuous increase in enrollment. This is clearly a reflection of the success of specific programs, and includes mostly Nursing, Exercise Science and Premedical students. However, some courses, like BIO321-Anatomy & Physiology 1 (A&P1) already exceed 350 students, and meeting further demand may not always be possible for the Department of Biology. Two major problems exist; 1) our lecture and lab space is reaching full capacity, and 2) teaching equipment, including anatomical models and technical resources, are insufficient or obsolete. The aim of this proposal is to identify strategies that will allow for a sustainable increase in enrollment over the next few years, without affecting quality and academic success in these courses.

Action proposed:

Phase I: Labs will be shortened by 30 minutes (from 2h:45min to 2h:15min), allowing for the creation of two additional new sections (from 15 to 17 sections, i.e., 48 students more). To achieve this, additional resources will be needed, including more anatomical models (so fewer students share the same model). In addition, faculty will invest significant time in creating Blackboard-based online support activities in order to guide the students through the lab and facilitate the completion of lab activities. This will speed up labs without having to reduce content, while achieving equal or better learning outcomes. In this way, we will be able to reach approximately 400 students, which is the maximum capacity of Edwards 100.

Phase II; It is anticipated that within the next 2-3 years, enrollment will reach 400 students in both BIO321-A&P1 and BIO322-A&P2. At this point, the only way to accommodate additional demand would be to divide both BIO321-A&P1 and BIO322-A&P2 into two courses each, since the College lacks a classroom with more than 400 seats. Splitting the course poses challenges and opportunities. One challenge will be to identify additional lab space. One benefit may be the opportunity to tailor both A&P courses for nursing or exercise physiology majors, increasing the instructional value of these courses. Additional anatomical models and resources obtained through this proposal would greatly facilitate this process. Otherwise, it will be impossible for the Department of Biology to purchase at once all the anatomical models and other resources required to equip two labs.

A-2. Impact Statement: What change will this project deliver in the short term? What are the expected longer term impacts?

Resources obtained through this proposal will facilitate the following outcomes:

- Short-term impact: Course capacity will increase to 400 students with Phase 1, allowing exercise science, nursing and pre-medical students to complete courses at Brockport.
- Long-term impact: Additional course capacity will be accomplished by Phase 2, dividing both A&P's into 2 courses each. New lab space would be identified, new courses would be created, tailoring them to the specific needs of each program, and new adjunct or full time teaching lines would be requested. This would enable enrollment up to 700-800 students. This proposal will greatly contribute to the academic and economic future of the College.
- The online activities here proposed may also contribute to a future hybrid design of the A&P labs that could be used during the summer session of A&P.
- This proposal will greatly facilitate meeting the need for expanded future enrollment.

B. STRATEGIC ALIGNMENT

B-1. To be a Great College at which to Learn

Success of the Brockport graduates is illustrated by the popularity of our Nursing, Exercise Science, Biology and Medical technology programs. Anatomy & Physiology courses play a pivotal role in their education. As such, improving, modernizing and expanding these lab courses to serve an ever increasing number of students has always been a priority for the Department of Biology. However, growth without increasing the lab resources available to our students is becoming increasingly difficult, as we estimate that our labs will have reached maximum capacity (15 sections) by 2017. Thus, this proposal is absolutely necessary to maintain and promote excellence among our graduates.

B-2. To be a College engaged with its Community

Service courses play an important role in promoting a sense of community among Brockport students. Hundreds of students from very different majors share these courses. Anatomy & Physiology lab activities require constant collaboration, communication and engagement, thus providing a great opportunity for students from different disciplines to get to know each other and work together.

Furthermore, many local nursing, premedical, medical technology and exercise science students remain in this area after graduation, providing the backbone of local health care and education. Thus, increasing the number of students in this programs provides an essential service to the community.

B-3. To be a Sustainable Institution for the 21st Century

Transformation requires sustainable and meaningful growth. The proposed investment will allow the Department of Biology to adapt our service courses to the challenges posed by continuous growth. As these are the largest courses taught in The College at Brockport these funds will allow the Department of Biology to persevere in our commitment for excellence, thus contributing to the economic viability of our institution.

B-4. To be a Great College at which to Work

Lab work is all about engaging students in hands-on activities. As such, Anatomy & Physiology labs constitute an essential part of the Brockport experience for Exercise Physiology, Nursing and many other majors. A detailed understanding of how muscles, brain, heart or lungs work is fundamental component of their education. A lab equipped with enough models and resources is absolutely essential to promote student engagement in these courses. In addition, having appropriate instructional means in our labs is important in order to maintain a culture of learning and motivate teaching assistants and faculty.

C. IMPLEMENTATION PLAN AND BUDGET

C-1. Identify the specific activities to be funded from the Investment Fund, estimated time-line for implementation, and for activities anticipated to be ongoing, plans for continued funding.

Item 1: Anatomical models

Item 1 Amount: 53094.519999999997

Item 2: Samsung 65in LED TV & Wall mount

Item 2 Amount: 1777.9400000000001

Item 3:

Item 3 Amount:

Item 4:

Item 4 Amount:

Item 5:

Item 5 Amount:

Item 6:

Item 6 Amount:

Item 7:

Item 7 Amount:

Item 8:

Item 8 Amount:

Item 9:

Item 9 Amount:

Item 10:

Item 10 Amount:

TOTAL EXPENSES, ALL ITEMS: 54872.459999999999

Matching Fund: 2500

In-Kind Services: Provide FTE and name of personnel who have committed to in-kind services.

time commitment from Elizabeth Heavey (Nursing); Bernardo Ortega (Biology) and Adam Rich (Biology)

Checked

D. ASSESSMENT PLAN:

D-1. What are the anticipated outcomes and specific measurements for success?

We expect that the strategies proposed here will allow growth of the Anatomy & Physiology courses, while maintaining or improving student success. During the first year (Fall-2017) we will assess if shortening labs is an effective strategy for BIO321-A&P1. We will use the following methods; 1) student satisfaction with labs will be assessed using an online survey; 2) the number of students requesting additional help during the end-of-lab tutorial will be carefully monitored, thus providing a good way to know if the length of labs is sufficient to cover all course topics; and 3) questions for lab exams are taken from an existing question bank, so by comparing lab grades from 2017 to lab grades from previous years we will be able to measure student performance. If student performance in labs is similar or better than previous cohorts, we will consider it a success. Given that lectures will remain unchanged, student performance in lecture exams will provide an effective control in order to account for differences between different cohorts of students. If student performance worsens, alternative plans would require identification of additional lab space.

E. ADDITIONAL INFORMATION

E-1. Please provide any additional information to assist in the review of the proposal, including why the initiative cannot be funded from divisional resources.

Anatomy & physiology labs require a considerable expenditure, not only in models, but also in consumables and reagents. Thus, funds available for replacement for anatomic models are limited, typically to no more than \$5,000, including equipment replacement funds provided by the School of Sciences and Mathematics. As can be seen in our itemized list, anatomical models are expensive.

Therefore, it would be impossible for the Department of Biology to undertake this project without significant assistance from the College.

Upload up to three supplemental files here (not required): [On file]

Signature of Project Lead: [on file]

Email: bortega@brockport.edu

Signatures of sponsors are on file in the Administration and Finance Division.

Sponsor 1 Comments: Great example of cross-school collaboration. Highly support this.

Sponsor 2 comments: I thank Dr. Ortega for putting together this cross-school project. This proposal has my full support.

Sponsor 3 Comments:

Date Created: 2017-03-09 15:14:03