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Application Summary

Competition Details

Competition Title:	Textbook Transformation Grants, Round Thirteen (Spring 2019-Spring 2020)
Category:	University System of Georgia
Award Cycle:	Round 13
Submission Deadline:	01/14/2019 at 11:59 PM

Application Information

Submitted By:	Deon OBryant
Application ID:	2886
Application Title:	428
Date Submitted:	01/15/2019 at 7:36 AM

Personal Details

Institution Name(s):	Atlanta Metropolitan State College
Applicant First Name:	Deon
Applicant Last Name:	OBryant
Applicant Email Address:	dobryant@atlm.edu
Applicant Phone Number:	6786231254
Primary Appointment Title:	Assistant Professor of Biological Science
Submitter First Name:	Deon
Submitter Last Name:	OBryant
Submitter Email Address:	dobryant@atlm.edu
Submitter Phone Number:	6786231254
Submitter Title:	Assistant Professor of Biological Science

Application Details

Proposal Title

428

Final Semester of Project

Spring 2020

Requested Amount of Funding

10,800

Type of Grant

No-or-Low-Cost-to-Students Learning Materials

Course Title(s)

Fundamentals of Microbiology/Fundamentals of Microbiology Lab

Course Number(s)

BIOL 2215/BLAB 2215

Team Member 1 Name

Deon O'Bryant

Team Member 1 Email

dobryant@atlm.edu

Team Member 2 Name

Stephen Klusza

Team Member 2 Email

sklusza@atlm.edu

Team Member 3 Name

Bryan Mitchell

Team Member 3 Email

bmitchell@atlm.edu

Team Member 4 Name

Team Member 4 Email

Additional Team Members (Name and email address for each)

Sponsor Name

Dr. Bryan Mitchell

Sponsor Title

Dean and Associate Professor of Biology

Sponsor Department

Division of Science, Math & Health Professions

Original Required Commercial Materials (title, author, price)

Foundations in Microbiology w/Connect. (2018) 10th ed. With Connect.Talaro, Kathleen. \$300.00

Benson's Microbiological Applications. (2016). 14th ed. Brown, Alfred. \$81.75

Average Number of Students per Course Section Affected by Project in One Academic Year

BIOL 2215 (21) BLAB 2215 (19)

Average Number of Sections Affected by Project in One Academic Year

BIOL 2215 (5) BLAB 2215 (4)

Total Number of Students Affected by Project in One Academic Year

BIOL 2215 (103) BLAB 2215 (74)

Average Number of Students Affected per Summer Semester

BIOL 2215 (21) BLAB 2215 (21)

Average Number of Students Affected per Fall Semester

BIOL 2215 (41) BLAB 2215 (22)

Average Number of Students Affected per Spring Semester

BIOL 2215 (41) BLAB 2215 (31)

Original Total Cost per Student

\$300.00 (Textbook) \$81.75 (Lab Manual)

Post-Project Cost per Student

\$0.00

Post-Project Savings per Student

\$381.75

Projected Total Annual Student Savings per Academic Year

\$36, 949.50

Using OpenStax Textbook?

Yes

Project Goals

- Support the Affordable Learning Georgia initiative by adopting a peer-reviewed, zero-cost textbook for Fundamentals of Microbiology lecture and lab providing significant cost savings to students at Atlanta Metropolitan State College.
- Create an active learning environment for Fundamentals of Microbiology lecture and lab courses by integrating supplemental course resources that provide students with personalized study plans to guide students and foster a strong student-instructor connection under the guidance of a data-driven learning design to decrease the DFW rate.
- Align the course learning objectives with OpenStax text content.
- Develop a lab manual to pair with the OpenStax text to replace the current textbook and lab manual used for Fundamentals of Microbiology.
- Evaluate the experiences of the students and faculty qualitatively and quantitatively through this transition.

Statement of Transformation

The aim of this proposal is to significantly reduce the cost for students taking Fundamentals of Microbiology at Atlanta Metropolitan State College. The rise in the cost of textbooks has become a challenge for the population of students that we serve, who are predominately non-traditional, first-generation, at-risk students. Adoption of these texts would greatly alleviate the burden of cost by making their education more affordable (acenet, 2015).

One solution to eliminating the high cost of textbooks is through the adoption of Open Educational Resources (OERs), which are free, accessible textbooks and supplemental materials located in public domain or authored with open copyright licenses (Choi, 2017). This proposal addresses all sections of Fundamentals of Microbiology and lab. Currently, this course sequence costs the students \$381.75. Due to the high cost the texts required for these courses, students tend to rely on lectures only without getting the benefit of having the textbook and the accompanying resources. This trend has led to an increase in the DFW rate in these courses at Atlanta Metropolitan State College. Transitioning to OER materials reduces that cost to \$0.00, saving Atlanta Metropolitan State College students thousands in textbook costs yearly which would provide financial relief for our students, and enable them to have access to course materials that are necessary for successful completion of these courses.

BIOL 2215 is a required course for students who wish to pursue careers in the health sciences. BLAB 2215 reinforces the fundamentals of microbiology through hands-on experimentation and active learning in the laboratory, facilitated by inquiry-based exercises. These courses are designed to introduce students to maintenance of an aseptic environment, isolation and identification of clinically relevant bacteria, and the nuances of deductive reasoning.

An essential part of microbiology education is careful alignment of lecture and laboratory topics in order to reinforce knowledge gained from lectures classes, with hands-on exercises in laboratory sessions. Traditionally, microbiology lecture is held twice a week for 1 hour and 15 minutes each, while microbiology lab meets once a week for 3 hours. Therefore, we propose aligning the lecture and lab using modules instead of dates, which will allow for a more fluid collaboration between lecture and lab instructors in keeping students thoroughly engaged with microbiology, and maximum flexibility in designating more time for covering difficult concepts.

Dr. Deon O'Bryant, Assistant Professor of Biology, is an instructor of the Fundamentals of Microbiology lecture and lab courses. Dr. Stephen Klusza, Biology Laboratory Coordinator, teaches the accompanying labs that will be affected by this project. Dr. Bryan Mitchell serves as Dean of the Division of Science, Mathematics and Health Professions. His duties include strategic planning, budgeting, and overseeing the operations of the division. This team consists of faculty and staff who could transform the Health Science program at Atlanta Metropolitan State College making learning affordable for Health Sciences majors.

Transformation Action Plan

There are two objectives for this transformation plan. The first goal is the adoption of the OpenStax Microbiology textbook for use in all sections of BIOL 2215 at no cost to the students. This textbook has been reviewed by Biology faculty and has been found to meet the learning outcomes for these courses. Dr. Deon O'Bryant will serve as the content expert for the redesign of the lecture courses to ensure that the text is aligned with the current curriculum and integrated into the course structure, as well as instructors for these courses. Students will be provided with information on how to gain access to both the open text, as well as the low-cost print version.

The second objective is the development of a new lab manual to accompany the OpenStax textbook for BLAB 2215. Currently, the lab manual for this courses costs \$81.75. Drs. Deon O'Bryant and Stephen Klusza will serve as subject matter experts in the creation of a new open laboratory manual for BLAB 2215. Dr. Stephen Klusza will also serve as instructor of the labs during implementation. Dr. Deon O'Bryant will supervise the transformation by managing the budget, ensuring that deadlines are met, completing reports, and facilitating the evaluation of materials. Dr. Bryan Mitchell will assist in creating and analyzing student course evaluations.

Quantitative & Qualitative Measures

Throughout the transformation project, the Office of Institutional Effectiveness at Atlanta Metropolitan State College will work with the Biology Department to assess the project employing both quantitative and qualitative measures. Quantitative measures will involve analysis of ABCD and DFW rates both before and after implementation of open source material. Student performance will also be quantitated by analysis of successful completion of course-specific and program learning outcomes. In addition, student course evaluation data will be gathered to evaluate student perceptions of the course modifications and the new OpenStax text. The student course evaluation will contain a section for students to respond to various aspects such their attitudes towards modular lecture and lab components, the quality of the open source lecture book and newly created laboratory manual and their effectiveness and accessibility. The evaluation will be qualitative in nature, however, the questions will be closed-ended to facilitate quantitation and data interpretation. Additionally, we also plan to conduct exit interviews to acquire feedback from students that will be critical to course design and implementation. Course evaluations will also be created for faculty to provide feedback on course delivery, course alignment and quality of course material.

Timeline

- January 2019- Submit transformation proposal
- January 2019- Receive award notification
- February 2019- Kickoff meeting, Middle Georgia State University
- February - May 2019- Content evaluation of the OpenStax textbook; make necessary modifications to modules in BrightSpace; Perform literature review for laboratory manual; Design laboratory manual template and capture images for laboratory manual
- June - July 2019- Completion of BLAB 2215 laboratory manual, submit for peer review among faculty of Atlanta Metropolitan State College
- August 2019- Implementation of materials in all course and lab sections of BIOL 2215 and BLAB 2215
- September - November 2019- Evaluate course progression and viability of modular design by quantitative methods; Review and discuss feedback with faculty for minor redesign of modular design and/or laboratory manual
- December 2019- Office of Institutional Effectiveness works with BIOL 2215 and BLAB 2215 faculty to collect qualitative and quantitative data on and student experiences and success rate. Conduct student surveys and perform exit interviews and surveys.
- January 2020- Implementation of redesigned lecture modules and/or laboratory manual
- February - April 2020 - Evaluate course progression and viability of redesigned modules and laboratory manual by quantitative methods; Review and discuss feedback with faculty; Conduct student surveys and perform exit interviews and surveys
- May 2020- Submit final report of findings to Affordable Learning Georgia.

Budget

Faculty and Staff Department Stipend

Dr. Deon O'Bryant \$2,000 for the review, identification, selection and adoption of no-cost open-access materials, course alignment and content redesign for BIOL 2215 and BLAB 2215.

Dr. Stephen Klusza \$2,000 for the identification and selection of no-cost materials and development of laboratory manual during implementation for BLAB 2215.

Dr. Bryan Mitchell \$2,000 for collecting and analyzing quantitative and qualitative data of student performance and student course evaluations.

\$4,000 is requested for equipment, software and materials related to lab manual development. New labs will be designed. The supplies are necessary to perform the activities to insure the labs work as envisioned.

The production of a high-quality no-cost lab Microbiology lab manual requires clear and detailed pictures to accompany identification of various microbes, and detailed visualization of microbiological protocols. In addition, supplemental production of videos at the microscopic level will provide incalculable value as additional teaching aids in training students in correct application of microbiological protocols. Therefore, we request the amount of \$4000 in order to achieve this goal, and have identified the equipment and supplies that would be necessary to purchase with this budget allocation:

1) Amscope 40x-2500x Plan Infinity Extreme Widefield EPI-Fluorescent Microscope (SKU: FM690TC-PL) - \$3,099.99

2) Amscope 6.3MP USB3.0 Fluorescence Digital Camera (SKU: MU633-FL) - \$519.99

3) Miscellaneous Microbial Organisms and Reagents - \$380.00

The Amscope EPI-fluorescent microscope (FM690TC-PL) is an extremely versatile microscope that will allow us to visualize microbes using bright light (brightfield) and fluorescence (specific wavelengths of light to make specific cells glow either green or blue). Most importantly, the microscope also comes with a trinocular port that allows us to attach a camera for image and video acquisition. The images of interest will be acquired with the 6.3MP Fluorescence Digital Camera (MU663-FL), which is optimized for fluorescence and darkfield microscopy, and is also more than adequate for brightfield microscopy. Along with the camera itself, Amscope provides user-friendly software to assist in image and video capture/processing at no extra cost. This equipment will be used to capture images of specimens for approximately 70 percent of the laboratory exercises in the newly created laboratory manual.

Grant kickoff meeting and other travel as necessary- \$800

Total Project Expenses: \$10, 800.00

Sustainability Plan

The redesigned Fundamentals of Microbiology lecture and lab courses will be offered each academic year and summer session. Course materials and updates for these courses will be made available on BrightSpace, which is easily accessible to all students enrolled in BIOL 2215 and BLAB 2215. In addition, a copy of the syllabus and teaching materials will be uploaded into a course shell in BrightSpace that is dedicated to the Division of Science, Mathematics and Health Professions, as well as the Biology Department Office to ensure that all instructors for these courses have access to this information. Future plans involve the incorporation of ancillary materials into these courses to promote an active learning environment.

Data derived from this study will not only be used for improvement of the transformation courses, but it will also be used for the transformation of other courses within the division. Implementation of the project in Fundamentals of Microbiology lecture and lab will be shared at Atlanta Metropolitan State College during the Faculty Institute to encourage other divisions to support the Affordable Learning Georgia Initiative. Team members involved in this project will provide professional development on the steps to identifying an open texts suitable for their courses and integrating them into their curricula.

Acknowledgment

Grant Acceptance

[Acknowledged] I understand and acknowledge that acceptance of Affordable Learning Georgia grant funding constitutes a commitment to comply with the required activities listed in the RFP and that my submitted proposal will serve as the statement of work that must be completed by my project team. I further understand and acknowledge that failure to complete the deliverables in the statement of work may result in termination of the agreement and funding.



OFFICE OF THE DEAN
DIVISION OF SCIENCE, MATHEMATICS & HEALTH PROFESSIONS
1630 METROPOLITAN PARKWAY, SW
ATLANTA, GEORGIA 30310

January 14, 2019

To Whom It May Concern,

This letter is sent to confirm my support of Dr. Deon O'Bryant's Affordable Learning Georgia—Textbook Transformation Grant, Round Thirteenth (Fall 2019-2020) grant application. I believe that the students at Atlanta Metropolitan State College will greatly benefit from the zero-cost textbook for the Fundamentals of Microbiology courses. You have developed a comprehensive proposal that is expected to assist well over 180 Health Sciences students per year, which will prepare them for further educational endeavors.

I appreciate your dedication and efforts to identify opportunities that will continue to enrich and adequately train our underserved, underrepresented and disadvantaged minority students. As always, I pledge my full support of your Textbook Transformation Grant proposal.

Sincerely,

Dr. Bryan O. Mitchell
Dean and Associate Professor of Biology



Textbook Transformation Grants, Round Thirteen (Spring 2019 –Spring 2020) Proposal Form and Narrative

Notes

- The proposal form and narrative .docx file is for offline drafting and review. Submitters must use the InfoReady Review online form for proposal submission.
- The only way to submit the official proposal is through the online form in Georgia Tech's InfoReady Review. The link to the online application is on the [Round 13 RFP Page](#).
- The italic text we provide is meant for clarifications and can be deleted.

Applicant, Team, and Sponsor Information

The **applicant** is the proposed Project Lead for the grant project. The **submitter** is the person submitting the application (which may be a Grants Officer or Administrator). The submitter will often be the applicant – if so, leave the submitter fields blank.

Institution(s)	Atlanta Metropolitan State College
Applicant Name	Deon O’Bryant
Applicant Email	dobryant@atlm.edu
Applicant Phone #	678-623-1254
Applicant Position/Title	Assistant Professor of Biological Science
Submitter Name	
Submitter Email	
Submitter Phone #	
Submitter Position	

Please provide the first/last names and email addresses of all team members within the proposed project. Include the applicant (Project Lead) in this list. Do not include prefixes or suffixes such as Ms., Dr., Ph.D., etc.

	Name	Email Address
Team Member 1	Deon O’Bryant	dobryant@atlm.edu
Team Member 2	Stephen Klusza	sklusza@atlm.edu
Team Member 3	Bryan Mitchell	bmitchell@atlm.edu
Team Member 4		
Team Member 5		
Team Member 6		
Team Member 7		
Team Member 8		

If you have any more team members to add, please enter their names and email addresses in the text box below.

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Please provide the sponsor's name, title, department, and institution. The sponsor is the provider of your Letter of Support.

Dr. Bryan Mitchell, Dean and Associate Professor of Biology, Division of Science, Math & Health Professions, Atlanta Metropolitan State College

Project Information and Impact Data

Title of Grant Project	<i>Improving Fundamentals of Microbiology Through the Use of Open Education Resources</i>
Type of Grant	<i>No-or-Low-Cost-to-Students Learning Materials</i>
Requested Amount of Funding	\$10,800
Course Names and Course Numbers	Fundamentals of Microbiology (BIOL 2215) Fundamentals of Microbiology Lab (BLAB 2215)
Final Semester of Project	<i>Spring 2020</i>
Average Number of Students Per Course Section Affected by Project	BIOL 2215 (21) BLAB 2215 (19)
Average Number of Sections Affected by Project in One Academic Year	BIOL 2215 (5) BLAB 2215 (4)
Total Number of Students Affected by Project in One Academic Year	BIOL 2215 (103) BLAB 2215 (74)
Average Number of Students Affected per Summer Semester	BIOL 2215 (21) BLAB 2215 (21)
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Title/Author of Original Required Materials	Foundations in Microbiology w/Connect. (2018) 10th ed. With Connect. Talaro, Kathleen. Benson's Microbiological Applications. (2016). Brown, Alfred. 14th ed.
Original Total Cost Per Student	\$300.00 (Textbook) \$81.75 (Lab Manual)
Post-Project Cost Per Student	\$0.00
Post-Project Savings Per Student	\$381.75
Projected Total Annual Student Savings Per Academic Year	\$30,900.00 (BIOL2215) \$6,049.50 (BLAB2215)

Using OpenStax Textbook?	Yes
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Narrative Section

1. Project Goals

- Support the Affordable Learning Georgia initiative by adopting a peer-reviewed, zero-cost textbook for Fundamentals of Microbiology lecture and lab providing significant cost savings to students at Atlanta Metropolitan State College.
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2. Statement of Transformation

The aim of this proposal is to significantly reduce the cost for students taking Fundamentals of Microbiology at Atlanta Metropolitan State College. The rise in the cost of textbooks has become a challenge for the population of students that we serve, who are predominately non-traditional, first-generation, at-risk students. Adoption of these texts would greatly alleviate the burden of cost by making their education more affordable (acenet, 2015).

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References:

American Council on Education. 2015. *Open Textbooks: The Current State of Play*. <https://www.acenet.edu/news-room/Documents/Quick-Hits-Open-Textbooks.pdf>

Choi, Young Mi and Carpenter, Cathy (2017). Evaluating the Impact of Open Educational Resources: A Case Study. *Libraries and the Academy*, Vol. 17, No. 4 (2017), pp. 685–693.

3. Transformation Action Plan

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Grant kickoff meeting and other travel as necessary- \$800

Total Project Expenses: \$10, 800.00

7. Sustainability Plan

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