Application Details

Manage Application: ALG Textbook Transformation Grants

Award Cycle:	Round 9
Internal Submission Deadline:	Sunday, April 30, 2017

Application Title:	320
Application ID:	#001750
Submitter First Name:	April Anne
Submitter Last Name:	Kay
Submitter Title:	Associate Professor of Biology
Submitter Email Address:	akay@daltonstate.edu
Submitter Phone Number:	706-272-2669
Submitter Campus Role:	Proposal Investigator (Primary or additional)
Applicant First Name:	April
Applicant Last Name:	Kay
Co-Applicant Name:	Susan Burran, Leah Howell
Applicant Email Address:	akay@daltonstate.edu
Applicant Phone Number:	706-272-2669
Primary Appointment Title:	Associate Professor of Biology
Institution Name(s):	Dalton State College
Submission Date:	Monday, May 1, 2017

Proposal Title:	320
Final Semester of Instruction:	Spring 2018

Team Members (Name, Title, Department, Institutions if different, and email address for each):

1. Dr. April Kay, Associate Professor of Biology, akay@daltonstate.edu

2. Professor Susan Burran, Assistant Professor of Biology, Sburran@daltonstate.edu

3. Dr. Leah Howell, Assistant Professor of Biology, Lhowell@daltonstate.edu

All team members are in the Department of Natural Sciences, School of Science, Technology,

and Mathematics

Sponsor, (Name, Title, Department, Institution):

Dr. Patricia Chute, Provost and Vice President for Academic Affairs, Dalton State College

Course Names, Course Numbers and Semesters Offered:

Microbiology BIOL 2215K offered fall, spring and summer semesters

General Microbiology BIOL 3340K, offered in fall and spring semesters

Average Number of Students per Course Section:	22
Number of Course Sections Affected by Implementation in Academic Year:	9
Total Number of Students Affected by Implementation in Academic Year:	200
List the original course materials for students (including title, whether optional or required, & cost for each item):	The textbook currently required: Foundations in Microbiology 9 th edition by Talaro and Chess. ISBN: 9780073522609.Cost: $266 new.
Proposal Categories:	OpenStax Textbooks
Requested Amount of Funding:	$15,800
Original per Student Cost:	$266
Post-Proposal Projected Student Cost:	$0
Projected Per Student Savings:	$266
Projected Total Annual Student Savings:	$53,200

Creation and Hosting Platforms Used ("n/a" if none):

OpenStax CNX

Project Goals:

Provide a free open access textbook to students taking courses BIOL 2215K and BIOL 3340K at Dalton State College. This will eliminate high cost textbooks that will benefit all of our students, especially our economically challenged population.
Redesign lecture materials for these courses using the structure and outline of the OpenStax free textbook. Microbiology BIOL 2215K focuses on learning the basics of infectious agents, and clinically significant diagnostic medical microbiology; whereas, General Microbiology BIOL 3340 focuses on a general overview including environmental, clinical, probiotics and specialized assays.
Trial the use of the free online textbook. Evaluate the content of the free textbook and compare it to the content of the current textbook.
Quantitatively evaluate student success in meeting learning objectives for these courses. Students will be given the same tests on content in Fall 2017 with the current textbook, and Spring 2018 with the OpenStax textbook.
If the OpenStax textbook is positively reviewed by team members, then there will be a department-wide adoption of this book for all Microbiology courses (BIOL 2215K and BIOL 3340K).
Share feedback to other faculty teaching these courses and share course materials derived from using the free online textbook.
Implement surveys to determine student satisfaction with the new course design and the cost of course materials.

Statement of Transformation:

The two microbiology courses offered at Dalton State College (DSC) are BIOL 2215K and BIOL 3340K. BIOL 2215K is primarily for pre-health professional students such as nursing and pharmacy. BIOL 3340K is an upper level course offered to biology majors. Approximately 200 students per academic year will benefit from this transformation.
DSC serves many economically disadvantaged students in Northwest Georgia (1). Many students are non-traditional with families and cannot afford expensive textbooks. Many students do not buy the textbook for these courses due to the cost ($266). Thus, many students are at a disadvantage without this resource material (2).
Using an OpenStax textbook will guarantee that all students have access to a textbook for these courses. Therefore, implementation of the free online text should have a positive impact on student success.
The transformative impact will serve all faculty teaching these courses at DSC. Sharing the course materials redesigned through this transformation will ensure that students are being taught the learning outcomes with the same content and rigor.
Working as a team in the Natural Sciences department with this redesign to a free textbook will promote more discussion among the microbiology faculty. This transformation will engage sharing high-impact course activities and exercises, thus benefiting all of our students in the STEM and health professional fields.

Transformation Action Plan:

Redesign Microbiology course syllabi for BIOL 2215K and BIOL 3340K
Overhaul lecture materials for both courses to correspond with the OpenStax textbook for Microbiology.
Administer experiential surveys to students using the current text compared to the free text.
Evaluate GPA, DFW rates, course learning outcomes; compare among students using current textbook and free textbook.
Direct student to the OpenStax online free textbook Internet site to obtain course materials.
Provide students with free lecture materials including PowerPoints, notes, and homework assignments on Georgia view.
Coordinate content of lecture materials among team members to ensure all sections cover course learning outcomes comparably.

Quantitative & Qualitative Measures:	Qualitative Measures:Students in BIOL 3340K sections will have a graded assignment in which they will compare selected chapters from each textbook and complete a survey on comprehension of text and figures. This will be done in two sections in different semesters: during Fall 2017 using the current textbook and Spring 2018 using the OpenStax textbook. Surveys from each semester will be compared.In Fall 2017, students will be using the current textbook (Talaro and Chess). During Fall 2017, 3 surveys will be given to students at various points throughout the semester to access their satisfaction with this text.In Spring 2018, we will switch to the OpenStax textbook. Then the same 3 surveys used in Fall 2017 will be used to access the OpenStax book. Surveys from Fall 2017 and Spring 2018 will be compared.Team members will survey the ease of transition to the new OpenStax Microbiology text and compare content and organization to that of the current textbook.Faculty members teaching the course will be surveyed on satisfaction with OpenStax. Quantitative measures:Students in BIOL 2215K and BIOL 3340K will be given tests at the beginning and close of the semester (pre/post tests) to access their success in learning the objectives for both courses. This data will be compared between Fall 2017 (current text will be used) and Spring 2018 (new text will be used).Grade distribution data and DFW rates will be evaluated and compared between students using the current textbook in Fall 2017 and the new OpenStax textbook in Spring 2018.

Timeline:

June 5, 2017: Attend kick-off training/implementation meeting

August-December 2017

Modify syllabi and course materials to align with OpenStax framework for implementation in Spring 2018.

August 2017:

Create student experience surveys over the current textbook (Talaro and Chess) to give at various points throughout semester

Give Pretest

BIOL 3340K students will be given an assignment to compare text book chapters

September 2017: Survey students with Initial experience survey to gauge first impressions of current textbook (Talaro and Chess)
Late October 2017: Poll students with mid-semester survey over current text
December 2017:
Poll students with final survey over current text
Give Posttest
Prepare status report for ALG
December 15, 2017: Submit Status Report
January 2018:
Modify surveys from previous semester to give again in Spring 2018. This time the surveys will address the OpenStax textbook
Give Pretest
BIOL 3340 students will be given an assignment to compare text book chapters
February 2018: Poll students with initial experience survey to gauge first impressions of OpenStax text
End of March 2018: Poll students with mid-semester survey over OpenStax text
Late April 2018:
Poll students with final survey over OpenStax text
Give Posttest
Prepare final report for ALG
May 1 2018: Submit Final Report

Budget:

$5,000 to each team member: Dr. April Anne Kay, Dr. Leah Howell, and Professor Susan Burran. This funding will serve as salary for redesigning courses, preparing surveys, creating new assignments for textbook comparison, analyzing quantitative and qualitative data, and preparing final report.

$800 for project expenses including travel to the grant kick-off and training and auxiliary services such as printing surveys.

Sustainability Plan:

Depending on demand for the Microbiology courses, there are 9-11 sections taught each academic year. Typically, sections are full, thus we serve over 200 students a year. By offering a free online textbook through OpenStax, we can potentially save our students $53,200 a year.

Upon positive evaluation of the OpenStax textbook, this book will be adopted across all sections and all courses of Microbiology at DSC. Thus, the sustainability for this transformation will be initiated across all Microbiology sections taught at DSC. This will result in 100% savings to our students. These courses also use lab manuals created by Dalton State Faculty and are available at no cost for students. This will have an enormous impact on our college: offering low-cost tuition (1) and courses with no additional costs will be appealing for students looking

for an affordable first destination college. In addition, many of our students struggle to stay in school because of financial hardships. This transformation will help relieve that population of some of the financial burden in hopes to retain their registration in school (2).

April 25, 2017

Re: ALG Proposal, Dr. April Kay

Dear Committee Member:

Provost and VP for Academic Affairs
650 College Drive
Dalton, GA 30720
706-272-4420 / 706-272-2670
www.daltonstate.edu

I am writing in support of the application for grant funds by Dr. April Kay, Associate Professor in Biology at Dalton State College (DSC). Dr. Kay is leading a team of faculty to develop an OpenStax textbook to address several courses in the Natural Sciences. These include Microbiology and General Microbiology which are offered during different semesters at DSC and affect 200+ students in up to nine sections. The current text, which costs more than $250 would be replaced thereby saving students a great deal of expense.

As more students are entering STEM fields, it behooves faculty, programs and colleges to develop methods of effective teaching along with passing on substantial savings in areas that often require sizable investments of precious dollars to ensure access to curriculum. In addition to the STEM fields, Microbiology is a course utilized by a large number of potential health professionals. As the workforce groups in Northern Georgia have identified the health fields as those of great need, it is important that the college provide students with opportunities that will enhance their learning while remaining affordable. Since Northern Georgia represents a considerable underserved population, this initiative becomes even more critical. Dalton State College is presently on the cusp of being identified as a Hispanic Serving Institution. As of this date enrollment is at 24.8% and there is

reason to believe that college will exceed the 25% tipping point.

The request for funding by Dr. April and her team of faculty is one that should be considered as part of the mission that supports these grants. The populations served in Dalton as well as the emphasis on health professions and STEM make this application an extremely strong one. I support it with great enthusiasm. If you have any questions, please feel free to contact me at 706-241-2491.

Sincerely,

Patricia M. Chute, Ed.D.
Provost and Vice President
for Academic Affairs

REFERENCES

1. Wheeler, M. (2016, July 28). Dalton State Remains One Of Most Affordable Colleges In Nation. Retrieved from http://www.chattanoogan.com/2016/7/28/328883/Dalton-State-Remains-One-Of-Most.aspx.

2. Grasgreen, A. (2014, January 28). Options Don't Stem Textbook Woes. Retrieved from https://www.insidehighered.com/news/2014/01/28/textbook-prices-still-crippling-students-report-says

OpenStax Microbiology Textbook Redesign

Dr. April Kay, Associate Professor of Biology, akay@daltonstate.edu

Professor Susan Burran, Assistant Professor of Biology, Sburran@daltonstate.edu

Dr. Leah Howell, Assistant Professor of Biology, Lhowell@daltonstate.edu

Dalton State College

Proposal Narrative

1.1 PROJECT GOALS

- Provide a free open access textbook to students taking courses BIOL 2215K and BIOL 3340K at Dalton State College. This will eliminate high cost textbooks to our students that will benefit all of our students, especially our economically challenged population.

- Redesign lecture materials for these courses using the structure and outline of the OpenStax free textbook. Microbiology BIOL 2215K focuses on learning the basics of infectious agents, and clinically significant diagnostic medical microbiology; whereas, General Microbiology BIOL 3340 focuses on a general overview including environmental, clinical, probiotics and specialized assays.

- Trial the use of the free online textbook. Evaluate the content of the free textbook and compare it to the content of the current textbook.

- Quantitatively evaluate student success in meeting learning objectives for these courses. Students will be given the same tests on content in Fall 2017 with the current textbook, and Spring 2018 with the OpenStax textbook.

- If the OpenStax textbook is positively reviewed by team members, then there will be a department-wide adoption of this book for all Microbiology courses (BIOL 2215K and BIOL 3340K).

- Share feedback to other faculty teaching these courses and share course materials derived from using the free online textbook.

- Implement surveys to determine student satisfaction with the new course design and the cost of course materials.

1.2 STATEMENT OF TRANSFORMATION

- The two microbiology courses offered at Dalton State College (DSC) are BIOL 2215K and BIOL 3340K. BIOL 2215K is primarily for pre-health professional students such as nursing and pharmacy. BIOL 3340K is an upper level course offered to biology majors. Approximately 200 students per academic year will benefit from this transformation.
- DSC serves many economically disadvantaged students in Northwest Georgia (2). Many students are non-traditional with families and cannot afford expensive textbooks. Therefore, many students do not buy the textbook for these courses due to the cost ($266). Thus, many students are at a disadvantage without this resource material (1).
- Using an OpenStax textbook will guarantee that all students have access to a textbook for these courses. Therefore, implementation of the free online text should have a positive impact on student success.
- The transformative impact will serve all faculty teaching these courses at DSC. Sharing the course materials redesigned through this transformation will ensure that students are being taught the learning outcomes with the same content and rigor.
- Working as a team in the Natural Sciences department with this redesign to a free textbook will promote more discussion among the microbiology faculty. This transformation will engage sharing high-impact course activities and exercises, thus benefitting all our students.

1.3 TRANSFORMATION ACTION PLAN

- Redesign Microbiology course syllabi for BIOL 2215K and BIOL 3340K
- Overhaul lecture materials for both courses to correspond with the OpenStax textbook for Microbiology.
- Administer experiential surveys to students using the current text compared to the free text.
- Evaluate GPA, DFW rates, course learning outcomes; compare among students using current textbook and free textbook.
- Direct student to the OpenStax online free textbook Internet site to obtain course materials.
- Provide students with free lecture materials including PowerPoints, notes, and homework assignments on Georgia view.
- Coordinate content of lecture materials among team members to ensure all sections cover course learning outcomes comparably.

1.4 QUANTITATIVE AND QUALITATIVE MEASURES

- **Qualitative Measures**:
  - Students in BIOL 3340K sections will have a graded assignment in which they will compare selected chapters from each textbook and complete a survey on comprehension of text and figures. This will be done in two sections in different semester: during Fall 2017 using the current textbook and Spring 2018 using the OpenStax textbook. Surveys from each semester will be compared.

  - In Fall 2017, students will be using the current textbook (Talaro and Chess). During Fall 2017, 3 surveys will be given to students at various points throughout the semester to access their satisfaction with this text.

  - In Spring 2018, we will switch to the OpenStax textbook. Then the same 3 surveys used in Fall 2017 will be used to access the OpenStax book. Surveys from Fall 2017 and Spring 2018 will be compared.

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1.5 TIMELINE

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1.8 REFERENCES & ATTACHMENTS

1. Grasgreen, A. (2014, January 28). Options Don't Stem Textbook Woes. Retrieved from https://www.insidehighered.com/news/2014/01/28/textbook-prices-still-crippling-students-report-says.

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