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Summer 2018

General Microbiology (Dalton State)

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Grants Collection
Dalton State College

UNIVERSITY SYSTEM OF GEORGIA

April Kay, Susan Burran, and Leah Howell

General Microbiology

Affordable Learning Georgia

Georgia's Virtual Library GALILEO
An Initiative of the University System of Georgia

Grants Collection

Affordable Learning Georgia Grants Collections are intended to provide faculty with the frameworks to quickly implement or revise the same materials as a Textbook Transformation Grants team, along with the aims and lessons learned from project teams during the implementation process.

Each collection contains the following materials:

- Linked Syllabus
  - The syllabus should provide the framework for both direct implementation of the grant team's selected and created materials and the adaptation/transformation of these materials.
- Initial Proposal
  - The initial proposal describes the grant project's aims in detail.
- Final Report
  - The final report describes the outcomes of the project and any lessons learned.

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Initial Proposal

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

University System of Georgia · An Equal Opportunity/Affirmative Action Program Institution

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.

  - 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.

1.5 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
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- September 2017: Survey students with Initial experience survey to gauge first impressions of current textbook (Talaro and Chess)
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    - 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
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    - 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
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- May 1 2018: Submit Final Report

1.6 BUDGET

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1.7 SUSTAINABILITY PLAN

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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.

2. 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.

Syllabus

BIOL 2215- Microbiology Spring 2018

Instructor: Dr. Leah Howell
Office: Sequoya 227
Email: Lhowell@daltonstate.edu

Office Hours: M (9:15-10:15), T (10:40-12:15, 2:05-3:05), R (10:40-3:05)
You may also make an appointment if office hours do not fit your schedule.

Required Materials:

Textbook: Free online OpenStax textbook: https://openstax.org/details/books/microbiology
Lab manual: Lab handouts will be posted on GaView.
Other course materials: i-Clicker-1 or i-Clicker-2 (You may use the cell phone app at your own risk- if you lose internet connection, this will not work.)

COURSE OBJECTIVES: Upon completion of this course, you should be able to:

1. Demonstrate effective use of a microscope, demonstrate knowledge of laboratory safety, and demonstrate laboratory techniques required to isolate, culture, and identify microorganisms.
2. Demonstrate an understanding of the biology of viruses, bacteria, fungi, and protozoan and animal parasites; demonstrate an understanding of the basic procedures used in the culture, identification, and control of microorganisms.
3. Demonstrate an understanding of the pathogenesis, epidemiology, diagnosis, and treatment of microbial diseases of humans; demonstrate an understanding of the human immune system, disorders of the immune system, and uses of immunological techniques.

Grading- <u>Your grade in the course is composed of the following:</u>

- 3 lecture exams (worth a total of 40%)
- Cumulative final exam (20%)
- Lecture clicker questions (10%)
- Lab attendance (5%)
- Lab report "Identification of an Unknown Bacterium" (10%)
- Turn in lab sheets (print from GaView) with all pictures drawn and questions answered (5%)
- 2 lab exams (worth a total of 10%)

About clicker questions: You need to purchase an i-clicker as soon as possible (I recommend the i-clicker-2 as it is more user friendly). You need to register your clicker by going to iclicker.com. Go to register a clicker. Select iclicker classic and then select that we are not using an LMS. It will then let you put in your name and iclicker # (the number below the barcode). If you are asked for a credit card number, simply email me the number below the

barcode on your i-clicker and I will register you for free. You should not have to pay to register your clicker, but if you purchase a used clicker, you may be asked to pay for registering. I can manually register you for free. As we finish chapters in class, I will often (not always) give you a clicker quiz over the chapter to make sure you have been listening in class. This may or may not be open note. I will also imbed clicker questions into my lectures that will count equally to those on quizzes.

About labs: Attendance is mandatory! Attendance will be taken at the beginning of lab. If you are late, you will be counted absent. I will give you one "free" late/leave early lab where being a few minutes late or leaving a few minutes early will not count against your attendance grade. Missing labs may result in difficulty in future labs. Lab policy is to complete the lab with your group as instructed. All members are responsible for conducting labs while always thinking "Safety First!" All members of the group must participate fully. You must work well together, and all members must remain in lab until finished; this includes clean-up. Points may be deducted from your grade if problems arise and persist.

About Exams: Exams will be multiple choice. Your final exam grade will replace your lowest exam grade (if it will help you to do so).

ALG grant for microbiology

Microbiology at Dalton State has become involved in an initiative to provide low cost/no cost textbooks to students in Georgia (ALG grant- Affordable Learning Georgia grant). I will be asking you to complete surveys throughout this semester to access the current textbook and to compare it to other textbooks you have been required to purchase in your time as a college student. I appreciate you giving your full and truthful feedback in this process.

Absence/Makeup Policy:

Class attendance and makeups: You are ***strongly advised*** to attend all class meetings. The material on the exams comes from class lectures, so it is to your benefit to attend all classes. If class is missed, you will be responsible for obtaining material and announcements. I will begin class promptly. Please be on time out of courtesy to me and your classmates. Announcements and clicker questions are often given at the beginning of class. Your grade on the final exam will be used to replace your lowest exam score (assuming, of course, the final exam score is higher).

No make-up exams will be given except for in certain circumstances which are noted below. I will determine if your excuse for missing an exam qualifies you for a make-up (i.e. planning a vacation during an exam is not a valid excuse). If making up an exam, you must do so before the next class period. However, your highest exam grade replaces your lowest exam grade, so you will not have a

zero on your missed exam if you cannot make it up in time (unless you miss more than one exam).

Lab attendance and makeups: Attendance in lab is mandatory, there will be no make-ups available for the material, and you cannot make up lab exams except for in certain circumstances as noted below.

What qualifies you for a makeup?: Makeups on lab exams, lab attendance, and lecture exams are permitted in cases of sickness (with doctor's note), military required service, or DSC approved activities or events. If your absence fits into one of these categories, please let me know ASAP.

A Few Odds and Ends:

Please turn off cell phones or leave them on silent in lecture and lab. Texting is not allowed in lecture or lab because it is distracting to me and other students. If you have a situation where you absolutely must use your phone, please leave the room to do so.

Questions and discussion in class and lab are encouraged – this is *your* class and I want you to participate! On the other hand, private conversations are distracting to others and to me. If your private conversations become excessive, I will warn you. The next time it happens, you will be asked to leave class for the day.

Please do not hesitate to stop by my office hours or make an appointment if you have questions.

Extra credit is neither a privilege or a right. It is my prerogative as the professor to offer extra credit questions or opportunities to the entire class. I do not allow individual students to do projects or assignments for extra credit.

Emergency Instructional Plan
If the college is closed for inclement weather or other conditions, please consult the lecture schedule located in this syllabus posted on GAView and read the chapter on the topic scheduled for lecture and examine and study thoroughly the PowerPoint slides.
Compensatory make-up days may be required if the total number of days lost exceeds the equivalent of one week.

DROP/WITHDRAWAL POLICY: Revised June 25, 2007

Students wishing to withdraw from the course may do so without penalty until the mid-point of the semester, and a grade of **W** will be assigned. After that point, withdrawal without penalty is permitted only in cases of extreme hardship as determined by the Vice President for Academic Affairs; otherwise a grade of **WF** will be issued. (Please note: At Dalton State College, the Hardship Withdrawal process requires students to withdraw from all classes at the college.) The proper form

for dropping a course is the **Schedule Adjustment Form**, which can be obtained at the Enrollment Services Office in Westcott Hall. The Schedule Adjustment Form must be submitted to the Enrollment Services Office. Students who disappear, completing neither the official withdrawal procedure nor the course work, will receive the grade of **F**. **This instructor will not withdraw students from the class. Withdrawal from any Dalton State College classes is a student responsibility**. The last day to drop classes without penalty is **March 23.**

COMPLETE WITHDRAWAL STATEMENT: REVISED JULY 17, 2012
"The proper form for withdrawing from all classes at the college after the official drop/add period but before the published withdrawal date is the **Schedule Adjustment Form**. *All students* must meet with a staff member at the Office of Academic Resources in the Pope Student Center to initiate the withdrawal process. After meeting with the staff member, students will then finalize the withdrawal process in the Enrollment Services Office."

ETHICAL CONDUCT
Academic Dishonesty: Cheating and plagiarism are a part of the Dalton State Code of Student Conduct, which can be found in its most updated form at http://daltoncampuslife.com/student-conduct/. ANY assistance provided or given in any way toward work in a class constitutes cheating, unless such behavior is authorized by your instructor. Additionally, any use of the ideas or words of others should be noted, or this will constitute plagiarism. For more details on what Dalton State considers to be Academic Dishonesty, please review the Code of Student Conduct. Instructors will assign grades based on classroom performance. Additional sanctions may be provided as a learning experience from the Student Conduct process. Borrowing another students' work or collaborating on an assignment not designated as collaborative is unacceptable. Furthermore, presenting work that was completed for another class, while not plagiarism technically, is not the same as presenting original work, and is therefore unacceptable.

Classroom Behavior: Dalton State is committed to respect via the Roadrunner Respect pledge. To learn more, please visit http://daltoncampuslife.com/roadrunner-respect/.

"I pledge to show my fellow Roadrunner students, faculty, staff, and administration respect by treating others the way they want to be treated and by thinking about others first before making decisions that might affect them.

OFFICIALLY APPROVED DSC GROUPS AND ACTIVITIES: (Effective Fall 2013)
When students are engaged in officially approved Dalton State groups or activities that require them to participate in events off campus during school days, they shall be treated similarly to any faculty or staff member acting in that same capacity. Thus, just as faculty and staff have excused absences from their regular work schedules, students shall be excused from class without penalty

if they are off campus representing Dalton State College in an approved, official capacity during their regular class time. Examples include presenting a paper or otherwise participating in a conference, attending a University System student affairs event, participating in intercollegiate competition (athletic or academic), participating in an approved field trip, etc. Just as faculty and staff members are required to submit Request to Travel forms for approval, in order to be excused, the student needs to provide the following information to the instructor prior to the date when he/she will be absent from class:

- notification of the event (in the case of athletics, students should provide each instructor a schedule of away events at the beginning of the semester or as soon as possible after the schedule is available);
- estimated time of departure from and return to campus (for example, if a student has an away game in the evening and will not be leaving campus until 3:00, he/she will not be excused from classes prior to that time on that day; similarly if the event is in the morning and the student will be returning to campus during the day, he/she is expected to attend any class scheduled after the return trip); and
- contact information for the person or organization sponsoring/authorizing the student's participation in the event.

The student shall be allowed to make up any work missed during the time he/she is off campus representing DSC in an official capacity. He/she shall discuss what will be missed with the instructor and make arrangements to make up any assignments, tests, presentations, etc. that were scheduled on that date.

DISABILITY SUPPORT SERVICES: (Revised July 30, 2014)

Students with disabilities or special needs are encouraged to contact Disability Support Services. In order to make an appointment or to obtain information on the process for qualifying for accommodations, the **student** should visit the Disability Support Services Library Guide at http://www.libguides.daltonstate.edu/Disability or contact the Coordinator of Disability Support Services. Contact information:

Andrea Roberson, Coordinator

Pope Student Center, lower level

706/272-2524

aroberson@daltonstate.edu

http://libguides.daltonstate.edu/c.php?g=24716&p=149667

Workforce Innovations Opportunity Act: Questions regarding students receiving financial assistance through the Workforce Innovations Opportunity Act should be directed to 706-295-6840.

TITLE IX INFORMATION:

Sex Discrimination, Harassment, & Assault

Sexual harassment is unwelcome, gender-based verbal or physical conduct that is sufficiently severe, persistent or pervasive that it has the effect of interfering with, denying or limiting someone's ability to participate in or benefit from the college's educational program and/or activities, and is based on power differential (quid pro quo), the creation of a hostile environment, or retaliation.

Sexual misconduct is a form of sexual harassment prohibited by Title IX. Sexual misconduct refers to "physical sexual acts perpetrated against a person's will or where a person is incapable of giving consent due to the victim's use of drugs or alcohol. An individual also may be unable to give consent due to an intellectual or other disability." Sexual misconduct includes dating violence, domestic violence, rape, sexual assault, sexual battery, stalking, and sexual coercion.

Reporting Options

Call 911 if you are in an emergency situation

Dalton State Public Safety (this report is not confidential)
Tech Building- Upper Level - 706-272-4461
Online Sexual Assault Report -
https://dynamicforms.ngwebsolutions.com/ShowForm.aspx?RequestedDynamicFormTemplate=3fe5724c-a8bd-4a31-9c25-1a3d35110a51

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Coordinator for Student Responsibility & Service/ Deputy Title IX Coordinator
Pope 113
balee@daltonstate.edu, 706-272-2999

Report Title IX complaint involving Faculty or Staff in person:

Faith Miller, Human Resources
Director of Human Resource/ Title IX Coordinator
Memorial 122
fmiller@daltonstate.edu 706-272-2034

If you would like to talk with someone confidentially:
Dalton State Counseling & Career Services, Academic Resources
Lower Pope
706-272-4429
counseling@daltonstate.edu
http://libguides.daltonstate.edu/Counseling

HB 280 Information

For information regarding HB 280 (campus carry) please visit the following website
http://www.usg.edu/hb280

Tentative Class Schedule

Week of	Topic	Chapters
9-Jan	An Invisible World How We See the Invisible World	1,2
16-Jan	The Cell Prokaryotic Diversity	3, 4
23-Jan	Prokaryotic Cells	4
30-Jan	Eukaryotic Cells Acellular	5, 6
6-Feb	Acellular **Exam 1- Thurs Feb 8**	6
13 Feb	Biochemistry Metabolism	7, 8
20-Feb	Metabolism Growth	8, 9
27-Feb	Genome Genetics	10, 11
6-March	Genetics Genetic Engineering	11, 12
20-March	**Exam 2- Thurs March 22** Controlling Growth Drugs	13, 14
27-March	Mechanisms of Pathogenicity Diseases and Epidemiology	15, 16
3-Apr	Innate Immunity Adaptive Immunity	17, 18
10-Apr	Immune Disorders Lab Methods/Immune Response	19, 20
17-Apr	**Exam 3-Thurs April 19** Diseases	21-26
24-Apr	Diseases	21-26
	Final exam date TBA	

Tentative Lab Schedule

Day	Lab #	Topic(s)
Jan 16	Lab 1	Lab Orientation, Safety, Microscope
Jan 23	Lab 2	Aseptic technique, Inoculations, Simple Stains
Jan 30	Lab 3	Microbial Morphology and Gram Stain
Feb 6	Lab 4	Acid fast and endospore stain
Feb 13	Lab 5	Bacterial Motility, Streak Plate, and Spread Plate
Feb 20	Lab 6	Catch up and Practice Day for Exam 1
Feb 27	Lab 7	Lab Exam 1
March 6	Lab 8	Selective Media, Biochemical Tests, Serial Dilutions
March 20	Lab 9	Selective Media, Biochemical Tests
March 27	Lab 10	Work on Unknowns
April 3	Lab 11	Work on Unknowns
April 10	Lab 12	Work on Unknowns and Practice Day for Exam 2
April 17	Lab 13	Lab Exam 2
		Lab report and lab manual due in class- April 24

Schedule is subject to change at the discretion of the instructor.

General Microbiology
BIOL 3340K H
Syllabus

Instructor:
Dr. April Anne Kay
217 Peeples Hall
Office phone: 706-272-2669
Email: akay@daltonstate.edu

Office Hours:
Monday: 12:40-1:40 and 3pm-4pm
Tuesday: 3:30-4:30pm
Wednesday: 12:40-1:40 and 3pm-4pm
Thursday:1:30-4:30pm

Like me on Facebook: Dr. Kay's Announcements http://www.facebook.com/DrKayDaltonState

ALG grant for microbiology
Microbiology at Dalton State has become involved in an initiative to provide low cost/no cost textbooks to students in Georgia (ALG grant- Affordable Learning Georgia grant). I will be asking you to complete surveys and assign additional homework throughout this semester to access the current textbook. I appreciate you giving your full and truthful feedback in this process. There is point compensation for completion of these surveys and assignments.

Textbook: Openstax Microbiology

Lab manual: Lab handouts will be posted on GAview (GAV) or given during lab. You need a composition book, the kind that is **string bound**. You also need a glue stick or double sided tape to paste your labs in your notebook. NO STAPLES! They are a safety hazard. Notebooks with staples will not be accepted.

Other course materials: A natural fiber article to tie-dye and rubber bands to tie. Optional course material is an I Clicker.

Course description: Introduces students to the biology of viruses, bacteria, fungi, and protozoan and animal parasites. Teaches students the fundamental principles of microbiology with special emphasis on the relationships of microbes to man. Trains students to isolate, culture, and identify microbes in a laboratory.

Student learning outcomes

1. **Lab techniques**: Demonstrate effective use of a microscope, demonstrate knowledge of laboratory safety, and demonstrate laboratory techniques required to isolate, culture, and identify microorganisms.

2. **Microbiology and Laboratory Theory**: Demonstrate an understanding of the biology of viruses, bacteria, fungi, and protozoan and animal parasites; demonstrate an understanding of the basic procedures used in the culture, identification, and control of microorganisms

3**. Human-Microbe Interaction**: Demonstrate an understanding of the pathogenesis, epidemiology, diagnosis, and treatment of microbial diseases of humans; demonstrate an understanding of the human immune system, disorders of the immune system, and uses of immunological techniques.

Grading	**Points**
4 Lecture exams	400
Final exam (comprehensive)	100
Lab	300
Quizzes	200
TOTAL points possible	**1000 points**

Grade Scale
A = 90-100% = 900-1000 points
B = 80 - 89% = 800-899 points
C = 70 - 79% = 700-799 points
D = 60 - 69% = 600-699 points
F = < 60% = 599 points or less

Your grades will be posted on GAview. Your grade is determined on a point system. You can determine your grade at any time during the semester by taking the number of points earned, divide that by the total points possible and multiply by 100.

$$\frac{points\ earned}{possible\ possible} * 100 = \%\ grade$$

For example, you have earned a total of 330 points out of 500 your grade would be a 66% or a D.

Attendance Policy
Lectures: Attendance is **mandatory**. Attendance will be taken daily. Attendance must be taken daily for financial aid purposes. **If you have an excused absence: see make-up policy.** Most lecture quizzes are posted on GAV and should be completed before the exam. Pop quizzes may be given in lectures. This is to insure you are keeping up with the material. PowerPoint presentations and lab handouts will be posted on GAV.

Laboratories: **Attendance is mandatory**! Missing **three** labs may result in an automatic F for the entire course. **If you have an excused absence: see make-up policy.** Labs are cumulative, so missing one lab may result in difficulty in completing future labs. Lab policy is to complete the lab with your group as instructed. All members are responsible for conducting labs always thinking "Safety First!" All members of the group must participate fully. You must work well together, so pick your partner wisely, all members must remain in lab until finished; this includes clean-up. 10 point deduction from your grade if you do not work well, if you are disrespectful to a TA or myself when we are trying to help you, or if your area is not cleaned properly before you exit the lab.

***Exams*: Attendance is required! If you have an excused absence: see make-up policy.** You have 4 lectures exams. If your final exam grade is higher than any one of your lecture exam grades, it will be replaced in the final calculation of your grade.

***Final exam*: Attendance is required!** The final exam will be cumulative and will contain material covered in lecture and laboratory.

Make-up Policy*:*

Make-ups are allowed with a written excuse. The excuse must follow the student guidelines for an excuse absence. These include officially approved DSC group activity, documented court activity, documented military activity, or documented illness. **YOU have seven calendar days after absence to contact me via email or office call to arrange a make-up.** You will have up to 14 calendar days to make up the work from the day missed, unless this time surpasses the last day of classes then other arrangements will be made. If you know you will be absent and will not be able to make-up the work after the absence, you will have to make arrangements for you to take graded work earlier than the rest of the class.

If you miss lab and have an excused absence, you may be able to make it up depending on lab availability and if you contact me so I can reserve lab materials. SO if you know you are going to be absent, or if you are sick, let me know asap. If you do miss lab, you are still responsible for the following week's quiz.

Academic Honesty: Conduct such as cell phone use during an exam/ lab, roaming eyes, going to the restroom during an exam, or getting up out of your seat during a lab practical the student will be reported to the Associate Director for Student Conduct and Student Development for disciplinary action. I will recommend the disciplinary action to be a letter grade F for the course. Any type of cheating reported by a student or teaching assistance will undergo the same scrutiny. There is no tolerance for academic dishonesty.

Class policies

To create and preserve a classroom atmosphere that optimizes teaching and learning, all participants share a responsibility in creating a civil and non-disruptive forum. Students are expected to conduct themselves at all times in this classroom in a manner that does not disrupt teaching or learning.

- Please feel free to ask questions pertaining to the scope of the subject at appropriate times. Raise your hand if you have a question or comment.
- Classroom discussion should be civilized and respectful to everyone and relevant to the topic we are discussing. Classroom discussion is meant to allow us to hear a variety of viewpoints. This can only happen if we respect each other and our differences.
- Electronic devices in class are not needed and are often a distraction. So my policy is no electronic devices except for your I clicker. These devices include cell phones, laptops, I pads, and any other device including wrist e-devices. Any distractions such as cell phone sounds and/or vibrations, you using your device or conversations with your neighbor over something online using a lap-top or other device will result in a 10 point deduction for each infraction.

- **What is expected of you?** Be on time, turn off your devices, do not use devices during lecture and lab, take notes, ask questions, actively participate in class and lab exercises, and be respectful. If you do this, you are on your way to success.
- Class behavior should not be a problem if you follow the Golden Rule, treat others as you want to be treated. Human courtesy is simple and essential in all aspects of life. Working well with others in our community with a happy heart comes back to benefit you! Any infractions of disrespectful language to another student or to the professor will result in a point deduction. Depending on the severity of the incident, a student may lose up to 50 points for each disrespectful outburst and/or wasting class time. If a student shows a pattern of misbehavior, the student will be reported to the student conduct board. If the student's misbehavior is too severe, they may not be allowed to come back to class until after seeking appropriate counseling.

TITLE IX INFORMATION:

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Sexual harassment is unwelcome, gender-based verbal or physical conduct that is sufficiently severe, persistent or pervasive that it has the effect of interfering with, denying or limiting someone's ability to participate in or benefit from the college's educational program and/or activities, and is based on power differential (quid pro quo), the creation of a hostile environment, or retaliation.

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Reporting Options

Call 911 if you are in an emergency situation
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If you would like to report to Dalton State Administration: (this report is not confidential)

Report Title IX complaint online - http://daltonstate.edu/campus_life/student-conduct-about.cms

Report Student-on-Student Title IX complaint in person:

Brittnie Lee, Office of Student Life
Coordinator for Student Responsibility & Service/ Deputy Title IX Coordinator
Pope 113
balee@daltonstate.edu, 706-272-2999

Report Title IX complaint involving Faculty or Staff in person:

Lori McCarty, Human Resources
Director of Human Resource/ Title IX Coordinator
Memorial 122
fmiller@daltonstate.edu 706-272-2034

If you would like to talk with someone confidentially:
Dalton State Counseling & Career Services, Academic Resources
Lower Pope
706-272-4429
counseling@daltonstate.edu
http://libguides.daltonstate.edu/Counseling

Emergency Instructional Plan

If the college is closed for inclement weather or other conditions, please consult the lecture schedule located in this syllabus posted on GAView and study the chapter on the topic scheduled for lecture and examine and study thoroughly the PowerPoint slides. Once you have finished studying, complete the GAView quiz posted. If a lab is cancelled, read over the lab and complete a lab quiz posted on GAView. Questions on the subject matter should be addressed via email: akay@daltonstate.edu. Compensatory make-up days may be required if the total number of days lost exceeds the equivalent of one week.

Lab Schedule

Lab Number	Week	Topic
Lab 1	Jan 11	Lab Orientation, Safety, Handwashing lab
Lab 2	Jan 18	Aseptic technique, Inoculation and Simple Stains
Lab 3	Jan 25	Microbial Morphology and Gram Stain
Lab 4	Feb 1	Bacterial Motility, Acid fast and Endospore stain
Lab 5	Feb 8	Eukaryotic Lab
Lab 6	Feb 15	Media Preparation and Sterilization
Lab 7	Feb 22	Microbial metabolism
Lab 8	March 1	Pour plate and spread plate
Lab 9	March 8	Microbial Enumeration, colony counting
Lab 10	March 15	Control of Microbial Growth, Tie dye lab
Lab 11	March 22	Virology and Immunology
Lab 12	March 29	Gram-positive lab
Lab 13	April 5	Gram-negative Lab
Lab 14	April 12	Unknowns
Lab Final	April 19	Lab Final, notebooks and lab report due
Make-up	April 26	Make-up lab in case of class cancellation

Lecture Schedule

Week	Topics
Jan 11	Syllabus, An Invisible World
Jan 18	How We see the Invisible World **Quiz 1**
Jan 25	The Cell Prokaryotic Diversity
Feb 1	**Exam1**
Feb 8	Microbial Eukaryotes Acellular Pathogens
Feb 15	Microbial Metabolism **Quiz 2**
Feb 22	Microbial Growth
Mar 1	**Exam 2**
Mar 8	Control of Microbial Growth
Mar 15	Spring Break
Mar 22	Antimicrobial Drugs **Quiz 3**
Mar 29	Microbial Mechanisms of Pathogenicity Disease and Epidemiology
Apr 5	**Exam 3**
Apr 12	Innate Nonspecific Host Defenses Adaptive Host Defenses **Quiz 4**
Apr 19	Disease of the Immune System Laboratory Analysis of the Immune Response
Apr 26	**Exam 4**
May 3	**Final Exam 4:10-6:10 pm**

Schedule and syllabus subject to change at the discretion of the instructor.

Disability Support Statement

Students with disabilities or special needs are encouraged to contact Disability Support Services in Academic Resources. In order to make an appointment to obtain information on the process for qualifying for accommodations, the **student** must contact the Disability Support Specialist.

Contact information:
Andrea Roberson
Pope Student Center, lower level
706/272-2524
aroberson@daltonstate.edu

Drop/Withdrawal Statement

The last day to drop this class without penalty is **March 23, 2018**. You will be assigned a grade of **W**. After this date, withdrawal without penalty is permitted only in cases of extreme hardship as determined by the Vice President for Academic Affairs; otherwise a grade of **WF** will be issued. The proper form for withdrawing from all classes at the college after the official drop/add period but before the published withdrawal date is the Schedule Adjustment Form. Students who are assigned to the Academic Advising Center for advisement must meet with an advisor or staff member at the Academic Advising Center (1074 Liberal Arts Building) to initiate the withdrawal process. All other students must meet with a staff member or advisor at the Office of Academic Resources in the Pope Student Center to initiate the withdrawal process. After meeting with the staff member or advisor, all students will then finalize the withdrawal process in the Financial Aid Office. Students who fail to complete the official drop/withdrawal procedure will receive the grade of **F**. **Withdrawal from class is a student responsibility**. The grade of **W** counts as hours attempted for the purposes of financial aid.

I have read, understand, and agree to the above policies and syllabus for BIOL 3340K General Microbiology with Professor Dr. April Anne Kay for Spring 2018.

Signed _____ Print name_____

Phone:_____

Final Report

Affordable Learning Georgia Textbook Transformation Grants

Final Report

General Information

Date: May 22. 2018

Grant Round: 9

Grant Number: 69268

Institution Name(s): Dalton State College

Project Lead: Dr. April Anne Kay, Associate Professor of Biology, Natural Sciences, akay@daltonstate.edu

Team Members:

(1) Professor Susan Burran, Associate Professor of Biology, Natural Sciences, sburran@daltonstate.edu

(2) Dr. Leah Howell, Assistant Professor of Biology, Natural Sciences, lhowell@daltonstate.edu

Course Name(s) and Course Numbers: Microbiology 2215K and General Microbiology 3340K

Semester Project Began: Summer 2017

Final Semester of Implementation: Spring 2018

Total Number of Students Affected During Project: 71

1. Narrative

A. Describe the key outcomes, whether positive, negative, or interesting, of your project. Include:

- Summary of your transformation experience, including challenges and accomplishments
- Transformative impacts on your instruction
- Transformative impacts on your students and their performance

Overall, the project was very positive. Students and professors alike were able to use the OpenStax textbook with ease and could navigate through the e-book effortlessly. It was interesting in the fact that there were many more diagrams, pictures, and tables than what the old paper textbook provided. This was a great feature to OpenStax! Professors were able to learn new concepts to teach and explain to their students thanks to the descriptions and detail in the OpenStax textbook.

It was a challenge to create new PowerPoint slides for every chapter. Before using this e-book, note pages and PowerPoints were created for the old textbook. Incorporating the new textbook into lecture was demanding. New PowerPoints had to be made that meshed all the new information, pictures, and diagrams with some of the old material that was still relevant to the course. This took a lot of time. However, additional diagrams and pictures meant that lecture time was spent more on explaining concepts instead of repeating worded information on a slide. This is believed to help students in the future at really understanding what professors are teaching instead of just memorizing information. Concept knowledge will help the student when he or she goes to take a graduate or pre-professional evaluation. This Final Report was also a challenge due to the time it took to complete and to provide accurate and true findings.

The majority of student survey responses showed how grateful they were for a free textbook that they could take along with them anywhere they went. Also, many students mentioned how much they preferred the OpenStax textbook just based on the layout and ease of use and accessibility of the textbook. Although there was about the same performance in students from previous semesters using a different textbook compared to the new OpenStax textbook, the students preferred to learn out of OpenStax.

B. Describe lessons learned, including any things you would do differently next time.

The only thing we would do differently would be to have all PowerPoints prepared and updated before the semester began. Time constraints prevented all participants from completing this task prior to the initiation of the project.

2. Quotes

1. “I very much prefer the free online textbook version. I have spent a lot of money on college textbooks over the years. Any help is greatly appreciated.”
2. “A free online textbook is better. Physical textbooks are bulky and expensive.”
3. “I prefer the online textbook to reduce the cost.”
4. “Openstax was not only easier to navigate but also did not talk completely over my head.”
5. “The organizations of the chapter, subheads, and book overall allowed for the reader to be both intrigued, engaged and challenged.”

3. Quantitative and Qualitative Measures

3a. Uniform Measurements Questions

Student Opinion of Materials: Was the overall student opinion about the materials used in the course positive, neutral, or negative?

Total number of students affected in this project: ___71_____

- Positive: ____65___ % of ___47_____ number of respondents
- Neutral: ____30___ % of ___ 47____ number of respondents
- Negative: ___4_____ % of ___47____ number of respondents

*Many students who answered that they had a neutral opinion of the textbook revealed that they never used it as a resource. Please reference attached surveys from students.

Student Learning Outcomes and Grades: **Was the overall comparative impact on student performance in terms of learning outcomes and grades in the semester(s) of implementation over previous semesters positive, neutral, or negative?**

Choose One:

- ___ Positive: Higher performance outcomes measured over previous semester(s)
- _✓ _Neutral: Same performance outcomes over previous semester(s)
- ___ Negative: Lower performance outcomes over previous semester(s)

Student Drop/Fail/Withdraw (DFW) Rates: Was the overall comparative impact on Drop/Fail/Withdraw (DFW) rates in the semester(s) of implementation over previous semesters positive, neutral, or negative?

Drop/Fail/Withdraw Rate:

5.6% of students, out of a total of 71 students affected, dropped/failed/withdrew from the course in the final semester of implementation.

Choose One:

- ___ Positive: This is a lower percentage of students with D/F/W than previous semester(s)
- ✓ Neutral: This is the same percentage of students with D/F/W than previous semester(s)
- ___ Negative: This is a higher percentage of students with D/F/W than previous semester(s)

3b. Measures Narrative

Student Learning Outcomes and Grades

The student success measures were very similar during the Fall 2017 semester (using the traditional textbook) compared to the Spring 2018 semester (using the OpenStax textbook). Very few students (2) withdrew from the course during the Fall 2017 semester; during the Spring 2018 semester, only one student failed to complete the course due to a medical issue. For Biology 2215K (pre-nursing Microbiology): the percentage of students receiving an A or B was higher during the Spring 2018 semester (85% of students) compared to the Fall 2017 semester (83%). The percentage of students receiving an A or B in Biology 3340K (Biology majors Microbiology) was lower during Spring 2018 (67% of students) in comparison with Fall 2017 (96%). Of note, the Biology 3340K course was taught as a hybrid during Spring 2018 and as a traditional course during Fall 2017: this may have been a contributing factor to the lower grades observed in that course during the semester of implementation.

The major learning objectives for Biology 2215K and Biology 3340K are demonstrating proper laboratory technique and theory, demonstrating an understanding of microbial biology, and demonstrating an understanding of the human immune system and interactions with pathogenic microbes. All three learning objectives were assessed successfully and our targets were met. Our objectives are assessed by giving a short test at the start of the semester and again at the close of the semester. There was marked improvement on these tests during Spring, indicating that the OpenStax textbook adequately assists students in accomplishing the learning objectives for the course.

Student Satisfaction

We questioned our students on their method of accessing the internet, their preferences for textbooks, whether textbooks were adequately used in their experience, and what consequences they experienced by not buying the textbook for a class (see Student Survey 1). Most students stated that they had access to a personal computer (98% in the Fall and 91% in the Spring). In the Fall 2017 semester, a high proportion of students (40%) indicated that they would not be willing to use an eBook, even if it would save them money. The rationale offered for this preference was that most students simply would rather have a physical copy of the book. For the Spring 2018, only 25% of students indicated that they would be unwilling to use an eBook, again citing their preference for a physical textbook. These responses indicate that students have access and, for the most part, are willing to use a digital textbook. Most students (67% in the Fall and 86% in the Spring) indicated that the required textbook was not used in at least one of their classes, and a surprising number of students (19% in the Fall and 39% in the Spring) indicated that the required textbook was not used in at least 5 of their classes. Students who responded to the surveys indicated that they have experienced the following negative consequences associated with expensive textbooks: not purchased the required textbook, dropped the course, received a poor grade or failed the course, or registered for fewer classes.

The responses to these questions indicate that students understand the necessity for utilizing the textbooks in courses as well as notice when the textbook is underutilized in the course.

Student satisfaction rated high with the OpenStax textbook: most students surveyed indicated that they were satisfied with the OpenStax textbook (31 of 47 students, or 66%; see Student Survey 2). This is a higher satisfaction rate than the previous semester with the traditional textbook (only 42 out of 76 students, or 55%). Students rated the ease with which one can search the OpenStax textbook as its greatest strength, followed by the fact that it is free and available online. Most students were able to access the textbook through multiple platforms: most commonly directly via the OpenStax website or by downloading and printing the PDF version of the chapters. For both the traditional and OpenStax textbooks, one of the frequently-cited weaknesses was that the students found the textbooks difficult to understand or containing too much information. Another issue for both textbooks is lack of access: 26% of students failed to access the textbook during the Fall 2017 semester and 29% of students did not access the textbook during the Spring 2018 semester.

Chapter 5 Side-by-Side Comparison

Students in Biology 3340K during the Spring 2018 semester were asked to complete a side-by-side comparison of Chapter 5 in the Talaro textbook to Chapter 5 in the OpenStax textbook. This chapter was chosen because it covered similar topics in both textbooks. The students were given a short test (37 questions) covering the content in both textbooks. They were then shown their grade on the test, and were asked to complete a reflection about their experience. To ensure students completed the assignment, they were graded based upon their completion of the test and questionnaire. This was a useful means of evaluation as students were able to directly compare textbook content within a narrow focus and gauge assets for both.

Students overwhelmingly preferred the OpenStax textbook, citing its strengths in multiple areas: comprehension of the language used, ease of navigation, and helpfulness of review resources. Most students (78%, or 17 of 22 students) even declared their preference of OpenStax to a physical textbook, which previous surveys indicated was contentious for many students. The majority of students mentioned specifically that they liked the “free” aspect of the OpenStax textbook: this may be a key factor for many students.

Professor Opinion

The professors who participated on this project were overall satisfied with either textbook (Talaro rated 7.8/10 and OpenStax rated 7/10). The major factor from the faculty was whether the instructor resources were helpful. Overall, the resources for the traditional textbook (Talaro) were better: the PowerPoint presentations were more robust, the test bank questions were better-developed, and the pictures/descriptions in the textbook were more thoughtful. There were some minor issues with the layout of the OpenStax but all agree that makes more sense for the pathogen unit (Chapters 21-26) to be organized by body system to a future health professional, which is the majority of our students.

4. Sustainability Plan

Starting in the summer of 2018 we are happy to say that we will continue to offer the free online OpenStax textbook for all students enrolled in a Microbiology class at Dalton State College. Students will have access to use the textbook in whatever ways that will help them succeed in the class. OpenStax is a perfect course material because it is online which requires little to no work to keep updated. Professors teaching this course will use this textbook to gather information and concepts that students need to know. Professors will continue working on their updated PowerPoints and mold them so that what is on them can be clearly referenced to the OpenStax book. As needed, professors can make changes to what is expected of the student based on the rigor of the class itself. For example, a 3000 level Microbiology student might need to know more in depth material than a 2000 level Microbiology student. This book is a low maintenance, low-cost learning material which is exactly what students and professors will benefit from in the years to come.

5. Future Plans

We were pleased to see how many students were relieved when they found out that their textbook for the semester was free. We try to keep everything at a low cost, including printing off labs for all my students. We understand the financial pressures our students have considering that many are non-traditional students trying to earn a degree. This textbook provides a quick and easy way for students to study and grasp concepts presented in class. In the future, we will continue to use OpenStax as our survey results showed a very high appreciation of it by the students.

At this time there are no planned presentations or publications of the work done on this project. Surveys of students will be kept and referenced when needed. The knowledge gained from this experience will always be remembered and the college will continue to use and enjoy the OpenStax textbooks.

We intend to address the issues surrounding students' failure to access the textbook and error in appreciating the value of their textbook. We propose to give a textbook-specific assignment that would be difficult for students to complete if they neglect to access their books. This will ensure that students know how to access their textbook. One suggestion is a textbook scavenger hunt in which students have to search the book for answers to questions. To help students understand how important it is to use their book to further their understanding of course content, some suggestions are to re-use a few chapter review questions on each exam. Additionally, we could assign review questions ahead of lecture that would require students to reference the textbook; students would be quizzed on these review questions randomly during lecture (perhaps using the iClicker technology).

In the future, we propose to offer our lecture presentations and some original test questions to OpenStax in order to round out their instructor materials, since we felt that was a major weakness with adopting the OpenStax textbook.

6. Description of Photograph

Pictured left from right are the grant recipients: Professor Susan Burran, Dr. April Anne Kay (project lead), and Dr. Leah Howell.