

Affordable Learning Georgia Textbook Transformation Grants
Final Report for Mini-Grants

General Information

Date: 12/21/18

Grant Round: **10**

Grant Number: **M11**

Institution Name(s): **Georgia College and State University**

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

Samuel Mutiti, Associate Professor of Geology/Hydrology, Biological and Environmental Sciences, samuel.mutiti@gcsu.edu

Christine Mutiti, Assistant Professor of Botany and Landscape Ecology, Biological and Environmental Sciences, christine.mutiti@gcsu.edu

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Donna Bennett, Associate Director of Collection & Resource Services, Ina Dillard Russell Library, donna.bennett@gcsu.edu

Project Lead: **Samuel Mutiti**

Course Name(s) and Course Numbers: **ENSC 1000**

Final Semester of Project: **Fall 2018**

If applicable to your project:

Average Number of Students Per Course Section: **50**

Number of Course Sections Affected by Implementation of Revised Resources: **4**

Total Number of Students Affected by Implementation of Revised Resources: **200**

1. Project Narrative

Describe the course of your revision or ancillary creation project, including

- *A summary of your project's purpose, plan, and timeline.*

The purpose of this work was to critically review, update and improve the ENSC 1000 ALG textbook that was written in 2015: <https://oer.galileo.usg.edu/biology-textbooks/4/>. The project also aimed to create more self-assessment questions in the form of end-of-chapter questions.

Timeline:

Jan. – July 2018:

Added content to Chapter 2 and 3 and merged them into a single chapter, updated graphics, end-of-chapter questions.

Split Chapter 8 into two chapters.

Revise Chapters 4 and 5 to incorporate new information.

July 2018:

Edited the book chapters for clarity, flow, readability, and accessibility

July – August 2018: Technical check, Creative Commons Attribution licensing, and uploading on Libguides

Fall 2018: Taught ENSC 1000, 4 sections (~200 students) using new material.

Dec. 2018: Assessment in ENSC 1000 course (all sections).

Dec. 2018: Analyzed assessment data.

- *The original works which were revised or added to, with links.*

Introduction to Environmental Sciences: <https://oer.galileo.usg.edu/biology-textbooks/4/>

- *A narrative description of how the project's plan was carried out.*

This was a fairly straight forward project plan to execute. The project was carried out by equally dividing the work among the team members. Each faculty member was responsible for working on at least two chapters. Once a chapter was updated and/or questions created they were shared with the rest of the team so that at least one more team member reviewed and edited the work further. This provided the team with an internal peer-review system. During the process the team was in constant communication to ensure that everyone was always on the same page. Upon completion the material was sent to our library team member who proof-red them further, checked and formatted them for accessibility and readability. The final product was then uploaded on LibGuide for students to access.

Most of the updates made to the textbook were previously identified by both faculty and students. All new figures and tables were counter checked for suitability and required permissions.

- *Lessons learned, including anything you would do differently next time.*

Through this project, we learned that the contents of the textbook need to be frequently updated to keep up with rapidly changing Earth environments, constantly shifting political and public opinions, and an existence of a variety of, and sometimes antagonistic, environmental policies. The book and its content, as well as its presentation, need to be continuously adjusted to match the learning styles and characteristics of the ever-changing student population, “generations”.

We also learned that most of our students (over 90%) are consistently using the textbook and over 80% find it either easy or moderately easy to read and understand. Most of the students who used the end-of-chapter questions found them useful. Unfortunately, only one third of the surveyed students actually used the self-assessment questions. We need to increase the number of students using these questions and as team we will spend next semester discussing the issue and devising ways to make more students use the questions in a meaningful and impactful way.

2. Materials Description

- *Describe all the materials you have created or revised as part of this project. These descriptions may be used in the [GALILEO Open Learning Materials](#) repository in the official description field.*

The GC Environmental Science (ENSC) program and Library faculty members (Samuel Mutiti, Christine Mutiti, Kalina Manoylov, Allison VandeVoort and Donna Bennett) reviewed and updated their ALG ENSC textbook: <https://oer.galileo.usg.edu/biology-textbooks/4/>.

The book was reorganized to increase readability and improve the flow of ideas, while also increasing accessibility. Chapter 8 (Water) was split into two separate chapters (Chapter 7 – “Water” and Chapter 8 - “Water Quality”). Chapter 2 (Population Ecology) and Chapter 3 (Human Demographics) were combined into a single chapter (Chapter 2 - Population Ecology and Human Demographics) while increasing the depth of content on this subject, particularly with respect to the human population. The other chapters were also updated with the latest information.

The quality of images was enhanced by replacing them with better images or using color schemes that work better for all readers. The team also created ancillary materials for the textbook (adding end-of-chapter questions to all chapters). At the end of the fall semester (December 2018) a survey was conducted to assess the effects of the updates on student learning. In this survey we assessed the accessibility, the ease of reading and understanding the content,

and the usefulness of the end-of-chapter questions and figures/illustrations. We also assessed the most common device used by students to access the textbook.

<http://libguides.qcsu.edu/ensc1000>

3. Materials Links

- *If you are hosting your materials in places other than GALILEO Open Learning Materials, please provide these links in this section. Otherwise, leave blank.*

4. Future Plans

- *Describe any planned or actual papers, presentations, publications, or other professional activities that you expect to produce that reflect your work on this project.*

We will spend time during this winter break digging deeper into the results of the survey and evaluating the impacts of the ancillary materials on individual student performance. We plan to collect more data next semester (spring 2019) before we make any more major edits to the book or present the findings of the work at a conference or publish in any media.

- *Describe any plans to revise or add to these materials in the future.*

We plan to continue adding the latest information and improving both readability and accessibility of the material. We also plan to continue creating other ancillary materials, such as quizzes and exam question pool for faculty.