

Affordable Learning Georgia Textbook Transformation Project for Introduction to Statistics

At

Albany State University (Round 16, #518) Final Report

Date: May 17, 2021

Grant Number: 518

Institution Name(s): Albany State University

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

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Course Name(s) and Course Numbers: MATH 2411 Introduction to Statistics

Project Lead: Zephyrinus Okonkwo, Professor of Mathematics, College of Arts and Sciences, Department of Mathematics and Computer Science Zephyrinus.okonkwo@asurams.edu

Semester Project Began: Fall 2020

Semester(s) of Implementation: Spring 2021

Average Number of Students per Course Section: 35

Number of Course Sections Affected by Implementation: 30

Total Number of Students Affected by Implementation: 1050

Total Number of Students Affected by Implementation: 409 (in spring 2021)

1. Narrative

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

Guided by the success the team members garnered in two previously funded Affordable Learning Georgia Textbook Transformation Grants, we applied and received this grant. The core goal of this project is to offer additional number of our students a high quality and affordable MATH 2411 Introduction to Statistics. The past four years have seen an increase in the number of students enrolling in MATH 2411-Introduction to Statistics at Albany State University. First, due the consolidation of old Albany State University and Darton State College, MATH 2411 has been attracting more students. Secondly, MATH 2411 could be taken by students to fulfill the math requirement for Area A2 in the core curriculum. Thirdly, as an alternative math pathway, non-STEM majors can take it to fulfill the math requirement in the core. Most non-STEM freshmen majors are being put in the Quantitative Reasoning course. A critical number of these students do not need Quantitative Reasoning and hence could use MATH2411 to fulfill that requirement.

Basically, this project offers a no-cost textbook course to our Introduction to Statistics students at Albany State University. It strengthens ASU's Strategic Core Goal of offering students high quality courses and programs at affordable costs. Furthermore, this project is in concert with the Board of Regents of the University System of Georgia (BOR) initiative of reducing the cost of education on the students and ensuring the offering of high-quality low cost courses. The data we will share in the sequel will exemplify that all the core goals of the project are attained.

In order to become more inclusive, our team increased the number of members in this grant to eight. The project team members taught about 75% of Introduction to Statistics course sections in fall 2020 and spring 2021. Here are the goals of the project:

1. To eliminate the cost of textbook and other course related materials to students by providing no-cost course materials, software, and free online textbook.
2. To strengthen student engagement in learning of MATH 2411 Introduction to Statistics, and to enhance student success and achievement in the course.
3. To motivate students' interest in the use of online based technology to solve real-life problems encountered in Statistics, including large scale data analysis using R-Studio.
4. To increase enrollment of students in Introduction to Statistics the provision of no-cost textbook and learning materials.
5. To create a standardized online Introduction to Statistics course by incorporating student-centered pedagogy, enriched learning resources, and assessments on a scalable instructional delivery platform.

For more than one hundred years, Albany State University has educated numerous young men and women from many and varied backgrounds and has championed the education of students who come from less affluent backgrounds. Lowering the cost of education has always been at the core of ASU's strategic goals. A perusal of our student profile indicates that more than eighty-five percent of our students receive one form of financial aid or another. By lowering or even eliminating the cost of some textbooks, we are contributing immensely to the lowering of cost of education for our students.

In order to ensure positive outcomes of the project, the project team worked with other faculty members within our department as well as other faculty members and departments outside our college. For more than ten years, many of our employment partners have been emphasizing the need to revise our curriculum to include additional quantitative courses, and Statistics was at the core of this request. The emergence of Data Science as core discipline has made the study of Introduction to Statistics most essential. Our team members were able to convince many students to take this course and further their understanding of applicable statistics by taking additional sequence courses such as Statistical Methods. Psychology program faculty have placed Introduction to Statistics as a core course. They determined that students who took Introduction to Statistics course outperformed their students who did not take it even in their program courses as statistics and its application are needed throughout the program.

Our team members collaborated by revising the syllabus and delineating what students needed to be covered in class lectures. Many of our team members were ***Study Table*** instructors, and used the Study Table sessions to strengthen students' quality time-on-task as well as collaborative learning. *The **Study Table** at Albany State University is a student-centered extended learning activity which provides one-stop center for all students seeking to improve their performance, achievement, engagement, and hence success in gate-keeper/ killer courses and almost-killer courses.*

One fundamental contribution to the success of the project is team collaboration, communication, and student-centeredness. Essentially, anecdotal information indicates faculty collaboration and communication enhances student success in multi-section courses as well as in programs. Student success and retention are very essential in the courses which address the Common Intellectual Experiences (the core courses). It holds true that once a student succeeds in these set of courses, that student will likely stay and attain his or her degree at Albany State University. This project makes a significant contribution to that endeavor. The development of MATH2411 Introduction to Statistics no-cost textbook course has enhanced student understanding, engagement, achievement, and interest in the course.

The COVID-19 pandemic continued to pose immense challenges during the 2020-2021 academic year. Many students attended classes in varied modalities: some attended face-to-face in small groups and had to attend synchronously some days in a week on Tru-Touch Technology powered by Cisco WebEx, another group chose to attend virtual only.

In fall 2020, some faculty members used our Introduction to Statistics OER textbook while some did not use it. For those who used, all the students had access to the course textbook and learning materials. 372 students enrolled in the course and the pass rate was 76%. In spring 2021, 409 students enrolled in the twelve sections of the course. The project team members taught nine sections of the course. 254 students enrolled in eight sections of the course (which we use to present this report). The pass rate (A, B, C) was 82% while the failure (D, F) rate was 18%.

The support from the Department, College, and Academic Affairs leadership enhanced our ability to refocus on student success, student progression, and degree completion in the major.

At the core of this initiative was sustained efforts made to increase the number of courses offered using Open Education Resources (OER) and low-cost or no-cost textbook.

In the next section, we discuss how this transformation experience was very effective and how this course has been redesigned and enhanced to meet the goals and outcomes of the project.

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

The Affordable Learning Georgia Textbook Project in Introduction to Statistics has enhanced student success and faculty collaboration. All students who took the course during spring 2021 had access to the free OER textbook and learning materials, including summary notes and PowerPoint Presentations. The project has encouraged conversations within the team and campus community on what faculty success should look like as we progress into the future. The team members worked collaboratively to create a welcoming environment for students, and hence enhanced student success in the course. The student success in this course, coupled with other student support activities like the Study Table, have had wider impact on student retention in the course, other courses and subsequently, in the major. Formative qualitative and quantitative data was collected, and this data helped shape the pathway for the success of this project.

2. TRANSFORMATION EXPERIENCE

The experience we gained through the affordable Learning Georgia Textbook Transformation Project in College Algebra and Quantitative Reasoning we garnered has guided our implementation effort for this project. Essentially, our team made up of Dr. Zephyrinus C. Okonkwo, Dr. Anilkumar Devarapu, Dr. Vijay Kunwar, Dr. Laxmi Paudel, Professor Anthony Smith, and Professor Taylor Wars received the ALG grant for MATH 1111 College Algebra in fall 2017. This enabled us to build an immense capacity and experience.

Several Board of Regents mandated projects, including Momentum Year and G2C, target the use of high impact practices and innovative and deliberate activities to enhance faculty and student engagement in learning, assessment, and advising. In addition, this was supported by the placing of freshmen in the foundation courses, including in their first Math course (College Algebra or Quantitative Reasoning), English, and other foundation courses in their first year. Included in this effort was the infusion of innovative pedagogy in instruction and the provision of out-of-class intensive academic support such as the Study Table. Many College Algebra and Quantitative Reasoning Sections had to have appended Co-Requisites, two-hour courses which enabled increased instructor-student contact time and enhanced problem-solving sessions. A central challenge which has affected these initiatives was the prohibitive cost of textbooks. Our student population could not afford the high cost of education, and in some cases, only about 15% of the students could purchase the textbook. The cost of textbooks impacted student success in many and varied ways, 1) the withdrawal rate from courses was high, 2) many students were unable to complete their assignments especially those which were given from the textbooks, 3) students with no textbook could not complete reading assignments given from the textbook thereby leading to shallow understanding of course content and concepts, 4) high failure rate resulted from lack of

textbooks. Over the years, MATH2411 Introduction to Statistics required that students take College Algebra or Quantitative Reasoning before taking it. This has helped to keep student success high in the course. For example, in fall 2020, 76% of students who took MATH2411 passed {with A, B, C}.

The Affordable Learning Georgia Textbook Transformation Grant for MATH2411-Introduction to Statistics avails us the opportunity to become more collaborative, focused, and deliberate in our pedagogical practices and a deeper focus on assessment of student learning outcomes of the course. Our project transformation could be summarized as follows.

	Goal	Status
1	To eliminate the cost of textbook and other course related materials to students by providing no-cost course materials, software, and free online textbook.	(i) MATH 2411 Introduction to Statistics instructors have the Open Education Resource (OER) Statistics (PDF) e-book placed on the course sections Georgia VIEW (D2L) platform. This e-book has been adopted as the standard textbook for the course. Students downloaded the pdf version of the book on their computers, smart phones, and other smart portable devices. Instructors assigned reading materials, and homework problems to students. Instructors also assigned problems to students in class during problem-solving sessions, whereby students could do individualized or collaborative work.
2	To strengthen student engagement in learning of MATH 2411 Introduction to Statistics, and to enhance student success and achievement in the course.	(i) There was enhanced student engagement in-class and out-of-class. Students did and completed their assignments without giving any excuses for not completing assigned work. Students completed assigned work more frequently than in the past, thereby giving the students opportunities to be graded on more assigned assessments.
3	To motivate students' interest in the use of online based technology to solve real-life problems encountered in Statistics, including large scale data analysis using R-Studio.	(i) Due to COVID -19 pandemic, many students completed all assignments virtually. Classes were delivered synchronously using Cisco WebEx. Online teaching and learning availed instructors and faculty to increase course engagement.
4	To increase enrollment of students in Introduction to Statistics the provision of no-cost	(i) There was an increased discussions on the need to place students in Focus Areas, hence, an increased number of non-STEM students placed in Introduction to Statistics. Enrollment numbers in this course is increasing.

	textbook and learning materials.	
5	To create a standardized online Introduction to Basic Statistics course by incorporating student-centered pedagogy, enriched learning resources, and assessments on a scalable instructional delivery platform	(i) Dr. Anilkumar Devarapu and Dr. Zephyrinus Okonkwo taught online Introduction to Statistics in fall 2020 and spring of 2021. Dr. Devarapu has a fully developed online version of the course that will be available to every Introduction to Statistics to “Copy Course” upon request. Team members also contributed additional learning and assessment materials to enhance the online course.

The amount saved by students in fall 2020 and spring 2021 by not purchasing the Introduction to Statistics was **\$109,480**.

Here is the Transformation Action Plan.

No.	Transformation Action Plan
1	Identification: The Affordable Learning Georgia Textbook Transformation Project Team reviews a set of e-books and associated learning materials, maps contents of the books with course learning outcomes and objects, and selects the most appropriate book. Hence an Open Education Resources (OER) textbook is adopted.
2	Adoption: Select the topics in the adopted OER text and align them with the course syllabi, goals, learning outcomes, and specific objectives of the course.
3	Adaptation: Select class assignments and assessments for students to complete using Open Education Resources (OER) sites, the text, as well as instructor-constructed materials.
4	Syllabus: The syllabus is revised and redesigned to align with the no-cost resources for course lectures. Also, the Instructional Schedule with assessment due dates, quizzes and exams are appended in the syllabus. Syllabus would describe how the lectures would be presented using OER. Students would be required to have one printed copy of syllabus. The syllabus is uploaded on Georgia VIEW as well.
5	Course Redesign: Students would complete assignments using Open Education Resources (OER) site and the Georgia VIEW. Students would be required to print minimal hard copies of selected course information from Open Education Resources (OER) sites for which quizzes and exams would be based. Students would upload their assignments, including any given writing assignments on Dropbox.

6	Instructor Design: Georgia VIEW would be the primary online Learning Management System for downloading content from selected Open Education Resources (OER) and other instructor developed resources.
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The project outcomes we stated in for this project guided our activities. The project team communicated very effectively using emails, telephone calls, WebEx meetings, and texts. We also met in person to discuss project activities. The Chairperson of the department participated actively. Other full- time and part-time mathematics instructors were aware of the project activities. We also notified our faculty members via emails. Team members collected data regularly, and used formative assessment to guide project implementation. Hence, faculty engagement and focus were essential for the success of the project.

The team members created an assessment support guide which was uploaded on the Georgia VIEW platform and made it accessible to all students. The course syllabus, the recommended e-book and other learning materials were also placed on Georgia VIEW as well.

Student engagement was excellent and seamless. Students used smartphones and ipads, and some brought laptop to class. They had the e-book and learning materials downloaded on their phones. Students exemplified active engagement during class activities including in-class reading assignment and problem-solving sessions. During a typical problem-solving session, the instructor would refer students to problems in certain sections in the book, and every student was required to solve the listed set of problems. Instead of the teacher copying a word problem on the board, students would individually read the problems before participating in class discussion or problem solving sessions. The OER package also comes with PowerPoint Presentations and summary lecture notes. Homework exercises were also assigned from the e-book. There was seamless student participation as every student had access to the textbook and learning materials on Georgia View as well as downloads on their smartphones, computers, and other smart communication devices. A combination of these activities had positive impact on student achievement and student success in the course as evidenced by the Introduction to Statistics pass rate in spring 2021. Student achievement was excellent. The retention rate was very high with very few withdrawals. The project was immensely successful.

3. CHALLENGES AND OUTCOMES

The high costs of textbooks continue to increase the cost of education. In many cases, textbooks, learning materials, and software are made compulsory and students are unable to pass the courses without them. This has led to increase in withdrawal rates and failure rates in courses, and low degree attainments in programs. During fall 2020 and spring 2021 semesters, all students in our course sections took classes for the first time without purchasing textbooks. Hence, convincing students that they would take a quality course without purchasing a textbook and additional course materials was a challenge. Many students believed that it was impossible to take a no-cost textbook course without having the downside of lowering instructional and learning quality. The project

team had to initially convince the students that indeed the OER Open Stax e-book and associated materials were of good quality and were adequate for the course. Some faculty members had to go further by mapping the course description and objectives with the listed topics in the textbook. These efforts further helped students to get convinced that minimum benchmark in terms of course material quality was attainable. There was internet access in all classrooms on campus, and all students were able to use their smartphones and computers to access Georgia VIEW during instruction and classroom activities.

The five project goals delineated above were accomplished. Successful transformation experience provided by the use of OER textbook and learning materials, as well as the materials constructed by faculty, set a pathway for future implementation of Introduction to Statistics delivery at low cost to the students. Our goal is to utilize this accomplishment to propagate the immense advantages of having a well-developed no-cost textbook course, the included course materials, and other associated learning materials. Furthermore, we will share this course and the project outcomes with deans, chairs, and other faculty members teaching Introduction to Statistics.

Goal 1. To eliminate the cost of textbook and other course related materials to students by providing no-cost course materials, software, and free online textbook.

MATH2411 Introduction to Statistics faculty team members have the Open Education Resource B (OER) e-book placed on the course sections Georgia VIEW (D2L) platform. This e-book has been adopted as the standard textbook for the course. Students downloaded the pdf version of the book on their computers smart phones, and other smart portable devices. Instructors assigned reading materials, and homework problems to students. Instructors also assigned problems to students in class during problem-solving sessions, whereby students could do individualized or collaborative work. This has saved students more than \$109, 480 over the past one year.

Goal 2. To strengthen student engagement in learning of MATH 2411 Introduction to Statistics, and to enhance student success and achievement in the course.

Due to the availability and accessibility of the course textbook to all students, there was increased student engagement in-class and out-of-class. Students did and completed their assignments without giving any excuses for not completing assigned work. Students completed assigned work more frequently than in the past, thereby giving the students opportunities to be graded on more assigned assessments. Data indicates increased course completion rate and subsequently pass rate.

Goal 3. To motivate students' interest in the use of online based technology to solve real-life problems encountered in Statistics, including large scale data analysis using R-Studio.

Due to COVID -19 pandemic, all students completed many course assignments online during the 2020-2021 academic year. Classes were delivered in varied modalities, including virtually and synchronously using Cisco WebEx. Online Teaching and Learning aided instructors and faculty to increase course engagement.

Goal 4. To increase enrollment of students in Introduction to Statistics the provision of no-cost textbook and learning materials

There was an increased discussions on the need to place students in Focus Areas, hence, an increased number of non-STEM students were placed in Introduction to Statistics. This led to reduction of students enrolled in enrollment numbers in College Algebra.

Goal 5. To create a standardized online Introduction to Statistics course by incorporating student-centered pedagogy, enriched learning resources, and assessments on a scalable instructional delivery platform.

Dr. Devarapu and Dr. Okonkwo taught online Introduction to Statistics and during fall 2020 and spring 2021. Dr. Devarapu has a fully developed online version of the course that will be available to every Introduction to Statistics instructor to “Copy Course” upon request. Team members also contributed additional learning and assessment materials to enhance the online course.

4. TRANSFORMATIVE IMPACT ON OUR INSTITUTION AND STUDENTS

There were numerous and varied positive transformation impacts on instruction, learning, and outcomes which evolved due to this project. This project presented instructors the opportunity to re-examine their pedagogical, assessment, and student practices. Several faculty members used the opportunity of this project to transform and reinforce their teaching, learning, and assessment practices. The following are notable impacts.

- (i) **Improved Student Engagement in Learning.** It is essential to recall that the availability of the recommended free Open Stax textbook to students enabled all students to become fully engaged in classroom activities, including problem-solving sessions and classroom discussion sessions. Instructors were able to give students individualized attention, as well as get the students to work in groups. Students were also allocated homework as well as online class activities. Students who missed quizzes and tests with valid excuses were given an opportunity to make them up online. This effort increased the number of students who completed their assessments and subsequently led to increased student achievement in Introduction to Statistics from 76% in fall 2020 to 82% in spring 2021. Instructors believed that use of Open Stax free textbook ranked high as the major attributes which help to ensure increase in student success in Introduction to Statistics.
- (ii) **Faculty Collaboration, Faculty Success, and Deliberate Engagement.** Most of the instructors teaching Introduction to Statistic, especially the project team members, shared instruction, assessment instruments, and additional course materials. The project team members met in groups to discuss course coverage, assessments, assignments, best practices, and were able to share each other’s materials to enhance learning in their own classes. Communication among faculty members and other related collaborative activities contributed to greater student achievement in the course.

- (iii) **University, College, and Departmental Leadership:** Supportive leadership at the university and support for student-centeredness played an essential role in the success of the project. The Dean of the College of Arts and Sciences and the chairperson of the Department of Mathematics, Computer Science, and Physics, participated actively in the project, and taught some of the course sections themselves.
- (iv) **Student Retention, Persistence, and Graduation:** Introduction to Statistics has been included in Area A2 (in the realms of Common Intellectual Experiences). Hence it can now serve as the first Math course of choice for non-STEM majors and hence a gatekeeper course. High {F,D,W,I} rate has a broader and deeper impact on student retention, progression, and degree attainment. Our project data (as will be delineated in the sequel) show very low {F, D, W, I} rate. Hence the pass rate gives students increased confidence, which has positive ramifications for persistence and subsequently degree attainment. Student Retention is very important for ASU.

4B. Transformative impacts on your students and their performance

We had only indirect survey of students this semester. The survey data collection was a challenge as we had very low survey completion rate due to COVID-19.

5. LESSONS LEARNED, CHALLENGES, AND STUDENT QUOTES

Several lessons were learned by the team members. First, the management of the project rested on the project team members. The team followed the timeline as delineated in the project. The team documented project activities, and designed the data collection instrument including the participant survey. During spring 2021 semester, student performance, faculty engagement and collaboration were monitored. Formative assessment was done using project data and relevant data sources. Faculty input was solicited throughout the semester. There was an effective communication on the importance of Statistics and its applications.

Quotes

"I will recommend a course that uses the OER book to all my friends."

Quantitative and Qualitative Measures

5a. Overall Measurements

Student Opinion of Materials

Was the overall student opinion about the materials used in the course positive, neutral, or negative?

- Not Applicable

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?

Student outcomes were described in details in Section 3.

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)



Department of Math and Computer Science

Grade Distribution Form

Semester / Year:		Spring 2021		#####		Instructor:		ALG_R16_#518				
SUBJ/CRSE	SEC	Title	A	B	C	D	F	W	I	Total Enrolled	Number Passing	Number Failing
MATH 2411	3.T1Ok	Introduction to Statistics	8	8	6	0	6	6	0	34	22	6
MATH 2411	2T.2F	Introduction to Statistics	10	10	8	1	3	1	0	33	28	4
MATH2411	9B.D	Introduction to Statistics	6	10	8	1	11	0	0	36	24	12
MATH2411	04.P	Introduction to Statistics	9	10	7	0	9	1	0	36	26	10
MATH2411	14P	Introduction to Statistics	9	13	7	0	2	0	0	31	29	2
MATH2411	01K	Introduction to Statistics	9	16	9	0	2	1	0	37	34	2
MATH2411	11B	Introduction to Statistics	1	8	13	1	3	2	0	28	22	4
MATH2411	OF	Introduction to Statistics	5	5	4	3	2	0	0	19	14	5
MATH2411		Introduction to Statistics										
Totals			57	80	62	6	38	11	0	254	199	45
										Percent Passing	82%	
										Percent Failing	19%	
Grade			A	B	C	D	F	I				
Percent			36.36%	25.45%	21.82%	5.45%	10.91%	0.00%				

Base= Total Enrollment - Total Withdrawals=254-11=243.

Student Drop/Fail/Withdraw (DFW) Rates

ABC Passing Rate = 82%

DFWI Failing Rate = 19%

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:

_____21.65% students, or 55 out of a total _254_____ 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)

- ☐ *Drop, fail, withdraw (DFWI) delta rates*

The DFW rate was 21.65%.

- ☐ *Course retention and completion rates*

The course retention rate was 97.64%.

- ☐ *Average GPA*

Pre—transformation DFW=.Not Applicable

Post-transformation DFW= Not Applicable

For grade distribution, please see the distribution above.

- ☐ *Student success in learning objectives*

All the course learning outcomes were met. The assessment instruments, including homework, tests, class work and technology-based exercises were aligned with the specific objectives. The overall student achievement was very good. Students showed immense satisfaction with the course.

- ☐ *Surveys, interviews, and other qualitative measures*

Please see Section 4 above.

- *Indicate any co-factors that might have influenced the outcomes for better or worse.*

New and supportive leadership contributed positively to increased student success.

- *When submitting your final report, as noted above, you will also need to provide the separate file of supporting data on the impact of your Textbook Transformation (surveys, analyzed data collected, etc.)*

Survey Questionnaire 9 statement, Not Applicable.

Please see appendix A

6. SUSTAINABILITY PLAN

- *Describe how your project team or department will offer the materials in the course(s) in the future, including the maintenance and updating of course materials.*

The Department of Mathematics and Computer Science has institutionalized the no-cost MATH2411 Introduction to Statistics course. The success of this course is impressive since it is a no-cost textbook course. In order to have a wider dissemination, presentations of the results will be made at the USG at regional conference and at the Joint Mathematics Meetings 2022. Materials developed through this grant will be available in Georgia VIEW and other instructors will be given permission to “copy” course when such requests are made. Furthermore, we plan to continue to develop new course materials to enrich this course.

Most of the course materials associated with this project are placed on Georgia VIEW. All the course materials can be downloaded. The project team and other math instructors will continue to contribute to the *instruction and learning materials guide*. This is a booklet initiated by project team and its development is under way. This booklet, which contains about 320 Introduction to Statistics problems, will be placed on Georgia VIEW in fall 2021.

7. FUTURE PLANS

Describe any impacts or influences this project has had on your thinking about or selection of learning materials in this and other courses that you will teach in the future.

This project has availed us an opportunity to have access to the free Open Stax Introduction to Statistics textbook, *Introductory Statistics by Barbara Illowsky and Susan Dean, and others*). OpenStax College, Rice University ISBN-13: 978-1-947172-05-0, Revision-ST-1-000-RS. ©2017 Rice University. Textbook content produced by OpenStax is licensed under a Creative Commons Attribution 4.0.

Through this project, we have developed a version of the course which is placed on the Georgia VIEW platform. Consequently, this course can be taught by offering it face-to-face in-class, online, or in hybrid format. In addition, we have developed additional learning materials, including a significant number of solved problems, which students and other instructors will find very useful. We will continue to develop and enrich the course by developing additional learning materials.

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 plan to write and present scholarly papers resulting from this project at several scholarly conferences and meetings. Some of the meetings include:

- (i) The Joint Mathematics Meetings, January 2022
- (ii) USG Teaching and Learning Conference
- (iii) G2C Conference
- (iv) Albany State University Seminars.

Describe any impacts or influences this project has had on your thinking about or selection of learning materials in this and other courses that you will teach in the future.

Many of our colleagues teaching MATH2411 Introduction to Statistics find the Open Stax e-book we adopted and the learning materials we developed very useful for their courses. Hence they are using these materials. Moreover, it has been adopted by the department as our foundation statistics textbook.