

## Application Form

---

### Personal

#### Details

**\*Submitter First Name:** Katie

**\*Submitter Last Name:** Bridges

**\*Submitter Title:** Instructional Designer

**\*Submitter Email Address:** kbridges@highlands.edu

**\*Submitter Phone Number:** 678-872-8083

**\*Submitter Campus Role:** Proposal Investigator (Primary or additional)

**\*Applicant First Name:** Camille

**\*Applicant Last Name:** Pace

**\*Applicant Email Address:** cpace@highlands.edu

**\*Applicant Phone Number:** 678.872.8127

**\*Primary Appointment Title:** Assistant Professor of Mathematics

**\*Institution Name(s):** Georgia Highlands College

#### Co-Applicant

**\*Co-Applicant:** Laura Ralston

---

#### Application Details

**\*Proposal Title:** 356

**\*Proposal Category:** No-Cost-to-Students Learning Materials

**\*Final Semester of Instruction:** Fall 2018

**\*Are you using an OpenStax textbook?:** Yes

**\*Team Members (Name, Email Address):**

***Camille Pace***, Assistant Professor of Mathematics, cpace@highlands.edu

***Laura Ralston***, Professor of Mathematics, lralston@highlands.edu

***Katie Bridges***, Instructional Designer, kbridges@highlands.edu

***Betsy Clark***, Librarian, eclark@highlands.edu

Four (4) additional faculty members teaching MATH 2200

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

Melanie Largin, Interim Dean of Mathematics, Georgia Highlands College

**\*Course Names, Course Numbers and Semesters Offered:**

MATH 2200: Elementary Statistics

This is a basic course in statistics at a level that does not require knowledge of calculus. Statistical techniques needed for research in many different fields are presented. Course content includes descriptive statistics, probability theory, hypothesis testing, ANOVA, Chi-square, regression and correlation. Students receive credit toward graduation for only one of the following courses: MATH 2200, MATH 1401.

This course is offered every semester as a face-to-face and fully online class.

**\*List the original course materials for students (including title, whether optional or required, & cost for each item):** OpenStax Introductory Statistics, ebook \$0  
WebAssign OpenStax Access Card, \$49.50  
TI-84 Calculator, \$ 100.00

**\*Average Number of Students per Course Section:** 25

**\*Number of Course Sections Affected by Implementation in Academic Year:** 31

**\*Average Number of Students Per Summer Semester:** 150

**\*Average Number of Students Per Fall Semester:** 323

**\*Average Number of Students Per Spring Semester:** 305

**\*Total Number of Students Affected by Implementation in Academic Year:** 775

**\*Requested Amount of Funding:** 30,800

**\*Original per Student Cost:** 149.50

**\*Post-Proposal Projected Student Cost:** 0

**\*Projected Per Student Savings:** 70% at 49.50, 30% w/o TI-84 at 149.50

**\*Projected Total Annual Student Savings:** 61,811

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

This course will be entirely hosted in D2L with a companion LibGuide.

**\*Project Goals:**

We intend to provide completely free, high quality learning materials for Georgia Highlands College students who take MATH 2200 by adopting Open Educational Resource materials and switching from the current purchased courseware and calculator to a no cost alternative. By adopting Open Educational Resources (OER) materials, students will have immediate access to the textbook on the first day of class. We expect to see a decrease in the withdrawal rates of our students with the transformation to the OER. While it is important to note that this project proposal is designed to meet the criteria of the "Top 100 Undergraduate Courses", it also bears mentioning that there has been no other proposal that used the LMS as the courseware and the repository for the course materials. We hope to contribute to the growing body of resources for this course.

Georgia Highlands College completed a transformation to the OpenStax Statistics textbook within the last few years and paired the book with WebAssign as the courseware. Since the transformation and switch to WebAssign from MyMathLab, Cengage has purchased WebAssign. Out of concern for the potential increase in the software pricing, the decision was made to transform the course to be completely free. Instead of using WebAssign for the courseware we will be using D2L to the fullest capabilities. The largest service areas for GHC include Bartow, Cobb, and Floyd County. The median incomes for these areas are \$22,595, \$33,778, and \$21,218, respectively. In Floyd County, 19.6% of families live below the poverty line. Often times, this means that our students are faced with the decision to either purchase books for school or pay the bills that sustain their households. Adopting an OER helps create access to better futures and an exit from poverty for our students. With this transformation, the estimated collective savings for students in these 31 sections is \$116,331 each academic year.

Adopting OER materials and using our own LMS increases preparedness of adjunct instructors. Often times, instructors have to be hired very late in the summer and they are not given adequate time to acclimate to both the LMS and WebAssign. This lack of access and

training can negatively affect student success. The creation of master course in the LMS ensures that instructors will have all of the resources necessary to teach and support student success.

To evaluate and assess the effectiveness of this conversion we will measure students' perceptions and experiences with OER materials as well as the course success rates with OER materials compared against previous courses not using OER materials.

**\*Statement of Transformation:**

Georgia Highlands College's Elementary Statistics MATH 2200 course is a 15-week course in basic statistics at a level that does not require knowledge of Calculus. Therefore, the primary transformation to the Elementary Statistics, MATH 2200, will be to transition from the current lower-cost materials to no-cost materials and to incorporate more accessible low-cost resources for statistical analysis, while preserving academic freedom for the full-time and adjunct faculty who routinely teach the course.

In this class, students complete most of their assignments in WebAssign which is owned by Cengage. WebAssign is where students complete their homework and exams while D2L contains the materials and discussions for the course. One drawback of the software is that if the students need technical support, they could spend up to three or four hours on hold with Cengage support and often not get the required help. Also, WebAssign also has some compatibility issues with Mac hardware and Adobe Acrobat.

The plan is to use D2L exclusively to build lessons including power points, closed captioned videos, and extra step-by-step notes, homework-based quizzes to help with the material, and exams to show mastery of the lessons. Susan Dean and Barbara Illowsky's free textbooks, Collaborative Statistics and Introductory Statistics, will be embedded in the course and their problems will be used for homework. While many students have access to the Texas Instruments calculator that is used to solve the homework, some students have a difficult time coming up with the funds to pay for a calculator that can cost up to \$100. We will provide alternate ways to solve the problems that is different from the calculator, so all students can be successful and start the course on the first day without waiting for materials and equipment.

At GHC, all Math 2200 instructors are required to use the same textbooks and materials. To help ease the transition, all Math 2200 faculty will be required to attend training on the new materials and technology. A master syllabus for the course will be created and made available for faculty and students on D2L to provide consistency. Additionally, the faculty included in the grant will be required to fill out a survey at the end of each module to help summarize their experiences.

In alignment with the TILT framework, this transformation will allow for the creation of module materials and homework quizzes, exams, and discussions that reinforce the course Student

Learning Outcomes. Students will learn at the beginning of the course that all assignments are designed with the goal of mastering course content. The mastery of the content ensures students can carry out these processes in a business setting.

### **\*Transformation Action Plan:**

The transformation action plan will be accomplished in three phases before the course is delivered in Fall 2018: pre-planning, planning, and course redesign.

#### ***Pre-Planning***

In the pre-planning phase, the Subject Matter Experts (SMEs) will research and evaluate additional options for no-cost textbook paired with a low-cost/no-cost learning management system (LMS). The SMEs will attempt to address frequent concerns from faculty expressed during the implementation of the open-resource textbook, Openstax Introductory Statistics, paired with the learning management system, WebAssign. Those concerns include:

Text assumes students know background information when presenting new concepts

Text is sequenced awkwardly

Text has very few examples

Text is not cohesive and inconsistent

LMS has too few problems from which to select

LMS does not have testing software (test generator)

LMS requires HTML and coding knowledge to modify or write questions

Additionally, the SMEs will research and evaluate alternative technologies for performing statistical analysis, beyond the Texas Instrument TI-84 calculator, which cost approximately \$100.

#### ***Planning***

In the planning phase, the SMEs will outline the content appropriate for a 15-week course in basic statistics at a level that does not require a knowledge of Calculus. The SMEs will work with the instructional designer to develop the master course ensuring it meets all quality and accessibility criteria. Activities, assessment, content, videos, and other supplementary materials will be developed and added to the master course. The planning phase of this project will be completed prior to Fall 2018.

#### ***Course redesign***

In a pursuit of student success, a variety of proven fundamental methodologies tied to teaching and learning will be utilized in the course. The metacognitive process outlined by Dr. Sandra McGuire in *Teaching Students How to Learn* will be employed; although predominantly used in a developmental or academic success course, the techniques should also be beneficial to the

content and application format of Elementary Statistics. Furthermore, the pedagogical elements from Benedict Carey's *How We Learn* will enhance the course, which is taught in at least two different modalities.

Finally, in addition to the creation of the master course, a Library Guide will be created to allow the course redesign and all the compiled resources to be shared with faculty at Georgia Highlands College, as well as with other faculty via the Creative Commons licensing.

**\*Quantitative & Qualitative Measures:** Assessment of this course is going to take place on a multitude of levels. The assessment measures will be both qualitative and quantitative. Qualitative measures will be carried out via survey that occurs two times during the semester, at the midpoint and the end of the semester. The survey will use a satisfaction scale. Levels will be Satisfied (5), Somewhat Satisfied (4), Neutral (3), Somewhat Dissatisfied (2), and Dissatisfied (1). Additionally, students will be asked to give open-ended feedback on the websites used for statistical analysis and course materials. Faculty teaching with the new material will be asked to give feedback like the students and will have a survey after each of the four modules to help quickly identify issues. Based on this analysis, the course can be continually updated to maximize student success. The course will be evaluated quantitatively by comparing DWF rates of the OER course to courses not using the OER. There may be a need to use data from previous semesters for this measurement. The other way that the course will be evaluated quantitatively is comparing overall course grade, percentage of content visited by the student and the pass rates associated with the Student Learning Outcomes for the course. In order to obtain this data, the OER content will be aligned with the Student Learning Outcomes (SLO), course objectives and assignments in the course. Each SLO and course objectives will be considered "passed" when students achieve a grade of 70 or greater on the assignments in the course. Using the Competency Tool in the Learning Management will allow for continuous calculation. The desired outcome is that the difference between the students' final grades and pass rate of the SLOs will be no more than a 10% difference.

**\*Timeline:**

**October – December 2017**

## **February – May 2018**

Attend Kick-Off Meeting

Locate and build supplemental materials

Redesign course in DesireToLearn (D2L) master course

Build Assessment Tools

## **August 2018**

Delivery of course, online modality

## **November 2018**

Data collection from students and faculty regarding experience and effectiveness of assessment tools

## **December 2018**

Make modifications to course based on data collection

Submit final report

### **\*Budget:**

Camille Pace, MSAS Assistant Professor of Mathematics

Instructor of Record/SME/Principle Investigator \$5,000.00

Laura Ralston, M.Ed. Professor of Mathematics

Instructor of Record/SME/Principle Investigator \$5,000.00

Katie Bridges, M.Ed.

Instructional Designer \$5,000.00

Betsy Clark, MLIS

Librarian \$3,000.00

Four (4) Additional Instructors of Record (\$2,800 each) \$11,200.00

Travel to Kick-off Meeting \$ 800.00

Total \$30,000.00

**\*Sustainability Plan:**

2200 is offered each semester and is offered in two formats: face-to-face and online. All non-STEM majors as well as some STEM majors take Math 2200 as their area D mathematics course requirement. Also, students in the four Bachelor degree programs, Nursing, Dental Hygiene, Healthcare Management, and Logistics and Supply Chain Management, require Math 2200 as a prerequisite. Thus, a no-cost textbook paired with no-cost learning management system has the potential to increase enrollment in the course, as well as the institution. A master course that includes the developed activities, assessments, videos, supplementary materials, and grading rubrics will be shared with any Georgia Highlands faculty member, full or part time. Additionally, the master course and Library Guide will be available to faculty at other USG institutions via the Brightspace platform. The course materials will be maintained by the SMEs, Camille Pace and Laura Ralston, and the instructional designer, Katie Bridges.

---

---

**Add Other Email Addresses for Notifications**

Enter recipient(s) email --  
address(es):

# GEORGIA HIGHLANDS



## COLLEGE

FLOYD CAMPUS  
3175 Cedartown Highway  
Rome, GA 30161

VICE PRESIDENT  
FOR ACADEMIC AFFAIRS

January 9, 2018

Dear ALG Grants Committee Members:

I am pleased to write this letter in support of this Mathematics/Statistics team, as they seek grant funding to incorporate free and open texts and other instructional materials for MATH 2200 Elementary Statistics. There are numerous reasons of efficiency, pedagogy, and instructional transformation which compel me to support this initiative.

First, this instructor/instructional designer/librarian team of collegiate educators will engage in a thoughtful process that broadly affects the student body at Georgia Highlands College. We expect to impact some 800 students per year through redesign of this course, a significant number of students needing to complete several associate pathways and baccalaureate majors. As referenced in the body of the application, GHC students living in the three primary counties of NW Georgia residence already struggle with high levels of poverty, low household incomes, and unrelenting competition for their available dollars; textbooks are too often relegated to a lesser priority, and it shows in diminishing student success.

Second, money saved through this plan's implementation would provide opportunity for both economy and learning. Case in point, with textbook costs rising at an unheard of rate, our students could be saving over \$116,000 per year, completely eliminating the requirement for a costly WebAssign ancillary and the necessity for a specialized calculator, at \$149.50 per unit, with open educational resources. We are building the entire course in D2L so students have immediate access to everything from day one and do not have to purchase access to an outside software application or a calculator. Without doubt, this affects our students' foundational learning, tenacity, and ability to thrive in this class and beyond.

Finally, this Affordable Learning Georgia grant will serve as a catalyst for enhanced teaching and learning. It will serve as a springboard for innovation on the part of faculty who work to make those materials more creative, applied, and relevant in today's statistics classroom. It will send the message that GHC faculty members care about their students, economically, socially and intellectually. It will urge students to persist and to finish in a discipline that is often, sadly, a stumbling block to college completion.

I wholeheartedly endorse this ALG Transformation Grant application from these forward-thinking, action-oriented educators. Their plan is noteworthy and laudable. Please allow them to continue their essential work through the approval of the grant.

Sincerely,

Renna Watterson, Ed.D.

Vice President for Academic Affairs

highlands.edu

Affirmative Action / Equal Employment and Educational Opportunity Institution

# GEORGIA HIGHLANDS



## COLLEGE

January 12, 2018

Affordable Learning Georgia Textbook Transformation Grants  
University System of Georgia  
270 Washington Street, SW  
Atlanta, GA 30334

Dear Review Committee:

I am pleased to offer my fervent support for the Affordable Learning Georgia Textbook Transformation grant proposal submitted by Camille Pace (Assistant Professor of Mathematics) in collaboration with Laura Ralston (Professor of Mathematics), Katie Bridges (Instructional Designer), and Betsy Clark (Librarian). This proposal is a continuation of our earlier ALG work to convert our Math 2200 Statistics course to an OpenStax textbook. While using our current OpenStax material and WebAssign homework support, we realized that there was a need to improve the text and currently commercially available homework support for this book. We plan to meet this improvement goal by providing a zero cost product to our students through the development of our own homework system and teaching materials delivered through USG's D2L learning management system.

The benefits of this approach to our students, faculty, and USG as a whole are enumerated below.

- 1) Reducing course material cost per student from \$149.50, which includes a calculator purchase, to \$0
- 2) All materials will be available to the student upon enrollment in D2L so students can start working and learning immediately
- 3) Combining and compiling the knowledge and teaching best practices of our subject matter experts in one course shell for dissemination to all faculty teaching the course
- 4) Providing consistency of approach and evaluation for all of our students taking the course
- 5) Internal control of the materials gives us the ability to quickly capture and implement course improvements including but not limited to tailored videos, examples, collaborative discussions, and outside resource links
- 6) Since we will be relying only on internal resources, training of new faculty will be easier to schedule and more responsive to specific needs
- 7) Using the Competency Tool and student learning outcome linkages in D2L will help focus the course while giving us the ability effectively track our progress toward attaining these goals
- 8) Use of D2L and the incorporation of the library guide will provide a mechanism for sharing this work easily, not only among USG institutions, but with the academic community at large through MERLOT or other curated collections

Georgia Highlands College is firmly committed to meeting our students where they are and giving them the tools they need to excel. Projects such as this are an important part of that toolkit. Thank you for your foresight in developing this grant pool and the opportunity to submit this proposal.

Regards,

Melanie S. Largin

Interim Dean of Mathematics

[www.highlands.edu](http://www.highlands.edu)

Affirmative Action / Equal Employment and Educational Opportunity Institution

FLOYD  
CAMPUS  
706-802-5000

CARTERSVILLE  
CAMPUS  
678-872-8000

HERITAGE  
HALL  
706-802-5000

GHC MARIETTA  
INSTRUCTIONAL SITE  
678-915-5010

GHC DOUGLASVILLE  
INSTRUCTIONAL SITE  
800-332-2406

GHC PAULDING  
INSTRUCTIONAL SITE  
678-946-1100

**Affordable Learning Georgia Textbook Transformation Grants  
Round Eleven  
For Implementations beginning Spring Semester 2018  
Running Through Fall Semester 2018**

**Proposal Form and Narrative**

- *The proposal form and narrative .docx file is for offline drafting and review. Submitters must use the InfoReady Review online form for proposal submission.*
- **Note: The only way to submit the proposal is through the online form in Georgia Tech's InfoReady Review at:**  
<https://gatech.infoready4.com/#competitionDetail/1757803>
- *If you are copying and pasting into InfoReady Review from this form, first convert the file to **plain text** and copy/paste from the plain text file.*
  - *In Word, go to File > Save As... > and change the file format to "Plain Text (.txt)."*
  - *Copy and paste from the .txt file.*
  - *Be sure to save both copies in case you are asked to resubmit.*
- *Microsoft Word Document formatting pasted into InfoReady Review will render the reviewer copy unreadable. **If you paste Word-formatted tables into InfoReady Review, you may be asked to resubmit your application if time permits.***
- *Italicized text is provided for your assistance; please do not keep the italicized text in your submitted proposal. Proposals that do not follow the instructions may be returned.*

|                               |  |
|-------------------------------|--|
| <b>Submitter Name</b>         | Katie Bridges  |
| <b>Submitter Title</b>        | Instructional Designer   |
| <b>Submitter Email</b>        | <a href="mailto:kbridges@highlands.edu">kbridges@highlands.edu</a> |
| <b>Submitter Phone Number</b> | 678-872-8083   |
| <b>Submitter Campus Role</b>  | Proposal Investigator  |
| <b>Applicant Name</b>         | Camille Pace   |
| <b>Applicant Email</b>        | <a href="mailto:cpace@highlands.edu">cpace@highlands.edu</a>       |

|   |   |
|---|---|
| <b>Applicant Phone Number</b>                             | 678-872-8127  |
| <b>Primary Appointment Title</b>                          | Assistant Professor of Mathematics  |
| <b>Institution Name(s)</b>                                | Georgia Highlands College   |
| <b>Team Members</b>                                       | <p><b>Camille Pace</b>, Assistant Professor of Mathematics, <a href="mailto:cpace@highlands.edu">cpace@highlands.edu</a></p> <p><b>Laura Ralston</b>, Professor of Mathematics, <a href="mailto:lrалston@highlands.edu">lrалston@highlands.edu</a></p> <p><b>Katie Bridges</b>, Instructional Designer, <a href="mailto:kbridges@highlands.edu">kbridges@highlands.edu</a></p> <p><b>Betsy Clark</b>, Librarian, <a href="mailto:eclark@highlands.edu">eclark@highlands.edu</a></p> <p>Four (4) additional faculty members teaching MATH 2200</p>                   |
| <b>Sponsor, Title, Department, Institution</b>            | Melanie Largin, Interim Dean of Mathematics, Georgia Highlands College  |
| <b>Proposal Title</b>                                     |   |
| <b>Course Names, Course Numbers and Semesters Offered</b> | <p>MATH 2200: Elementary Statistics</p> <p>This is a basic course in statistics at a level that does not require knowledge of calculus. Statistical techniques needed for research in many different fields are presented. Course content includes descriptive statistics, probability theory, hypothesis testing, ANOVA, Chi-square, regression and correlation. Students receive credit toward graduation for only one of the following courses: MATH 2200, MATH 1401.</p> <p>This course is offered every semester as a face-to-face and fully online class.</p> |
| <b>Final Semester of Instruction</b>                      | Fall 2018   |

|  |  |  |    |   |     |
|--|--|--|----|---|-----|
| <b>Average Number of Students Per Course Section</b>   | 25   | <b>Number of Course Sections Affected by Implementation in Academic Year</b> | 31 | <b>Total Number of Students Affected by Implementation in Academic Year</b> | 778 |
| <b>Average Number of Course Sections Per Semester</b>  | Spring 2018: 12 sections (305 total students, average 25 per section)<br>Fall 2017: 13 sections (323 total students, average 25 per section)<br>Summer 2017: 5 section, (150 total students, average 25 per section) |  |    |   |     |
| <b>Award Category (pick one)</b>   | <input checked="" type="checkbox"/> No-or-Low-Cost-to-Students Learning Materials<br><input type="checkbox"/> Specific Core Curriculum Courses   |  |    |   |     |
| <b>Are you planning on using an OpenStax textbook?</b>   | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No   |  |    |   |     |
| <b>List the original course materials for students (including title, whether optional or required, &amp; cost for each item)</b> | OpenStax Introductory Statistics, ebook \$0<br>WebAssign OpenStax Access Card, \$ 49.50<br>TI-84 Calculator, \$ 100.00   |  |    |   |     |
| <b>Requested Amount of Funding</b>   | \$ 30,800  |  |    |   |     |
| <b>Original Per Student Cost</b>   | \$ 149.50  |  |    |   |     |
| <b>Post-Proposal Projected Per Student Cost</b>  | \$ 0   |  |    |   |     |

|   |               |
|---|---------------|
| <b>Projected Per Student Savings</b>          | \$ 149.50     |
| <b>Projected Total Annual Student Savings</b> | \$ 116,311.00 |



**NARRATIVE**

## 1.1 PROJECT GOALS

We intend to provide completely free, high quality learning materials for Georgia Highlands College students who take MATH 2200 by adopting Open Educational Resource materials and switching from the current purchased courseware and calculator to a no cost alternative. By adopting Open Educational Resources (OER) materials, students will have immediate access to the textbook on the first day of class. We expect to see a decrease in the withdrawal rates of our students with the transformation to the OER. While it is important to note that this project proposal is designed to meet the criteria of the “Top 100 Undergraduate Courses”, it also bears mentioning that there has been no other proposal that used the LMS as the courseware and the repository for the course materials. We hope to contribute to the growing body of resources for this course.

Georgia Highlands College completed a transformation to the OpenStax Statistics textbook within the last few years and paired the book with WebAssign as the courseware. Since the transformation and switch to WebAssign from MyMathLab, Cengage has purchased WebAssign. Out of concern for the potential increase in the software pricing, the decision was made to transform the course to be completely free. Instead of using WebAssign for the courseware we will be using D2L to the fullest capabilities. The largest service areas for GHC include Bartow, Cobb, and Floyd County. The median incomes for these areas are \$22,595, \$33,778, and \$21,218, respectively. In Floyd County, 19.6% of families live below the poverty line. Often times, this means that our students are faced with the decision to either purchase books for school or pay the bills that sustain their households. Adopting an OER helps create access to better futures and an exit from poverty for our students. With this transformation, the estimated collective savings for students in these 31 sections is \$116,311 each academic year.

Adopting OER materials and using our own LMS increases preparedness of adjunct instructors. Often times, instructors have to be hired very late in the summer and they are not given adequate time to acclimate to both the LMS and WebAssign. This lack of access and training can negatively affect student success. The creation of master course in the LMS ensures that instructors will have all of the resources necessary to teach and support student success.

To evaluate and assess the effectiveness of this conversion we will measure students' perceptions and experiences with OER materials as well as the course success rates with OER materials compared against previous courses not using OER materials.

## 1.2 STATEMENT OF TRANSFORMATION

Georgia Highlands College's Elementary Statistics MATH 2200 course is a 15-week course in basic statistics at a level that does not require knowledge of Calculus. Therefore, the primary transformation to the Elementary Statistics, MATH 2200, will be to transition from the current lower-cost materials to no-cost materials and to incorporate more accessible low-cost resources for statistical analysis, while preserving academic freedom for the full-time and adjunct faculty who routinely teach the course.

In this class, students complete most of their assignments in WebAssign which is owned by Cengage. WebAssign is where students complete their homework and exams while D2L contains the materials and discussions for the course. One drawback of the software is that if the students need technical support, they could spend up to three or four hours on hold with Cengage support and often not get the required help. Also, WebAssign also has some compatibility issues with Mac hardware and Adobe Acrobat.

The plan is to use D2L exclusively to build lessons including power points, closed captioned videos, and extra step-by-step notes, homework-based quizzes to help with the material, and exams to show mastery of the lessons. Susan Dean and Barbara Illowsky's free textbooks, Collaborative Statistics and Introductory Statistics, will be embedded in the course and their problems will be used for homework. While many students have access to the Texas Instruments calculator that is used to solve the homework, some students have a difficult time coming up with the funds to pay for a calculator that can cost up to \$100. We will provide alternate ways to solve the problems that is different from the calculator, so all students can be successful and start the course on the first day without waiting for materials and equipment.

At GHC, all Math 2200 instructors are required to use the same textbooks and materials. To help ease the transition, all Math 2200 faculty will be required to attend training on the new materials and technology. A master syllabus for the course will be created and made available for faculty and students on D2L to provide consistency. Additionally, the faculty included in the grant will be required to fill out a survey at the end of each module to help summarize their experiences.

In alignment with the TILT framework, this transformation will allow for the creation of module materials and homework quizzes, exams, and discussions that reinforce the course Student Learning Outcomes. Students will learn at the beginning of the course that all assignments are designed with the goal of mastering course content. The mastery of the content ensures students can carry out these processes in a business setting.

### 1.3 TRANSFORMATION ACTION PLAN

The transformation action plan will be accomplished in three phases before the course is delivered in Fall 2018: pre-planning, planning, and course redesign.

#### ***Pre-Planning***

In the pre-planning phase, the Subject Matter Experts (SMEs) will research and evaluate additional options for no-cost textbook paired with a low-cost/no-cost learning management system (LMS). The SMEs will attempt to address frequent concerns from faculty expressed during the implementation of the open-resource textbook, Openstax Introductory Statistics, paired with the learning management system, WebAssign. Those concerns include:

- Text assumes students know background information when presenting new concepts
- Text is sequenced awkwardly
- Text has very few examples
- Text is not cohesive and inconsistent
- LMS has too few problems from which to select
- LMS does not have testing software (test generator)
- LMS requires HTML and coding knowledge to modify or write questions

Additionally, the SMEs will research and evaluate alternative technologies for performing statistical analysis, beyond the Texas Instrument TI-84 calculator, which cost approximately \$100.

#### ***Planning***

In the planning phase, the SMEs will outline the content appropriate for a 15-week course in basic statistics at a level that does not require a knowledge of Calculus. The SMEs will work with the instructional designer to develop the master course ensuring it meets all quality and accessibility criteria. Activities, assessment, content, videos, and other supplementary materials will be developed and added to the master course. The planning phase of this project will be completed prior to Fall 2018.

#### ***Course redesign***

In a pursuit of student success, a variety of proven fundamental methodologies tied to teaching and learning will be utilized in the course. The metacognitive process outlined by Dr. Saundra McGuire in *Teaching Students How to Learn* will be employed; although predominantly used in a developmental or academic success course, the techniques

should also be beneficial to the content and application format of Elementary Statistics. Furthermore, the pedagogical elements from Benedict Carey's *How We Learn* will enhance the course, which is taught in at least two different modalities.

Finally, in addition to the creation of the master course, a Library Guide will be created to allow the course redesign and all the compiled resources to be shared with faculty at Georgia Highlands College, as well as with other faculty via the Creative Commons licensing.

## 1.4 QUANTITATIVE AND QUALITATIVE MEASURES

Assessment of this course is going to take place on a multitude of levels. The assessment measures will be both qualitative and quantitative. Qualitative measures will be carried out via survey that occurs two times during the semester, at the midpoint and the end of the semester. The survey will use a satisfaction scale. Levels will be Satisfied (5), Somewhat Satisfied (4), Neutral (3), Somewhat Dissatisfied (2), and Dissatisfied (1). Additionally, students will be asked to give open-ended feedback on the websites used for statistical analysis and course materials.

Faculty teaching with the new material will be asked to give feedback like the students and will have a survey after each of the four modules to help quickly identify issues. Based on this analysis, the course can be continually updated to maximize student success.

The course will be evaluated quantitatively by comparing DWF rates of the OER course to courses not using the OER. There may be a need to use data from previous semesters for this measurement. The other way that the course will be evaluated quantitatively is comparing overall course grade, percentage of content visited by the student and the pass rates associated with the Student Learning Outcomes for the course. In order to obtain this data, the OER content will be aligned with the Student Learning Outcomes (SLO), course objectives and assignments in the course. Each SLO and course objectives will be considered "passed" when students achieve a grade of 70 or greater on the assignments in the course. Using the Competency Tool in the Learning Management will allow for continuous calculation. The desired outcome is that the difference between the students' final grades and pass rate of the SLOs will be no more than a 10% difference.

## 1.5 TIMELINE

| Time                    | Milestone  |
|-------------------------|--|
| October - December 2017 | Assess OER Options   |
| February - May 2018     | Attend Kick-Off Meeting<br>Locate and build supplemental materials<br>Redesign course in DesireToLearn (D2L) master course<br>Build Assessment Tools |
| August 2018             | Delivery of course, online modality  |
| November 2018           | Data collection from students and faculty regarding experience and effectiveness of assessment tools   |
| December 2018           | Make modifications to course based on data collection  |
| December 2018           | Submit final report  |

**1.6 BUDGET**

|  |                  |
|--|------------------|
| Camille Pace, MSAS Assistant Professor of Mathematics<br>Instructor of Record/SME/Principle Investigator | \$5,000.00       |
| Laura Ralston, M.Ed. Professor of Mathematics<br>Instructor of Record/SME/Principle Investigator         | \$5,000.00       |
| Katie Bridges, M.Ed.<br>Instructional Designer   | \$5,000.00       |
| Betsy Clark, MLIS<br>Librarian   | \$3,000.00       |
| Four (4) Additional Instructors of Record (\$3,000 each)   | \$12,000.00      |
| <u>Travel to Kick-off Meeting</u>  | <u>\$ 800.00</u> |
| Total  | \$30,800.00      |

## 1.7 SUSTAINABILITY PLAN

Math 2200 is offered each semester and is offered in two formats: face-to-face and online. All non-STEM majors as well as some STEM majors take Math 2200 as their area D mathematics course requirement. Also, students in the four Bachelor degree programs, Nursing, Dental Hygiene, Healthcare Management, and Logistics and Supply Chain Management, require Math 2200 as a prerequisite. Thus, a no-cost textbook paired with no-cost learning management system has the potential to increase enrollment in the course, as well as the institution. A master course that includes the developed activities, assessments, videos, supplementary materials, and grading rubrics will be shared with any Georgia Highlands faculty member, full or part time. Additionally, the master course and Library Guide will be available to faculty at other USG institutions via the Brightspace platform. The course materials will be maintained by the SMEs, Camille Pace and Laura Ralston, and the instructional designer, Katie Bridges.

## 1.8 REFERENCES & ATTACHMENTS

- Carey, B. (2015). *How we learn: The surprising truth about when, where and why it happens*. Random House.
- McGuire, S. (2015). *Teach students how to learn: Strategies you can incorporate into any course to improve student metacognition, study skills, and motivation*. Stylus.
- MSU Office of Inclusion and Intercultural Initiatives. (2017). Purpose of climate survey. Retrieved September 17, 2017, from Michigan State University College of Music website: <http://music.msu.edu/diversity/purpose-of-climate-surveys>
- Population estimates. (2016). Retrieved September 17, 2017, from <http://www.census.gov/quickfacts/table/PST045215/00>
- University of Nevada, Las Vegas (UNLV). (2017). Transparency in learning and teaching in higher education. Retrieved September 17, 2017, from UNLV Office of Executive Vice President and Provost website: <https://www.unlv.edu/provost/teachingandlearning>