

**Affordable Learning Georgia Textbook Transformation Grants
Round 2
Summer 2015, Fall 2015, Spring 2016
Proposal Form and Narrative**

Please complete per inline instructions; the completed document is not to exceed four pages. The 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.

Institution Name(s)	Georgia Highlands College				
Team Members (Name, Title, Department, Institutions if different, and email address for each)	Dr. Soumitra Chattopadhyay, Professor, Division of Science and Physical Education, schattop@highlands.edu ; and Dr. Jeffrey Linek, Professor of Mathematics and Director of eLearning, jlinek@highlands.edu				
Sponsor, Title, Department, Institution	Dr. Renva Watterson, Vice President for Academic Affairs, Georgia Highlands College				
Course Names, Course Numbers and Semesters Offered (Summer 2015, Fall 2015, or Spring 2016)	Introduction to Physics, PHYS 1111, Fall and Summer of every year, Fall 2015				
Average Number of Students Per Course Section	24	Number of Course Sections Affected by Implementation in Academic Year 2016	4	Total Number of Students Affected by Implementation in Academic Year 2016	~100
Award Category (pick one)	<input type="checkbox"/> No-Cost-to-Students Learning Materials <input checked="" type="checkbox"/> OpenStax Textbooks <input type="checkbox"/> Course Pack Pilots <input type="checkbox"/> Transformations-at-Scale				

List the original course materials for students (including title, whether optional or required, & cost for each item)	<p>A standard textbook of College Physics, required, in the range of \$111 - \$330.</p>	<p>Between \$111 and \$ 330</p> <p style="text-align: right;">Total Cost</p>	
Plan for Hosting Materials	<input type="checkbox"/> OpenStax CNX <input checked="" type="checkbox"/> D2L <input type="checkbox"/> LibGuides <input type="checkbox"/> Other _____		
Projected Per Student Cost	\$0	Projected Per Student Savings (%)	100%

1. PROJECT GOALS

The goal of this project is to lower the student's cost for the learning materials associated with Introductory Physics. To this end, students will not have to purchase any textbooks, yet they will have full access to the material needed to succeed in the course. Use of relevant cost-free materials for the course allows all course content to be housed in D2L. In doing so, students will have complete access to all course materials without the need to purchase a book. Because materials used in the course will be free of cost, students will be more likely to remain in and successfully complete this vital course.

1.1 STATEMENT OF TRANSFORMATION

Georgia Highlands College is an open access institution. Many of the students attending this college come from a background that cannot afford a book. PHYS 1111 is a course in Area D (required Science and Math skills category) in the University System of Georgia as well as the Technical College System of Georgia. Also, this is a basic science and math skills required course at private institutions, where the course number may be different. A comparative study shows that most of the textbooks available in the market costs between \$111 and \$330. This is extremely expensive for many of the students who attend our institution. Additionally, as the course is developed and all materials are stored within a master course in D2L, anyone teaching this course at GHC, whether full-time instructors or adjunct faculty members, will have access to the teaching materials. This will ensure continuity and streamlined teaching material institution-wide. In addition, the course materials components can be exported and shared with other institutions throughout Georgia.

1.2 TRANSFORMATION ACTION PLAN

All materials will be obtained from OpenStax, and videos demonstrations etc. located on YouTube, journal articles, movies, from GALILEO, Films On Demand, MERLOT, and other open sources. The tests, quizzes, and D2L evaluation and assessment tools, developed in conjunction with this project, will be used from and stored in the learning management system, currently Brightspace by D2L (Desire2Learn). Thus, students will have access to the material needed for the course from anywhere they have access to an Internet connection. All Physics instructors will have complete access to course materials and will have a means to better assist students towards success. Student success in this course will assist the institution in achieving retention goals in compliance with Complete College Georgia. Furthermore, having all the instructors use the same course materials will create a continuity within the course which will make this fundamental science course stronger.

The development and sustainability team contains members with extensive experience in teaching Physics and Mathematics, and with the pedagogy and technical aspects on online course design. It will be the role of Dr. Chattopadhyay to guide and lead the process as a subject matter and instructional design expert as it relates to Physics. The

team will utilize Dr. Linek's experience in distance education as he will act in the capacity of the technical and online methodology expert.

To provide for open access to the materials developed, a public Web site will be constructed to house the content of the course. This site will be linked to the Georgia Highlands College Web site. However, as part of this project, research will be conducted as to the best title for the main page so as to maximize its profile with Internet search engines.

1.3 QUANTITATIVE AND QUALITATIVE MEASURES

This project will use both qualitative and quantitative instruments to measure the effectiveness of the project. Quantitatively, a survey will be given at the beginning and the end of the course to find whether the students preferred a traditional textbook or the OpenStax text and associated material used in the course. It will be given to all students taking the course to find out the likeability of the online resources usage, and student opinions as to the role the materials played in their success. The pre- and post-surveys will be identical in content and will be manually graded by the instructor, and the data will be entered and analyzed using statistical software. Qualitatively, the success rate of students taking a traditional class (one that uses the traditional textbooks) and this proposed class will be compared and conclusions about the feasibility of using this course model will be analyzed. The data collected over a period of two semesters will be compared. This data will be included in the final report of the project to demonstrate the project's success.

1.4 TIMELINE

January 1, 2015 – May 31, 2015: Selection of OpenStax, YouTube, GALILEO, MERLOT and other open resources

June 1, 2015 – July 31, 2015: D2L Master Course redesign

August 12, 2015 – December 15, 2015: Implementation of redesigned course in one section of PHYS 1111

January 2016 - March 2016: Continuous formative evaluation of redesign with student input

March 2016: Evaluation of Course Redesign (Student Survey and Interviews)

April 2016: Analysis of Evaluation and Course Revision (if needed)

August 2016: Report to the GHC faculty on outcomes of the project.

August 2016: Implementation of Redesigned Course - All Fall 2016 PHYS 1111 Sections

August 2016 – December 2016: Continuous formative evaluation of redesign with student input

January 2017: Evaluation of Course Redesign (Student Survey and Interviews)

January 2017: Analysis of Evaluation and Course Revision (if needed)

1.5 BUDGET

Dr. Soumitra Chattopadhyay: \$5,000

Dr. Jeffrey Linek: \$5,000

Travel: \$800

Total: \$10,800

1.6 SUSTAINABILITY PLAN

PHYS 1111 is offered every Summer and Fall semesters and is one of the options for students pursuing a Transfer program. A majority of the students attending Georgia Highlands College fall into this category. Thus, this course redesign will affect the majority of students at our institution. We plan to review and update materials three times a year (January, April-May, and August). This will allow us to not only ensure that the materials are still available and that links are working, but will also allow us to replace any outdated materials. This process is vitally important since MERLOT and GALILEO constantly update their offerings. In addition to reviewing the materials ourselves we will also seek student feedback. We believe that students should be actively involved in course design since it directly affects their learning experiences. This feedback

will be collected informally by both team members using a convenience sample of students enrolled in their classes.

1.7 REFERENCES & ATTACHMENTS

A body of literature supports our redesign plans. First, Open Educational Resources (or OERs) are supported across a wide variety of research studies and more reflective pieces. In a study by Bliss et al (2013), community college students and faculty perceived OERs as a positive inclusion to the curriculum. Both groups viewed OERs as equal in quality to traditional materials while also citing perceived increases in cost-savings and learning. Issack (2011) explored the sustainability of OERs and found that “OERs help maintain a good quality level, sustain a viable economic model with reduction of tuition fees for learners, increase access and achieve the intended learning outcomes without any negative impact on the learners' experience”. Not only do OERs increase cost savings and perceived learning but also increase faculty autonomy. By removing the required, proprietary textbook from the classroom faculty are free to remix and reuse resources as needed. In addition, it can be argued that the use of OERs contribute to a more democratic society. According to Koustelini (2012) “this unquestioned use of textbooks contributes to the unquestioned preservation of the social, economic, and political status quo, and it prevents teacher’s involvement in changing the monolithic educational agenda”. Conversely, a move away from textbooks subverts this model. Second, primary sources are a powerful learning tool across the curriculum and across different measures of learning. The inclusion and analysis of primary sources has been found to improve students’ general critical thinking skills (Dutt-doner et al, 2007), discipline-specific research skills (Tally & Goldenberg, 2005), and levels of compassion (Farmer et al, 2007). Third, research supports the inclusion of students in course design (Bovill, Cook-Sather, & Felten, 2011). Both McDaniel College and Elon University are currently including students in course design (Walker, 2011). At Elon students “appear to have learned at least as much as students in prior versions of the class; additionally, they reported significantly higher satisfaction with the class, in part because they appreciated that peers had helped to design the course” (Walker, 2011). At McDaniel this process has increased empathy and understanding between students and faculty members (Walker, 2011). Fourth, OERs increase faculty autonomy. By removing the required, proprietary textbook from the classroom, faculty are free to remix and reuse resources as needed. In addition, it can be argued that the use of OERs contribute to a more democratic society. According to Koustelini (2012) “this unquestioned use of textbooks contributes to the unquestioned preservation of the social, economic, and political status quo, and it prevents teacher’s involvement in changing the monolithic educational agenda”. Conversely, a move away from textbooks subverts this model.

A recent film by CNN Films (Ivory Tower – Is College Worth it?) concluded that the cost of attending college has become so much that students and parents are getting equally frustrated by the time and money spent to attend college. It is great to see that “Affordable Learning Georgia” is trying to find cheaper The efforts of Affordable

Learning Georgia and this project fit well in addressing these concerns to find solutions to make college affordable to the citizens of the state. It is an honor to submit proposal to that endeavor trying to make a difference in our students' lives.

The authors would like to acknowledge the help and support of Mrs. Sarah Hepler, Director of Faculty Academy at Georgia Highlands College and Dr. Nancy Devino, Grants Coordinator of Technical College System of Georgia.

Also attached is an Excel Sheet showing Introductory Physics textbook prices comparison from various sources.

PROPOSAL SUBMISSION: ALL PROPOSAL DOCUMENTS, REFERENCES, AND ATTACHMENTS MUST BE SUBMITTED IN A SINGLE EMAIL TO ALG@GATECH.EDU.

DEADLINE FOR CATEGORIES 1-3: 5:00 PM, NOVEMBER 30, 2014

DEADLINE FOR CATEGORY 4: 5:00 PM, DECEMBER 8, 2014