Affordable Materials Grants, Round 20:

Transformation Grants

(Fall 2021-Fall 2022)

Proposal Form and Narrative

# **Notes**

· The proposal form and narrative .docx file is for offline drafting and for our review processes. Submitters must use the online Google Form for proposal submission.

· The only way to submit the official proposal is through the online Google Form. The link to the online application is on the [Round 20 RFP Page](https://www.affordablelearninggeorgia.org/about/rfp_r20).

· The italic text provided below is meant for clarifications and can be deleted.

The Round 20 Kickoff will include an asynchronous training module, required for all team members to complete, followed by the synchronous Kickoff Meeting on December 10, 2021 from 1pm-4pm. At least two team members from each awarded team (unless the award is for one individual) are required to attend the synchronous Kickoff Meeting.

# **Applicant and Team Information**

*The* ***applicant*** *is the proposed Project Lead for the grant project. The* ***submitter*** *is the person submitting the application (which may be a Grants Officer or Administrator). The submitter will often be the applicant—if so, just list leave the submitter blank.*

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| **Requested information** | **Answer** |
| **Institution(s)** | Georgia Southern University |
| **Applicant name** | Donna Mullenax |
| **Applicant email** | dmullenax@georgiasouthern.edu |
| **Applicant position/title** | Principal Lecturer |
| **Submitter name** | What is the difference between the applicant and the submitter? |
| **Submitter email** | Donna Mullenax |
| **Submitter position/title** | dmullenax@georgiasouthern.edu |

Please provide the first/last names and email addresses of all team members within the proposed project. Include the applicant (Project Lead) in this list. Do not include prefixes or suffixes such as Ms., Dr., Ph.D., etc.

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| --- | --- | --- |
| **Team member** | **Name** | **Email address** |
| **Team member 1** | Donna Mullenax | dmullenax@georgiasouthern.edu |
| **Team member 2** | Laurie Adams | laadams@georgiasouthern.edu |
| **Team member 3** | Shaunell McGee | smcgee@georgiasouthern.edu |
| **Team member 4** |  |  |
| **Team member 5** |  |  |
| **Team member 6** |  |  |

If you have any more team members to add, please enter their names and email addresses in the text box below.

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# **Project Information**

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| **Requested information** | **Answer** |
| **Priority Category / Categories**  *Projects in these categories will receive three extra points in the final score for fitting a priority of these particular rounds of Transformation Grants. The type of funding for the project is determined by the funding categories criteria above. As of Round 18, projects can be a part of more than one category. Note that the below categories only indicate priority, not which applications qualify for a grant. Select all that apply.* | *Priority categories:*  · *Collaborative Projects with Professional Support*  · *Student Participation in Materials Evaluation and/or Development*  · *Departmental Scaling Projects*  · *Upper-Level Campus Collaborations*  *Otherwise, put “None.”*  *Please note: Departmental Scaling Projects applications require the department to commit to implement the resources for at least the Final Semester of the project.* |
| **Requested Total Amount of Funding**  *$30,000 maximum total award per grant* | *$8,000* |
| **Final Semester of Project** | *All Transformation Grants for Round 20 end in Fall 2022.* |
| **Using OpenStax Textbook?**  *This is to indicate to OpenStax that they can provide additional support and resources to your team during the adoption process.* | *Yes/No*  *NO* |

# **Impact Data**

Please fill in the data below with impact data in below with one course (all sections) in each table, and only include courses and instructors that are specifically part of the scope of this grant proposal. Add or remove tables as needed. **Please only put a single averaged or totaled (as appropriate) number in each box. Do not put ranges or mathematical equations in any of these boxes.** If the materials used by different instructors in a course vary drastically, it is possible to enter one course per instructor.

For a multi-course project, if a significant amount of students are assumed to take courses in a sequence and only one textbook is used for these courses, please take this into account in your total *(i.e. only include that book in the first course they would purchase it for OR adjust the number of students affected. Please explain in the notes section if making such adjustments).*

## **Course 1**

|  |  |  |
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| **Row #** | **Requested information** | **Answer** |
| **N/A** | Course title and number | PHSC 1211 |
| **N/A** | Course instructors | 1 |
| **1** | Average number of students enrolled per section | 130 |
| **2** | Average number of affected course sections scheduled in a summer semester | 1 |
| **3** | Average number of affected course sections scheduled in a fall semester | 1 |
| **4** | Average number of affected course sections scheduled in a spring semester | 1 |
| **5** | Total number of course sections scheduled in an academic year  *Add up rows 2-4.* | 3 |
| **6** | Total number of student section enrollments per academic year  *Multiply row 1 and row 5.* | 390 |
| **7** | Original required commercial materials  *Include each title, author, price for a new copy purchased from either your campus bookstore, the publisher, or Amazon, and a URL to the book showing the price.* | Conceptual Physical Science, Books a la Carte Edition, 6th Edition  Paul Hewitt, John Suchocki, Leslie Hewitt  <https://www.pearson.com/us/higher-education/product/Hewitt-Conceptual-Physical-Science-Books-a-la-Carte-Edition-6th-Edition/9780134082295.html>  $159    <https://gsustore.com/CourseMaterials>  $153.32 |
| **8** | Original cost per student section enrollment  *Add up the cost of all materials in row 7.* | $153.32 |
| **9** | Average post-project cost per student section enrollment | $0 |
| **10** | Average post-project savings per student section enrollment  *Subtract row 9 from row 8.* | $153.32 |
| **11** | Projected total annual student savings per academic year  *Multiply row 10 and row 6.* | $59,794.80 |

If you have more courses to add, copy the table as many times as needed to complete all courses on the grant.

# **Narrative Section**

## **1. Project Goals**

*Goals for a Transformation Grant project go beyond just cost savings. Include goals for student savings, student success, materials creation, and pedagogical transformation here.*

Goal 1: Create an affordable Physical Science (PHSC) 1211 course. Currently, PHSC 1211 uses a traditional textbook where less than half of the book is used and it costs over $15O, loose-leaf. To create an affordable, ideally free, course, more detailed, engaging, “modern” lecture videos will be created with the depth to replace the textbook, along with new assessment tools. The handouts currently used are from the publisher of the textbook. Therefore, new handouts and other assessment tools will be developed that are independent of a textbook to ensure the course is affordable.

Goal 2: Create a more relevant course for the students. Over one-third of the students are from one department within the University. These students are required to take PHSC 1211. Then the other two-thirds of the students are taking the course for CORE Area D. Having more real-life applications where students can see how the content they are learning is related to their major and/or life experiences will help them learn and retain the material.

Goal 3: Create a more streamlined course to improve student success and interest. Current students have provided a lot of feedback on the course, which has lead to Goal #3. The course consists of a required textbook, online videos from the instructor, group work (handouts), and discussions. Based on student feedback, the required group participation will be done away with. Students will be given the option to work in groups or individually. Additionally, the handouts will be created to be submitted on FOLIO and graded on FOLIO. In the past, students struggled with uploading documents in formats that the graders could read. Likewise, teaching assistants struggle to give feedback in a timely manner. We would like to have immediate feedback for the students for them to continue to learn, and the use of FOLIO will facilitate this. The course videos were also redesigned to look more professional. The instructor created the videos as if she were in front of the class writing on the board. On surveys, students indicated that they prefer having access to typed lectures as well as these videos. Therefore, the videos will be modified with typed text, handwritten problem solving, and current images. An additional issue was supplemental videos were separate from the lecture and required the students to go an additional step. To streamline the course, either the videos will be embedded in the lecture videos or links will be embedded in the lecture videos, thereby removing the extra step.

## **2. Statement of Transformation**

*Transformation Grants are awarded to teams focused on creating impactful changes. This section allows teams to describe why the project should be awarded. Include the following:*

· *A description of the current state of the course, department, and/or institution if relevant.*

PHSC 1211 is currently an asynchronous online course taught in the Department of Physics and Astronomy at Georgia Southern University. This course has two populations it addresses: (1) Core D and (2) several Health Professions majors, of which this course is required. Prior to the merger of Armstrong State University and Georgia Southern University in 2018, the majority of the students that took PHSC 1211 were from the College of Health Professions. At the time, the course was taught face-to-face with a maximum of 90 students. Students wanting a Core Area D course that did not require a lot of math (physics and chemistry courses) often chose PHSC 1211. The course presented content that was applicable to all students and all majors on campus. So it was, and still is, a popular course that fills up quickly. After the merger, students from Statesboro started to drive between campuses to take the course because the course was not offered on the Statesboro campus. PHSC 1211 was an Armstrong-only course designed for the College of Health Professions and Core Area D. Wanting to avoid having students driving I-16 twice a week, the instructor started to work on creating an online course. COVID-19 assisted in the transition by forcing all courses online. With the transition online, the size of the course increased to 150 students per semester with students from all three campuses taking PHSC 1211 online.

· *An overall description of the project and how it will impact the course, department, and institution as described previously. Include references to scholarly literature to support the claims of your impact if possible.*

The goal of this transformation is to break away from the publisher and make this course stronger and more focused on the physical science for the health professions majors, which cover the majority of the students enrolled, and in the process affordable.

When the course went online, the same textbook continued to be used. Rather than students turning in individual work, students now work in groups and submit work completed as a group. This work includes handouts from the publisher of the textbook. The instructor has created lectures for the course. Students are also provided links to resources beyond the professor’s videos.

Current students have been anonymously surveyed on what they like, do not like, and recommended changes for the course.

Over 35% of the students that enroll in PHSC 1211 are majoring in programs from the Department of Diagnostic and Therapeutic Sciences within the Waters College of Health Professions. Therefore, a collaborative effort has been created between the instructor (the Department of Physics and Astronomy) and faculty from the Department of Diagnostic and Therapeutic Sciences to provide a stronger curriculum that will support the students from the Department of Diagnostic and Therapeutic Sciences and provide real life applications for all students rather than the standard textbook problems, which currently consist of “a block slides down an incline” type problems.

The three faculty have already met. Within the first conversation, all faculty agree that the content that is covered in the course covers the material needed in future Health Professions classes. However, as is common among students, retention is low and students do not remember what they learned in PHSC 1211 to apply in their future courses. The conversation also showed areas that need to be strengthened.

Ultimately, the transformation will create a more dynamic, content-relevant course for students that will make a well-rounded science course for the Core students and an updated course meeting the needs of the Health Profession majors. The transformation will create a great option for all students of Georgia Southern, and be a strong service course of the Department of Physics and Astronomy.

## **3. Action Plan**

*Transformation Grant projects are work-intensive and require project management in order to be successful. This section allows teams to describe how the team will fulfill the goals of the project. This section must include:*

· *The role(s) of each team member in the project with details as to the major tasks team members will complete, with an estimate of how long each task will take (e.g. number of hours).*

o Donna Mullenax will be the PI, facilitate student surveys, upload materials on FOLIO, and assist in video and curriculum materials development.

8 hours - create the 4 surveys in Qualtrics

16 hours - to read and analyze the survey results

160 hours - to create videos and supplemental materials

10 hours - to upload materials

o Laurie Adams - team member - Create videos and written dialogues modeling topics that will be used in future courses for the health professions majors.

10 hours - to create videos and content materials

o Shaunell McGee - team member - Create videos and written dialogues modeling topics that will be used in future courses for the health professions majors.

10 hours - to create videos and content materials

· *A review of existing open, no-cost, and/or low-cost course materials for the course(s).*

o A review has been completed and no open, no-cost materials were found other than resources that are already being used. Select videos from a series of Youtube videos designed for conceptual physics are already being used. Openstax was contacted to see if they have a Physical Science OER textbook coming in the near future. The answer was no, not even in the not-so-near future.

· *The plan for the selection, adoption, adaptation, and/or creation of new course materials (if applicable). Include plans for open licensing and plans for making your materials accessible.*

o With most available resources focusing on physics requiring a minimum of trigonometry to understand, we will focus on improving videos and resources that have already been developed by the PI, Donna Mullenax, and creating a line of videos and demos that connect PHSC 1211 with fields from the Department of Diagnostic and Therapeutic Sciences and other everyday phenomena.

*The plan for redesigning your course(s), including any instructional design work, curriculum alignment, course accessibility changes, etc.*

o The faculty will meet to choose a new format for the course, since textbook chapters will not be available. Based on the conversations among the faculty the following will be the units – Mechanics, Waves (sound, EM radiation), The Atom (chemistry, nuclear), Electricity and Magnetism, Astronomy (will be presented as astronomy, but also a review of all of the topics).

o From this discussion and feedback from current PHSC 1211 students, the faculty will develop lecture videos and resources (handouts, demos, activities) to help the students practice the content being presented. The students liked handouts. They did want more “modern and streamlined” lectures where the supplemental videos were embedded in the lecture videos. The PI will work with the Faculty Center (formally known as Center for Teaching Excellence) to see if this is possible, and if yes, do it.

o The materials will then be uploaded in FOLIO to be piloted in Summer 2022.

\* A new pre-post assessment will be created. The assessment tool that was used during face-to-face classes cannot be placed online for student access. Therefore, one will be created. Baseline data using the new assessment will be collected during Spring 2022 when the class is taught with the textbook and no new videos.

· *The plan for providing open access to the new materials. Affordable Learning Georgia will host any newly created materials in our repository; please indicate if you are using other platforms in addition to the repository to host them.*

No additional plans exist.

## **4. Quantitative and Qualitative Measures**

*All Transformation Grant projects must measure student satisfaction, student performance, and course-level retention (drop/fail/withdraw rates), but teams and institutions will do this in varied ways. Outstanding applications will include measures beyond the minimum to gain meaningful insights into the impact of the project. Include the following:*

· *Each quantitative or qualitative measure to be used, along with a description of the methods and/or tools used to gather and analyze data.*

o At the beginning and end of each semester, PHYS 1211 students take the same assessment. Statistical analysis of this assessment will be compared between the “traditional online course” and the new no-cost course.

o Anonymous surveys will also be given throughout the semester to evaluate the impact of the videos and resources on student learning according to the students.

o Feedback from these surveys will be used to fine-tune the materials and continue the development of a great course.

o Anecdotal evidence will be collected from the faculty in the Department of Diagnostic and Therapeutic Sciences. Are students retaining the material learned in PHSC 1211 at a greater rate than current students? Can they apply this information to their field? The general answer to these questions has been no. We want it to be yes.

· *If the team needs IRB (Institutional Review Board) approval, please indicate this here. Each institution’s IRB functions differently, and teams will need to know how their institution’s IRB evaluates and approves of institutional research.*

* Yes, we have officially been approved by the Ga Southern IRB Board. The following is the email from the IRB:

Hello,

Protocol  **H22146,** and titled **“An Affordable PHSC 1211"** has been approved. The official document is attached. If a change or modification of the approved protocol becomes necessary, please submit an amendment form with the modified documents attached.

Have a good day,

Research Integrity

Institutional Review Board (IRB)

Georgia Southern University

## **5. Timeline**

*This section allows teams to describe how the project will progress from its inception to the Final Report. Please provide a list of major milestones, events, and deadlines, aligned with your Action Plan and the final semester of your project. Include the submission of your Final Report in this list.*

*Do not put this timeline in the form of a table, as it will not transfer well to Google Forms for the official application—a bullet-point list is acceptable.*

\* Fall 2021 - Develop new assessment tool for the online class

\* January 2022 - implement the assessment tool as a pre-test on the first day of class

\* Spring 2022 - Create new videos, demos, and assessments.

\* April 2022 - New materials and resources will be uploaded on FOLIO for the Summer 2022 course.

\* May 2022 - Administer the post-assessment and analyze student performance for the “traditional online course”

\* May - June 2022 – The pre-post assessment will be given on the first day of class. The students will complete the summer term course with the post-assessment given on the last day of class. Surveys will be given periodically throughout the term.

\* July 2022 – The pre-post assessment results will be analyzed and compared results from previous semesters. Weaknesses will be addressed for the fall term. Videos will be created to address these weaknesses.

\* August 2022 - December 2022 - The pre-post assessment will be given on the first day of class. The students will complete the course with the post-assessment given on the last day of class. Surveys will be given periodically throughout the term.

\* Future - Continue to evaluate the performance of the students in PHSC 1211. Continue communications with the Department of Diagnostic and Therapeutic Sciences to determine changes in the medical fields, and address these changes with material in the course.

## **6. Budget**

*Please enter your project’s budget below. Include personnel and projected expenses, keeping in mind that this funds the estimated time in your Action Plan. The maximum amounts for the award are as follows:*

· *$5,000 maximum per team member for salary, course release, travel, etc.*

· *Additional project expenses allowed, but must be adequately justified in this section*

· *$30,000 maximum total award per grant*

*Do not put this budget in the form of a table, as it will not transfer well to Google Forms for the official application—a bullet-point list is acceptable. Please keep all funding guidelines from the corresponding RFP in mind.*

Donna Mullenax $4000 salary (see breakdown below)

$1000 Travel/Conferences

Laurie Adams $1000 Travel/Conferences

Shaunell McGee $1000 Travel/Conferences

Total $7,000

Donna Mullenax will receive $4000 ($3088 in summer salary and $912 in fringe benefits) and $1000 to go towards travel costs (including registration for virtual/in-person conferences and transportation, lodging, and food expenses for in-person events ). With the growth of online courses, a successful course transformation will be shared with peers across the country. Such conferences include American Association of Physics Teachers and Georgia Science Teachers Association. Many of these conferences are currently virtual, but a speaker still has to pay registration fees.

Laurie Adams and Shaunell McGee will use their $1000 each in travel funds to attend conferences and present a talk or poster to share the success of this course transformation. This will be important to the fields within Health Professions as they continue to strengthen their programs around the country to meet the increasing demands on Health Profession workers. The $1000 for each team member will fund conference registration, as well as transportation, lodging, and food costs for in-person events. Such conferences include the Association of Educators in Imaging and Radiologic Sciences Annual Conference or the National Health Science Conference.

## **7. Sustainability Plan**

*Transformation Grants should have a lasting impact on the course for years to come. In order for this to happen, a Sustainability Plan needs to be in place after the end of the project. Please include here your plans for offering the course in the future, including:*

· *The maintenance and updating of course materials*

· *The commitment of the department(s) or institution(s) to continue the use of affordable materials*

· *Any possible expansion of the project to more course sections in the future*

· *Future plans for sharing this work with others through presentations, articles, or other scholarly activities*

As with any science course, the content will need to be updated. As new techniques are created in the medical field or new applications of the material in other majors taking the course, we will continue to create and update our videos to make the most up-to-date relevant videos for the students to view.

With the success of these course materials, the results may be shared at local or regional physics education and/or health professions education conferences. Such conferences include American Association of Physics Teachers and Georgia Science Teachers Association. Many of these conferences are currently virtual, but a speaker still has to pay registration fees. These conferences will allow us to share our results with our peers, expanding our impact to other institutions, but also receive feedback from other institutions to continue to strengthen our course enhancing the lasting impact of this course transformation.

# **Creative Commons Terms**

*I understand that any new materials or revisions created with ALG funding will, by default, be made available to the public under a Creative Commons Attribution License (CC-BY), with exceptions for modifications of pre-existing resources with a more restrictive license.*

# **Accessibility Terms**

*I understand that any new materials or revisions created with Affordable Learning Georgia funding must be developed in compliance with the specific accessibility standards defined in the Request for Proposals.*

# **Letter of Support**

*The Department Chair from the corresponding project, or the Department Chair’s direct report such as the Dean or Provost, must provide a signed Letter of Support for the project. This letter should acknowledge the following:*

* *The department will provide support for fund disbursement in correspondence with the Grants/Business Office.*
* *The department approves of the work on the proposal by the applicant(s).*
* *The department acknowledges the sustainability of the use of these affordable resources after the grant work is complete.*

*In the case of multi-institutional affiliations, all participants’ institutions must provide a letter of support.*

*Please provide the name and title of the department chair (or other administrator) who provided you with the Letter of Support.*

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| *Dr.* [Clayton Heller](mailto:cheller@georgiasouthern.edu)  *Department of Physics and Astronomy Department Chair* |

# **Grants or Business Office Acknowledgment Form**

*Institutional Grants/Business Offices will be responsible for fund disbursement, often in correspondence with the Department Chair, including expense and travel reimbursement. All applicants will need to provide a signed Acknowledgement Form, the template for which is linked on the RFP page, stating that the Grants/Business Office knows about the applicant’s intent to apply for an Affordable Materials Grant. Either the Department Chair or the Project Lead can work with the Grants/Business Office to get this signed form.*

*In the case of multi-institutional affiliations, all participants’ institutions must provide this form.*

*Please provide the name and title of the grants or business office representative who provided you with the acknowledgement form.*

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| --- |
| *Laura Regassa*  *Associate Provost of Research*  *lregassa@georgiasouthern.edu* |