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.*

|  |  |
| --- | --- |
| Requested information | Answer |
| Institution(s) | Columbus State University |
| Applicant name | Linqiang Ge |
| Applicant email | ge\_linqiang@columbusstate.edu |
| Applicant position/title | Assistant Professor |
| Submitter name |  |
| Submitter email |  |
| Submitter position/title |  |

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.

|  |  |  |
| --- | --- | --- |
| Team member | Name | Email address |
| Team member 1 | Linqiang Ge | ge\_linqiang@columbusstate.edu |
| Team member 2 | Anastasia Angelopoulou | angelopoulou\_anastasia@columbusstate.edu |
| Team member 3 | Yi Zhou | zhou\_yi@columbusstate.edu |
| Team member 4 | Suk Lee | lee\_suk@columbusstate.edu |
| Team member 5 | Rania Hodhod | hodhod\_rania@columbusstate.edu |

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

|  |
| --- |
|  |

# Project Information

|  |  |
| --- | --- |
| 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* |  |
| 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.* | *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

|  |  |  |
| --- | --- | --- |
| Row # | Requested information | Answer |
| N/A | Course title and number | Wireless, IoT and Mobile Security, CYBR3136 |
| N/A | Course instructors | Linqiang Ge |
| 1 | Average number of students enrolled per section | 25 |
| 2 | Average number of affected course sections scheduled in a summer semester | 0 |
| 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 | 0 |
| 5 | Total number of course sections scheduled in an academic year  *Add up rows 2-4.* | 1 |
| 6 | Total number of student section enrollments per academic year  *Multiply row 1 and row 5.* | 25 |
| 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.* | “Wireless and Mobile Device Security + Cloud Labs” by Jim Doherty (ISBN: 9781284228465) $149.95  https://www.jblearning.com/catalog/productdetails/9781284228465 |
| 8 | Original cost per student section enrollment  *Add up the cost of all materials in row 7.* | $149.95 |
| 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.* | $ 149.95 |
| 11 | Projected total annual student savings per academic year  *Multiply row 10 and row 6.* | $3748.75 |

## Course 2

|  |  |  |
| --- | --- | --- |
| Row # | Requested information | Answer |
| N/A | Course title and number | Theory of Computation, CPSC 4148 |
| N/A | Course instructor | Anastasia Angelopoulou |
| 1 | Average number of students enrolled per section | 15 |
| 2 | Average number of course sections scheduled in a summer semester | 0 |
| 3 | Average number of course sections scheduled in a fall semester | 0 |
| 4 | Average number of course sections scheduled in a spring semester | 1 |
| 5 | Total number of course sections scheduled in an academic year  *Add up rows 2-4.* | 1 |
| 6 | Total number of student section enrollments per academic year  *Multiply row 1 and row 5.* | 15 |
| 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.* | “Introduction to the Theory of Computation | 3rd Edition” by Michael Sipser (ISBN: 9780357670583) $187.95<https://www.cengage.com/c/introduction-to-the-theory-of-computation-3e-sipser/9780357670583PF/> |
| 8 | Original cost per student section enrollment  *Add up the cost of all materials in row 7.* | $187.95 |
| 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.* | $187.95 |
| 11 | Projected total annual student savings per academic year  *Multiply row 10 and row 6.* | $2,819.25 |

## Course 3

|  |  |  |
| --- | --- | --- |
| Row # | Requested information | Answer |
| N/A | Course title and number | Software Engineering, CPSC 4175 |
| N/A | Course instructor | Yi Zhou |
| 1 | Average number of students enrolled per section | 28 |
| 2 | Average number of course sections scheduled in a summer semester | 0 |
| 3 | Average number of course sections scheduled in a fall semester | 1 |
| 4 | Average number of course sections scheduled in a spring semester | 0 |
| 5 | Total number of course sections scheduled in an academic year  *Add up rows 2-4.* | 1 |
| 6 | Total number of student section enrollments per academic year  *Multiply row 1 and row 5.* | 28 |
| 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.* | Software Engineering 10th Edition, by Ian Sommerville, ISBN-10: 0133943038  ISBN-13: 978-0133943030.  $159.99  https://www.amazon.com/Software-Engineering-10th-Ian-Sommerville/dp/0133943038 |
| 8 | Original cost per student section enrollment  *Add up the cost of all materials in row 7.* | $159.99 |
| 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.* | $159.99 |
| 11 | Projected total annual student savings per academic year  *Multiply row 10 and row 6.* | $4,479.72 |

## Course 4

|  |  |  |
| --- | --- | --- |
| Row # | Requested information | Answer |
| N/A | Course title and number | Computer Architecture, CPSC4155 |
| N/A | Course instructor | Suk Jin Lee |
| 1 | Average number of students enrolled per section | 15 |
| 2 | Average number of course sections scheduled in a summer semester | 0 |
| 3 | Average number of course sections scheduled in a fall semester | 1 |
| 4 | Average number of course sections scheduled in a spring semester | 0 |
| 5 | Total number of course sections scheduled in an academic year  *Add up rows 2-4.* | 1 |
| 6 | Total number of student section enrollments per academic year  *Multiply row 1 and row 5.* | 15 |
| 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.* | Computer Architecture and Security - Fundamentals of Designing Secure Computer Systems by Shuangbao Paul Wang, Robert S. Ledley, Wiley, 2013, ISBN: 978-1-118-16881-3.  $129.00  https://www.wiley.com/en-us/Computer+Architecture+and+Security%3A+Fundamentals+of+Designing+Secure+Computer+Systems-p-9781118168813 |
| 8 | Original cost per student section enrollment  *Add up the cost of all materials in row 7.* | $129.00 |
| 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.* | $129.00 |
| 11 | Projected total annual student savings per academic year  *Multiply row 10 and row 6.* | $1,935.00 |

## Course 5

|  |  |  |
| --- | --- | --- |
| Row # | Requested information | Answer |
| N/A | Course title and number | Digital Media, CPSC 3105 |
| N/A | Course instructor | Rania Hodhod |
| 1 | Average number of students enrolled per section | 21 |
| 2 | Average number of course sections scheduled in a summer semester | 0 |
| 3 | Average number of course sections scheduled in a fall semester | 0 |
| 4 | Average number of course sections scheduled in a spring semester | 1 |
| 5 | Total number of course sections scheduled in an academic year  *Add up rows 2-4.* | 1 |
| 6 | Total number of student section enrollments per academic year  *Multiply row 1 and row 5.* | 21 |
| 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.* | Digital Multimedia by Nigel Chapman, Jenny Chapman, Wiley, ISBN: 978-0-470-51216-6  $60.95  https://www.wiley.com/en-us/Digital+Multimedia%2C+3rd+Edition-p-9780470512166 |
| 8 | Original cost per student section enrollment  *Add up the cost of all materials in row 7.* | $60.95 |
| 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.* | $60.95 |
| 11 | Projected total annual student savings per academic year  *Multiply row 10 and row 6.* | $1,279.95 |

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.*

The pricey college textbooks highly affected the student’s educational choices and outcomes. A study [1] showed that more than 80% of students decided to skip or delay required textbook purchases. As a result, half of the students said that their grades had been negatively impacted by their decision. The high textbook costs may decrease the students’ chances to succeed in the courses and contribute to flatlining graduation rate [2]. The use of Open Educational Resources (OER) has proven to be an effective way to address this problem [3-4]. Many existing studies showed that the OER, including the open textbook, were as effective for student learning as commercial materials [5-7]. At the same time, the OER provides significant financial benefits for students and cost savings on textbooks.

The goal of this Textbook Transformation Grant project is to design computer science courses that offer affordable open educational resources (OER) material and provide cost savings of $137.11 per student in five computer science courses: CYBR 3136 Wireless, IoT and Mobile Security, CPSC 4148 Theory of Computation, CPSC 4175 Software Engineering, CPSC 4155 Computer Architecture, CPSC 3105 Digital Media. The Computer Science faculty will replace the required textbooks in the five courses with no-cost OER.

The Computer Science faculty will search for, select, and develop OERs as needed for these five courses during the Spring 2022 semester in multiple formats (e.g., text, audio, video, webpages) following the University System of Georgia (USG) accessibility guidelines. The selected OERs are expected to make education more equitable by supporting the aggregation, creation and dissemination of high-quality reusable, affordable resources on the first day of class. The team aims to use these resources in an active learning environment not only to help our students save money and increase usage of textbooks by all students enrolled in these classes to 100%., but also to improve student learning [1, 4] and increase student engagement and retention in these classes [5].

The five target courses will be taught in Spring 2022 and Fall 2022 with the new OERs. At the end of Spring 2022 and Fall 2022, student survey data and student performance data will be collected from all sections of these courses to evaluate the impact of OER on student retention and success. Data related to students’ perceptions of the use and quality of OER will also be collected in order to improve and revise the selection of OERs.

## 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.*
* *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 TSYS School of Computer Science at Columbus State University has successfully eliminated textbook costs for students in Computer Science I (CPSC 1301), Computer Science II (CPSC 1302), Data Structures (CPSC 2108) and Information Security (CPSC 2106) during the past academic years. The PIs have also eliminated the textbook costs for CPSC 5135 Programming Languages, CPSC 3125 Operating Systems, CPSC 2105 Computer Organization, and CPSC 2125 Internet Programming in Spring 2021-Fall 2021. The current project aims to transform five additional Computer Science courses and eventually progress to offer no-cost or low-cost textbooks in all courses of the bachelor’s degree programs in Computer Science and Information Technology. The five target courses in the current project are: CYBR 3136 Wireless, IoT and Mobile Security, CPSC 4148 Theory of Computation, CPSC 4175 Software Engineering, CPSC 4155 Computer Architecture, CPSC 3105 Digital Media.

The Wireless, IoT and Mobile Security (CYBR 3136) is a core course in the B.S. in Cybersecurity program and is an elective in all the programs. The course provides step-by-step real-life, advanced scenarios of performing security assessments of wireless networks and Internet of Things (IoT) environments. The current textbook mainly focuses on the well-developed techniques and is lacking in catching the newest IoT and mobile technology developments. The publisher releases a new edition of their book every three or four years [10]. There are many students buying earlier editions or recycled textbooks. In addition, the textbook includes some practical experiments that can be developed by other supplementary materials or designed by the instructor.

The Theory of Computation (CPSC 4148) course is a core course in every computer science program and aims to provide a deep understanding on the development of formal mathematical models of computation as well as insights into the computer hardware and software limitations. The book currently used as part of the Theory of Computation (CPSC 4148) course at CSU is quite expensive and some of the students delay or forgo the purchase of the text, which results in failures in the weekly quizzes that are based on reading the assigned book chapters. The book is also outdated (2013) and presents some experiential learning gaps that are usually covered by other supplementary resources and external hands-on activities designed by the instructor.

The Software Engineering (CPSC 4175) course is mandatory in 5 of the 7 undergraduate programs and is an elective in all the programs. There are three motivations behind transforming this course. First, the current textbook is quite expensive. The book covers most of the material needed in the course, but the students are reluctant to read the book since this course involves a lot of practical and pragmatic skills and practices. Second, a large number of supplementary resources and external hands-on activities are usually designed by the instructor to fill any course material or experiential learning gaps existing in the book used in this course. Third, the book is also outdated, and contemporary topics such as DevOps are not included.

The Computer Architecture (CPSC 4155) is one of core courses of Software Systems Track in BS CS and is an elective in all the programs. The current textbook covers a wide range of computer hardware, system software and data concepts from a security perspective that makes students feel reluctant to read. In addition, most of our students are low income students so that the current textbook is not affordable. The students barely purchase the textbook. Most students rely on supplementary materials and practical hands-on labs that the instructor provides.

The Digital Media (CPSC 3105) is a required course in the CS Education Track and Software Systems Track and is an elective in all the programs. The textbook for this course covers several multimedia technologies with discussions of issues faced by media professionals and hardware and software including developments in mobile platforms and user interfaces. With book cost being a burden for college students, this makes the book unaffordable to many students with only few students buying the book. These students rely on hands-on activities, instructor notes and recommended internet resources.

The project will involve the replacement of traditional textbooks with no-cost open educational resources and interactive online material. Students will also participate in the creation of material for the CPSC 4148 course as part of their class project. More specifically, students will be asked to work in teams to survey applications of finite-state methods, context-free grammars, or other formalisms to real world problems and write reports as part of their projects. The instructor will use these reports in future classes as examples of how the theory can be applied to the real world. The instructor will also introduce students to accessible design guidelines so that the created materials follow the accessibility guidelines.

The TSYS school of computer science faculties teaching these courses can easily adopt and create innovative teaching pedagogies to implement the course material with the flexible OERs.

Besides the cost saving, there are numerous potential benefits of this project.

* *Ease of revision and update:* Computer Science is very dynamic and developing in nature. With the progress of technology, programming concepts and information security are being evolved and transformed on a regular basis. A traditional textbook faces difficulty keeping pace with the rate of progress in CS topics. OERs, on the other hand, are easy to review, update and modify.
* *Impact on instructors:* Any USG faculty member will be able to access and use these resources for their class. The quality of instruction in these three courses will also improve significantly since instructors will have a lot of teaching materials available to them.
* *Quality of resources:* High quality resources based on Computer Science have already become an established and successful culture of open source software (OSS). Success and popularity of OSS indicate that OERs, once established, will be beneficial to CS students in a very similar manner.
* *Ease of accessibility:* Team members of this project will modify/develop open courseware following accessibility guidelines from the USG. Learning materials will be available in multiple formats, thus accommodating students with disabilities and different learning styles.
* *Higher enrollment, retention and success rate:* Many CS students avoid buying textbooks altogether and complete a course using online free resources anyway. However, since they do not get any guidance for selecting such resources, and because courses are designed based on traditional textbooks as main resources, student performances are negatively impacted. The textbook transformation project will eliminate the inequity in course material access among students and increase usage of textbooks by all students enrolled in these classes to 100%. The use of OER will also increase student engagement and retention in these classes [9]. When students have access to free and accessible OER course material, student achievements and success rates increase.

The quality of instruction in the five courses is expected to improve since the instructors will have a variety of material available to them that will cover the topics in the desired order. Faculty members in the University System of Georgia will also be able to access and use these resources for their classes. OERs will be available in multiple formats and will follow accessibility guidelines from the USG, thus accommodating students with disabilities and different learning styles.

## 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).*
* *A review of existing open, no-cost, and/or low-cost course materials for the course(s).*
* *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.*
* *The plan for redesigning your course(s), including any instructional design work, curriculum alignment, course accessibility changes, etc.*
* *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.*

The following steps will take place to successfully achieve the goals of this project:

* The team has already received IRB approval for collecting demographic, income background, and past achievement data as well as surveying the students about the use and perceptions of OER material. The D/F/W and grade data will be provided by CSU’s Office of Institutional Research in order to evaluate student achievements. Personnel in charge: Dr. Angelopoulou
* The faculty will search and document current open educational materials that are available under open licenses to be used for the transformation. Personnel in charge: Dr. Ge (CYBR 3136), Dr. Angelopoulou (CPSC 4148), Dr. Zhou (CPSC 4175), Dr. Lee (CPSC 4155), Dr. Hodhod (CPSC 3105).
* The faculty will adapt and transform the OER materials that cover the material included in the curriculum and align with the course objectives. The faculty will create a new OER for each class to be transformed as needed. These materials will follow accessibility guidelines. Personnel in charge: Dr. Ge (CYBR 3136), Dr. Angelopoulou (CPSC 4148), Dr. Zhou (CPSC 4175), Dr. Lee (CPSC 4155), Dr. Hodhod (CPSC 3105).
* The team will use the developed/adapted OER materials in the proposed courses. The team will also collect data according to the evaluation plan described in this proposal. Personnel in charge: Dr. Ge (CYBR 3136), Dr. Angelopoulou (CPSC 4148), Dr. Zhou (CPSC 4175), Dr. Lee (CPSC 4155), Dr. Hodhod (CPSC 3105).
* The team will prepare and deliver the final report of the transformation of the materials to the sponsoring agency. The faculty will also publish the adapted materials as required by the agency in the corresponding databases/systems. In addition to sharing these resources via GALILEO, we will share resources internally via a shared Google Drive. Personnel in charge: Personnel in charge: Dr. Ge (CYBR 3136), Dr. Angelopoulou (CPSC 4148), Dr. Zhou (CPSC 4175), Dr. Lee (CPSC 4155), Dr. Hodhod (CPSC 3105).

## 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.*
* *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.*

The team has adopted surveys from the Open Education Group and Digital Textbook toolkit and revised them as needed:<http://openedgroup.org/toolkit>. More specifically, the sample student survey based on Bliss et al. (2013) has been adopted and revised to include questions related to motivation to learn.

**Quantitative Measures:**

The team plans to collect data for all students enrolled in the five target courses during the Spring 2022 and the Fall 2022 semesters through surveys and the CSU’s Office of Institutional Research:

* Demographic information such as gender, ethnicity and age
* Income background and financial aid eligibility.
* GPA (semester, mid-term and institutional GPA)
* Motivation to learn
* Perceptions and frequency of use of the adopted OER

In order to compare student performance with traditional textbook requirements, the team will collect the following data for these target courses from the Fall 2017 until the Fall 2022 semesters:

* Number of students enrolled in each of these courses - CSU’s Office of Institutional Research.
* D/F/W rates of each of the required courses - CSU’s Office of Institutional Research.
* Grade earned by each student in the required courses - CSU’s Office of Institutional Research.

**Qualitative Measures:**

The surveys will include free-form questions to seek student feedback on the quality, content and organization of the required OERs. Some sample discussion forum questions are:

* What are your thoughts on the quality of the OERs?
* What are your thoughts on the organization of the OERs?
* In your opinion, how could the supporting material and activities be improved to better support student learning?
* Why do you think the OER materials are better, same, or worse than traditional textbooks?

**Data Collection**

The team will collect survey data using the Qualtrics online system (which employs TLS encryption for data transmitted over the Internet). Survey participants will be provided with an informed consent statement before taking the survey and collected data will be anonymized before data is shared and stored. No student data with personally identifiable features will be collected or shared with anyone outside the team members. All project data will be stored for two years after the Fall 2022 semester. The data will be permanently deleted from the computer’s hard drive after the Fall 2023 semester.

**Data Analysis**

Quantitative data analysis will include:

* Descriptive statistics to understand the impact of OERs on student success and overall academic performance
* Comparison of performance and D/F/W rates in OER courses vs previous non-OER courses
* Independent-samples t tests, chi-square tests, linear regression and multivariate statistical analysis to understand the causal relationships among variables such as: age, gender, GPA, income background, prior academic achievements, motivation to learn, quality of OER, and frequency of using OER material.
* Qualitative data will be analyzed using narrative analysis and discourse analysis to obtain causal explanations of the impact of OERs in the four target courses.

**IRB application**

The team has obtained an IRB approval for this project.

## 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.*

**Fall 2021**

* Create shared Google folder to internally share course materials
* Attendance by at least one team member at a required online kick-off meeting

**Spring 2022**

* Dr. Angelopoulou will create OER materials for CPSC 4148 during the Spring 2022 semester
* Dr. Angelopoulou will have students create OER for the class as part of their project. An accessibility workshop will be offered to students during class so that the created materials follow the accessibility guidelines.
* Write and submit Spring 2022 Semester project status report

**Summer 2022**

* Conduct extensive research on all available free and open resources and make a collection of these resources for the rest of the courses (CYBR 3136, CPSC 4175, CPSC 4155, and CPSC 3105)
* Collect open and freely available textbooks that align with the course objectives, evaluate them based on established criteria and make a shortlist of them
* Finalize selection of free and open courseware from collected materials and create additional materials as needed. This material will follow accessibility guidelines and will be made accessible to the public through OpenALG and the GALILEO Open Learning Materials repository
* Modify syllabi
* Write and submit Summer 2022 Semester project status report

**Fall 2022**

* Teach CPSC 4175, CYBR 3136, CPSC 4155, and CPSC 3105 using OER materials
* Team members meet to share and discuss students’ initial reactions to the OERs used in their courses
* Administer surveys (worth extra credit) to all students enrolled in these courses
* Analyze student survey data
* Re-evaluate selected OERs and make modifications as needed (including updating syllabi)
* Write and submit final project report

## 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*

**PERSONNEL:**

Linqiang Ge $4654.16

Anastasia Angelopoulou $4654.16

Yi Zhou $4654.16

Suk Lee $4654.16

Rania Hodhod $4654.16

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Total Personnel $23,270.80

**FRINGE BENEFITS:**

6.20% (FICA) Ge $280.29

1.45% (FICA Medicare) Ge $65.55

6.20% (FICA) Angelopoulou $280.29

1.45% (FICA Medicare) Angelopoulou $65.55

6.20% (FICA) Zhou $280.29

1.45% (FICA Medicare) Zhou $65.55

6.20% (FICA) Lee $280.29

1.45% (FICA Medicare) Lee $65.55

6.20% (FICA) Hodhod $280.29

1.45% (FICA Medicare) Hodhod $65.55

Total Fringe Benefits $1,729.20

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TOTAL PROJECT $25,000.00

## 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*

The team will work with instructional designers and librarians to maintain the compiled OERs using the following locations and resources:

* LibGuides hosted by the CSU library to host links and any other web content on CSU Library [site](https://columbusstate.libguides.com/);
* All grants artifacts, reports, and supporting applications will be hosted by the ALG and Galileo Open Learning Materials [website](https://oer.galileo.usg.edu/) ;
* Some resources may be shared via other OER applicable sites that the team may find;
* Course materials will also be maintained on a shared Google drive by the PIs.

Our sustainability plan aligns with the TSYS School of Computer Science’s effort to continuously improve the quality of teaching by providing affordable and accessible textbooks. The team is committed to transforming their courses by adopting, adapting and creating OERs that align with their courses’ learning objectives and can improve student motivation and academic success. After the end of the project, the course coordinators will meet at the end of each semester to review and revise the OERs based on student feedback and performance, thus maintaining/improving course quality and continuing the effort to enhance student learning. The team plans to share the results of the textbook transformation project through presentations at educational conferences and journal publications to promote the use of open educational resources in the field of Computer Science.

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[10] Harleen Dhami, “The Average Print Textbook Goes Out of Date Every 3 Years”, https://tophat.com/blog/print-textbook-editions/

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# 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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# 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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