Affordable Materials Grants, Round 21:

Transformation Grants

(Spring 2022-Spring 2023)

Proposal Form and Narrative

# **Creating** [new OER](https://oer.galileo.usg.edu/communication-textbooks/3/) to adopt in place of a commercial textbook when there are no OER to cover the subject.

# 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, including uploading this document.
* The only way to submit the official proposal is through the Google Form. The link to the online application is on the [Round 21 RFP Page](https://www.affordablelearninggeorgia.org/about/rfp_r21).
* The italic text provided below is meant for clarifications and can be deleted.

The Round 21 Kickoff will include an asynchronous training module, required for all team members to complete, followed by the synchronous Kickoff Meeting on March 25, 2022 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) | GEORGIA HIGHLANDS COLLEGE |
| Applicant name | MERRY CLARK |
| Applicant email | MCLARK@HIGHLANDS.EDU |
| Applicant position/title | PROFESSOR OF BIOLOGY |
| 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 | MERRY CLARK | MCLARK@HIGHLANDS.EDU |
| Team member 2 | APRIL COLE | ACOLE17@STUDENT.HIGHLANDS.EDU |
| Team member 3 | EMILY BLALOCK | EBLALOCK1@GSU.EDU |
| Team member 4 | KATIE BRIDGES | KBRIDGES@GSU.EDU |
| Team member 5 |  |  |

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

| 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: This is an inter-institutional project between GSU-PC and GHC utilizing an instructional designer and student in the development and implementation. * Student Participation in Materials Evaluation and/or Development: April Cole AND students in BIOL2700K * Departmental Scaling Projects: Manual will be used in all BIOL2700K courses at GHC. Portions of the manual will be used in all BIOL 1107 courses at GHC and all BIOL2107 courses at GSU-PC as well as BIOL 1103L and BIOL 2310 courses at GSU-PC. * Upper-Level Campus Collaborations: GHC and GSU-PC both involved |
| Requested Total Amount of Funding  *$30,000 maximum total award per grant* | $5000 – MERRY CLARK, Co-Principal Investigator and content expert  $5000 – APRIL COLE, Student Assistant  $5000 – EMILY BLALOCK, Co-Principal Investigator and content expert  $5000 – KATIE BRIDGES, Instructional Designer  $200 – TRAVEL FOR CROSS-COLLABORATION  $950 - MATERIALS   * Art/Graphics design software for instructional diagrams/images ($150); * Equipment for video capture/storage ($800) |
| Final Semester of Project | May 15, 2023 |
| 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 number 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 | BIOL2700K AT GEORGIA HIGHLANDS |
| N/A | Course instructor | MERRY CLARK |
| 1 | Average number of students enrolled per section | 10 |
| 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 | 0 |
| 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.* | 1 |
| 6 | Total number of student section enrollments per academic year  *Multiply row 1 and row 5.* | 10 |
| 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.* | GHC BIOL2700K: Genetics Laboratory Investigations (14th Edition) ISBN: 9780321814173 by Mertens & Hammersmith $240.81  <https://www.biblio.com/book/genetics-laboratory-investigations-14th-edition-mertens/d/1334261772>  Clarification: BIOL2700K does have a commercial textbook; the savings are only for the lab portion. |
| 8 | Original cost per student section enrollment  *Add up the cost of all materials in row 7.* | $240.81 |
| 9 | Average post-project cost per student section enrollment | $0.00 |
| 10 | Average post-project savings per student section enrollment  *Subtract row 9 from row 8.* | $240.81 |
| 11 | Projected total annual student savings per academic year  *Multiply row 10 and row 6.* | $2400.81 |

## Course 2

|  |  |  |
| --- | --- | --- |
| Row # | Requested information | Answer |
| N/A | Course title and number | BIOL 2107L AT GEORGIA STATE- PERIMETER COLLEGE |
| N/A | Course instructor | EMILY BLALOCK |
| 1 | Average number of students enrolled per section | 24 |
| 2 | Average number of course sections scheduled in a summer semester | 2 |
| 3 | Average number of course sections scheduled in a fall semester | 6 |
| 4 | Average number of course sections scheduled in a spring semester | 6 |
| 5 | Total number of course sections scheduled in an academic year  *Add up rows 2-4.* | 14 |
| 6 | Total number of student section enrollments per academic year  *Multiply row 1 and row 5.* | 336 |
| 7 | Original required 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.* | GSU-PC BIOL 2107L: Lab manual in-house and published by Hayden-McNeil for $31.50.  <https://www.bkstr.com/georgiastatestore/bag> |
| 8 | Original cost per student section enrollment  *Add up the cost of all materials in row 7.* | $31.50 |
| 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.* | $31.50 |
| 11 | Projected total annual student savings per academic year *Multiply row 10 and row 6.* | $10,584 |

## Course 3

|  |  |  |
| --- | --- | --- |
| Row # | Requested information | Answer |
| N/A | Course title and number | BIOL 1107 AT GEORGIA HIGHLANDS COLLEGE |
| N/A | Course instructors | SEVERAL GHC FACULTY MEMBERS TEACH THIS COURSE INCLUDING THE BIOLOGY CHAIR, BRANDY ROGERS. \**SEE LETTER OF SUPPORT INCLUDED IN THIS PROPOSAL* |
| 1 | Average number of students enrolled per section | 24 |
| 2 | Average number of course sections scheduled in a summer semester | 2 |
| 3 | Average number of course sections scheduled in a fall semester | 5 |
| 4 | Average number of course sections scheduled in a spring semester | 5 |
| 5 | Total number of course sections scheduled in an academic year  *Add up rows 2-4.* | 12 |
| 6 | Total number of student section enrollments per academic year  *Multiply row 1 and row 5.* | 288 |
| 7 | Original required 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.* | GHC BIOL1107 – In-house Laboratory manual is provided. Students are REQUIRED to print the manual before attending class.  Since this is not an open-source manual, we cannot provide additional information. |
| 8 | Original cost per student section enrollment  *Add up the cost of all materials in row 7.* | $8.00 |
| 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.* | $8.00 |
| 11 | Projected total annual student savings per academic year *Multiply row 10 and row 6.* | $2304 |

# 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.*

This is a multi-institution proposal with Georgia Highlands College (GHC) and Georgia State University - Perimeter College (GSU-PC) to create a quality, open-access, no-cost laboratory manual for use in multiple biological courses. The creation of this manual will involve student participation, thus further supporting student success.

Genetics is a required course for biology majors in many USG schools, yet there is no open-source, no-cost laboratory manual currently available for undergraduate or graduate level genetics courses. Rather, biology majors within the USG have the option of a non-laboratory-based genetics course, a genetics laboratory with an expensive manual, or a laboratory that is directed by handouts/exercises provided as needed, similar to an independent research course.

Genetics (BIOL2700K) is a newly developed course at Georgia Highlands College (Spring 2020). Because genetics and biotechnology are a rapidly growing field/industry ([8](https://www.northeastern.edu/graduate/blog/biotechnology-careers/)), the activities performed by undergraduate level students in this course are key in shaping and securing student readiness and success in these fields. Since this course has a laboratory component, a laboratory manual is needed. The only available laboratory manual that contains activities suitable for this course (and the laboratory equipment available) is $280 if purchased new. The price of this manual is a deterrent for students interested in taking the course. As such, a no-cost manual is critical for the sustainability of this course and the advancement of biology majors at GHC.

Many biology courses offered at USG institutions do not provide laboratory experiences that truly prepare students for this rapidly growing and changing field. At GHC and GSU-PC, for example, students enrolled in Principles of Biology (BIOL2107 at GSU-PC or BIOL1107 at GHC), a required course for all biology majors within the USG, do not currently engage in laboratory exercises that demonstrate basic genetic/biotechnology applications. The exercises included in our proposed manual would supplement the current laboratory protocols for these courses, thus improving the student experience and facilitating student success.

As mentioned, this is a multi-institution proposal. The final product will be a collection of genetics activities to satisfy the need for a genetics (BIOL2700) laboratory manual at Georgia Highlands College. Several activities will additionally replace existing BIOL1107/BIOL2107 laboratory activities at GHC and GSU-PC, respectively.

The number of BIOL 2107 students on all GSU-PC campuses is approximately 336 per year. At GHC, the average number of students enrolled in BIOL1107 each year is 288. While the current manuals for these courses are in-house, they are not open-access, nor free. Our proposed manual will provide a resource for instructors at GSU-PC and GHC to improve their courses by providing quality laboratory exercises to supplement the current options. Further, this manual will serve as a starting point for the creation of additional lab exercises for BIOL 2107 at GSU-PC and BIOL1107 at GHC with the ultimate goal of creating a free, open-access manuals to replace the current options.

We additionally propose to involve students in the creation of laboratory exercises to be included in the manual. April Cole, a GHC student is currently conducting independent research under the direction of Merry Clark. Ms. Cole is an integral team member, as she has taken the BIOL2700K course and will serve as a student advocate for the creation, design, and execution of exercises in the manual. She will provide input based on her experience, and will meet with current BIOL2700K students to discuss/troubleshoot laboratory exercises during implementation. Ms. Cole will be responsible for ensuring artwork, graphics and multimedia resources in the final submission are accurate and up to date.

Further student involvement will include student contributions through implementation. BIOL2700K students will be asked to submit protocols for laboratory exercises in Spring 2022 and Spring 2023. The protocols will be assessed and tested if possible. Viable protocols will be included in the final submission of this manual, thus giving students the experience of authorship/inclusion in something beyond the scope of the course.

Finally, we propose to include links in each exercise to the college learning management system. These assignments will be structured to facilitate conceptual learning and collaboration among the students.

Katie Bridges was chosen as the instructional designer for this project due to her vast knowledge in creating accessible content to meet the standards of Section 508 of the Rehabilitation Act of 1973. She completed the Creative Commons Certification course and earned a bachelor's degree in physics with a minor in mathematics. Additionally, Ms. Bridges has taken several Biology courses, including Genetics. Her experience in undergraduate science coursework and how to make the content accessible to students is invaluable.

The final product will be made available to all instructors within the USG. Further, the manual will be REQUIRED in all future sections of BIOL2700K at GHC. Some chapters of the manual will be REQUIRED for ALL BIOL1107 courses at GHC and ALL BIOL2107 courses at GSU-PC.

**Our project goals are as follows:**

* Create a laboratory manual that will be provided to all future BIOL2700K/BIOL1107/2107 students and make them readily accessible to the public.
* Assist current students in designing protocols for inclusion in a future laboratory manual. Students can additionally submit these projects as part of the honors program.

## ***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.***Georgia Highlands College (GHC) is a limited four-year college in the University System of Georgia that serves an average of 5000-6000 students in northwest Georgia and Northeast Alabama ([1](https://www.usg.edu/assets/usg/docs/news_files/Fall_2021_SER.pdf)). GHC offers transfer and career associate degree programs as well as targeted baccalaureate degree programs. GHC offers instruction on four diversified campuses, thus providing an opportunity to develop, implement, and compare new teaching materials and pedagogies across campuses.

Mean annual household income in the geographic areas served by GHC is about $61,927 ([2](http://www.uspirg.org/sites/pirg/files/reports/NATIONAL%20Fixing%20Broken%20Textbooks%20Report1.pdf)). An average of 75% of GHC students receive some type of financial aid, 40% receive Pell Grant support, and many are non-traditional students working full-time in addition to taking a full course load ([3](https://sites.highlands.edu/iesi/wp-content/uploads/sites/9/2020/03/Fact-Book-2018-2019-FINAL-11-5-19.pdf)). Low-cost course materials are an integral component in facilitating student success in this region of the country.

According to the United States Bureau of Labor Statistics, employment of genetic counselors is projected to grow 26% over the next decade, significantly faster than the average for all occupations ([4](https://www.bls.gov/ooh/healthcare/genetic-counselors.htm)).

Furthermore, the demand for qualified workers in biotechnology is above the average job demand for all professions ([5](file:///C:/Users/mclark/Desktop/ALG%20GRANT%202022/5), [6](https://www.bls.gov/ooh/architecture-and-engineering/biomedical-engineers.htm)). Bioengineers, Biomedical Engineers, and Biological Technicians are among the top 10 in-demand careers in the field ([7](https://www.genengnews.com/a-lists/top-10-life-sciences-jobs-most-in-demand-over-the-next-decade-2/)), and job opportunities for these specialties are projected to grow 7-13% over the next decade ([8](https://www.northeastern.edu/graduate/blog/biotechnology-careers/)).

During the creation of the BIOL2700K course, we searched for low or no-cost options for a laboratory manual. We found only one accessible lab manual ([9)](https://academicworks.cuny.edu/ny_oers/7/) but it did not fit the curriculum for our course and we did not have the laboratory equipment needed for the exercises.

Currently, the price of course materials makes BIOL2700K an unattractive option for many GHC students, despite it being a required elective in many curriculum pathways. This course transformation will reduce the financial burden for students. This transformation will additionally provide an opportunity for students to participate in the creation of exercises for future classes.

We recognize that the current annual savings impact for this transformation is low, but we believe that the high cost of the materials is a limiting factor for enrollment in BIOL2700K. Further, the broader impact will be on students in four-year programs where there are no current open-access laboratory manuals. Since many institutions require Genetics as part of a four-year curriculum, students who are not currently enrolled at GHC may elect to take BIOL2700K at GHC to satisfy the requirement at a lower cost.

We have established a cross-college collaboration between GHC and GSU-PC. The five GSU-PC campuses serve over 18,000 students from diverse backgrounds. GSU-PC offers both transfer and associates degree programs. An average of 54% of students receive some type of financial aid, with 31% of that being Federal loans. Additionally, over 58% of students are non-traditional students who are working full-time while taking courses ([10](https://datausa.io/profile/university/georgia-state-university-perimeter-college)). All GSU-PC biology majors are required to take Principles of Biology I (BIOL 2107) as a part of their degree program. The current BIOL 2107 lab manual represents a cost of $10, 584 per year for enrolled GSU-PC students.

Additionally, the current BIOL 1107 and BIOL2107 lab manuals are in major need of revision to develop more hypothesis-driven laboratory exercises to ensure students are prepared for upper-level science courses. This transformation will provide 6-7 lab exercises to be utilized by GHC and all GSU-PC campuses for BIOL1107/2107. The manual will serve as a starting point for the development of additional activities that can be used in courses such as BIOL 1103L (non-majors biology) and BIOL 2310 (microbiology).

Moreover, and perhaps most important, our project will provide an opportunity for currently enrolled students to engage in the process of content creation, experimental design and evaluation.

***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.***

## 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.*

Our plan is to create an OER laboratory manual that covers curriculum for multiple courses offered in the USG. The action plan consists of 4 phases:

**PHASE 1:** **OER Review,** **Organization and Planning, Student Participation**

Merry Clark and Emily Blalock will review comparable OERs outside of the USG (as none are currently available within the USG). Learning outcomes/course objectives will be compared for courses at GHC and GSU-PC to select laboratory activities for inclusion in the final OER.

Students enrolled in BIOL2700K (Genetics) at GHC (Spring 2022) will develop potential laboratory activities, supervised by Dr. Merry Clark and assisted by April Cole. Pre and post-assessment questions will be administered for existing laboratory activities to assess student confidence and ability to master specific course objectives for BIOL2700K and BIOL2107L. Post-assessment questions will be administered to measure student opinion of existing laboratory exercises.

April Cole will record video of techniques used in BIOL2700K laboratories and create QR codes for inclusion in the OER.

Katie Bridges will develop a template for the manual which meets the accessibility guidelines established by Section 508 of the Rehabilitation Act of 1973. Additionally, she will ensure all images meet the Creative Commons licensing requirements CC-BY-NC-SA. The manual will be developed using Microsoft Word to allow for easy conversion to PDF, also allowing for adaptations, remixes and transformations in accordance with the CC-BY-NC-SA.

**PHASE 2: Content creation**

All team members will meet to assess student contributions for inclusion in the final OER.

Appropriate activities will be tested and/or modified by Merry Clark, April Cole and Emily Blalock. Clark and Blalock will create additional activities to satisfy remaining course objectives for their respective course objectives.

April Cole will create artwork (diagrams and/or images) needed for selected activities.

Katie Bridges will ensure accessibility of created content including new artwork and images, assemble the curated content from Clark and Blalock in the manual, develop, disseminate, and analyze data from student surveys evaluating content as it relates to learning objectives.

**PHASE 3: Content evaluation and publication**

The team will evaluate the effectiveness of the new laboratory exercises in GHC (BIOL2700) and GSU-PC (BIOL2017) courses. Course syllabi will be adjusted to include the new exercises.

**PHASE 4:**

The team will meet to compile student survey data and create final ALG report.

The manual will be made available on the Affordable Learning Georgia website.

***Each team member will take an active role in implementing the Transformation Action Plan as follows:***

**Dr. Merry Clark**: Co-PI and curriculum expert - will administer project from beginning to end, including: development of 4-6 laboratory exercises, syllabi revision, administration of surveys, data collection, and creation of the final report. Will also supervise BIOL2700K students in the creation of laboratory exercises and assess/test those exercises for inclusion in the final laboratory manual.

**Dr. Emily Blalock**: Co-PI and curriculum expert - will administer the project from beginning to end, including: development of 5-7 laboratory exercises, syllabi revision, administration of surveys, data collection, and creation of the final report.

**April Cole**: Student Assistant and content expert –will oversee artwork/graphics for each activity and develop multimedia resources including instructional video clips and QR codes. Will also work with BIOL2700K students to create laboratory exercises.

**Katie Bridges**: Instructional Design – will oversee design and formatting of the lab manual ensuring accessibility and CC guidelines are met, development and dissemination of surveys, data collection, and analysis.

## 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.*

**QUANTITATIVE AND QUALITATIVE MEASURES**

Throughout the length of this project, we will assess the impact of the laboratory manual. Both quantitative and qualitative data will be collected as follows:

Quantitative measures will include: (1) a comparison of lab assignments and overall course grades to previous semesters (BIOL2700K and BIOL2107L), (2) comparison of content usage data collected from D2L in transformed course versus non-transformed courses (BIOL2700K and 2107L).

Qualitative measures will utilize pre- and post- course student surveys to determine (1) frequency of use of OER, (2) ease of use and accessibility, and (3) overall opinion of the OER. Student surveys will also be accessed to determine use and effectiveness of multimedia resources. All data will be compiled, analyzed, and presented in a final project report.

## 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.*

**Spring 2022**

* **Attend Kick-off meeting**
* **Identify topics that require inclusion in manual**: Learning outcomes will be compared for courses at GHC and GSU-PC to decide on appropriate activities needed for the final manual
* **Assessment:** Pre- and Post- course student surveys administered
* **Experimental design with students:** Students currently enrolled in BIOL2700K (Genetics) at GHC will develop potential laboratory activities, supervised by Dr. Merry Clark and assisted by April Cole.
* **Create artwork/graphics and multimedia resources:** April Cole will record video of students executing laboratory protocols, and create QR codes for inclusion in the manual.
* **End of Spring**: Team meets to discuss protocols submitted to determine their potential for inclusion in an OER

**Summer 2022**

* **Development of new lab protocols:** Clark, Blalock, & Cole will discuss results from spring and collaborate to develop remaining activities

**Fall 2022**

* **Assess experimental design for chosen protocols**
* **Create activities for use in LMS at GHC and GSU-PC**
* **Generate multimedia resources and/or artwork for each activity**
* **Assessment:** Pre- and Post- course student surveys administered

**Spring 2023**

* **Assessment:** Pre- and Post- course student surveys administered
* **Finalize protocols (formatting, graphics, troubleshooting, etc.)**
* **Analyze survey data and compile final report**
* **Format final manual with accessibility and CC guidelines**

## 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.*

**GSU-PC BUDGET:**

**Emily Blalock: $5000** – creation of laboratory exercises, data collection and analysis

**Katie Bridges: $5000** – design, build and formatting of the lab manual ensuring accessibility and CC guidelines are met, development and dissemination of surveys, data collection, and analysis.

**GHC BUDGET:**

**Merry Clark: $5000 -** creation of laboratory exercises, advisement for and assessment of student protocols, data analysis, submission of reports

**April Cole: $5000** - creation of multimedia resources (instructional videos, QR codes, online assignment links) artwork and graphics, troubleshooting student protocols

**Materials/Supplies: $950**

* $150 - *Biorender* subscription for clip art/images (<https://biorender.com/)\>
* $700 - Video camera for capturing high quality instructional videos

\*This is a critical component for the inclusion of video tutorials linked to QR codes embedded in the manual. We cannot use our personal or work devices for 2 reasons: 1) the quality is sub-par and 2) we do not have adequate storage for videos on our devices

* $100 - Memory Cards for storing/editing instructional videos

**Travel: $200 -** Travel costs for collaboration with GSU (parking, fuel)

**REFERENCES**

1. Board of Regents, University System of Georgia, Office of Research and Policy Analysis. 2021. <https://www.usg.edu/assets/usg/docs/news_files/Fall_2021_SER.pdf>
2. United States Public Interest Research Group. 2014. <http://www.uspirg.org/sites/pirg/files/reports/NATIONAL%20Fixing%20Broken%20Textbooks%20Report1.pdf>
3. Georgia Highlands College Fact Book: Academic Year 2018-2019 <https://sites.highlands.edu/iesi/wp-content/uploads/sites/9/2020/03/Fact-Book-2018-2019-FINAL-11-5-19.pdf>
4. Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Genetic Counselors, <https://www.bls.gov/ooh/healthcare/genetic-counselors.htm>
5. Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Bioengineers and Biomedical Engineers, <https://www.bls.gov/ooh/architecture-and-engineering/biomedical-engineers.htm>
6. <https://www.bls.gov/ooh/architecture-and-engineering/biomedical-engineers.htm>
7. (<https://www.genengnews.com/a-lists/top-10-life-sciences-jobs-most-in-demand-over-the-next-decade-2/>),
8. (<https://www.northeastern.edu/graduate/blog/biotechnology-careers/>).
9. <https://academicworks.cuny.edu/ny_oers/7/>
10. <https://datausa.io/profile/university/georgia-state-university-perimeter-college>

## Sustainability Plan Transformation

*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*
* This laboratory manual will be used in ALL BIOL2700 courses at GHC
* Several exercises in the manual will be used in ALL BIOL2107 courses at GSU-PC and ALL BIOL1107 courses at GHC
* We will continually update exercises based on student feedback
* The manual will be available in digital format for all future students at GHC and GSU-PC
* The manual will be made available for use in additional courses at GHC and GSU-PC
* Student submissions for this project may be submitted for various scientific conferences

*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.*

|  |
| --- |
| *Brandy Rogers, GHC Chair, Biology, School of STEM*  *Deniz Ballero, GSU-PC Interim Chair, Life and Earth Sciences* |

# 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.*

# 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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| *Krissy Shanahan, GHC*  *Glenn Pfeifer, GSU-PC* |