

**Project Title:** Leveraging OER to Break Down Barriers to a College Education

**Summary:** Texas A&M International University's (TAMIU) Killam Library is requesting \$249,297 in funding from the National Leadership Grants for Libraries to support a three-year project in the Community Catalysts category for the development and implementation of an open educational resources (OER) program with a focus on Hispanic Serving Institutions (HSIs). The goals of this project are: 1) increase the adoption, adaptation, and creation of OER; 2) connect faculty, staff, librarians, and administrators through workshops and professional development opportunities; and 3) conduct research on the impact of course material costs on Hispanic students.

**Statement of Need:** Nationally, the number of HSIs has increased by 93% over the past decade. Since 2019, the number of institutions with between 15% and 25% full-time-equivalent undergraduate Hispanic enrollment has grown by 7%, and more than half of all states have at least one institution that meets this definition. This trend is likely to continue, as the number of Latinx students enrolled in higher education continues to rise.<sup>1</sup> Generally, HSIs have a higher enrollment of students from low-income families and most are first-generation students. For example, the poverty rate in Laredo, TX is 29.1%<sup>2</sup> compared to 12%<sup>3</sup> nationally and the percentage of first-generation students at TAMIU is 56%<sup>4</sup> compared to a national average of 33%.<sup>5</sup> With a student population that is 91.5% Hispanic, TAMIU has the largest percentage of Hispanic enrollment among US institutions among all US states. As part of the Higher Education Amendments of 1992, Congress has funded a grant program for minority-serving institutions. However, despite this grant program, as well as the overall growth of HSIs and the increasing enrollment of Hispanic students, HSIs continue to be woefully underfunded. For example, in 2019, the total funding available for HSIs represented just \$87 per Hispanic student, compared with \$1,642 per Black student enrolled at historically Black colleges and universities (HBCUs). Additionally, funding models for HBCUs and HSIs are significantly different. The funding model for HBCUs is based on a formula, where all eligible institutions receive funds, on the other hand, HSIs receive funding based upon a competition, meaning that some institutions do

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<sup>1</sup> St. Amour, M. (2020). Latinx Enrollment, Hispanic-Serving Institutions Increase. <https://www.insidehighered.com/quicktakes/2020/04/17/latinx-enrollment-hispanic-serving-institutions-increase>

<sup>2</sup> United States Census Bureau. (2019). Quick Facts - Laredo, Texas. <https://www.census.gov/quickfacts/laredocitytexas>

<sup>3</sup> United States Census Bureau. (2019). Quick Facts - United States. <https://www.census.gov/quickfacts/fact/table/US/PST045219>

<sup>4</sup> Texas A&M International University. (2020). Fast Facts. <https://www.tamtu.edu/newsinfo/dyk.shtml>

<sup>5</sup> National Center for Education Statistics. (2018). First-Generation Students: College Access, Persistence, and Postbachelor's Outcomes. <https://nces.ed.gov/pubs2018/2018421.pdf>

not apply for or receive funding.<sup>6</sup> The consequence of this is that it becomes more difficult to fund new initiatives, such as an OER program, that would be highly beneficial to students. As a result of these funding inadequacies, the Center for American Progress states to “improve racial equity and give a rising generation the opportunity to succeed in college and the economy, Congress should invest a total of \$1 billion in Hispanic-serving institutions (HSIs), which collectively enroll 2.5 million Latinx students.”<sup>7</sup>

The development and implementation of an OER program will help relieve some of the burden of educational cost and provide a more equitable educational experience. Furthermore, the high cost of textbooks is very likely one of the reasons why the four-year and the six-year graduation rates (24.75% and 45.66% respectively)<sup>8</sup> at TAMIU are significantly below the national average among public institutions (36.9%<sup>9</sup> and 61%<sup>10</sup> respectively). This project is needed to build capacity for the adoption, adaptation, and creation of OER as well as conduct research on the impact of course material costs on Hispanic students.

**Project Design:** This three-year project has three main goals: 1) increase the adoption, adaptation, and creation of OER through the implementation of an alternative textbook program; 2) connect faculty, staff, librarians, and administrators through workshops and professional development opportunities; and 3) conduct research on the impact of course material costs on Hispanic students.

- **Adopt, adapt, create:** Killam Library will develop an alternative textbook program to provide funding to individuals, teams, and departments/programs to increase the adoption, adaptation, and creation of OER. Funding will be divided into three categories: adoption, adaptation, and creation.

Type	Range	Description
Adoption	\$500 to \$1,000	Adopt an existing open textbook for a course with little revision to the original content.

<sup>6</sup> Anguiano, V. and Navarro, M. (2020). Hispanic-Serving Institutions Need \$1 Billion More in Federal Funding. Center for American Progress. <https://www.americanprogress.org/issues/education-postsecondary/news/2020/12/08/492883/hispanic-serving-institutions-need-1-billion-federal-funding/>

<sup>7</sup> Anguiano, V. and Navarro, M. (2020). Hispanic-Serving Institutions Need \$1 Billion More in Federal Funding. Center for American Progress. <https://www.americanprogress.org/issues/education-postsecondary/news/2020/12/08/492883/hispanic-serving-institutions-need-1-billion-federal-funding/>

<sup>8</sup> Texas A&M International University. (2018). Quick Facts. <https://www.tamtu.edu/adminis/iep/DataCenter.shtml#DRQF>

<sup>9</sup> National Center for Education Statistics. (2020). Digest of Education Statistics. [https://nces.ed.gov/programs/digest/d20/tables/dt20\\_326.10.asp](https://nces.ed.gov/programs/digest/d20/tables/dt20_326.10.asp)

<sup>10</sup> National Center for Education Statistics. (2019). Undergraduate Retention and Graduation Rates. [https://nces.ed.gov/programs/coe/pdf/Indicator\\_CTR/coe\\_ctr\\_2019\\_05.pdf](https://nces.ed.gov/programs/coe/pdf/Indicator_CTR/coe_ctr_2019_05.pdf)

Type	Range	Description
Adaptation	\$1,000 to \$2,000	Adapt, update, combine, or improve existing OER to replace a currently used textbook.
Creation	\$2,000 to \$4,000	Create an original open educational resource to be used in a course and shared under a Creative Commons license.

Requests for funding will be done through an application process evaluated by the OER Advisory Council, a cross-departmental committee convened and led by the library. The OER Advisory Council will include membership from the library, faculty, staff, and student body. Potential evaluation criteria for applications will be total potential savings, number of students impacted, frequency of course offering, inclusion of diverse perspectives, accessibility, and gap in existing OER.

Individuals, teams, and departments/programs receiving funding will commit to the following:

- Meet with a member of Killam Library's Scholarly Communications & OER Team.
- Take part in one additional OER-related professional development opportunity.
- Meet with the Office of Disability Services for Students.
- Submit final syllabus and list of OER materials.
- Teach the course using OER in all assigned sections for at least two semesters.
- Share any adapted and/or created work under a Creative Commons license.
- Provide an appropriate copy of the work to be uploaded to TAMIU's institutional repository, RIO (if adapting or creating).
- Complete a faculty survey about their experience using OER.
- Inform the Registrar's Office and TAMIU Bookstore regarding the use of the OER in each semester it is used.

In addition to the alternative textbook program, Killam Library will collect data on the usage of OER on campus from a faculty survey, the online course schedule, and information shared from the bookstore. The data collected will be faculty name, department, title and link of OER used, cost of previous textbook, term, course, section number, number of sections, and number of students enrolled per section. This information will be stored in a database and made publicly available on the Open Education at TAMIU website developed and maintained by Killam Library.

- **Connect:** Killam Library will develop, organize, facilitate, and fund professional development opportunities to connect faculty, staff, librarians, and administrators. This includes hosting events during Open Education Week and organizing a free annual open education symposium at the conclusion of each academic year. We will plan to host these events both in-person and virtually to allow for a broad attendance. In the event that COVID-19 may still impact in-person events, we will also develop plans to host the Open Education Week events and open education symposium virtually. The Open Education Week events and symposium will be recorded and made available in TAMIU's institutional repository, RIO.

The open education symposium will be held annually at the conclusion of each Spring semester. Invitations to this event will be extended to all institutions in the Texas A&M University System, Texas Digital Libraries members, and other local and regional colleges and universities. This event will include an invited keynote speaker; a session on Creative Commons licensing; a faculty panel discussing their experiences with OER; a student panel discussing the impact of the cost of course materials and their experiences with OER; and breakout sessions on adopting, adapting, creating, and teaching with OER.

Additionally, this project will provide funding for participation in programs such as Rebus Community's Textbook Success Program. For creation projects, we will consult and contract with the Rebus Community to enroll the creation projects in Rebus' Textbook Success Program. This program is "the pairing of a 12-week course and a monthly check-ins regimen for teams creating open textbooks. Participants will join a group made up of project teams from their institution as well as teams from other universities and colleges. The entire open textbook process, from ideation to adoption tracking, will be covered over the first 12 weeks. Once the course portion is complete, monthly check-ins with the group and the Rebus team will be held for nine months."<sup>11</sup> The goal of the Textbook Success Program is to create a supportive learning community, build an institution's capacity for future OER creation, and encourage the growth of OER communities on campus.

- **Research:** The high cost of course materials continues to have significant impacts on student access, success, and degree completion. The Florida Virtual Campus' 2018 *Student Textbook and Course Materials Survey* found that 64.2% of students are not purchasing the required textbook; 42.8% are taking fewer courses; 40.5% are not registering for a specific course; 35.6% are earning a poor grade; and 22.9% dropping a

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<sup>11</sup> Rebus Community. (2021). Textbook Success Program. <https://about.rebus.community/textbook-success-program/#faq>

course.<sup>12</sup> The report *Fixing the Broken Textbook Market: Third Edition* by the U.S. Public Interest Research Group (PIRG), found similar trends. Their survey, conducted in September 2020 and factoring in the impacts of COVID-19, found that 65% of students reported not purchasing the required textbook, and 21% reported not purchasing an access code. That number jumps to 86% for students who experienced food insecurity during the pandemic. The report also found that 90% of students are still heavily concerned that not purchasing course materials will have a negative impact on their grades.<sup>13</sup>

While the reports from the Florida Virtual Campus and the U.S. PIRG offer valuable data and information on the impacts of the cost of course materials on students, demographic information is missing. Not only is demographic information missing from these reports, there is little research in general about the impact of course material costs on different student demographics. As a Hispanic serving institution, especially one that is located where the poverty rate is nearly three times the national average, this data is alarming. Given the demographics of our institution and the city in which Texas A&M International University is located, we want to conduct research on the impact of course material costs on Hispanic students and determine whether Hispanic students are more adversely impacted by the cost of course materials than the overall general student population. We have three main research questions:

- Are Hispanic students impacted more by the cost of course materials than the general student population?
- Does the cost of course materials affect Hispanic students' decisions on which courses to take?
- Does the cost of course materials affect Hispanic students' decisions on the major they choose?

Using similar survey questions as those by the Florida Virtual Campus and U.S. PIRG, we will develop a questionnaire that aims to address our research questions regarding our specific student population. Our goal will be to develop the questionnaire during Year One of the project and disseminate it during the Fall of Year Two. Our plan will be to disseminate the questionnaire at Texas A&M International University as well as other institutions within the Texas A&M University and University of Texas Systems that have a majority student population that identify as Hispanic. This will include the following five additional institutions:

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<sup>12</sup> Florida Virtual Campus. (2019). 2018 Student Textbook and Course Materials Survey. <https://bit.ly/3qCkrUd>

<sup>13</sup> U.S. PIRG. (2021). *Fixing the Broken Textbook Market: Third Edition*. <https://bit.ly/30nF6AH>

- University of Texas Rio Grande Valley - 91%<sup>14</sup>
  - 32,441 total enrollment, 29,359 Hispanic student enrollment
- University of Texas at El Paso - 83%<sup>15</sup>
  - 24,879 total enrollment, 20,650 Hispanic student enrollment
- Texas A&M University-San Antonio - 76%<sup>16</sup>
  - 6,741 total enrollment, 5,136 Hispanic student enrollment
- Texas A&M University-Kingsville - 71%<sup>17</sup>
  - 6,915 total enrollment, 4,902 Hispanic student enrollment
- University of Texas at San Antonio - 57%<sup>18</sup>
  - 34,742 total enrollment, 19,809 Hispanic student enrollment

The enrollment of these five institutions and Texas A&M International University account for 114,166 total students and 87,797 Hispanic students (77% of the total student enrollment).

The findings of our research will be shared through a variety of venues. These will include presentation/workshop proposals to conferences such as ACRL, Creative Commons Global Summit, Open Education Southern Symposium, Open Texas, Hispanic Association of Colleges and Universities, Association of Mexican American Educators, HBCU Library Alliance, and Open Education Global; and publication proposals to open access journals like the *International Journal of Open Educational Resources*. We will also make an appropriate copy of any scholarship produced from this project available in TAMIU institutional repository, RIO, with a Creative Commons license.

**Current Work:** Over the course of the 2020-2021 academic year, Killam Library has begun laying the foundation for a more systematic approach to OER. We have been collecting data on the usage of OER at TAMIU through faculty surveys and shared information from the campus bookstore. This led to the discovery that 119 courses utilized OER, 5,460 students were enrolled in an OER course; and 47 different faculty members from 15 different disciplines used OER. This has resulted in a total estimated cost savings of \$575,109 for the 2020-2021 academic year (see Figure 1). Despite this success, there remains a general unawareness of OER, both among faculty and students. What we have also found from this data is that a majority of courses using OER are using OpenStax and are not aware of other OER available or where to find them. As a

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<sup>14</sup> University of Texas Rio Grande Valley, (2021). Institutional Summary 2020-2021.

<https://www.utrgv.edu/sair/files/documents/instsummary2020.pdf>

<sup>15</sup> University of Texas at El Paso. (2021). At a Glance. <https://www.utep.edu/initiatives/at-a-glance/>

<sup>16</sup> Texas A&M University - San Antonio. (2021). Texas A&M University-San Antonio - Profile.

<https://tabsoft.co/3v9lpJF>

<sup>17</sup> Texas A&M University - Kingsville. (2021). Interactive Campus Data.

<https://www.tamuk.edu/oira/institutional-data/Interactive-Campus-Data.html>

<sup>18</sup> University of Texas at San Antonio. (2021). Student Demographics.

<https://www.utsa.edu/ir/content/dashboards/student-demographics.html>

result, Killam Library has been engaged in outreach efforts to raise awareness. Those outreach efforts have extended to academic deans, departments, individual faculty, administration, and the Student Government Association (SGA). These outreach efforts have resulted in a growing commitment and enthusiasm for OER adoption, adaptation, and creation. We are currently collaborating with University College on implementing OER across all courses and sections; working with SGA on creating a video to raise awareness about OER among students; consulting with Public Administration on the adoption of OER in their curriculum; consulting with History on the adoption of OER across all sections of the American History survey courses. Faculty have also expressed interest in adapting and creating OER, but require funding. This project would provide us with the ability to build upon our current success and provide additional opportunities for faculty to adapt and create OER that can be utilized at TAMIU and beyond.

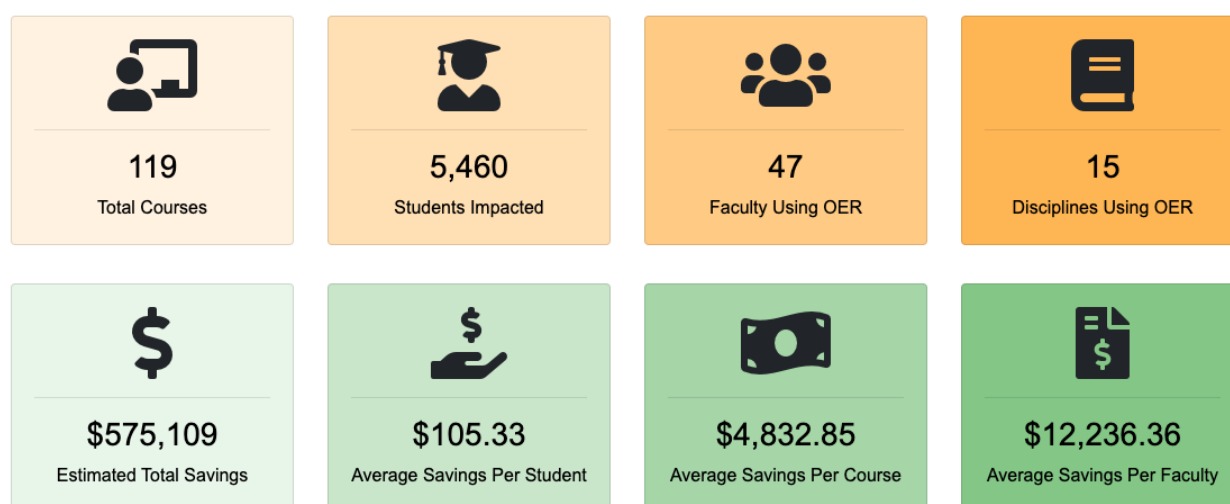


Figure1: OER Activities at TAMIU for 2020-2021 Academic Year

**Diversity Plan:** Multicultural diversity, equity, and inclusion has not historically been prevalent in teaching materials, most notably textbooks, which form the basis for 70% to 95% of all classroom instruction.<sup>19</sup> Historically multicultural education has existed but it has been described in America as a “heroes and holidays approach to teaching”<sup>20</sup>, meaning that the history of Black, Indigenous, or People of Color (BIPOC) are only taught during national holidays or events. This problem is so systemic that the United Nations Sustainable Development Goals addresses this in Goal 4, which prompts us to “ensure inclusive and equitable quality education and promote

<sup>19</sup> Gay, G. (2000). *Culturally responsive teaching : theory, research, and practice*. Teachers College Press.

<sup>20</sup> Mensah, F. M. (2013). Theoretically and Practically Speaking, What is Needed in Diversity and Equity in Science Teaching and Learning? *Theory into Practice*, 52(1), 66-72.  
<https://10.1080/00405841.2013.743781>

lifelong learning opportunities for all.”<sup>21</sup> Specifically Goal 4.7, states that part of a basic, quality education should be the knowledge and skills to understand and promote a “sustainable lifestyle, human rights, gender equality, global citizenship, and appreciation of cultural diversity and of culture’s contribution to sustainable development”.<sup>22</sup>

Some scholars have found that this need for competent, global citizens calls for more intercultural competence and cross-cultural empathy in higher education curriculum.<sup>23</sup> Faculty are encouraged to create a culturally accountable curriculum by finding course materials that lift underrepresented voices and perspectives that aren’t just talked about by others.<sup>24</sup> This can mean cultivating resources from alternative and non-mainstream sources. OER are uniquely positioned to aid in these endeavors to diversify learning materials. TAMIU is uniquely positioned to answer this call for multicultural and diverse perspectives as we have the eighth most diverse Faculty body among Colleges with the Greatest Racial and Ethnic Diversity Among Faculty members.<sup>25</sup> By supporting our Faculty’s efforts to draw on their own multicultural backgrounds we intend to add to the diversity of the field and body of OER by contributing their unique voices and perspectives. We will further commit to raising BIPOC voices and experiences by offering a diverse set of speakers at our open education symposium.

Killam Library is committed to advocating for underrepresented peoples and perspectives in all aspects of academia. Our Diversity and Inclusivity value states, “We cultivate a welcoming and open library that values diversity and inclusivity, recognizing the strength that they bring to our institution and operations.”<sup>26</sup> We will continue and expand on this work through our OER initiatives.

Additionally, applications for funding will be evaluated on inclusion of diverse, multicultural, and underrepresented perspectives. Specifically voices should be from people of various cultures, genders, classes, sexualities and with differing abilities.

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<sup>21</sup> United Nations. (2021). Goal 4 | Department of Education and Social Affairs. <https://sdgs.un.org/goals/goal4>

<sup>22</sup> United Nations. (2021). Goal 4 | Department of Education and Social Affairs. <https://sdgs.un.org/goals/goal4>

<sup>23</sup> Andrews-Swann, J. (2019). Cultivating Global Citizens: Classroom Tools to Reduce Cultural Judgment and Foster Intercultural Understanding in Higher Ed. *Multicultural Instructional Design: Concepts, Methodologies, Tools, and Applications* (pp. 492-506). IGI Global. <https://10.4018/978-1-5225-9279-2.ch023>

<sup>24</sup> Culturally Responsive & Inclusive Curriculum Resources: Creating Culturally Responsive Curriculum. <https://guides.library.pdx.edu/c.php?g=527355&p=3605354>

<sup>25</sup> Colleges With the Greatest Racial and Ethnic Diversity Among Faculty Members, Fall 2017. <https://www.chronicle.com/article/colleges-with-the-greatest-racial-and-ethnic-diversity-among-faculty-members-fall-2017/>

<sup>26</sup> Sue & Radcliffe Killam Library. (2021). Mission, Vision, & Values. Sue & Radcliffe Killam Library. <https://www.tamtu.edu/library/about-killam/mission.shtml>



## Sample Evaluative Criteria for Diversity and Inclusion for OER Funding Applications:

Does the OER engage diverse and/or underrepresented populations?
Does the OER reflect and engage our current and prospective student population?
Does the OER acknowledge various perspectives?
Does the OER foster an inclusive classroom community?
Are all information formats, i.e. visual, audio, etc., accessible?

**National Impact:** The affordability of textbooks and other course materials remains a pressing issue in higher education, and continues to present a barrier for many students. This is further compounded at HSIs, which have been traditionally underfunded. There are currently 539 HSIs and 352 emerging HSIs, with 96 HSIs and 45 emerging HSIs located in Texas. The Hispanic Association of Colleges and Universities estimates that Hispanic enrollment in higher education is estimated to be 4.2 million, or nearly 25% of all students, by 2029.<sup>27</sup> However, despite the growing Hispanic student population, HSIs only receive 68 cents for every dollar going to all other colleges and universities annually, per student, from all federal funding sources. A preliminary reviewer noted that this project is the “first application I’ve seen that specifically aims to address access and resources for this historically underserved community.” This project addresses the issue of course material affordability at HSIs and will have significant national impact through the creation of new OER and research on the impact of course material costs on Hispanic students. As the number of HSIs continues to grow, this project can serve as a culturally and academically relevant model for other HSIs.

TAMIU is well positioned to undertake this project. There is growing commitment and enthusiasm on campus for OER. Outside of TAMIU, members of the project team are actively involved and engaged with the Texas Digital Library and the Texas A&M University System Council for Academic Technology and Innovation Education OER Working Group, which are focused on increasing awareness and capacity for OER across the Texas A&M University System and other Texas higher education institutions.

**Key Personnel:** Ben Rawlins will serve as the project director and principal investigator. He is the library director at Texas A&M International University and has experience developing and implementing OER initiatives. He currently serves as a member of the Texas A&M University System Council for Academic Technology and Innovation Education OER Working Group and has served as a member of the SUNY OER Advisory Council. He has presented on OER both

<sup>27</sup> Hispanic Association of Colleges & Universities. (2020). 2020 Fact Sheet. [https://www.hacu.net/images/hacu/OPAI/2020\\_HSI\\_FactSheet.pdf](https://www.hacu.net/images/hacu/OPAI/2020_HSI_FactSheet.pdf)

nationally and internationally, and his work on OER curation has been recognized by ACRL<sup>28</sup> and the Open Education Consortium.<sup>29</sup>

Elizabeth DeZouche will serve as a co-investigator, adviser, and facilitator. She is the Information Literacy Librarian at TAMIU and has experience utilizing and leveraging OER in her instructional and liaison roles. She was involved in the creation of the TAMIU OER website and is invested in the discoverability and usability of OER inside and outside of the classroom.

Jeanette Hatcher will serve as a co-investigator and advisor. She is the Special Collections Librarian at Texas A&M International University. Ms. Hatcher has diverse grant award experience with grantors such as the National Endowment for the Humanities, American Library Association, the Summerlee Foundation and most recently as a peer advisor for *Email Archives, Capacity and Community Grant Program* sponsored by the University of Illinois at Urbana-Champaign and the Andrew W. Mellon Foundation. Her professional interests include methods of connecting and retaining diverse student populations with higher education opportunities and an assessment of OER initiatives among peer institutions within the Texas A&M system.

Rodney Webb will serve as a co-investigator and advisor. He is the Reference/Government Documents Librarian at Texas A&M International University. He has over 35 years of experience encompassing two Hispanic Serving Institutions with membership in the university and library assessment committees where he has been involved in assessment of OERs. He is especially interested in the instructional use of government documents as OERs.

**Budget:** The total estimated budget for the three-year project is \$249,297. This includes approximately: \$100,000 for participant fees for adoption, adaptation, and creation of OER; \$18,500 in fringe benefits for participant fee payments; \$37,000 to facilitate workshops and professional development opportunities for faculty; \$12,834 for Project Team travel to disseminate research and effective outcomes at professional conferences; \$6,000 for materials and supplies; and \$74,963 in indirect costs calculated at the DHHS negotiated rate of 43%.

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<sup>28</sup> Ollis, C. (2019). SUNY Geneseo receives ACRL CLS Innovation in College Librarianship Award. <https://bit.ly/3s74xml>

<sup>29</sup> Open Education Consortium. (2019). 2019 Winners of Resources, Tools, and Practices Awards - OER Curation. <https://bit.ly/2Nnozcu>







## DIGITAL PRODUCT FORM

### INTRODUCTION

The Institute of Museum and Library Services (IMLS) is committed to expanding public access to digital products that are created using federal funds. This includes (1) digitized and born-digital content, resources, or assets; (2) software; and (3) research data (see below for more specific examples). Excluded are preliminary analyses, drafts of papers, plans for future research, peer-review assessments, and communications with colleagues.

The digital products you create with IMLS funding require effective stewardship to protect and enhance their value, and they should be freely and readily available for use and reuse by libraries, archives, museums, and the public. Because technology is dynamic and because we do not want to inhibit innovation, we do not want to prescribe set standards and practices that could become quickly outdated. Instead, we ask that you answer questions that address specific aspects of creating and managing digital products. Like all components of your IMLS application, your answers will be used by IMLS staff and by expert peer reviewers to evaluate your application, and they will be important in determining whether your project will be funded.

### INSTRUCTIONS

If you propose to create digital products in the course of your IMLS-funded project, you must first provide answers to the questions in **SECTION I: INTELLECTUAL PROPERTY RIGHTS AND PERMISSIONS**. Then consider which of the following types of digital products you will create in your project, and complete each section of the form that is applicable.

#### **SECTION II: DIGITAL CONTENT, RESOURCES, OR ASSETS**

Complete this section if your project will create digital content, resources, or assets. These include both digitized and born-digital products created by individuals, project teams, or through community gatherings during your project. Examples include, but are not limited to, still images, audio files, moving images, microfilm, object inventories, object catalogs, artworks, books, posters, curricula, field books, maps, notebooks, scientific labels, metadata schema, charts, tables, drawings, workflows, and teacher toolkits. Your project may involve making these materials available through public or access-controlled websites, kiosks, or live or recorded programs.

#### **SECTION III: SOFTWARE**

Complete this section if your project will create software, including any source code, algorithms, applications, and digital tools plus the accompanying documentation created by you during your project.

#### **SECTION IV: RESEARCH DATA**

Complete this section if your project will create research data, including recorded factual information and supporting documentation, commonly accepted as relevant to validating research findings and to supporting scholarly publications.

## **SECTION I: INTELLECTUAL PROPERTY RIGHTS AND PERMISSIONS**

**A.1** We expect applicants seeking federal funds for developing or creating digital products to release these files under open-source licenses to maximize access and promote reuse. What will be the intellectual property status of the digital products (i.e., digital content, resources, or assets; software; research data) you intend to create? What ownership rights will your organization assert over the files you intend to create, and what conditions will you impose on their access and use? Who will hold the copyright(s)? Explain and justify your licensing selections. Identify and explain the license under which you will release the files (e.g., a non-restrictive license such as BSD, GNU, MIT, Creative Commons licenses; RightsStatements.org statements). Explain and justify any prohibitive terms or conditions of use or access, and detail how you will notify potential users about relevant terms and conditions.

**A.2** What ownership rights will your organization assert over the new digital products and what conditions will you impose on access and use? Explain and justify any terms of access and conditions of use and detail how you will notify potential users about relevant terms or conditions.

**A.3** If you will create any products that may involve privacy concerns, require obtaining permissions or rights, or raise any cultural sensitivities, describe the issues and how you plan to address them.

## **SECTION II: DIGITAL CONTENT, RESOURCES, OR ASSETS**

**A.1** Describe the digital content, resources, or assets you will create or collect, the quantities of each type, and the format(s) you will use.

**A.2** List the equipment, software, and supplies that you will use to create the digital content, resources, or assets, or the name of the service provider that will perform the work.

**A.3** List all the digital file formats (e.g., XML, TIFF, MPEG, OBJ, DOC, PDF) you plan to use. If digitizing content, describe the quality standards (e.g., resolution, sampling rate, pixel dimensions) you will use for the files you will create.

### **Workflow and Asset Maintenance/Preservation**

**B.1** Describe your quality control plan. How will you monitor and evaluate your workflow and products?

**B.2** Describe your plan for preserving and maintaining digital assets during and after the award period. Your plan should address storage systems, shared repositories, technical documentation, migration planning, and commitment of organizational funding for these purposes. Please note: You may charge the federal award before closeout for the costs of publication or sharing of research results if the costs are not incurred during the period of performance of the federal award (see 2 C.F.R. § 200.461).

## **Metadata**

**C.1** Describe how you will produce any and all technical, descriptive, administrative, or preservation metadata or linked data. Specify which standards or data models you will use for the metadata structure (e.g., RDF, BIBFRAME, Dublin Core, Encoded Archival Description, PBCore, PREMIS) and metadata content (e.g., thesauri).

**C.2** Explain your strategy for preserving and maintaining metadata created or collected during and after the award period of performance.



**C.3** Explain what metadata sharing and/or other strategies you will use to facilitate widespread discovery and use of the digital content, resources, or assets created during your project (e.g., an API [Application Programming Interface], contributions to a digital platform, or other ways you might enable batch queries and retrieval of metadata).

### **Access and Use**

**D.1** Describe how you will make the digital content, resources, or assets available to the public. Include details such as the delivery strategy (e.g., openly available online, available to specified audiences) and underlying hardware/software platforms and infrastructure (e.g., specific digital repository software or leased services, accessibility via standard web browsers, requirements for special software tools in order to use the content, delivery enabled by IIIF specifications).

**D.2.** Provide the name(s) and URL(s) (Universal Resource Locator), DOI (Digital Object Identifier), or other persistent identifier for any examples of previous digital content, resources, or assets your organization has created.

## **SECTION III: SOFTWARE**

### **General Information**

**A.1** Describe the software you intend to create, including a summary of the major functions it will perform and the intended primary audience(s) it will serve.

**A.2** List other existing software that wholly or partially performs the same or similar functions, and explain how the software you intend to create is different, and justify why those differences are significant and necessary.

### **Technical Information**

**B.1** List the programming languages, platforms, frameworks, software, or other applications you will use to create your software and explain why you chose them.

**B.2** Describe how the software you intend to create will extend or interoperate with relevant existing software.

**B.3** Describe any underlying additional software or system dependencies necessary to run the software you intend to create.

**B.4** Describe the processes you will use for development, documentation, and for maintaining and updating documentation for users of the software.

**B.5** Provide the name(s), URL(s), and/or code repository locations for examples of any previous software your organization has created.

## Access and Use

**C.1** Describe how you will make the software and source code available to the public and/or its intended users.

**C.2** Identify where you will deposit the source code for the software you intend to develop:

Name of publicly accessible source code repository:

URL:

## SECTION IV: RESEARCH DATA

As part of the federal government's commitment to increase access to federally funded research data, Section IV represents the Data Management Plan (DMP) for research proposals and should reflect data management, dissemination, and preservation best practices in the applicant's area of research appropriate to the data that the project will generate.

**A.1** Identify the type(s) of data you plan to collect or generate, and the purpose or intended use(s) to which you expect them to be put. Describe the method(s) you will use, the proposed scope and scale, and the approximate dates or intervals at which you will collect or generate data.

**A.2** Does the proposed data collection or research activity require approval by any internal review panel or institutional review board (IRB)? If so, has the proposed research activity been approved? If not, what is your plan for securing approval?

**A.3** Will you collect any sensitive information? This may include personally identifiable information (PII), confidential information (e.g., trade secrets), or proprietary information. If so, detail the specific steps you will take to protect the information while you prepare it for public release (e.g., anonymizing individual identifiers, data aggregation). If the data will not be released publicly, explain why the data cannot be shared due to the protection of privacy, confidentiality, security, intellectual property, and other rights or requirements.

**A.4** What technical (hardware and/or software) requirements or dependencies would be necessary for understanding retrieving, displaying, processing, or otherwise reusing the data?

**A.5** What documentation (e.g., consent agreements, data documentation, codebooks, metadata, and analytical and procedural information) will you capture or create along with the data? Where will the documentation be stored and in what format(s)? How will you permanently associate and manage the documentation with the data it describes to enable future reuse?

**A.6** What is your plan for managing, disseminating, and preserving data after the completion of the award-funded project?

**A.7** Identify where you will deposit the data:

Name of repository:

URL:

**A.8** When and how frequently will you review this data management plan? How will the implementation be monitored?