



**PennState**

# **Open Educational Resources (OER) Task Force Report**

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*August 2016*

**Penn State University OER Task Force  
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## Key Findings and Summary of Recommendations

The Penn State OER Task Force was charged in February 2015 to explore OER adoption and creation at the university in support of President Barron's access and affordability imperative. The Task Force met with several university stakeholders, benchmarked OER and affordable course content initiatives at peer institutions, hosted an OER Summit event, and conducted proof-of-concept pilots to investigate OER adoption underway and the support needed to scale adoption.

### ***Key Findings***

- Significant initiatives are already underway to create, adapt, and adopt OER and affordable course content at Penn State.
- Although much work related to OER and affordable course content is already underway, it is not coordinated or presented in a way that allows faculty to take advantage of the services and support available to them to transition their course(s) to low or no-fee alternatives.
- Penn State is well-positioned to support a programmatic effort to reduce cost through OER and affordable course content adoption by leveraging its investment in instructional design to support course transitions combined with faculty innovation in teaching and learning.
- Successful faculty development programs are already in place at Penn State to innovate teaching and learning (i.e., the Faculty Engagement Awards and Blended Learning Transformation Program administered by Teaching and Learning with Technology) and serve as models for scalable course transitions.
- Much of the work already underway on OER and affordable course content is taking place among the faculty and instructional designers at the Commonwealth Campuses and in the Colleges of Earth and Mineral Sciences and Arts and Architecture.
- The faculty and students involved in OER-based courses report a high level of satisfaction with the materials and their effectiveness in these courses.
- In addition to OER adoption, significant savings to students can be realized through a more coordinated and timely approach to textbook adoption for multi-section courses within and across locations.

### ***Summary of Recommendations***

- Create a coordinating position to further develop systematic and university-wide OER and affordable course content initiatives within University Libraries to partner with the OER lead recently designated in the Teaching and Learning with Technology unit of ITS.
- Leverage the existing Penn State involvement in the Unizin consortium and join OERu and the Open Textbook Network to maximize existing programs for faculty development and OER sharing.

- Capitalize on the interest generated from the OER Summit by implementing the professional development component of the Open Textbook Network membership for the Spring 2017 semester.
- Implement a robust faculty development program based on the model employed by Teaching and Learning with Technology in the Blended Learning Transformation Program.
- Pilot a systematic approach to course reserves for World Campus courses based on the model developed by the University of Minnesota.
- Implement a robust partnership with the university's bookstore vendor to facilitate a coordinated approach to textbook adoptions for multi-section courses, facilitate a systematic approach to expanding course reserves, and offer print-on-demand services for applicable open textbooks.
- Develop a strategy for hosting locally created OER as an early charge to the new staff and faculty leads in Teaching and Learning with Technology and University Libraries respectively.
- Develop and implement a university-wide strategic action plan for OER and affordable course content initiatives as an early charge to the new staff and faculty leads in Teaching and Learning with Technology and University Libraries respectively. Recommended metrics include course transitions and cost savings, faculty OER developments and adoptions, and outcomes-based assessment in courses using OER and affordable alternatives.
- Implement a course material designation in LionPath for OER and affordable course content to facilitate assessment of pedagogical effectiveness and eventually the ability of students to identify courses based on affordable course content.

# Chapter 1 - Context for OER at Penn State University

## *Open Educational Resources at Penn State – A Strategic Imperative*

Penn State's Open Educational Resources (OER) Initiative is a direct outgrowth of President Eric Barron's imperative to address access and affordability.<sup>1</sup> Penn State's mission statement includes a critically important sentence. "As Pennsylvania's land-grant university, we provide unparalleled access to education and public service to support the citizens of the Commonwealth and beyond."<sup>2</sup> Additionally, one of the plan's foundations includes *Enabling Access to Education* with "We will place pursuing and completing a Penn State education within reasonable reach for students and their families."<sup>3</sup>

Course materials comprise a significant financial burden for students, with costs hovering around \$1200 annually for undergraduate students. Textbook prices have risen 812% since 1978, far outpacing the consumer price index, which rose 250% during the same period.<sup>4</sup> Although the cost of textbooks is increasing, a recent article in the *Chronicle of Higher Education* noted that student expenditures on textbooks dipped slightly in the most recent year. A major reason is that students are not purchasing their texts because of cost. In one study 65% of students reported not purchasing a textbook because of its high cost.<sup>5</sup> Faculty have observed that some students do not have texts until well into the semester, if at all. OER is an important component, not only to support access and affordability, but also to drive pedagogical innovation. Studies conducted at Virginia State University and Houston Community College found that students who used open textbooks tended to have higher grades and lower withdrawal rates than their peers.<sup>6</sup>

The worldwide OER movement embraces the unprecedented opportunity afforded by technology to expand access to knowledge and advance pedagogy in creative ways. OER as a term was first designated by UNESCO in 2002 at the *Forum on the Impact of Open Courseware*

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<sup>1</sup> The Pennsylvania State University, *Our Commitment to Impact: The Pennsylvania State University's Strategic Plan for 2016-2020*. <http://sites.psu.edu/strategicplan/wp-content/uploads/sites/40561/2016/02/PennStateStrategicPlan2016-2020.pdf>.

<sup>2</sup> Ibid., 3.

<sup>3</sup> Ibid., 4.

<sup>4</sup> Dan Kopf. "Which Major Has the Most Expensive Textbooks?" *Priceonomics* (August 24, 2015). <http://priceonomics.com/which-major-has-the-most-expensive-textbooks>.

<sup>5</sup> U.S. PIRG Education Fund and the Student PIRGs, *Fixing the Broken Textbook Market*. <http://www.studentpirgs.org/reports/sp/fixing-broken-textbook-market>.

<sup>6</sup> John Hilton III & Carol Laman, "One College's Use of an Open Psychology Textbook." *Open Learning: The Journal of Open, Distance, and e-Learning*, 27, no. 3 (2012): 265-272; Andrew Feldstein, Mirta Martin, Amy Hudson, Kiara Warren, John Hilton III, & David A. Wiley, "Open Textbooks and Increased Student Access and Outcomes." *European Journal of Open, Distance and E-Learning*, (2012).. <http://www.eurodl.org/?p=current&article&article=533>.

for *Higher Education in Developing Countries*.<sup>7</sup> Then in 2012, UNESCO held the first worldwide summit on OER in Paris.<sup>8</sup> UNESCO, in partnership with the Commonwealth for Learning, has also published guidelines for OER in higher education.<sup>9</sup> OER has parallels with the open software movement, premised on values of free, editable, and reusable content.<sup>10</sup> Even before the term OER was coined at the UNESCO forum to encompass diverse efforts in the open education domain, MIT, funded by the Hewlett foundation, had begun its OpenCourseWare initiative in 2001. While precise definitions for OER vary, there is general agreement on core principles of open educational materials that include being freely available to everyone and reusable in other contexts.<sup>11</sup>

While research pertaining to OER is relatively new, there has been some key empirical work done considering adoption, usage, barriers, and the teaching and learning impact of OER. Additionally, research in the area of OER has significantly increased in recent years, suggesting worldwide growth of the OER initiative.<sup>12</sup> Such audiences are increasingly relevant as Penn State physical campuses continue to diversify internationally and especially for the World Campus as students physically located internationally increasingly enroll for Penn State Online.

## Defining OER

While there are a few different definitions of OER that are typically employed, they all have overlap in a few key areas: they refer to resources that are free, reusable, and typically modifiable. Some common definitions are provided below.

- **UNESCO DEFINITION:** “Open Educational Resources (OERs) are any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy, use, adapt and re-share them. OERs range from textbooks to curricula, syllabi, lecture notes, assignments, tests, projects, audio, video and animation.”<sup>13</sup>

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<sup>7</sup> Airtón Zancanaro, Jose Leomar Todesco, & Fernando Ramos, “A Bibliometric Mapping of Open Educational Resources.” *International Review of Research in Open and Distributed Learning*, 16, no. 11 (2015): 1-23.

<sup>8</sup> Javiera Atenas & Leo Havemann, “Questions of Quality in Repositories of Open Educational Resources: A Literature Review.” *Research in Learning Technology*, 22, no. 13 (2014).

<sup>9</sup> UNESCO, *Guidelines for Open Educational Resources (OER) in Higher Education*.  
<http://unesdoc.unesco.org/images/0021/002136/213605E.pdf>.

<sup>10</sup> Ethan Senack, *Open Textbooks: The Billion Dollar Solution*, (2015).  
<http://studentpirgs.org/sites/student/files/reports/The%20Billion%20Dollar%20Solution.pdf>.

<sup>11</sup> Martin Weller, Bea de los Arcos, Rob Farrow, Beck Pitt, & Patrick McAndrew, “The Impact of OER on Teaching and Learning Practice.” *Open Praxis*, 7, no. 4 (2015): 351-361.

<sup>12</sup> Javiera Atenas & Leo Havemann, “Questions of Quality in Repositories of Open Educational Resources: A Literature Review.” *Research in Learning Technology*, 22, no. 13 (2014).

<sup>13</sup> UNESCO, *What Are Open Educational Resources (OERs)?*  
<http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/open-educational-resources/what-are-open-educational-resources-oers>.

- **David Wiley’s 5 Rs of OER:**
  - *Retain* – the right to make, own, and control copies of the content
  - *Reuse* – the right to use the content in a wide range of ways (e.g., in a class, in a study group, on a website, in a video)
  - *Revise* – the right to adapt, adjust, modify, or alter the content itself (e.g., translate the content into another language)
  - *Remix* – the right to combine the original or revised content with other open content to create something new (e.g., incorporate the content into a mashup)
  - *Redistribute* – the right to share copies of the original content, your revisions, or your remixes with others (e.g., give a copy of the content to a friend)<sup>14</sup>
- **Hewlett Foundation Definition of OER:**

“OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.”<sup>15</sup>

### *Penn State OER Definition*

Penn State’s OER definition is noted below and is intended to encompass a wide range of affordable approaches:

Penn State University – Open Educational Resources (PSU-OER) are any type of educational materials that are available to the university community with little or no cost. It may also be the case with PSU-OER that the nature of these open materials means that students, faculty, and staff can legally and freely copy, use, adapt, and re-share them within the university community.

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<sup>14</sup> David A. Wiley, “The Access Compromise and the 5th R.” <http://opencontent.org/blog/archives/3221>.

<sup>15</sup> The Hewlett Foundation, “Open Educational Resources.” <http://www.hewlett.org/programs/education/open-educational-resources>.

## Chapter 2 - Charge to the Task Force and Membership

### *Penn State OER Task Force*

Executive Vice President and Provost Nicholas Jones charged the Penn State OER Task Force in February 2015.

Charge: Develop approaches for systematically implementing open educational resources to support Penn State teaching and learning and contribute to President Eric Barron's agenda for student access and affordability. The use of OER, including open textbooks, can significantly reduce costs for students, provide more control for faculty for their course content, and enable or empower enhanced pedagogical approaches to teaching and learning.

#### **Task Force Membership:**

- Barbara I. Dewey (Chair), Dean, University Libraries and Scholarly Communication
- Fred Aebli, IST Instructor and Internship Coordinator, Penn State Worthington Scranton
- Kate Domico, Executive Director, Learning Design and Public Media, Penn State Outreach and Online Education
- Steve Falke, Head, Penn State Barnes & Noble Educational Operations
- Yvonne Gaudelius, Assistant Vice President and Associate Dean for Undergraduate Education
- Lee Giles, David Reese Professor, College of Information Science and Technology
- Andrea Gregg, Online Learning Researcher, Penn State World Campus
- Emily Miller, student representative, University Park
- Przemyslaw Maslak, Associate Professor, Department of Chemistry, University Park
- Joseph A. Salem, Jr., Associate Dean for Learning, Undergraduate Services, and the Commonwealth Campuses, University Libraries
- John Shank, Head Librarian, Penn State Berks
- Ann Snowman, Head, Access Services, University Libraries
- Jennifer Sparrow, Senior Director of Teaching and Learning with Technology, Information Technology Services

### *Penn State OER University Libraries Task Force*

Dean Dewey charged the Penn State OER University Libraries Task force to specifically work on leveraging library resources, technologies, and expertise to advance OER at Penn State.

Charge: The Libraries OER Task Force will work specifically to develop a multi-pronged approach to advancing OER at Penn State including building on our course reserve, LMS integration work, textbook program, publishing program, ScholarSphere, and other initiatives.

The task force will consider a branding and marketing approach increasing open education resources and leveraging to the fullest licensed educational resources which support the curriculum.

***Task Force Membership:***

- John Shank (Co-Chair), Head Librarian, Penn State Berks
- Ann Snowman (Co-Chair), Head, Access Services
- Linda Ballinger, Metadata Strategist
- Anne Behler, Information Literacy Librarian & Instruction Coordinator
- Linda Friend, Head, Scholarly Publishing Services
- Chris Holobar, Manager, Lending and Reserve Services
- Patricia Hswe, Head, ScholarSphere Services and Digital Content Strategist
- Brandy Karl, Copyright Officer
- Tom Reinsfelder, Reference Librarian, Penn State Mont Alto

## Chapter 3 - Background and Environmental Scan

### *U.S. Higher Education Environment*

The cost of higher education is driving increased interest from state and federal government officials who are investigating ways to reduce the cost of education. College and university administrators have responded by considering the areas in which the cost of higher education has been increasing faster than the pace of inflation. One area that has gained attention from higher education administration, faculty, and students is the rising cost of textbooks. SPARC was one of the U.S. organizations that worked for the Affordable College Textbooks Act, October 2015.<sup>16</sup> The cost of textbooks has risen over 1000% in the past four decades (three times the general rate of inflation).<sup>17</sup> A recent survey by the United States Public Interest Research Group found that 65% of students have not purchased a textbook because of the high cost.<sup>18</sup> Another study found that 31% of students chose not to enroll in a course because of the prohibitive impact of textbooks costs.<sup>19</sup>

It has been estimated that the total cost students spend on textbooks is around \$1,200.<sup>20</sup> While relatively low when compared to high tuition schools like Penn State, the amount is significant in that it's an additional cost students often haven't budgeted for. The cost savings of Open Educational Resources (OER) (including Open Textbooks) can be significant for students.<sup>21</sup> In terms of specific cost savings per student, in studies replacing traditional materials with OER, it has been estimated that the average textbook cost savings is anywhere from \$90 to \$126.<sup>22</sup>

There is also a growing body of evidence suggesting that use of OER can positively impact student success.<sup>23</sup> For instance, in a study of nearly 5000 United States higher education

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<sup>16</sup> SPARC, "The Affordable College Textbook Act – S. 2176/H.R. 3721." <http://sparcopen.org/our-work/2016-act-bill>.

<sup>17</sup> Ben Popken, "College Textbook Prices Have Risen 1,041 Percent Since 1977," (August 6, 2015). <http://www.nbcnews.com/feature/freshman-year/college-textbook-prices-have-risen-812-percent-1978-n399926>.

<sup>18</sup> Ethan Senack, "Survey Shows Students Opting Out of Buying High-Cost Textbooks," (January 27, 2014). <http://www.uspirg.org/news/usp/survey-shows-students-opting-out-buying-high-cost-textbooks>.

<sup>19</sup> Florida Virtual Campus, *2012 Florida Student Textbook and OER Survey*. <http://florida.theorange grove.org/og/items/10c0c9f5-fa58-2869-4fd9-af67fec26387/1>.

<sup>20</sup> Dan Kopf. "Which Major Has the Most Expensive Textbooks?" *Priceonomics* (August 24, 2015). <http://priceonomics.com/which-major-has-the-most-expensive-textbooks>.

<sup>21</sup> John Hilton III, Jared Robinson, David A. Wiley, & Dale Ackerman, "Cost-Savings Achieved in Two Semesters through the Adoption of Open Educational Resources." *International Review of Research in Open and Distance Learning*, 15, no. 2 (2014): 67-84; SPARC, "The Affordable College Textbook Act – S. 2176/H.R. 3721." <http://sparcopen.org/our-work/2016-act-bill>.

<sup>22</sup> Lane Fischer, John Hilton III, Jared Robinson, & David A. Wiley. "A Multi-Institutional Study of the Impact of Open Textbook Adoption on the Learning Outcomes of Post-secondary Students," *Journal of Computing in Higher Education*, 27, no. 3 (2015): 159-172; Ethan Senack, *Open Textbooks: The Billion Dollar Solution*, (2015). <http://studentpirgs.org/sites/student/files/reports/The%20Billion%20Dollar%20Solution.pdf>.

<sup>23</sup> Jared Robinson, Lane Fischer, David A. Wiley, & John Hilton III, "The Impact of Open Textbooks on Secondary Science Learning Outcomes." *Educational Researcher*, 43, no. 7 (2014): 341-351.

students at a total of 10 institutions (including both 2-year and 4-year), when the control group of students using traditional textbook materials was compared to the experimental group of students using OER materials, it was found that in “three key measures of student success—course completion, final grade of C- or higher, course grade—students whose faculty chose OER generally performed as well or better than students whose faculty assigned commercial textbooks.”<sup>24</sup> In general, research shows that moving from traditional materials to OER materials, in addition to saving students money, does not result in a negative impact on student learning.<sup>25</sup>

While much of the research emphasizes cost savings for students and potential learning impacts of the use of OER, another key area is faculty perceptions of OER and potential barriers for adopting OER. Faculty members are arguably one of, if not *the*, key stakeholders in shifting to OER and affordable textbooks as they are typically the ones setting the assigned materials in their courses. There is a documented lack of awareness of OER among faculty members, but at the same time, when faculty members are exposed to OER, they rate it to be of similar quality levels to traditional course materials. As the Babson survey group suggested:

*Awareness and adoption of open educational resources (OER) has yet to enter the mainstream of higher education. Most faculty remain unaware of OER, and OER is not a driving force for faculty decisions about which educational materials to adopt. The picture does include some promising signals, as results show that faculty find the concept attractive: those who are aware of OER rate it roughly on par with traditional resources, and those who have not yet used it are very willing to give it a try.*<sup>26</sup>

In terms of OER quality, a synthesis of existing OER literature found that “a comprehensive way to assure quality for OER is to specify a series of standards for peer review instruments in order to evaluate the resources.”<sup>27</sup> In a study of 127 educators who have used OER materials, it was also found that recommendations by trusted colleagues were a primary way in which the educators found out about the materials and that “the role of educators in promoting and giving credibility to OER, such as open textbooks, cannot be underestimated.”<sup>28</sup>

In working with OER, from both a content creation and content consumption perspective, a key consideration is understanding the meaning of, and how to use, Creative Commons licensing, as it is fairly ubiquitous when it comes to the use of OER. The Creative Commons framework was initially developed in 2002 and “aims to facilitate the transfer, sharing, use and adaptation of academic and creative content, while protecting the intellectual property rights of the

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<sup>24</sup> Lane Fischer, John Hilton III, Jared Robinson, & David A. Wiley. “A Multi-Institutional Study of the Impact of Open Textbook Adoption on the Learning Outcomes of Post-secondary Students.” *Journal of Computing in Higher Education*, 27, no. 3 (2015): 159-172.

<sup>25</sup> John Hilton III, Jared Robinson, David A. Wiley, & Dale Ackerman, “Cost-Savings Achieved in Two Semesters through the Adoption of Open Educational Resources.” *International Review of Research in Open and Distance Learning*, 15, no. 2 (2014): 67-84.

<sup>26</sup> I. Elaine Allen Jeff & Seaman, *Opening the Curriculum: Opening Educational Resources in US Higher Education*, (2014). <http://www.onlinelearningsurvey.com/reports/openingthecurriculum2014.pdf>.

<sup>27</sup> Javiera Atenas & Leo Havemann, “Questions of Quality in Repositories of Open Educational Resources: A Literature Review.” *Research in Learning Technology*, 22, no. 13 (2014).

<sup>28</sup> Rebecca Pitt, “Mainstreaming Open Textbooks: Educator Perspectives on the Impact of OpenStax College Open Textbooks.” *International Review of Research in Open and Distributed Learning*, 16, no. 4 (2015): 133-155.

authors.”<sup>29</sup> Creative Commons Licensing is the industry standard for copyright and licensing OER materials. Penn State libraries are fully equipped to help faculty both find materials to use as OER in their courses as well as to share their own materials to be used by others.

In spite of all these benefits to students, the adoption and use of OER remains quite low. To bridge this gap Penn State University is exploring ways to speed up faculty adoption of OER in order to meaningfully decrease student course costs while simultaneously increasing student course success. Several key barriers will have to be overcome in order to achieve this goal. These barriers are awareness, discoverability, usability, and incentives (both extrinsic and intrinsic).

**OER Examples:** This Task Force has identified key resources and instructional designers who can partner with faculty to help identify OER materials that might replace for-cost curriculum materials. Additionally, a Penn State OER website has been created: <http://oer.psu.edu>.

*OER-related/involved Organizations:*

- SPARC
- UNESCO
- OER Research HUB: a research project funded by the Hewlett Foundation which examines the impact of OER through collaborative, comparative, international research: <http://oerhub.net>
- Open Education Group: Collection of peer-reviewed studies on OER pertaining to efficacy and/or perception: <http://openedgroup.org/review>

*Key OER Repositories:*

- Open Textbook Library (U. of Minnesota): <https://open.umn.edu/opentextbooks>
- OpenStax College (Rice University): <https://openstax.org>
- MERLOT: <https://www.merlot.org>

*University Implementation Examples:*

- BC Campus: British Columbia, Canada: <http://bccampus.ca/open-textbook-project>
- Tidewater Community College Z Degree: <http://www.tcc.edu/academics/zdegree/index.html>
- University of Maryland University College: <http://www.umuc.edu>
- North Dakota Open Educational Resources Initiative: <http://www.onlinelearningsurvey.com/reports/2015openingthepublicsnd.pdf>

## *Affordable Course Content, Copyright, and Licensing*

### **Creative Commons Licenses**

Creative Commons (CC) licenses are public copyright licenses that enable the free distribution of copyrighted works. Authors use CC licenses (and other open licensing schemes) to give

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<sup>29</sup> Javiera Atenas & Leo Havemann, “Questions of Quality in Repositories of Open Educational Resources: A Literature Review.” *Research in Learning Technology*, 22, no. 13 (2014).

others the right to share, use, and build upon their copyrighted works. CC licenses can be applied to any copyrighted work, including books, blog posts, webpages, journal articles, sound recordings, photographs, maps, and more.

By using a Creative Commons license, an author grants users the right to distribute the unmodified work worldwide for non-commercial purposes so long as proper attribution is given. Attribution requirements are specified in the CC licenses and failure to attribute amounts to a use that exceeds the bounds of the license—copyright infringement. CC licensors may adopt licenses that broaden the scope, including allowing commercial uses and the creation of derivative works, all requiring the proper attribution.

### ***Creative Commons and OER***

Creative Commons defines OER as “teaching, learning, and research materials in any medium that reside in the public domain or have been released under an open license that permits their free use and re-purposing by others.”<sup>30</sup> Creative Commons provides the technical legal infrastructure to make free educational resources accessible and adaptable via the open licenses because of the standardized method to grant copyright permissions to the works. Accordingly, the standardized copyright license also makes CC-licensed educational resources easy to use. When everyone uses the same license it becomes easier to create a body of resources with dramatic reach, impact, and usability.

Furthermore, CC licensing that enables the creation of derivative works allows educational resources to grow and change in response to new methods, research, and discoveries. All CC licensed OER except for BY-ND and BY-NC-ND can be adapted by peers, researchers, faculty, educational resource authors, instructional designers, or whomever might contribute to the updating of the work.

Finally, CC licenses are machine-readable licenses and highly discoverable. Properly using a CC license results in a software code embedded into the work that can be read by a computer, searched for, and ultimately served up in special purpose search engines.

The CC BY license is most often recommended for the highest impact. Works distributed under this license can be incorporated into commercial products (always with attribution), translated, and otherwise adapted.

While the impulse may be to restrict noncommercial uses, some people avoid using resources with this restriction because of the gray area between core commercial and noncommercial uses. Similarly, some users wish to restrict the creation of derivative works, which also restricts the ability of others to adapt, update, translate, and localize works.

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<sup>30</sup> Creative Commons. *Education / OER*. <https://creativecommons.org/about/program-areas/education-oer>.

## **CC, OER, & PSU**

Penn State can take advantage of Creative Commons in our OER initiatives in two ways: using CC-licensed works, and creating CC-licensed works. OER published using CC licenses become part of a growing body of resources available for everyone to use; by using and contributing to this body, PSU becomes part of the OER landscape.

By utilizing OER and Creative Commons licensed works in and for course materials, faculty and staff can reduce the cost of courses to students both directly and indirectly. The use of Creative Commons licensed textbooks brings the textbook cost to zero. By using Creative Commons licensed resources in course materials faculty and instructional designers reduce hefty licensing fees; the cost savings is indirectly passed to students. In addition, by reusing and/or updating existing CC-licensed resources, valuable time is saved, freeing time for creation of materials where no resources exist.

However, being part of the OER landscape should be reciprocal. PSU cannot just be a user and consumer of CC-licensed OER. In order to become a well-integrated member of a robust OER community, faculty and staff should seek out ways to share their works via CC licenses, which the University can support via clear recommendations on the application of CC licenses on University-owned works, an improved approval workflow, as well as easier record-keeping for CC out-licenses via a centralized registry, which would also capture the impact that PSU makes in the OER community.

## *OER and Outcomes-Based Assessment*

As discussed earlier in this chapter, a recent meta-analysis of studies focused on OER and student success found that in general, students in courses using OER perform at the same level or at a slightly higher level than their counterparts in courses using traditional resources.<sup>31</sup> In addition to being a viable alternative to traditional textbooks based on student success, OER provides opportunities to better align course materials and resources with course learning objectives. With the ability to create and adapt OER, course materials can be selected or revised to directly support course objectives, better facilitating outcomes-based assessment.

This is particularly noteworthy with the implementation of Canvas as the new learning management system at Penn State University. Canvas includes a learning-outcomes module that allows faculty to embed outcomes and align course content and assignments with them. OER can be directly tied to the designated outcomes within Canvas, providing strong alignment and assessment opportunities. Course metrics, including student use of embedded resources, can help to determine the effectiveness of the OER within the course as well.

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<sup>31</sup> Lane Fischer, John Hilton III, Jared Robinson, & David A. Wiley. "A Multi-Institutional Study of the Impact of Open Textbook Adoption on the Learning Outcomes of Post-secondary Students." *Journal of Computing in Higher Education*, 27, no. 3 (2015): 159-172.

## Chapter 4 - Penn State OER or Affordable Course Content Initiatives

The following are selected OER and Affordable Course Content initiatives already underway at Penn State.

### *John A. Dutton e-Education Institute*

The John A. Dutton e-Education Institute is the learning design unit for the College of Earth and Mineral Sciences. The Institute works in close partnership with the College's five academic departments to design, develop, and manage the College's online certificate and degree programs.

The College of EMS serves as a leader in distance teaching and learning at Penn State. To date, the College boasts 19 certificate and degree programs online and more than 130 online courses. The College has been able to extend the reach of a high-quality, rigorous, and research-based Penn State education to more than 5,900 undergraduates and more than 1,250 working adult professionals around the globe.

Since 2007, the Dutton Institute has housed the College of Earth and Mineral Sciences' Open Educational Resources (OER) initiative, which is online at <http://open.ems.psu.edu>. As part of this initiative, 71 full courses, 9 sets of resources, and 4 noncredit modules are offered.

The resources are currently freely available for non-commercial use under a University-approved open source license. Students who wish to earn academic credit and get feedback from instructors still need to register and pay tuition to Penn State.

### *eLearning Institute*

The eLearning Institute is responsible for the development of online courses within the College of Arts & Architecture. Several years ago, the Institute launched an effort to remove textbooks associated with our online general education courses. The rationale for the decision was twofold: first, textbook costs for some disciplines were very high; second, the flexible nature of online courses permitted a more continual updating of course content that is simply not possible via reliance on a specific textbook from a publisher. As a result, the Institute enacted a strategy for textbook replacement involving a small student fee for access to online content for courses that met several criteria. These criteria include courses for which the need for a textbook has been removed, the course content relies heavily on media (video, graphics, animation, etc), and the courses require continual revisions. For courses that meet these criteria, the Institute charges a \$30 fee per student for access to course material. The courses that meet these criteria are not the majority of the Institute's portfolio of classes, with only 12% of the courses

currently applying the course access fee. As enrollments increase, the hope is that the per-student fee can be reduced to \$20 over time.

Revenue collected from course access allows the Institute to sustain the textbook replacement approach by funding media-rich revision costs. Absent the textbook replacement fee, funding media-intensive instructional materials would present significant challenges. Finally, the Institute believes that there is great potential in avoiding courses with ties to a specific textbook, and instead embracing a model that allows individual faculty to alter, edit, or supplement online course content in ways that reflect their individual teaching strategies. The Institute will continue to apply the textbook replacement fee only in cases that meet specific criteria, and will work toward an ongoing reduction of the per-student cost that balances affordability with a sustainable support model.

### *Department of Chemistry*

The Department of Chemistry has developed an interactive electronic textbook (eBook) for its general chemistry courses (CHEM 110 and 112) to provide total pedagogical control of delivered content, to improve student learning, and to lower the costs of educational materials. At University Park, the course is currently taken each year by about 4,000 CHEM 110 students and about 2,000 CHEM 112 students. When completed, the eBook will replace the printed textbook, the accompanying solution manual, the homework platform, and will add adaptive practice and assessment tools. Five-year access to the eBook is currently provided to students for \$65 (through the PSU Bookstore), replacing the educational materials listed above that are priced at over \$400. Assuming that students in CHEM 112 have already purchased the materials, this project will reduce overall direct-student cost by \$1.34 million annually for the 4,000 CHEM 110 students at University Park. Adoption by other PSU campuses could lower the access fee further and create greater overall direct-student cost reduction overall.

The eBook is highly interactive, contains simulations and animations of chemical and physical phenomena, videos of chemical demonstrations, an interactive periodic table and molecular displays, a chemist's calculator, and interactive quizzes. The homework module offers over 1,000 completely solved and explained chemical questions, all of which are fully cross-linked with the lessons covering the relevant concepts. The text itself also contains extensive internal cross-links and includes an extensive glossary of chemical terms. Navigation is organized through interactive course syllabi that direct students to the assigned reading and studying materials, and homework. The eBook is highly customizable, with individual course sections having the option to adjust the contents to be presented.

### *BBookx*

BBookx is a new technology that uses a human-assisted computing approach to enable creation of open source textbooks. BBookX uses intelligent algorithms to explore OER repositories and return relevant resources that can be combined, remixed, and re-used to

support specific learning goals. As instructors and students add materials to their book, BBookX learns and further refines the recommended material. Account registration and more information is available at <http://bbookx.psu.edu>. BBookx was developed in partnership between the College of IST and the Teaching and Learning with Technology (TLT) unit of ITS.

### *Faculty Engagement Awards*

For academic year 2016-2017, OER is the theme for faculty engagement awards administered by the TLT. Each year, several grants are awarded around a specific theme, and faculty are encouraged to apply for these grants, which can cover technology, professional development, or other resources that support the engagement. TLT researchers then assess the impact of this technology and share what they have learned with the Penn State community.

## Chapter 5 - Library Initiatives

Initiatives promoting and facilitating OER and affordable course content adoption within University Libraries currently underway and proposed are described below.

### *Course Reserves*

University Libraries has a long tradition of service to classroom instruction via Course Reserves Services, by its nature an affordable option to providing course content. Textual materials as well as audio and video recordings are made available to students at no cost at every campus location and online.

While some course materials are still offered in hard copy print, many more take the form of links to the Libraries' licensed digital resources, PDFs delivered digitally, streaming audio and video, and e-books. Library electronic reserves also hosts locally created content, such as sample exams and student presentations.

Sometimes textbooks are available on Course Reserves. Though prohibitive to consider supplying a copy of every textbook students may need (a cost estimated to approach \$1.9 million University-wide per semester for undergraduates alone), many library locations provide at least some textbooks via Course Reserves. Superseded older editions may often be found in the stacks. The Libraries welcomes the opportunity to include faculty desk copies on the Reserves shelves and actively seeks digital licensing options when available.

Copyright permissions for scanned content are managed by staff of University Libraries, which absorbs permission fees and liability, thus indemnifying the course provider from responsibility.<sup>32</sup> The expertise of Course Reserve staff and the Copyright Officer, an attorney specializing in intellectual property, informs the Libraries' practice, with the goal of respecting the rights of content providers while also maximizing our, and our students', rights under fair use.

Librarians provide guidance for faculty wishing to explore affordable library resources available for the curricula.

Even traditional services like course reserves are being reexamined with the goal of increasing their reach and impact on student course material access. The University of Minnesota has established a strong affordable course content program, with University Libraries a leading partner. Among the programs at the University of Minnesota is a strategic partnership between University Libraries and the university bookstore to take a programmatic approach to course-

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<sup>32</sup> Penn State University, "Policy IP05: Policy Governing Copyright Clearance."  
<http://guru.psu.edu/policies/IP05.html>.

level access to licensed content through a program entitled the “Bookstore Partnership Project.” Through this partnership, the bookstore provides the list of materials created for each course. The library created an automated process to compare the required materials with currently licensed digital content and the licenses available through their core materials vendors. As a result, 65 assigned texts were found to be in the digital collection and made available at the course level through the Electronic Reserves Service. Through an allocation of \$20,000 for Fall Semester 2015, just under another 200 titles were added, with potential savings to students of approximately \$331,000.<sup>33</sup>

A pilot of this systematic approach to course reserves for World Campus courses is recommended for the upcoming academic year. The course material adoptions can be gathered systematically from the World Campus and the process to check them against current electronic licenses can be established over the upcoming year. Data for the fall semester can be used to establish the process and budget for material support with the pilot and data gathering on use and cost savings can be conducted in the spring semester.

### *Textbook Fund*

The Textbook Fund was established as a result of University Libraries fund-raising as part of the 2015 Giving Tuesday initiative. For 2015, \$37,242 was raised to establish the fund. Funds will be used to purchase textbooks to be placed on reserve. The Textbook Fund will also be the goal for subsequent efforts as part of Giving Tuesday and will be part of the upcoming campaign.

In addition to central funding through the Textbook Fund, some Commonwealth Campus Libraries have established partnerships to support textbook purchases for course reserves. For example, at Penn State Harrisburg, the library partners with the Learning Center and Student Activities Fund (SAF) to develop and maintain a collection of textbooks used by Harrisburg’s general education classes: math, chemistry, physics, economics, statistics and psychology. The Learning Center applies for the SAF grants and purchases the textbooks. The library places the books on a 2-hour library-use-only reserve. This program started in Fall 2012, and students appreciate this popular service. In 2014-2015, 31 titles circulated 3,633 times. In 2015-2016, 35 titles circulated 3,511 times. This type of partnership can be pursued at several UL locations.

### *Canvas*

Course Reserves has long been integrated with ANGEL, the learning management system (LMS) currently being replaced with Canvas. The LMS team in the Libraries, which includes and has met with instructional designers from colleges across Penn State, is testing a local installation of Canvas as we transition to a new electronic reserves management system

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<sup>33</sup> U. of Minn, *eLearning report: Information for FY17 compact submission*, Minneapolis, MN. (2015).

licensed from Springshare, which also provides platforms for LibGuides (subject and course research guides) and Ask a Librarian. Springshare's platform allows the Libraries to provide a suite of information services seamlessly integrated with Canvas. Other OA resources and apps can also be integrated with Canvas, providing the opportunity to promote OER directly to faculty and students within the LMS. The University and the Libraries may wish to investigate making selected OER apps available systematically in Canvas courses.

Accessibility is a hallmark of Library Services. Every effort is made to ensure resources provided through Course Reserves, the Libraries' website or mounted to the course management system by the Libraries are accessible for print disabled users, or that an alternative format is made available.

University Libraries has partnered with and supported World Campus since its inception, providing information services, delivery of digital and physical materials to students, and electronic reserve and copyright services to faculty and instructional designers. These collaborations have served as models for similar partnerships between University Libraries and colleges and Commonwealth Campuses throughout Penn State.

### *Outreach and Professional Development*

As part of the University Libraries instruction and outreach programs, OER are included in faculty outreach and collaboration. A more formal OER and affordable course content outreach program administered by University Libraries is recommended. In addition to its teaching and learning mission, University Libraries is well-positioned to administer such a program. Throughout its stakeholder engagement opportunities, the OER Task Force commonly fielded questions regarding the intellectual property issues related to sharing OER developed or adapted by faculty. The Copyright Officer within University Libraries is well-positioned to provide programming and guidance in this area as discussed in Chapter 3.

## Chapter 6 - Proof-of-Concept Pilots

In order to take advantage of work already underway, the proof-of-concept pilots for the AY 2015-2016 sought to first gather data on OER already in use at Penn State University and then to take advantage of the significant instructional design support available at the university to transition interested faculty into OER adoption and document that process and faculty feedback on it.

### *Fall Semester 2015*

For the fall, faculty who were already using OER in their course(s) were surveyed regarding their experience with adoption and their perception of student satisfaction with the resources. 12 of the 14 faculty who were recruited for the pilot responded, representing up to 23 course sections.

Of the 12 faculty who responded to the survey, 8 distributed the survey to their students online in 17 course sections. Of the 404 students surveyed, 171 completed the survey for a 42% response rate.

*The following courses were included in the fall pilot:*

- BIOL 011
- CAS 100A
- GEOG 432
- GEOG 482
- MATH 251
- E MCH 251

*Of the 160 students who indicated their campus, the following campuses were represented:*

- Berks ( $n = 50$ , 31.%)
- Harrisburg ( $n = 16$ , 10%)
- Lehigh Valley ( $n = 78$ , 49%)
- Mont Alto ( $n = 5$ , 3%)
- World Campus ( $n = 11$ , 7%)

*Notable findings:*

- 65% of student respondents preferred OER to traditional textbooks
- 73% of student respondents indicated that the OER in use were of moderate or great aid to their learning

- 39% of student respondents indicated that this was their first course that used an e-textbook instead of a traditional print textbook
- 88% of student respondents indicated that the OER in use in their course(s) included an e-textbook
- 75% of faculty respondents have replaced their traditional textbook with OER in the pilot courses

## *Spring Semester 2016*

During the Spring 2016 semester, faculty who had not yet used OER were recruited to transition their course(s) and their feedback was sought on the process as well as the benefits of and obstacles involved in OER adoption or creation.

An instructor of several Mechanical Engineering Technology courses and one from Economics participated, encouraging their students to engage with the study. Other instructors who had planned to implement OER decided to wait for another semester to better prepare. One instructor used images that he had created or found in open sources or Google searches to enhance the course materials. Others used materials that were already part of the curriculum, or had received help from Julie Lang in finding relevant resources. These materials were mostly used in place of a traditional print text (75%).

### *Selected faculty observations regarding OER benefits:*

- The ability to create content specifically for that course.
- A reduction in cost for the textbook. Some students still used a legacy textbook from a previous course as a supplemental text, but it was not required for the course.
- Additional material helped with comprehension of problems. Introduction to different programming languages than those covered in class.

### *Obstacles encountered by instructors included:*

- Availability of resources in STEM disciplines. Many open textbook replacements do not have as many end-of-chapter problems or examples as do traditional textbooks. Higher availability of these materials would help with wider adoption.
- Obstacles mostly consisted of unavailability of materials. For many mechanical engineering courses, there are no good open education textbook replacements. The replacements that do exist do not have the same level of examples/end-of-chapter problems that help students reinforce class material.

- Obstacles are unavailability of engineering OERs and end of chapter/example problems.

*General comments from instructors:*

- I believe more networking among faculty would be essential in the adoption of this concept.
- Overall, the experience so far has been positive. The resources I have found have not been a perfect replacement, but, in many places, they were close to what I would have been using with a traditional textbook.

## Chapter 7 - Penn State Stakeholders Consulted

As part of the process to develop a comprehensive plan for OER at Penn State, the Task Force met with several stakeholders, presented updates to selected bodies, participated in university programming, and hosted an inaugural OER event.

### *University Stakeholders*

Members of the Task Force solicited feedback and met with the following Penn State stakeholders over the course of its term:

- Academic Council on Undergraduate Education
- College of Communications Campus Faculty
- College of IST Campus Faculty
- Commission on Adult Learners
- Council of Commonwealth Student Governments
- Digital Learning Academic Council
- Digital Learning Steering Committee
- eEducation Council
- Faculty Senate Library and Information Services Technology Committee
- Gary Chinn (e-Learning Institute)
- Graduate and Professional Student Association
- Mary Lee Schneider (PSU Board of Trustees)
- Online Coordinating Council
- Penn State New Kensington Faculty and Staff
- Student Technology Advisory Committee
- Steve Falke and Nancy Thompson (Barnes & Noble)
- Stevie Rocco (Dutton Institute)
- Undergraduate Technology Advisory Committee

### *Presentations at University Events*

Members of the Task Force presented at the following Penn State professional development opportunities and symposia:

- 2015 Learning Design Summer Camp
- 2016 TLT Symposium

## *OER Summit*

Members of the OER Task Force and University Libraries OER Task Force planned the inaugural OER Summit on March 23, 2016 in Pattee Paterno Library. The event was sponsored by University Libraries and Penn State Outreach and attracted 180 participants in-person and online. Immediate feedback to the summit indicated an interest in making the event an annual occurrence.

### **Schedule:**

- 8:45 – 9:00: Welcome: Barbara Dewey, Dean of University Libraries and Scholarly Communication
- 9:00 – 10:00: Keynote: Nicole Allen, Director of Open Education for SPARC
- 10:15 – 11:45: Showcase of OER Champions: Gary Chinn, Stevie Rocco, Jacob Moore, and Bart Pursel
- 11:45 – 12:00: Provost's OER Task Force Update: Joe Salem, OER Task Force Member
- 12:00 – 1:00: Facilitated Discussion of OER and Potential Library Roles
- 1:00 – 2:00: Hands-On Workshop: Julie Lang and Andrea Gregg

### **Participation:**

- In-person: 50
- Online: 130, including participants at events hosted Commonwealth Campus Libraries:
  - Abington - 7
  - Altoona - 4
  - Behrend - 5
  - Beaver - 2
  - Brandywine - 10
  - Fayette - 4
  - Hazleton - 2
  - Berks - 14
  - Harrisburg - 14
  - Mont Alto - 4
  - Schuylkill - 1
  - Lehigh Valley - 9
  - Wilkes-Barre - 1
  - Shenango - 5

***Video Availability:***

The keynote, showcase, and OER Task Force update are available on MediaSite Live:

<http://live.libraries.psu.edu/Mediasite/Play/e4bba31836454195986c44abf28853ec1d?catalog=8376d4b2-4dd1-457e-a3bf-e4cf9163feda>.

## Chapter 8 - Potential Cross-Institutional Partners

Due to the nature of OER and affordable course content initiatives, university-level participation in national projects and consortia offers a good opportunity to leverage ongoing investments among peer institutions locally and to create opportunities for educational impact for Penn State faculty at the national level. Per the charge to the Task Force to explore participation in the Open Textbook Initiative (now the Open Textbook Network), this chapter describes selected potential partnership opportunities in addition to the existing partnerships with the Association of Research Libraries and the Scholarly Publishing and Academic Resources Coalition (SPARC).

### *Unizin*

In November 2014, Penn State joined Unizin, a consortium of like-minded institutions facilitating the transition toward collaborative digital education. Its mission, to improve the learning experience by providing an environment built on collaboration, data, standards, and scale, provides a technological and collaboration framework to advance the development and use of OER across multiple institutions. Unizin's 11 founding members, many of whom are also in the Consortium for Institutional Collaboration, are working to develop a model for sustainable open educational resource development, peer review, curation, and analytics about the use of these resources. There will be several approaches to this model developed, allowing for the testing of these models across the Unizin institutions.

Initial opportunities include three models:

1. The use of existing OER materials that can be delivered through the Unizin platform in general, and content relay in particular, allowing faculty to add additional materials as needed for an individual course
2. Coordinating a cohort of faculty on a particular discipline (large enrollment, general education courses) to establish a shared subset of learning outcomes, Unizin will facilitate faculty development of course materials and support the curation of existing OER materials, to be delivered for a low cost that allows for funding of materials for additional courses
3. The development of peer review processes for curated or created OER around a particular topic

Unizin provides both the technologies for the creation and sharing of materials and the project management for the pilots. The Teaching and Learning subcommittee of Unizin (of which Penn State has several participants) can act as a shepherd to identify projects and have Unizin support those projects. Alternatively, individual institutions can identify a course to develop and utilize the Teaching and Learning subcommittee to pull together the critical mass of faculty for a

particular project, allowing for both a strategic investment in OER and the flexibility to address individual institutional needs.

## *Open Textbook Network*

The Center for Open Education at the University of Minnesota administers two programs focused on OER and affordable course content at the national level, the Open Textbook Network (OTN) and the Open Textbook Library. The OTN is a consortium of higher education institutions working to promote the adoption and creation of open textbooks throughout higher education through faculty engagement and professional development for OER coordinators at member institutions. Membership includes professional development for faculty at each institution that includes an introduction to open textbooks and an opportunity for participating faculty to review open textbooks. Participants receive a stipend for contributing a textbook review. Member institutions are also encouraged to send one representative to the OTN summer institute each year to facilitate a “train the trainer” model for professional development at each institution. OTN members include five Big Ten Academic Alliance affiliates (The University of Iowa, The University of Minnesota, The Ohio State University, Purdue University, and Rutgers University) and notable peer institutions including The University of Kansas, The University of Massachusetts at Amherst, The University of Tennessee, Temple University, and Virginia Tech University.

The Open Textbook Library is an open repository for open textbooks administered by the Center for Open Education and the Open Textbook Network. All textbooks are either used at multiple higher education institutions; or affiliated with an institution, scholarly society, or professional organization. Penn State faculty can contribute their open textbooks to the library or use the resources available through the site.

## *OERu*

Recently, the Dutton Institute reached out to WikiEducator to inquire about listing the available OER courses with them. Wayne Mackintosh, Director of the OER Foundation and OERu facilitator, reached out with an invitation to participate as a partner with OERu.

There are several advantages to attempting this partnership. First, it serves the institutional mission by enhancing access to Penn State materials for students who may never be able to participate in a Penn State education. It reduces costs for student materials in areas that may not be normally within the Penn State wheelhouse, as well. One example of this is the OERu material for a class entitled “Australian Indigenous Culture, History and Contemporary Issues,” which Penn State would have permission to use and repurpose. The partnership also enhances Penn State’s participation in global engagement through partnerships with other like-minded institutions. While prestigious R1 institutions are notably absent in this partnership, institutions with a rich tradition of distance education, such as Athabasca and the Open University, do

participate. It is in partnerships with these institutions that Penn State can leverage our online material in support of a global audience.

From the perspective of the Dutton Institute, this also offers an opportunity to contribute back to the larger OER community. Oceania is of great strategic interest to the Dutton Institute, as well, in that the GIS programs are coming to be known in that region. The Institute also has the requisite resources in order to provide the required two courses and personnel to contribute to OERu.

### *Big Ten Academic Alliance*

With eight of the 16 members of the Big Ten Academic Alliance (BTAA) also participating in Unizin, much of the current planning around OER and affordable course content initiatives involves the Unizin consortium and platform. The libraries within the BTAA are in the early planning stages of a more coordinated effort focused on developing shared OER for the information literacy programs administered at each institution. Additional opportunities include coordinated OER development within general education courses throughout the BTAA. It is currently anticipated that the libraries within each member institution will serve in facilitating and coordinating roles at the local and consortial levels.

## Chapter 9 - Cost Savings

During the Fall 2015 semester, 404 students enrolled in 17 course sections using OER were surveyed. With an average course textbook cost of \$82,<sup>34</sup> the fall pilot discovered at least \$33,128 in savings already realized at Penn State within this small cohort. With its scale, Penn State University can realize significant cost reductions with targeted course transitions. Cost savings to students for OER adoption and common text adoptions are estimated below.

### *OER Cost Saving Estimates*

One strong strategy for instant savings to students is to target high enrollment courses for transition to OER or affordable course content. An analysis of Fall 2016 semester textbook adoptions for the two largest enrollment courses at Penn State, ECON 102 and PSYCH 100 reveals that even very targeted OER development and adoption can yield significant savings to students.

For both courses, textbook adoptions vary greatly by instructor and section. On average, students enrolled in these courses pay \$102.70 for their textbooks for each course, with prices ranging from no-fee to \$288.35. A programmatic effort to create, adopt, or adapt OER for these two courses that could then be shared across the sections could eliminate the direct student cost for both courses. This would reduce the overall expenditure for Penn State students on course materials per year by over \$10 million. Of course, this would require a coordinated effort and the sharing of course materials across sections, but would result in significant savings.

### *Common Textbook Cost Saving Estimates*

A coordinated approach to traditional textbook adoptions would also result in reduced cost to students. The table below indicates the potential savings that would result from adopting the lowest cost traditional textbook in two selected multi-section courses.

The estimated savings are based on simple cost reductions per course savings at current prices for new books and do not include any discounts to the bookstore for buying in bulk that can be passed onto students.

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<sup>34</sup> National Association of College Stores, "Higher Education Retail Market Facts & Figures." <https://www.nacs.org/research/industrystatistics/higheredfactsfigures.aspx>.

<b>Course</b>	<b>Enrollment</b>	<b>Current Cost</b>	<b>Section Total</b>	<b>Proposed Cost</b>	<b>Proposed Total</b>	<b>Est. Savings</b>
SOC 001	335	\$118.65	\$39,747.75	\$118.65	\$39,747.75	N/A
SOC 001	600	\$184.90	\$110,940.00	\$118.65	\$71,190.00	\$39,750.00
CRIM 100	120	\$120.00	\$14,400.00	\$76.40	\$9,168.00	\$5,232.00
CRIM 100	150	\$76.40	\$11,460.00	\$76.40	\$11,460.00	N/A
CRIM 100	48	\$163.25	\$7,836.00	\$76.40	\$3667.20	\$4,168.80
					<b>Total Est. Savings</b>	\$49,150.80

Transitioning only a few course sections for two courses would result in annual savings of \$49,150.80 in direct student expenditures. For the course section that already uses the lowest cost option, no savings would be realized; however, it is anticipated that these savings would scale and increase greatly with more course coordination and common textbook adoption.

## Chapter 10 - Conclusions and Recommendations

Penn State University is well-poised to build a more systematic approach to reducing course material costs for students through the creation and adoption of OER, systematic approaches to services that reduce costs, such as library course reserves, and increasing common resource adoption across the Commonwealth. Penn State University is uniquely positioned to make significant progress in affordable and open course material adoption due to its significant investment in instructional design and the opportunities that the Commonwealth Campuses afford related to course materials.

The Commonwealth Campuses offer opportunities to pilot OER initiatives, and to take advantage of economies of scale for common resource adoptions. As discussed in Chapter 10, even licensed resource or traditional textbook costs for selected courses can be reduced with increased coordination across the campuses. The Commonwealth Campuses offer the opportunity to pilot systematic approaches to OER adoption that can also be implemented at other Penn State University locations. For example, the OER Task Force meeting with faculty and staff at Penn State New Kensington focused on strategies to meet a hypothetical goal of having each full-time faculty member using OER in at least one course and yielded the suggestion of exploring a cohort model based on the successful hybrid course development program at that campus.

The Commonwealth Campuses are also well-positioned to address one of the common concerns expressed by faculty with whom the Task Force met, the alignment of OER creation and adoption with the tenure and promotion policies. The general concern is that this work is not recognized by most tenure and promotion policies at Penn State. The Commonwealth Campuses can pilot recognition strategies for affordable course content creation and adoption within the scholarship of teaching, and give examples for successful integration of these initiatives into the tenure and promotion structure for other Penn State locations to use as models.

Although the Task Force found overall interest in OER among the faculty who were consulted and a considerable amount of work underway at Penn State related to OER (see Chapter 4 for a few examples), two issues surfaced. First, there is no one unit or point person leading OER and affordable course content initiatives. In addition to unit-level programs focused on OER, two central units are already supporting OER and are well-positioned to expand their support, the Teaching and Learning with Technology unit within ITS and University Libraries. Regardless of reporting lines, an OER coordinating position is needed to serve as the point of contact for OER and a referral to the support available to interested faculty.

The other issue that became clear is that a well-developed strategy for faculty development related to OER and affordable course content is needed. The goals of this faculty development

program should be awareness of the issues and opportunities, and support for OER creation and affordable course content adoption for those faculty who are interested.

The following are recommendations for the development of a robust OER program at Penn State University.

## *Recommendations*

### **Staffing**

A coordinating position is recommended to further develop systematic and university-wide OER and affordable course content initiatives. Teaching and Learning with Technology within ITS has designated an instructional designer position to lead its efforts on OER. As the other central unit providing services and resources in support of OER, a coordinating position within University Libraries is recommended. A recent survey of institutions within the Association of Research Libraries found great variability in the titles for such a position and in organizational alignment; however, a position modeled on the open education portion of the Open Education, Copyright & Scholarly Communications Librarian at Virginia Tech is recommended.<sup>35</sup>

This position will:

- Coordinate faculty and staff development focused on OER and affordable course content within University Libraries to embed support for interested faculty through the University Libraries liaison librarian program
- Coordinate professional development and programming for faculty interested in transitioning to OER
- Administer or co-administer faculty incentive program(s) designed to encourage OER or affordable course content adoption.

This position will either report within the Library Learning Services department, or at one of the Commonwealth Campus Libraries. Library Learning Services would align the position with other services and programs focused on undergraduate teaching and learning. A Commonwealth Campus Library appointment would align the position with the best opportunities for faculty adoption of OER.

### ***Cross-Institutional Partnerships***

It is recommended that Penn State University leverage existing partnerships to guide its OER and affordable course content program and strategically select new partnerships. Unizin has been identified as the most promising existing partnership to advance OER at Penn State. In addition to the local facilitation of OER creation and adoption through the platforms supported and created by Unizin, the institutions participating in Unizin offer the best opportunity to create

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<sup>35</sup> Anita Walz, Kristi Jensen, & Joseph A. Salem, Jr. *SPEC Kit 351: Affordable Course Content and Open Educational Resources July 2016*, Washington, D.C.: Association of Research Libraries, 2016.

OER that can support selected learning outcomes, particularly at the general education level across several peer institutions.

The OERu partnership is recommended as well. Penn State's membership in OERu would cost \$4,000 annually. The OERu membership would make the OER authored at Penn State more prominent and provide easily-integrated OER content to Penn State faculty. The invitation to join was first made to the John A. Dutton e-Education Institute. An institutional membership would also mark a noteworthy shift in the approach to OER at Penn State from the unit or initiative level to a more programmatic approach.

Finally, it is recommended that Penn State join the Open Textbook Network. For the cost of \$5,000, Penn State will join a consortium of institutions interested in OER and affordable course content initiatives and will receive already-established faculty development and engagement programming during the first year, assessment data on open textbook adoptions, and the opportunity to send a designated OER coordinator or librarian for training at the summer institute to facilitate a train-the-trainer model for faculty development. In order to build on the momentum created by the inaugural OER Summit, it is recommended that the OTN membership start in order to facilitate the initial faculty development program during the spring of 2017 as a follow up event.

### ***Faculty Development***

In addition to the faculty development offered through the Open Textbook Network, it is recommended that a robust faculty development program be created in partnership among the Center for Online Innovation in Learning, the Schreyer Institute for Teaching Excellence, the Teaching and Learning with Technology unit within ITS, and University Libraries. The recommended program is based on the successful Blended Learning Transformation program administered by TLT. A cohort of up to 12 faculty would be sought annually and supported by a team that includes a librarian, instructional designer, and outcomes-based assessment support. Each faculty would agree to transition their course(s) from traditional student-purchased or licensed course content to OER or affordable content during summer or fall semesters for use in the spring.

A stipend of \$1,000 can be offered to faculty as well for any course that enrolls at least 25 students. With travel support, programming, and potential software licensing, the program could be supported by an approximate investment of \$15,000 each year and yield a savings of at least \$24,600 (based on enrollment of at least 25 students in 12 courses) annually, for a net total saving to the Penn State community of at least \$9,400. The savings will persist beyond the annual investment and the program will create a growing cohort of faculty using OER and affordable course content. Assuming that each course is taught biennially, the total net savings for such a program over a five-year period could conservatively be estimated at \$146,600. If these materials were adopted in multiple sections and across locations, those savings would grow exponentially.

### ***Pilot of Systematic Course Reserves***

It is recommended that University Libraries pilot a systematic approach to course reserves for World Campus courses during the upcoming academic year based on the model developed at The University of Minnesota. A fund of \$20,000 will be designated to support increased or additional licenses for online course materials in use within World Campus courses. The course material adoptions can be gathered systematically from the World Campus and the process to check them against current electronic licenses can be established over the upcoming year. Data for the fall semester can be used to establish the process and budget for material support with the pilot expending the \$20,000 allocation, embedding the materials in Canvas, and gathering data on use and cost savings can be conducted during the spring semester.

### ***Partnership with University Bookstore***

It is recommended that a robust partnership with the bookstore vendor (currently Barnes & Noble) be established to pursue strategies to reduce cost for courses using traditional textbooks. As discussed above, the uniform designation of textbook for multi-section courses at any one location will reduce costs to students. With the Commonwealth Campuses, Penn State is well-poised to maximize those savings. It is recommended that cross-campus textbook adoptions be pursued for those courses for which a traditional textbook is most applicable. In order to facilitate such adoptions, the bookstore vendor could encourage cross-campus adoptions by sponsoring coordinating events or summits annually.

If successful, it is recommended that the University Libraries pilot of systematic course reserves with World Campus courses be expanded to residential courses using text adoption data provided by the bookstore.

In addition to cost reduction strategies, it is also recommended that the bookstore be notified of open textbook or OER adoptions to facilitate print-on-demand for those students who prefer to use a physical copy of the book, when applicable.

### ***Strategy for Hosting OER***

It is recommended that a preferred hosting option for locally created OER be selected. In order to facilitate easier learning management system (LMS) transitions in the future and wider availability of locally created OER, it is not recommended that the LMS be used to host content. Rather, an established repository like the OER Commons platform or a Penn State open access learning object repository should be established. The local repository could be built on the platform used for ScholarSphere, the institutional repository currently supported at Penn State University.

### ***Strategic Action and Assessment Plans for OER/Affordable Course Content***

It is recommended that a strategic action plan for OER and affordable course content be developed by the OER Coordinator (TLT) and Open Education Librarian (UL) during the first year of that staffing model, with implementation during the 2017-2018 academic year. The plan should focus on faculty development, course transition, and student awareness and use of OER throughout the curriculum. Recommended metrics include course transitions and cost savings, faculty OER developments and adoptions, and outcomes-based assessment in courses using OER and affordable alternatives.

### ***Course Material Designations***

It is recommended that courses that use OER be designated in LionPath in order to facilitate assessment of course material on student success. Once fully developed, it is recommended that the designation be shared with students so that enrollment decisions can be made accordingly.

### ***Funding Proposal for Recommendations***

Proposed funding sources for each recommendation described above that requires additional resources are provided below. A three-year funding period is proposed to facilitate the efficacy of each initiative within the current Penn State University Strategic Plan period (2016-2020). Unless otherwise indicated, temporary funding is proposed for all initiatives.

Over the three year-period, it is proposed that Penn State University invest a total of \$207,980 in OER and affordable course content initiatives and that Barnes & Noble invest \$9,000 for a total investment of \$216,980. It is proposed that University Libraries make a total investment of \$92,000 (AY 2016-17: \$34,000; AY 2017-18: \$29,000; AY 2018-19: \$29,000) and the Provost's Office make a total investment of \$115,980 (AY 2016-17: \$70,980 permanent + \$15,000; AY 2017-18: \$15,000; 2018-19: \$15,000).

<b>Initiative</b>	<b>2016/17</b>	<b>2017/18</b>	<b>2018/19</b>	<b>Funding Source</b>
Open Education Librarian*	\$70,980 (\$52,000 base + fringe)	\$72,754 (Y1 + 2.5% increase)	\$74,573 (Y2 + 2.5% increase)	Provost's Office
Faculty Development	\$15,000	\$15,000	\$15,000	Provost's Office
OERu	\$4,000	\$4,000	\$4,000	University Libraries
Open Textbook Network	\$10,000 (membership & programming)	\$5,000 (programming)	\$5,000 (programming)	University Libraries
World Campus Course Reserves Pilot	\$20,000	\$20,000	\$20,000	University Libraries
Common Text Summits	\$3,000	\$3,000	\$3,000	Barnes & Noble
<b>Total</b>	<b>\$122,980</b>	<b>\$119,754</b>	<b>\$121,573</b>	

\*FTMY position

## Chapter 11 - Next Steps for Supporting OER at Penn State University

For AY 2016-2017, the following immediate next steps are recommended in order to advance the initiatives described in Chapter 10.

1. Recruit the Open Education Librarian within University Libraries and establish the staffing and partnership model with the OER coordinator in the Teaching and Learning with Technology (TLT) unit in ITS.
2. Pursue Penn State memberships in OERu and the Open Textbook Network to begin during AY 2016-2017.
3. Plan a follow-up event to the OER Summit through the partnership with the Open Textbook Network.
4. Transition the OER web site developed by the OER Task Force (<http://oer.psu.edu>) to the new staffing partnership for further development and maintenance.
5. Conduct the pilot of systematic course reserves with World Campus courses described in Chapter 5.
6. Develop a strategic plan for OER and affordable course content creation and adoption at Penn State.
7. Develop the faculty development program for implementation during AY 2017-2018 as a permanent follow up to the Faculty Engagement Awards administered by TLT focusing on OER during the upcoming year.
8. Develop the multi-section course textbook adoption program in partnership with Barnes & Noble.
9. Create a LibGuide within UL focused on OER and affordable course content as a supplement to the OER site discussed above.
10. Share the OER Task Force findings and recommendations as a follow up to the stakeholder engagement throughout AY 2015-2016.

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