NEW YORK STATE
OPEN EDUCATIONAL RESOURCES FUNDS
CUNY YEAR ONE REPORT

CU
NY
THE GREATEST
URBAN UNIVERSITY
IN THE WORLD

"

Higher education is a necessity for a middle-class future, yet the rising costs of educational resources make it difficult for many students. Through programs like the Excelsior Scholarship, the first-in-the-nation free college tuition program for students at SUNY and CUNY, and the OER initiative, we are providing important financial relief for many of our students and families, helping to make quality higher education accessible for all New Yorkers."

Governor Andrew M. Cuomo,
New York State

TABLE OF CONTENTS

INTRODUCTION

As part of Governor Andrew Cuomo's efforts to make college more affordable at the City University of New York (CUNY) and the State University of New York (SUNY), the FY 2018 State Budget enacted the Governor's Excelsior Scholarship program, which provides free tuition to families in New York State making up to $100,000 per year. The Excelsior Scholarship, a 'last mile' program, extends the state's existing generous aid programs, including the nearly $1 billion Tuition Assistance Program and any applicable federal grants, and fills in any remaining gaps after federal and state aid are applied to tuition costs. In addition, to mitigate the cost of textbooks, the FY 2018 Budget also invested $8 million in CUNY and SUNY to scale and sustain the adoption of open educational resources (OER) across their systems.

The two systems were awarded $4 million each to establish, sustain, and enhance new and ongoing OER initiatives at their colleges, with the funding to be spent in its entirety in FY 2018. The expected result was large-scale course conversions to OER throughout the systems. The initiative also sought to engage faculty in the redesign of courses through the replacement of proprietary textbooks with OER.

At CUNY, the short-term goal of the State funds was to reduce costs for students and accelerate their progress through college, but an important secondary goal was to change the University's culture to create systems and structures that better connect curriculum and pedagogy to student learning outcomes. Of particular interest were the use of OER in high-enrollment general education courses and the creation of degree pathways with no textbook costs (Z-degrees).

By focusing on high-enrollment general education courses, CUNY has seen a significant impact in cost savings to students. In FY 2018, the funding from New York State has resulted in a savings of $9.5 million for more than 76,000 students in over 2,800 newly converted course sections. More importantly, the funding has laid the groundwork to accelerate the conversion of general education courses to OER and to create Z-degrees.

"

I can work as many jobs as I can but [the high cost of textbooks] is still going to affect me. If I'm able to pay the tuition, I won't be able to pay for the textbooks. If I pay for the textbooks, I won't have enough money for tuition."

Student, Kingsborough Community College

SYSTEM APPROACH

CUNY OVERVIEW

In establishing the CUNY system in 1961, the New York State Legislature stated, "Only the strongest commitment to the special needs of an urban constituency justifies the Legislature's support of an independent and unique structure for the University. Activities at the City University campuses must be undertaken in a spirit which recognizes and responds to the imperative need for affirmative action and the positive desire to have City University personnel reflect the diverse communities which comprise the people of the city and state of New York …"

The University spans 24 campuses across the five boroughs in New York City, encompassing seven community colleges offering associate degree programs; eight senior colleges offering baccalaureate degree programs; three comprehensive colleges offering baccalaureate and associate degree programs; and six graduate, honors and professional schools. As a public university system of New York City, and the largest urban university system in the country, CUNY serves a diverse student population of over 250,000 full- and part-time undergraduate students: 31% Hispanic, 25% Black, 24% White, 21% Asian, and less than 1% American Indian/Alaskan Native. Over a third of CUNY undergraduates were born outside of the U.S. mainland and 45 percent are first-generation college students. With 58 percent of CUNY undergraduates receiving a Pell grant, and 42 percent from a household with an income of less than $20,000, full-time tuition for CUNY undergraduate programs are targeted to their student population ($4,800 to $6,530 per year for New York State residents).[1]

FUNDING OER ADOPTION AT THE SYSTEM LEVEL

CUNY's Office of Library Services (OLS) in the Office of Academic Affairs (OAA) provided the oversight and infrastructure for distributing the State's OER funds and overseeing each college's course conversion to OER. The funds were distributed through a competitive grant process, with institutions submitting proposals to support their OER initiatives. With a goal of large-scale course conversions throughout the system, the request for proposals sought high enrollment general education courses, Z-degrees, and an institutional commitment to convert at least five courses to OER, with five sections per course. Proposals were assessed based on their potential to develop, enhance and institutionalize new and ongoing OER initiatives across CUNY and to establish CUNY as a national leader in OER scaling in higher education. A rubric guided the assessment of each proposal, with the following factors considered:

[1] "Current Student Data Book by Subject – The City University of New York." – The City University of New York. Accessed May 14, 2018. http://www2.cuny.edu/about/administration/offices/oira/institutional/data/current-student-data-book-by-subject/.

- Level of project support, both within a course/department and through the institution's library and/or Center for Teaching and Learning

- Institution's experience and/or ability to convert a course to OER

- Budget reflective of grant intentions

- Overall quality of the grant proposal

Institutions that submitted a proposal committed to several grant requirements. Prior to a course starting, participating institutions were required to designate courses with a Zero Textbook Cost (ZTC) course attribute in CUNYfirst, CUNY's integrated management system. By designating courses with the ZTC attribute, students can easily search for courses and sections with zero textbook costs during registration. Institutions were also required to submit summary reports after the fall 2017 and spring 2018 semesters describing the outcomes of their projects and providing course data such as per semester student enrollment, number of sections converted to OER, and textbook cost savings.

The University's request for proposals provided a funding formula to cover a standardized level of faculty, staff, and sustainability support, including:

- Faculty compensation for OER course conversion

- Compensation for faculty training

- Course maintenance fee per student for technical support

- Staffing support for participating libraries and/or Centers for Teaching and Learning

By having each participating institution develop their own OER course conversion proposal and budget, and identify the departments, staff, and other collaborative partners within their institution to implement and scale their OER initiative, the initiative offered institutions the flexibility to develop OER in a way that best met each institution's existing expertise and faculty and student needs. Proposal guidelines, while providing standardized principles and various levels of support for OER initiatives, also encouraged institutions to take new and innovative approaches in their work.

In total, OLS funded all 21 eligible institutions across the system—all the 20 undergraduate schools and the Graduate Center — for a cost savings of $9.5 million for 76,000 students in over 2,800 newly converted course sections. Additional OER initiatives and projects were funded throughout the year to allow interested faculty and institutions additional opportunities to explore, adopt, create, and share OER materials.

"

I haven't been able to purchase the Spanish textbook yet, and I won't be able to get it until next week unfortunately, and already, I see myself slightly behind in class."

Student, BMCC

SUPPORTING CUNY'S INSTITUTIONS

CUNY has a long history of supporting academic innovation within its institutions; in fact, OER initiatives were already in place at many of the colleges. The addition of State funds allowed OLS to formalize and expand the resources and services it provides to institutions to scale OER. In addition to disbursing the State funds to institutions in a manner that encouraged the adoption of OER, OLS also provided services and resources to help seed the infrastructure within and between institutions to create a foundation of support for OER adoption, scaling and sustainability.

An important aspect of the CUNY OER initiative was OLS' requirement for, as well as their support of, localized OER teams within each participating institution headed by an OER lead/coordinator (see OER Champions profiles). Typically held by staff from the institution's library or the Center for Teaching and Learning, these OER coordinators oversaw the progress of their OER initiatives, including: the recruitment, buy-in, professional development, and ongoing support of faculty and staff; data collection; marketing and outreach; technical support and coordination; content curation and creation; and much more. By placing the responsibility on each institution to build their own OER team, OLS encouraged institutions to develop in-house institutional expertise and sustainability models.

Additionally, the funding allowed the University to expand services to support OER adoption, scaling, and sustainability in the following ways:

- **System-level communities of practice and coordination:** OLS convened faculty and staff to collaborate, network, and share their work, successes, challenges, and needs. Throughout AY 2017 – 18, the institutions' OER leads convened regularly to give updates on their work, problem-solve, and innovate. In addition, the State funds also supported the convening of intra-disciplinary faculty from across CUNY to collaborate on OER adoption and creation, such as the creation of OER lab manuals by biology faculty and collaborative redesign in STEM courses between community and senior colleges (see Community College and Senior College Collaborations in STEM Courses below).

- **System-level resources:** OLS investigated, procured, and facilitated resources and services at the University level. Examples include the enhancement of Academic Commons (an online, academic social network for CUNY faculty, staff, and students built on open-source technology) as an open publishing and OER teaching platform; LibGuides content management system to curate, share and organize information; CUNY-wide contract with Lumen Learning, a company that provides OER content, courseware, and faculty support for higher education institutions; and membership in the Open Textbook Network for train-the-trainer workshops and faculty support in reviewing OER texts.

"

Studies have shown that students choose not to register for courses with high textbook and materials costs and, as a result, may not pursue majors like the sciences that require expensive texts. The Governor's continued investment in OER provides a critical support to economically disadvantaged students and removes a longstanding barrier to access, equity and excellence in higher education."

William C. Thompson, Jr., Chairperson of the CUNY Board of Trustees

- **Workshops and trainings:** OLS coordinated a variety of hands-on workshops on OER adoption and course redesign. The range of workshop topics included learning-focused syllabi, backwards design, culturally-sustaining and culturally-relevant pedagogy, zero textbook cost materials, Creative Commons licensing, copyright and fair use, OER curation, creation, and delivery, and OER accessibility. Some workshops were developed as train-the-trainer models for workshop participants to share their learning with colleagues at their home institutions.

- **Marketing and outreach:** To drive faculty participation in their institution's OER initiative and to inform students about zero textbook cost courses, OLS, working with CUNY's Registrar and Office of Communications, developed informational campaigns to educate faculty, staff, and students. One example of the Office's student outreach campaigns was the promotion of the ZTC course attribute through the education of and outreach to advisors and a social media and email blast video campaign to educate students on how they could search and register for zero textbook cost courses. Promotional materials such as screen displays and print posters, flyers, and bookmarks were also used.

- **Assessment and evaluation:** In addition to capturing and analyzing cost savings to students and the number of students and sections impacted, the Office of Academic Affairs is collecting and analyzing data to explore the impact on student learning outcomes, perceptions, and use. Initial data are expected later this year.

- **Open-NYS:** Developed collaboratively between CUNY and SUNY, Open-NYS (www.open-nys.org) is a repository of information that provides a one-stop shop for faculty to begin exploring OER across both systems. Open-NYS supports easy integration, creation and adaptation of open materials into the classroom with resources such as metasearch engines; repositories of openly licensed courses, textbooks, and media; open access research articles and datasets; library guides to OER; professional learning communities; faculty success stories; and information on professional development events.

OER**CHAMPIONS**

Within any successful project or initiative that involves change management, there are champions of the work who lead, advocate and inspire others to follow their lead in creating a space for innovation and improvement. The CUNY OER initiative has seen many OER champions who have driven and furthered the work both within their institution and across the system.

CAILEAN COONEY
Assistant Professor and Open Educational Resources Librarian, New York City College of Technology

JEAN AMARAL
Associate Professor and Open Knowledge Librarian, Borough of Manhattan Community College

Cailean first became involved in OER in Fall 2014, working with colleagues to create professional development opportunities for faculty to explore OER. During the 2014 15 academic year, Cailean led the development and launch of the OER Fellowship program with three faculty from different disciplines curating and creating OER. Under Cailean's leadership over academic year 2017 18, the OER initiative supported 52 faculty to create and curate OER and 77 faculty to adopt OER in their courses.

Cailean sees her role at City Tech as working collaboratively and effectively with departments and individual faculty members in their involvement with OER, and helping faculty look to OER as an opportunity to benefit their teaching and their students' learning. In addition to her work at City Tech, Cailean has also provided professional development to faculty and staff across CUNY and works to share her knowledge of OER with others across the system. Cailean is particularly focused on supporting others within CUNY who are interested in exploring or advancing OER.

Cailean's words of advice for others looking to lead and support OER initiatives at their institutions? *"Collaborate with everyone you can faculty interested in learning about OER, the Centers for Teaching and Learning, the libraries. Keep the process as collaborative as possible."*

Jean got her start in OER in 2014, working with BMCC's Center for Excellence in Teaching, Learning, and Scholarship to develop professional development in course redesign using OER and zero-cost textbooks. Jean is passionate about developing and leading faculty and library staff professional development at BMCC and across CUNY. As a former college English instructor, she is very comfortable talking about pedagogy, and finds running faculty professional development to be a transformative experience for herself and faculty.

Jean designs and delivers professional development focusing on pedagogical innovation and improving course design relative to its alignment with learning outcomes. Jean believes that OER's benefits go beyond saving students money. She loves teaching faculty about the power of OER to engage faculty and student learning communities, moving students from knowledge consumers to knowledge creators, and curating and creating culturally-relevant and culturally sustainable OER.

Jean's success in working with faculty at BMCC is tied to her understanding of the needs of BMCC faculty, who were eager for workshops and seminars on pedagogy. Jean advises others to, *"Figure out your campus culture and what faculty most need and want, and then create professional development that helps to meet those needs."*

INNOVATIVE APPROACHES TO OER ADOPTION AND SCALING

Across the system, institutions requested funding for a variety of projects-- from individual faculty adoptions to whole department conversions and from professional development for faculty and staff to OER fellowship programs. While each project is unique, below are five innovative approaches to OER adoption at CUNY that highlight the breadth of innovation accelerated by the New York State OER funds.

LAGUARDIA COMMUNITY COLLEGE

At LaGuardia Community College, math department faculty and staff from five developmental and introductory college-level courses collaborated to investigate the potential of OER replacements for their courses' online platforms.

Courses impacted:

- Elementary Algebra (potential impact at scale: 1,300 students)

- Fundamentals of Algebra (potential impact at scale: 1,900 students)

- College Algebra and Trigonometry (potential impact at scale: 3,000 students)

- Algebra and Trigonometry (potential impact at scale: 800 students)

- Elementary Statistics I (potential impact at scale: 2,500 students)

Prior to fall 2017, each of the courses used a commercial online platform, ranging from $63 to $105 per student per semester. Through the support of the New York State OER funds and the support of CUNY's OAA, LaGuardia piloted three open resource online platforms (MyOpenMath, Khan Academy and WeBWork), each available at no cost to students, in ten course sections during the fall 2017 semester, with an impact of over 260 students and a savings of approximately $22,000 in online platform costs for students. In spring 2018, a five-section pilot was run in each course. Nine faculty members, a project coordinator, and technical support staff at LaGuardia Community College participated in the pilot.

OER platforms for each course in the spring 2018 pilot were selected based on faculty and student survey perceptions of the fall 2017 pilot. Based on the survey results, the MyOpenMath platform was expanded to additional sections of all five math courses and Khan Academy was used in three

"

Faculty have been reporting that OER has invigorated their pedagogy. It has also strengthened the Library's relationships within departments."

Institutional OER Coordinator

hybrid sections. Impact from the spring pilot is anticipated at $72,000 in cost savings for over 830 students in 31 sections. As a result of this project, LaGuardia plans to expand the use of MyOpenMath to all 164 sections of these courses in fall 2018, with an impact of 4,000 students in the Fall semester.

NEW YORK CITY COLLEGE OF TECHNOLOGY

New York City College of Technology (City Tech) is an early institutional leader in OER development and open source platform development. The funds from New York State provided City Tech with the opportunity to expand its library's OER Fellowship program and extend the OER initiative across the college - making course materials publicly available to students through the OpenLab, City Tech's open-source digital platform for collaboration, teaching, and learning.

Launched in fall 2014, City Tech Library's OER Fellowship program funds faculty to curate zero-cost OER to replace existing learning materials in their courses. Fellows participate in faculty development seminars to learn about OER as well as strategies for optimal accessibility and usability of course materials; best practices around attribution, copyright, Creative Commons licenses, and fair use; and creation of their own OpenLab site to house OER.

City Tech's initiatives support development of new OER courses to strengthen coordination of instructional materials among faculty, increase adoption of OER among course sections, and expand professional development opportunities in teaching and learning among part-time and full-time City Tech faculty. The project has strengthened the Library's programming around instructional design and faculty development in partnership with the Faculty Commons (City Tech's Center for Teaching and Learning), the OpenLab, and the Office of Instructional Technology.

The support provided by the New York State funds allowed City Tech to extend their reach, especially in disciplines or departments that the institution had not worked with in the past or where there were few existing OERs available for adoption. In fall 2017, City Tech increased the number of staff dedicated to OER - with instructional design support staff well-versed in information architecture, course design, and accessibility best practices - in partnership with City Tech's open source platform for teaching and learning, the OpenLab. This made it possible to provide one-on-one and group training and support to faculty. In addition, the funds allowed City Tech to triple the number of OER Fellowship cohorts from one to three.

In fall 2017, City Tech developed 85 new zero-textbook cost/OER course sections that saved over $250,000 for over 2,100 students. Impact from spring 2018 (after final data is calculated) is anticipated at an additional

141 sections reaching an additional 3,500 students at an additional cost savings of approximately $307,000.

CUNY GRADUATE CENTER

The Graduate Center's core mission is to train the professoriate of tomorrow by embedding graduate students at CUNY's undergraduate institutions as adjunct faculty and teaching fellows in mostly core introductory courses. Sixty-one percent of the Graduate Center's 4,500 doctoral students and 92% of CUNY doctoral faculty have dual appointments at the Graduate Center and another CUNY campus, and Graduate Center doctoral students teach upwards of 7,600 CUNY courses per year.

Through the support of the New York State OER funds, the Graduate Center launched the OER Faculty Fellows Project in fall 2017. Eleven CUNY tenure-track faculty already teaching with OER were selected to work with Graduate Center student instructors on the development of zero-cost OER units for spring 2018. These courses were taught using the CUNY Academic Commons – CUNY's own online, academic social network for faculty, staff and students. All original OER developed on the Commons through the Fellows Project will be permanently archived and accessible in CUNY's institutional repository, Academic Works, providing additional discoverability for these zero-cost and openly-licensed materials.

The State OER funds also supported the Graduate Center's Teaching and Learning Center and library staff in conducting focus groups with graduate students to better understand the needs and concerns of the future professoriate surrounding OER and zero-cost courses.

COMMUNITY COLLEGE AND SENIOR COLLEGE COLLABORATIONS IN STEM COURSES

In spring 2018, OLS, in partnership with the CUNY Central Office of Research, solicited applications from collaborative teams of community and senior colleges to build OER capacity in foundational/gateway STEM courses in biology, chemistry, computer science, environmental science, math, and physics. Each team had to consist of faculty members from a community college and a senior college working together to explore ways in which OER could be incorporated into lectures, labs, or course-related activities across a shared curriculum. The collaborative projects were also required to develop proposed models for scaling OER within large multi-section courses and to include plans for comprehensive assessment of student learning outcomes. Implementation of the course redesign will take place during AY 2018-19.

In total, fourteen projects were funded with participation from seven community colleges, seven senior colleges, and two comprehensive colleges. Funded projects include collaborations between:

FUNDING IMPACT

2,800
New Sections
across CUNY that converted from expensive proprietary materials to open educational resources

IMPACTING
76,000
Students
that experienced a course using OER

STUDENTS SAVED
$9.5
Million
from Fall 2017 - Fall 2018

RESULTING IN
$2.38
in savings for every $1 of NYS Funding

- Queensborough Community College and City Tech to create OER lab manuals for circuit analysis courses in their engineering technology programs.

- Bronx Community College and Lehman College to create videos for their introductory chemistry courses.

- Borough of Manhattan Community College and Hunter College to develop OER for their intermediate/college algebra and pre-calculus courses.

- Borough of Manhattan Community College and Medgar Evers College to adapt socially inclusive and contextually-relevant OER content in human development and psychology courses for their culturally diverse student populations.

CS0 FOR ALL CUNY

A survey conducted by Susan Imberman, the University Associate Dean for Technology Education at CUNY, found that only seven CUNY institutions offered CS0 courses within their general education offerings. These introductory computer science courses, intended for students with little or no programming experience, aim to introduce students to computer science and retain them in computer science programs. Through her survey, Dr. Imberman also discovered that there were only 1,200 CS0 seats available for 250,000 CUNY undergraduates. To increase the number of CS0 courses offered within the University, Dr. Imberman received funding from OLS for the development of OER content for CS0 courses. These materials will include lecture materials, labs, homework assignments, and video content that will offer CUNY institutions without a CS0 course the content they need to easily create one. The work will take place in three phases:

- **Phase 1:** Working with an instructional designer to develop comprehensive OER materials using existing content.

- **Phase 2:** Creating openly licensed video content.

- **Phase 3:** Collaborating with faculty from other disciplines to develop discipline-relevant CS0 content to better engage students.

Faculty from John Jay College, City College, College of Staten Island, Borough of Manhattan Community College, Bronx Community College, and Medgar Evers College are leading the work, with an anticipated launch of the Phase 1 OER in Spring 2019.

EARLY FINDINGS AND LESSONS LEARNED

To understand the impact of OER on faculty, students, institutions, and across the University, data about the OER sections, student enrollment, textbook cost savings, and authored OER content are being collected centrally by the University for further analysis in the future. In addition, data collection has also been occurring at many of the individual institutions, allowing for a more extensive analysis into the impact of OER on the student experience, faculty experience and student outcomes.

While the final course data from spring and summer 2018 are still being calculated as of this report, the projected impact[2] for the fall 2017 through 2018 semesters across all participating institutions is:

- Over 2,800 newly created OER sections

- More than 76,000 students impacted

- $9.5 million in cost savings, representing $2.38 in savings for every $1 of New York State funding

OER was used in over 57 disciplines across the University, with 60% of newly created OER sections concentrated in 10 disciplines (see Figure 1).[3]

TOP 10 DISCIPLINES WITH NEW OER SECTIONS ACROSS CUNY IN AY 2018-19

Disciplines	Number of Newly Created OER Sections
Mathematics	245
Biology	194
English	173
Modern Languages	109
Astronomy	78
Art	69
Music	68
Academic Literacy and Linguistics	64
Theatre Arts	58
Criminal Justice	56

Figure 1. Developed with data self-reported from institutions as of August 24, 2018.

[2] Projected impact based on data self-reported by CUNY institutions as of August 24, 2018.

[3] Data self-reported from CUNY institutions as of August 24, 2018.

Since fall 2017, the number of ZTC designations in CUNYfirst has been increasing, potentially indicating growing faculty awareness of the OER initiatives within their institutions. In addition to faculty supported through one of the State-funded project proposals, other faculty across CUNY are publicly identifying their courses as zero-textbook cost for the first time (see Figure 2).[4]

CUNY ZERO-TEXTBOOK COST DESIGNATIONS BY SEMESTER

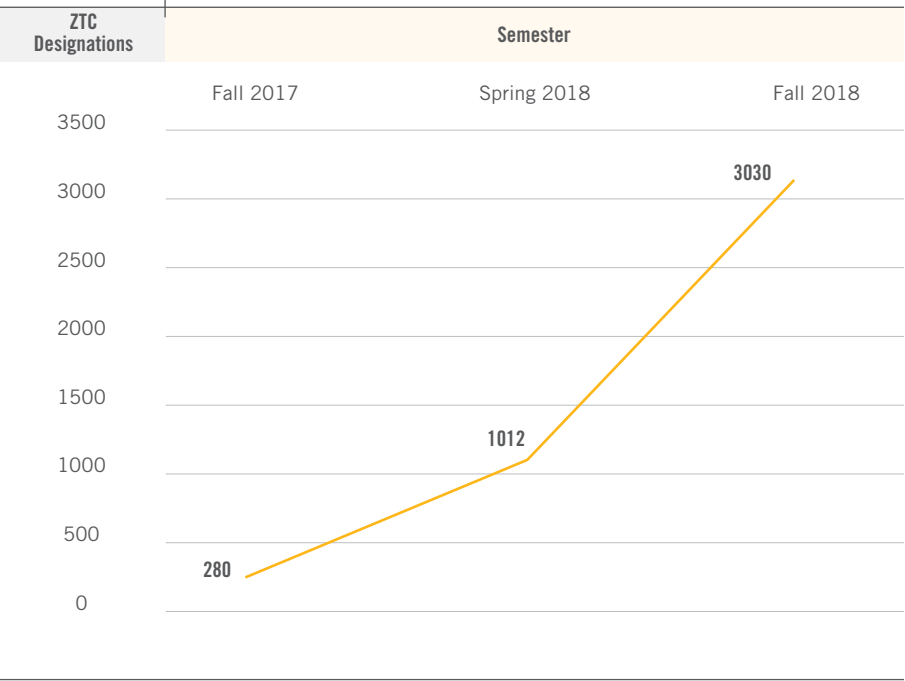| ZTC Designations	Semester		
	Fall 2017	Spring 2018	Fall 2018
3500			
3000			3030
2500			
2000			
1500			
1000		1012	
500			
0	280		

Figure 2. Developed through data collected as of July 26, 2018.

Among the institutions and sections that provided information on OER platform use, Blackboard was the most frequently used platform, followed by platforms offered by outside vendors such as Lumen Learning, OpenStax, and Wordpress, and faculty- and CUNY-developed platforms such as CUNY Academic Commons, the OpenLab, and faculty-created Libguides.[5]

In addition to the analysis of textbook cost savings and the number of sections and students impacted during AY 2017-18, the Office of Academic Affairs has also conducted two additional research projects to assess the impact of the State funds: A qualitative survey on OER coordinator workload, faculty recruitment, marketing, and overall changes; and qualitative research through site visit interviews with administrators, librarians, faculty, and students.

Feedback from the OER coordinator survey (conducted in January/February 2018) found that implementation models for OER adoption and scaling varied, with some institutions hiring instructional technologists and others pairing librarians with faculty and faculty development staff.

"

The Library is critical in providing guidance and support for faculty developing OER. Discipline faculty are appreciative of our work, and this leads to other collaborations."

Librarian, Lehman College

[4] ZTC designation data collected from CUNY institutions as of July 26, 2018.

[5] Data collected from CUNY institutions as of July 26, 2018.

OER coordinators cited several challenges to their work, including building faculty buy-in, working with faculty determined to create their own OER but unprepared for the time commitment of the work, compensating faculty for their work, and finding coordinated times for collective professional development. The successes highlighted by OER coordinators included day-one course material access for students, bringing faculty together with library staff, having faculty see their teaching improve as a result of course redesign, and receiving support from department chairs to help drive momentum for the work.

Site visit interviews conducted in January and February 2018 at four of the institutions allowed CUNY to gain the insight of students and administrators in addition to library staff and faculty. In particular, students noted that when they registered for their courses in fall 2017, they did not realize they were signing up for a zero-textbook cost / OER course but were pleasantly surprised to find that their course did not require a textbook purchase. Students found that their OER course materials were more focused, targeted and relevant than traditional textbooks, although there were some students who preferred a physical copy of the materials for studying. To address student feedback on receiving access to a hard copy of their learning materials, CUNY is developing printing options to meet students' needs.

OLS has also seen trends in OER adoption and creation across the University as institutions have started or scaled up their OER initiatives, including:

- **Development of openly licensed ancillary learning materials:** As faculty and departments curate OER for their courses, they have discovered gaps in OER content that have created stumbling blocks in offering zero-textbook cost / OER courses. To fill these gaps, many faculty have stepped up to create OER content. One particularly ripe area for OER creation has been the development of ancillary learning materials, such as test bank questions, lab manuals, videos, and homework management systems, to supplement existing OER textbooks. Examples of OER ancillary material development at CUNY include the creation of worksheets, test banks, videos, and practice problems in a Statistics with Algebra course at the Borough of Manhattan Community College and biology and psychology lab manuals at Queens College.

- **Student engagement in the development of OER materials:** OER offers faculty the opportunity to engage students in open pedagogy, where students take on the role of knowledge creators and share their work and their learning with others. The Borough of Manhattan Community College, the Graduate Center, John Jay College, and Medgar Evers College are some of the institutions that will incorporate open pedagogy programs, seminars and resources into their OER initiatives in AY 2018-19.

- **Cultural shift among faculty in sharing teaching materials:** As institutions have started or scaled up their OER initiatives, the University has begun to see a mindset shift in faculty in sharing their teaching materials. This shift in mindset can be evidenced in CUNY Academic Works, where the amount of OER published has increased by over 880 percent over the last four years (see Figure 4), with 253 total OERs published and available for adoption, including 25 textbooks developed by CUNY faculty and staff.

OER Published on CUNY Academic Works from 2011-2018

OER Published	Year							
	2011	2012	2013	2014	2015	2016	2017	2018
	2	3	5	11	40	27	65	97

Figure 4. Developed from data captured from CUNY Academic Works as of September 5, 2018.

LESSONS LEARNED

Over the course of the academic year, OLS has learned some important lessons to drive success within and across institutions:

- **Ensure ownership and champions on each campus:** To maintain momentum of institutional initiatives while still building accountability, OLS required each participating institution to designate an OER team-lead or coordinator to liaise with OLS. Most of those appointed were CUNY librarians or faculty associated with the colleges' Centers for Teaching and Learning. The OER coordinators were tasked with monitoring, reporting, and facilitating key elements of the college OER strategies including: recruitment, professional development, and ongoing support of faculty and staff; data collection; marketing and outreach; technical support and coordination; content curation and creation; and much more.

"

The investment New York State has made into OER at CUNY and SUNY has made a big difference in raising awareness of OER as an open, engaged pedagogical movement. College affordability may be what's motivating state officials to invest in OER, but what the money has also brought is exposure about OER, and that has provosts talking about OER, librarians talking about OER, and faculty slowly becoming more and more knowledgeable and curious."

Gregory Gosselin, Interim University Dean for Libraries and Information Systems, CUNY

- **Build department and senior-level administrator campus support:** The University has seen a significant increase in faculty and staff buy-in established at the colleges. At institutions where department chairs and senior-level administrators championed OER adoption, programs were often able to gain traction faster.

- **Engage new faculty interested in OER throughout the academic year:** While the bulk of the New York State OER funds was disbursed to institutions through the institutional grant process, OLS continued engaging faculty who voiced interest in exploring OER during the academic year. For example, OLS offered faculty stipends of up to $200 to review an Open Textbook Network textbook and an additional $300 if the faculty adopted that textbook. OLS continually encouraged and supported faculty and other stakeholders to develop additional one-off proposals.

- **Collect student outcome data to evaluate the impact of OER on student success:** While the drive to convert courses to OER stems from the desire to reduce the cost of college attendance for students, OER offers faculty the opportunity to re-evaluate their teaching materials and their course design, as well as curate or develop interactive and engaging materials for students. By collecting student outcomes data for OER sections and comparing them against non-OER sections, the University can explore trends in student outcomes connected to OER use. For instance, at John Jay College of Criminal Justice, a comparison of OER and non-OER sections in Pre-Calculus, Discrete Structures and Calculus II showed significantly higher student success outcomes in OER sections.

"

Many faculty appreciate updating their courses with more interactive technology."

Administrator, Brooklyn College

FUTURE PLANS

In April 2018, New York State approved the FY 2019 budget, which included another $4 million each for CUNY and SUNY to continue and scale their OER initiatives.

SYSTEM PLANS

Based on the lessons learned in AY 2017-18, the CUNY Office of Academic Affairs will be working on several projects to accelerate and sustain OER adoption across the system:

- **Providing institutional grants:** With the success in fostering innovative approaches through institutional grants, the University put out another request for proposals to continue the work from year one and generate additional project ideas to scale OER. The total fund requests were double the amount requested from AY 2017-18.

- **Increasing student awareness of zero cost textbooks and OER:** From student interviews, the University learned that students were not aware that they had registered for ZTC courses. While they were extremely supportive of having courses move to OER, they did not know how to search for these courses during the registration process. A video on ZTC was created by the Office of Communications and emailed to students and posted on social media. Advisors were also educated on the Zero Textbook Cost Course attribute in CUNYfirst. CUNY will focus additional efforts on raising student awareness in AY 2018-19. This will include communications campaigns and working with student governments.

- **Encouraging inter-institutional collaboration:** During AY 2017-18, OLS and the Office of Research envisioned and funded STEM collaborations across community and senior colleges to standardize STEM course learning materials and outcomes. The University will be exploring other collaborations between institutions to convene faculty and staff for OER collaborations.

- **Investing system-level resources to advance OER adoption and sustainability:** By leveraging economies of scale, OLS has been able to provide system-level support resources to its institutions. CUNY will continue to offer new resources to facilitate OER scaling, including:

  * CUNY microsite on OER Commons, which will serve as a digital library of CUNY OER materials hosted on multiple platforms, aggregating their discovery and access in a single interface.

"

New York State's investment in OER has enabled CUNY and SUNY to do so much to support our faculty and students. But one of the most powerful lessons we've learned is that money isn't everything — just as meaningful as the cost savings of open resources are the positive impacts on pedagogy, equity, collaboration, and student achievement. One year into our work, we're excited to sustain these benefits and continue to empower more faculty and students, in New York and around the country, to feel their impact."

Ann Fiddler, Open Education Librarian, CUNY

* Sustaining membership of the Open Education Consortium, which offers CUNY the opportunity to participate in Open Education Consortium activities and events, join committees and working groups, and network with other institutions and organizations around the world.

- **Collaborating with SUNY to share resources and knowledge:** The State funding has been a catalyst for collaborations between CUNY and SUNY, resulting in the development of www.open-nys.org as well as a jointly hosted OER Showcase in March 2018 with a keynote speaker, student and faculty panels, and breakout sessions for institutions from both systems to share their work. Individual institutions across CUNY and SUNY have developed projects to collaboratively create OER, and CUNY and SUNY have participated in joint conference panel discussions, with many presentations at the 2017 OpenEd conference.

- **Collaborating with other institutions/systems/organizations working on OER:** In 2017, leaders from CUNY, SUNY and the University System of Maryland (USM) began meeting to discuss how they could further advance the role system offices play in scaling and sustaining academic innovation related to OER. As large public higher education systems significantly expanding their OER initiatives across each of their systems, CUNY, SUNY and USM have been informally collaborating to share resources and to develop a network of peer public higher education systems committed to scaling OER, sharing resources, and leveraging its collective influence to advance OER policy, research, quality, and accessibility.

- **Researching the long-term impact of OER conversion:** The short-term research at CUNY has focused on the number of sections, students and cost savings impacted as well as faculty, administrator, library staff, and student feedback. OAA and OLS will begin exploring the long-term impacts of OER through a randomized controlled trial to evaluate the long-term cost, student outcomes, use, and perceptions, and identify best practices through another study comparing various OER/non-OER sections and analyzing course design characteristics that yield better results.

- **Recognizing faculty for contribution to OER development:** OLS is exploring ways in which faculty can be recognized for authoring, adapting, and adopting OER, particularly as it pertains to tenure and promotion.

- **Promoting institutional sustainability:** To sustain OER, OAA and OLS recognize that OER initiatives need to be incorporated into CUNY's Strategic Plan as a strategy to increase access and completion. A sustained focus on collaboration between OAA and each of the institutions will help to ensure that OER initiatives are not siloed as a trend or fad but are truly seen as a tool to drive academic innovation in teaching and learning.

INSTITUTIONAL PLANS

As institutions take their OER initiatives to the next level in AY 2018-19, they are focused not just on exponentially expanding their OER offerings, but also on building the infrastructure to sustain OER adoption across the University. The proposals submitted to OLS highlight that institutions are committed to their OER initiatives. Proposals include projects to support various aspects of OER sustainability, including:

- **Developing easily searchable repository of OER content:** The Borough of Manhattan Community College proposes the development of course hubs for twenty-one high enrollment courses to facilitate faculty in sharing their syllabus, handbooks, teaching resources, and ancillary materials.

- **Adapting OER content for wider usage across courses:** Baruch College's proposal includes the creation of OER modules in communications and public speaking to help adjuncts find and use the exact content modules they need for their course.

- **Building technological infrastructure to advance OER adoption:** City Tech plans to continue its OpenLab platform enhancements to allow faculty to easily copy different portions of existing OER and incorporate them into their own OER content.

- **Establishing an OER quality review process:** To create consistently high-quality OER at its institution, Hunter College has proposed the creation of quality review panels of Hunter (and potentially other CUNY) faculty to review zero-cost materials.

- **Providing faculty development to curate, create and update OER:** As OER is being developed for a course, faculty have the opportunity to redesign their course to better engage students and increase student outcomes. After OER has been created, regular reviews and updates of materials are required in order to keep the teaching and learning materials current. Medgar Evers College's proposal includes the creation of an OER Center dedicated to supporting faculty in connecting curriculum and pedagogy with student learning outcomes through trained library staff, workshops and seminars, and Course Subject OER liaisons.

- **Promoting intra- and inter-institutional collaboration:** Collaboration between faculty, departments and institutions provide opportunities to align learning materials across pathways and 2- and 4-year institutions. In addition, collaboration helps to build learning communities and affinity groups to share knowledge and research. Hostos Community College has proposed developing a community of practice between

the 2- and 4-year Bronx colleges (Hostos Community College, Lehman College and Bronx Community College), engaging the education department at Lehman College to develop OER, and creating ancillary materials for STEM courses across the three Bronx colleges.

- **Marketing to students:** To educate students on the ZTC designation, Guttman College proposes the implementation of campus wide marketing, in-house education strategies and campaigns specifically targeting students, and partnerships with Guttman's Office of Academic Affairs and Office of Student Engagement to train student engagement specialists such as Student Support Advocates, the admissions team, orientation leadership, and the Summer Bridge team on explaining ZTC and how students can search for ZTC courses on CUNYfirst.

These projects represent just a small handful of innovative work across CUNY to build and sustain OER adoption. As CUNY kicks off AY 2018-19, institutions will be piloting, creating, iterating, and scaling their OER projects for the benefit of faculty, students and institutions.

> It's been an opportunity to strengthen intra-institutional connections with the Center for Teaching and Learning, the OpenLab, and the office of Instructional Technology. We've been able to fund new faculty to develop OERs as well as returning faculty to continue building on their course materials. This growth increases exposure to OER in the greater college community and strengthens our knowledge networks around OER and open pedagogy."

OER Coordinator

CU
NY
THE GREATEST
URBAN UNIVERSITY
IN THE WORLD