Strengthening Real-World Problem-Solving Skills at CSU (QEP 2016-2021)

A Quality Enhancement Plan Submitted by

COLUMBUS STATE UNIVERSITY

to the Commission of Colleges
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We Solve It! - Columbus State University’s Quality Enhancement Plan

Table of Contents

Section……………………………………………………………………………………………………………………………………………………………………..Page

Executive Summary…………………………………………………………………………………………………………………………………………………..2

Chapter 1: Introduction to Columbus State University……………………………………………………………………………………………………..4

Chapter 2: Institutional Process for Identifying Key Issues and Selecting the QEP Topic………………………………………………………………………………..9

Chapter 3: Focus Phase—Development of Logo and Detailed Focus with Learning Outcomes, Goal, and Program Outcomes………………………………………………………………………………………………………………..18

Chapter 4: QEP Initiatives to Expand Creative, Real-World Problem Solving Skill Development at CSU………………………………………………………………………………………………………………………………………………..27

Chapter 5: Institutional Involvement and Capability……………………………………………………………………………………………………………………50

Chapter 6: Assessment & Improvement Plans……………………………………………………………………………………………………………………63

References……………………………………………………………………………………………………………………………………………………………………....75

Appendix A: Leadership and Dialogue Workgroup Memberships……………………………………………………………………………………………………..80

Appendix B: Campus Feedback & Core Values……………………………………………………………………………………………………………………81

Appendix C: Design Team Membership……………………………………………………………………………………………………………………………..84

Appendix D: Summary of the Activities of the Design Team…………………………………………………………………………………………………………85

Appendix E: Letter of Support from the President……………………………………………………………………………………………………………………90

Appendix F: Letter of Support from the Vice Presidents…………………………………………………………………………………………………………….91

Appendix G: Letter of Support from the Deans……………………………………………………………………………………………………………………….92

Appendix H: QEP Implementation Timeline………………………………………………………………………………………………………………………93

Appendix I: We Solve It! Rubric: Evaluation Rubric for Creative, Real-World Problem-Solving………………………………………………………………………………..96

Appendix J: Annual We Solve It! Effectiveness Survey………………………………………………………………………………………………………………99

Appendix K: Faculty & Staff Development Survey………………………………………………………………………………………………………………101

Appendix L: We Solve It! Report………………………………………………………………………………………………………………………………………………..102
Executive Summary

Columbus State University’s (CSU) second Quality Enhancement Plan (QEP), We Solve It!, focuses on strengthening the real-world problem-solving skills of our students. The selection of the focus of this QEP involved broad-based input from students, faculty, staff, trustees, and alumni. Initially, the institution identified five needs for improving teaching and learning at CSU, including: 1) writing effectively in a variety of forms and contexts (the focus of our first QEP); 2) applying sound reasoning to making choices and solving problems; 3) correctly framing, analyzing, and solving problems; 4) applying analytical skills, creativity, and evaluative skills in information processing; 5) monitoring one’s own understanding and learning needs. Based on further input from surveys and focus groups, the QEP Leadership Team selected creatively solving real-world problems as the top need for improving teaching and learning at CSU, which incorporates many aspects of the five needs initially identified.

Enhancing student problem-solving skills aligns closely with CSU’s institutional mission: “… we will continue to focus on skills that encourage life-long learning, including communication (written and oral), critical problem-solving, and critical thinking.”

Educational research has shown that with enhanced problem-solving skills, students are better able to perform in their academic pursuits and in their careers after graduation. As a result, enhancing problem-solving skills of students is a current area of emphasis for student learning in higher education across the nation. CSU will encourage the growth of problem-solving skills in our students by offering new and enhanced opportunities for our students to solve problems, both inside and outside the classroom. A standardized problem-solving report and rubric were developed to track growth in students as they participate in these new We Solve It! problem-solving activities and endeavors.

Facilitating positive change for CSU’s students requires that our faculty and staff have training and support. Therefore, the initiatives associated with We Solve It! will provide faculty and staff with development opportunities and monetary support to encourage the use of pedagogical strategies that foster the enhancement of students’ problem-solving abilities across all colleges and instructional departments. In addition to faculty, support staff involved in co-curricular student activities and non-credit learning opportunities will participate. Training opportunities will
help faculty and staff properly score students’ reports using a standardized We Solve It! Rubric. Faculty and staff will have the opportunity to apply for grants to purchase supplies or to take students off campus for more intensive problem-solving opportunities as part of regular courses or as part of independent work. Stipends also will be available to compensate faculty and staff members for time and work involved in developing and including new problem-solving activities or approaches in their courses. Many of our faculty members already engage their students in problem-solving activities. For these faculty members, fees will be issued for the time required to score students’ completed reports using the standard We Solve It! Rubric. In addition to monetary incentives, faculty members who participate successfully in We Solve It! will receive credit toward excellence in teaching during annual reviews and in promotion and tenure processes. Faculty who complete particularly impressive problem-solving projects with students will be acknowledged publicly through an awards program and an e-publication. Students too will be recognized for outstanding problem solving through the awards program, and the campus community will gather each semester for a day devoted to celebrating creative, real-world problem solving.

The purpose of We Solve It! is to strengthen the real-world problem-solving skills of CSU students. To achieve this goal, five specific student learning outcomes (SLO) were identified:

Columbus State University seniors will:
SLO 1. DISCOVER: Demonstrate high levels of analytical skills in identifying and diagnosing challenging, ill-defined problems in everyday settings and in critically exploring and evaluating many possible solutions.
SLO 2. DESIGN: Demonstrate high levels of logic and creativity in designing reasonable solutions to diagnosed real-world problems.
SLO 3. DELIVER: Articulate highly sophisticated and persuasive presentations of proposed solutions to stakeholders of diagnosed real-world problems.
SLO 4. REFLECT: Exhibit high levels of insight and awareness of what was learned from the completion of real-world problem-solving experiences and what should be done differently in the future to improve their DISCOVER, DESIGN, DELIVER, and REFLECT skill levels and performances.
SLO 5. OVERALL PROBLEM-SOLVING ABILITY: Demonstrate an enhanced ability to creatively solve real-world problems.

CSU students will complete the We Solve It! Report after they engage in real-world problem-solving experiences, and completed reports will be evaluated by faculty and staff members using the Rubric. Completed and evaluated reports will be compiled into a We Solve It! Portfolio that will illustrate and highlight the growth of problem-solving skills in our students.

The following plan describes CSU’s second QEP, We Solve It! Strengthening Real-World Problem-Solving Skills at CSU. The QEP is grounded in current educational research demonstrating the benefits of better problem-solving skills for students, is aligned closely with our institutional mission to encourage life-long learning, and is based on input from numerous constituents on campus and in the community. CSU is prepared to initiate, implement, and complete this QEP over the next five years.
Chapter 1
Introduction to Columbus State University

Campuses and Facilities

Columbus State University, a unit of the University System of Georgia, is located in Columbus, Georgia, on the southwest border of the State. Founded in 1958, the institution began as a two-year college, Columbus College. In 1965, the school received four-year status and began offering bachelor’s and master’s degrees; in 1996, it was granted university status and was renamed Columbus State University. Today CSU enrolls approximately 7,000 undergraduate students and 1,500 graduate students in 46 undergraduate and 42 graduate degree paths in five colleges: College of the Arts, D. Abbott Turner College of Business, College of Education and Health Professions, Honors College, and College of Letters and Sciences. The university offers nationally accredited programs in art, business, chemistry, music, nursing, theater, and teacher education on two campuses, Main campus and RiverPark campus.

Main campus is located in suburban Columbus, approximately 5 miles from downtown Columbus. The 132-acre campus houses most of the academic departments, as well as the Simon Schwob Memorial Library, Honors College, the Center for International Studies, the Schuster Student Success Center, the Academic Center for Tutoring, the Student Recreation Center, and Lumpkin Center, which houses offices of the athletic department. Adjacent to Main campus, two student-housing complexes, Courtyard I and II, house approximately 856 students. Beginning fall semester 2016, a new freshman residence hall will be ready for occupancy, allowing the university to close the older Courtyard II. Students living in residence halls or taking classes on Main campus have easy access to the downtown RiverPark campus via an extensive campus shuttle system that moves thousands of students between campuses each week.

Figure 1.01 Images of two CSU campuses. Left panel shows Main campus and right panel shows RiverPark campus, both signified by clock towers.

Development of CSU’s RiverPark campus began in the early 1990s with the decision to relocate the university’s arts programs downtown to make the new RiverCenter for the Performing Arts
an integral part of the music school. In 1995, the Board of Regents of the University System of Georgia approved the movement of Schwob School of Music downtown and, since then, the RiverPark campus has experienced tremendous growth. The entire College of the Arts now is located at RiverPark, including the Departments of Art, Theatre, and Communications, and the Department of History and Geography relocated to RiverPark within the last 5 years. The growth of the RiverPark campus has occurred via strategic purchase and adaptive reuse of historic buildings by CSU. Among the facilities renovated or built by CSU are the Corn Center for the Visual Arts, Riverside Theatre, Carpenter's Hall, the Seaboard Depot, the Yancey Center, One Arsenal Place and the old Pillowtex factory. The university provides housing for up to 450 students in loft-style apartments at the RiverPark campus. The most recent transformation occurring at RiverPark is the repurposing of the historic Ledger-Enquirer building to house the School of Nursing and the College of Education and Health Professions by fall semester 2016.

In addition to providing instruction on the university’s traditional campuses, CSU offers quality online degree programs in many disciplines, including six undergraduate degrees, ten master’s degrees, one Specialist in Education, and one doctoral degree in Education. Fall semester 2015, the university offered over 500 online and partially online courses. CSU is a partner with the Southern Regional Education Board’s Electronic Campus, making CSU’s online instruction available to students throughout Georgia and other states.

The university boasts several outstanding extension and outreach facilities that provide innovative learning experiences for students and the community. Some of those are

**Coca-Cola Space Science Center** houses the Challenger Learning Center, Omnisphere Theatre, and Mead Observatory. Located in downtown Columbus, the Space Science Center provides unique resources to learn about astronomy, space science, and space exploration.

**Oxbow Meadows Learning Center** opened in 1995 as a collaboration among Columbus State University, Columbus Water Works, and the City of Columbus, offers programs about the ecology and natural history of West-Central Georgia and the Chattahoochee Valley. The Center includes two classroom-laboratories, an 86-seat auditorium, the Natural History Discovery Center, indoor and outdoor exhibits of living reptiles and fish, a pollinator garden, beehives, and environmental art.

**Carson McCullers Center for Writers and Musicians** is housed in the Smith-McCullers house, the writer’s childhood home in Columbus. Here CSU operates a museum, maintains the world’s most extensive research collection related to the life and work of McCullers, and hosts a variety of educational and cultural programs. CSU offers fellowships for writers and composers who live for periods of time in the house. In 2013, the university acquired McCullers’ home in Nyack, NY, making CSU one of the only universities to own two homes by a single author.

**Spencer House at Oxford, England**, an integral part of the institution’s Study Abroad program, allows CSU students to enjoy a yearlong immersion into the life and scholarship of the University of Oxford. Columbus State University is one of only four U.S. universities with such a facility for study abroad programs. In addition to the Spencer Oxford Visiting Student program, CSU faculty members teach courses each spring and summer to CSU students at the Spencer House.
Faculty

In fall semester 2015, CSU employed 331 full-time faculty members (including 287 instructional faculty members, 27 library or professional staff, and 17 administrators), 231 (69.8%) holding terminal degrees. With 73.8% of its faculty tenured or on tenure track, CSU ranks third among all universities in the University System of Georgia in percent of tenure-track faculty. Among the faculty are 186 males (56.2%) and 145 females (43.8%). Diversity by ethnic origins is as follows: 213 White (74.2%), 30 African American/Black (10.5%), 29 Asian or Pacific Islander (10.1%), 10 Hispanic or Latino (3.5%), and five identifying as two or more races (1.7%). In fall 2015, CSU’s student/faculty ratio was 18/1.

Columbus State is justly proud of the quality and achievements of the faculty who are dedicated to excellence in teaching, research, and service. Faculty members are awardees and winners of national and international awards in many disciplines. One recent example is physics professor Dr. Kimberly Shaw, who was named 2015 Georgia Professor of the Year for outstanding undergraduate teaching by the Council for Advancement and Support of Educators (CASE) in Washington, DC. We boast Fulbright Scholars in the fields of chemistry, computer science, and the arts. In 2013-14, CSU faculty wrote 11 books, 20 chapters, had 144 articles published in peer-reviewed journals, conducted 537 presentations at national, international and state conferences, created 193 scholarly works and creative endeavors, and produced 35 exhibitions and performances.

Students

Columbus State University is enriched by the diversity of its student body. Fall 2015 enrollment was 8,440, of which 6,937 (82.2%) were undergraduate students and 1,503 (17.8%) were graduate students. The student body is comprised of 5,444 (64.5%) full-time students and 2,996 part-time students, and 645 of our students transferred to CSU from other institutions. Traditional students, aged 18-25, make up 72% of the undergraduate population. The CSU student body reflects national trends in gender: 59.7% female and 40.3% male. The institution boasts a more ethnically diverse student population than almost any institution in Georgia, except the historically black colleges: 53% white, 36% African American/black, 5% Hispanic or Latino, 3% Asian, 2% identifying as two or more races, and 2% international. In the 2014-15 academic year, 3,816 students (37.7%) were awarded Pell Grants.

While 45% of CSU students come from Columbus and the surrounding counties, the institution attracts many students from other areas of the state and outside of Georgia. In fall semester 2015, 3,075 (36.4%) students came from Atlanta and other Georgia counties, 1,402 (16.6%) were from other states, and 122 were international students. CSU enrolls students from 44 states and 37 countries. In addition, because of its proximity to Fort Benning, CSU has a large population of active military, veterans, and military dependents. For the past four years, CSU has been designated a “Military Friendly School” by Victory Media for our efforts to serve military students and ensure their success on campus.

CSU attracts academically prepared students who succeed in and out of the classroom. In the 2014-15 academic year, 2,427 CSU students were awarded the HOPE (Helping Outstanding Pupils Educationally) scholarship. The average high school GPA for freshmen entering fall semester 2015 was 3.12, up from 3.07 in 2014. During the 2014-15 academic year, 649 students participated in internships and co-ops. There were 153 undergraduate students and 52 graduate students who engaged in research with a faculty member. Students participated in
336,844 community service hours with over 50 non-profit organizations, and 41 students participated in on-campus Federal Work Study program for a total of $100,530 in earnings.

Columbus State is one of three USG universities that serve as access institutions. Because there are no USG two-year institutions within 50 miles, students who do not meet CSU’s admission standards may enroll under certain conditions if they live within Muscogee County and five surrounding counties. Fall semester 2015, 212 freshmen were admitted to CSU as access students requiring learning support in English or mathematics. To meet the needs of the CSU community and continue progress made by the institution over its 57-year history, the university embraces its 2013-2018 Strategic Plan.

**Columbus State University - 2013-18 Strategic Plan**

**Vision**
Columbus State University strives to be a first choice institution for discerning students who seek challenging programs, engaged faculty, and a vibrant, globally connected campus culture.

**Mission**
We empower people to contribute to the advancement of our local and global communities through an emphasis on excellence in teaching and research, life-long learning, cultural enrichment, public-private partnerships, and service to others.

**Strategic Focus #1 - Becoming a “First Choice” Institution**

Priority #1: Attract a higher percentage of students with the motivation and preparation to complete a degree
- Improve CSU’s name recognition, academic reputation, and ranking
- Increase the number of student scholars
- Continue to offer “best value” educational experience

Priority #2: Employ more creative instructional methods
- Improve the quality of instruction through improvements in classrooms, labs, professional development, instructional quality, and instructional technology
- Improve flexibility in course design and resources for all students

Priority #3: Increase student academic and social engagement and a sense of belonging
- Promote student participation in CSU’s global, academic, and experiential learning programs
- Cultivate student participation in CSU’s cultural and social activities
- Focus more on student satisfaction and well-being

**Strategic Focus #2 - Driving Sustainable Growth**

Priority #1: Sustain the University’s growth by focusing resources in areas with strong potential based on emerging opportunities
- Increase the relevance, efficiency, and value of degree programs through interdisciplinary collaboration and credentialing options (e.g., minors, certificates, endorsements)
- Provide support to sustain innovative and grant-funded programs that prove successful
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- Explore programs that support growth areas: increase funding, resources, and support for the graduate programs and for faculty who teach graduate courses
- Maximize faculty expertise and commitment through increased funding for new endowed positions in growth areas
- Increase funding for student scholarships in growth areas

Priority #2: Improve faculty/staff retention, job satisfaction, and productivity
- Embrace and expand opportunities for broad-based shared governance through implementation of the policy proposed by the Shared Governance Task Force
- Achieve competitive salaries for faculty and staff to retain a strong, diverse, and versatile workforce
- Recognize faculty/staff performance and achievements, and develop a program to support faculty applications for state, regional, and national awards
- Develop a policy to return a share of direct grant funds to faculty
- Balance instructional, service, and research loads to enhance faculty productivity

Columbus State University’s We Solve It! Quality Enhancement Plan supports several of the goals outlined in the institution’s 2013-18 Strategic Plan as it focuses on improving students’ real-world problem-solving skills. Lessons learned during the successful implementation of CSU’s first QEP on the topic “Writing the Solution: Steps Toward Developing Competent and Professional Student Writers” have been incorporated into the planning of this second QEP.
Chapter 2
Institutional Process for Identifying Key Issues and Selecting the QEP Topic

The purpose of We Solve It! is to improve CSU students’ creative, real-world problem-solving skills, a topic selected through a yearlong period of broad-based input from students, faculty, staff, trustees, and alumni. This chapter describes activities involved from initial conversations regarding potential QEP topics in April 2014 to the selection of the topic in December 2014. A summary timeline for the phases of the QEP’s development is presented in Figure 2.01.

Figure 2.01. Timeline and Phases of Development for QEP at CSU

This timeline for completion of QEP 2016-2021 allowed input from faculty, staff, and students at each stage of development. Phases 1 and 2, the attention of this chapter, address dialogue regarding potential QEP topics and selection of the QEP topic.

1. Dialogue Phase

During this initial phase of the QEP’s development, various assessments were used to identify possible topics for the QEP. The QEP Leadership Team, which consisted of representatives from all major campus constituencies (see Appendix A), met during the early spring of 2014. This team launched the QEP Dialogue Phase in late April 2014 by circulating a general survey...
(adapted from the 2006-2011 QEP at CSU) about needs in student learning and faculty development.

Members of the QEP Leadership Team met in May in large and small group sessions to develop a set of potential topics and discuss whether each potential topic would address identified weaknesses of our students and/or our learning environment. The Leadership Team used three main information sources (noted below) during these deliberations: (1) Results of 2014 Campus Survey, (2) Weaknesses Identified by 2012 Strategic Planning, and (3) Needs for 21st Century Student Learning.

1. **Results of Campus Survey (2014)**

One hundred individuals on campus completed the survey: 81 faculty members, 15 staff, and 4 students. The top five overall student needs identified by the survey, based on a 5-point scale (1 = minimal need and 5 = critical need), three of which (underlined) involved improving problem solving, were: (1) Writing effectively in a variety of forms and contexts (4.32), (2) Applying sound reasoning to making choices and solving problems (4.2), (3) Correctly framing, analyzing, and solving problems (4.17), (4) Application of analytical skills, creativity, and evaluative skills in information processing (3.97), and (5) Monitoring one’s own understanding and learning needs (3.96). The survey identified one top faculty need: The need for support (i.e., honorariums, stipends, release time) for faculty development associated with the QEP (3.99).

2. **Weaknesses Identified by Strategic Planning (2012)**

Additional data from 2012 campus surveys were available regarding student needs. A committee devoted to developing CSU’s 2013-2018 Strategic Plan collected these data to inform selection of relevant and useful goals for the Strategic Plan (described in Chapter 1). Figure 2.02 shows a summary of CSU strengths and weaknesses identified by the 2012 survey/SWOT (Strengths/Weaknesses/Opportunities/Threats) process.

![Figure 2.02. Summary of strengths and weaknesses identified in 2012 SWOT analysis.](image-url)
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From these SWOT data, the Leadership Team identified lack of on-campus engagement, lack of coherence among campuses, declining cohesiveness, lack of resources to support student research, and lack of name recognition as weaknesses that a QEP could target.

3. **Needs for 21st Century Learning**

Today’s life and work environments require far more than thinking skills and content knowledge. The ability to navigate complex life and work environments in the globally competitive information age requires students to pay rigorous attention to developing adequate skills that allow them to be lifelong, self-generated learners. The Partnership for 21st Century Skills (P21 Framework Definitions) includes three general sets of skills needed for today’s learners:

- Life and Career Skills
- Learning and Innovation Skills
- Information, Media, and Technology Skills

Skills involved in the three areas overlap, such that some skills seem fundamental to all three areas. Some of those underlying, fundamental skills include the ability to remain flexible in thought and action, to set goals and carry out plans, to communicate with others in various formats, and to be inquisitive while listening and gathering information.

After considering the three data sources, the Leadership Team convened in July 2014 to produce four potential QEP topic ideas to address CSU’s greatest teaching and learning needs/weaknesses. The Team expressed four potential topic ideas in the following statements:

- Students should develop creativity and problem-solving skills (to address a lack of intellectual curiosity).
- Students should develop self-efficacy, emotional intelligence, and a belief in capacity to perform (to address a lack of grit: discipline, perseverance, and resourcefulness).
- Students should develop mindfulness and strategies for effective learning (to address a lack of effective learning skills and meta-cognitive awareness).
- Students should increase global cultural knowledge, awareness, and experiences (to address a lack of diverse cultural reference points).

The Leadership Team then decided to share the four potential QEP topics with the rest of the campus community to obtain feedback regarding their value, feasibility, and applicability across a wide range of disciplines at CSU. To disseminate the potential topics and gather feedback effectively, a QEP Dialogue Workgroup was formed in August 2014. The Dialogue Workgroup, comprised of faculty and staff (see Appendix A), adopted a multipronged approach to collecting feedback on these potential QEP topics from students, faculty, staff, trustees, and alumni. The Workgroup brought the four topic ideas to 17 organization and department meetings for face-to-face discussion with students and faculty in September 2014. An online survey supplemented the in-person feedback.

The August and September 2014 meetings with organizations and departments produced the following preferences for the QEP topic (results reported for students/faculty in Appendix B):

1. Creativity and problem-solving skills (29% / 30%)
2. Global cultural awareness (28% / 18%)
3. Mindfulness and effective learning strategies (20% / 25%)
4. Self-efficacy, emotional intelligence, and a capacity to perform (23% / 13%)
5. Other (0% / 15%)

“Other” topic ideas proposed by faculty and staff during the fall of 2015 dialogues included:

- Experiential learning
- Purposeful ownership of education, goal-setting
- Skills development: critical thinking, computational thinking, reading, writing
- Integrated, interdisciplinary studies

The Dialogue Workgroup met in late September to discuss the feedback from campus. Due to the preference for creativity and problem-solving skills as well as experiential learning and learning strategies, members of the Dialogue Workgroup and Leadership Teams consulted the literature regarding best practices in higher education for addressing these topics. This initial assessment of existing literature focused on problem-based learning strategies.

**Summary of Literature on Project- and Problem-Based Learning**

Project- and problem-based learning (PBL) at universities arose in the 1970s in Europe as part of a move toward greater democracy in higher education (Von Kotze & Cooper, 2000). PBL upsets the long-held position that the teacher is the expert and purveyor of knowledge, a notion that already is difficult to maintain in the information age (Shanley, 1999). The information age is changing the role of universities, which, until now, have decided what is studied and taught to society. In the new paradigm, students study what they find interesting and ask the professor for needed resources. Society asks institutions to provide graduates and research results that society members can use (Lenschow, 1998).

Some theorists indicate that PBL is taking center stage in a paradigm shift that is slowly taking place in education. A growing body of literature supports the value of the project- and problem-based approaches to teaching and learning (Albanese & Mitchell, 1993; Norman & Schmidt, 1992; Walton & Matthews, 1989). While PBL is winning ground in industry at a faster rate than in universities, it is educationally sound (Shanley, 1999) and is based pedagogically on cooperative learning principles (Lenschow, 1998). These principles suggest that students learn least from lectures, more from exercises, and most from fellow students. Lenschow sees PBL as an avenue to better learning and greater competence when competence is defined in terms of attitude, ability, knowledge, and skill.

In PBL, students learn from other students, from the project or problem, from their faculty advisers, from hands-on practice, and from information sources. These PBL experiences allow them to learn in an action-oriented, socially relevant manner while at the same time gaining academic recognition and credit (Van Kotze & Cooper, 2000). Students navigate their way to understanding and skill acquisition in a learning environment that encourages initiative and creativity. Further, this freedom to act and create leads many students to prefer PBL to more traditional methods of instruction (Lenschow, 1998).

In sum, PBL builds on the underpinnings of educational philosophy and theory from learning constructivists Dewey, Vygotsky, and Piaget and provides an opportunity for students to build on what they already know, to learn across curricular lines, to build critical thinking and problem solving skills, and to build strong ties between school and community (Shanley, 1999).

Members of the Dialogue Workgroup also reviewed the results of the 2014 National Survey of Student Engagement (NSSE) for CSU. Columbus State University’s 2014 NSSE results are available at [https://ir.columbusstate.edu/assess/CSU_NSSE14_Impact_Practices.pdf](https://ir.columbusstate.edu/assess/CSU_NSSE14_Impact_Practices.pdf). Institutions use NSSE to gather information regarding student engagement in high-impact learning experiences. Faculty engage students in high-impact learning experiences using teaching strategies known as high-impact practices (HIPs; Kuh, 2008). According to the 2014
NSSE data, CSU students are engaged in more high-impact learning experiences during their first year than comparator peers. These data are based on student involvement in learning communities, service learning opportunities, and research experiences. First-year students at CSU particularly excelled in the areas of learning communities and service learning compared to peer institutions. For seniors, NSSE also asks about participation in capstone experiences, internships, and study abroad programs. CSU, again, scored higher than comparative institutions in several areas, such as study abroad (one of CSU’s award-winning programs); it also scored similarly to peer institutions in internships, research, and capstone experiences. Therefore, in a broad sense, CSU did not appear deficient in its HIPs according to the 2014 NSSE results.

However, when the Dialogue Workgroup disaggregated and analyzed NSSE data on HIPs in more detail (i.e., by department), it noted additional needs and opportunities to provide students with high-impact experiences. (The department-level data can be seen on p. 8 of the NSSE results available at https://ir.columbusstate.edu/assess/CSU_NSSE14_Impact_Practices.pdf.) Specifically, all departments scored below peer institutions in internships, except departments within the Turner College of Business and the School of Nursing. Similarly, the Department of Biology, one of the largest departments at CSU, requires most graduates to complete research projects. However, most other departments on campus do not engage a large proportion of their students in undergraduate research. It became apparent that the overall NSSE data actually masked some HIP deficits on campus due to unusually high volumes of HIP activity in a few departments.

Based on (1) feedback gathered via survey and small-group interactions with faculty and staff, (2) literature regarding problem-based learning, and (3) NSSE data for CSU students (2013-2014), the Dialogue Workgroup developed additional questions to ask the campus community about potential QEP topics. Leaders of the Dialogue Workgroup posed these questions to the campus community in a series of Open Forums held in October 2014. Members of the Dialogue Workgroup also created a promotional video (https://vimeo.com/107406471) to encourage faculty participation in the Open Forums, and Residence Life provided free pizza to encourage student participation.

### Reflective Questions for Open Forums

**Which emphasis for student learning do you think would appeal to “discerning students who seek challenging programs”?**
- Acquiring effective learning/study skills
- Developing problem solving skills
- Fostering creative thinking skills

**Which teaching strategy/method do you think has the most potential to impact student learning in lower-level courses?**
- Providing experiential learning opportunities
- Practicing interactive teaching methods
- Promoting inquiry-based research projects

**Which teaching strategy/method do you think has the most potential to impact learning in upper-level or graduate courses?**
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The reflective questions and forums generated productive conversations, and echoed and expanded the September feedback from campus organizations and departments. Then the Dialogue Workgroup surveyed the Board of Trustees of the CSU Foundation and the Board of Directors of the Alumni Association during their regular fall meetings. Asking these specific constituencies about issues of direct relevance to their concerns generated the following feedback regarding QEP topics:

**Faculty only**: What would best motivate you to change your course design or develop new approaches to teaching?

1. Time (course release or more flexibility in scheduling) **58%**
2. Money (grant stipends) **35%**
3. Recognition (credit in evaluation/P&T processes) **25%**

**Students only**: What would best motivate you to participate in events outside of regularly scheduled classes?

1. Opportunity to improve course grades **59%**
2. Formal credit towards degree **51%**
3. Recognition of extra time built into course expectations **4%**

**Foundation Trustees only**: What does our region need most from new graduates?
- Stay in community
- Provide jobs
- Fresh perspective
- Commitment to community involvement
- Taking pride in workmanship
- Staying involved @ CSU
- Innovative thinkers

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**Which teaching strategy/method do you consider most feasible to widely implement in 1-5 years?**
- Providing experiential learning opportunities
- Practicing interactive teaching methods
- Promoting inquiry-based research projects

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**Which structural change would best support a “vibrant, globally connected campus culture”?**
- Expecting students to participate in events outside of regularly scheduled class time
- Promoting cross-disciplinary curricular options (certificates, minors, learning -communities)

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**Which theme has the most potential to promote engaged learning?**
- Sustainability
- Global Citizenship
- Purposeful Living
Volunteering
Technological savviness

Alumni Board of Directors only: What are your memorable learning experiences from your time at CSU?
- Sent to national conference of accountancy organization on two occasions; made connections that are still relevant to professional activity
- Traveled to New York City for visit to advertising agency; first trip out of state, first plane flight made for inspiring and memorable learning experience
- Hands-on experiences in lab courses provided valuable learning
- Taught by professors with relevant industry experience in ICAPP (Intellectual Capital Partnership Program) program
- Internships around Columbus offered important work experiences
- Received a letter of notification about Honor Roll achievement

Alumni expressed consensus that relevant, hands-on, and outside-of-the-classroom activities made a lasting impact on learning. Recognition of academic achievement was also valued.

Summary of QEP Dialogue Phase

Survey results and noted feedback from all constituents were collected and recorded by members of the Dialogue Workgroup. Approximately 400 members of the CSU community participated in the 2014 April-through-November Dialogue phase of this QEP process:
1. Face-to-face conversations at regularly scheduled meetings of seventeen campus departments and faculty/student organizations (September)
2. Face-to-face open forums (four total) for faculty and students on both Main and RiverPark campuses (October)
3. Face-to-face conversations at the regularly scheduled meetings of the CSU Board of Trustees and the CSU Alumni Association (October, November)
4. Online surveys circulated to faculty, students, and staff (three separate surveys in April, September, and October)

2. Topic Selection Phase

During this phase of QEP development, the Dialogue Workgroup and the Leadership team refined potential topics and reached consensus as to which topic to pursue.

In November 2014, the QEP Dialogue Workgroup reported to the Leadership Team. By compiling keyword ideas and concepts that resonated most strongly throughout the Dialogue phase, the Dialogue Workgroup identified the following possible QEP topics with broad support across campus:
- A need to connect academic learning with creative, real-world problem solving
- A need to offer coherence and meaning to learning beyond disciplinary borders
- A need to nurture curiosity and self-direction within and outside the classroom
- A need to build on strong foundations in several areas: international/global awareness, sustainability, ethics and professionalism, community engagement
- A need to support students’ “learning to learn”
- A need to support faculty development in three areas: interactive teaching and learning, experiential teaching and learning, and student-faculty research and creative activity
While it collected campus feedback, the Dialogue Workgroup also solicited new items to contribute to the working bibliography of research literature, as well as examples of programs at other colleges and universities that might serve as productive models. One such model, Birmingham Southern College’s “Explorations” program, impressed the Dialogue Workgroup as a model that addressed needs similar to our own. The program’s student learning outcomes include these abilities for BSC graduates:

1. Solve problems creatively
2. Engage their social and political world
3. Connect their coursework to the wider world
4. Engage in self-directed teaching and learning

The Leadership Team also considered a potential approach for the QEP design that would make use of High Impact Practices (HIPs). Many HIPs were already in place at CSU, although not explicitly linked or labeled as HIPs. Examples of existing HIPs included first-year learning communities, study abroad programs, internships, undergraduate research and creative activity, and service learning. The HIP approach was presented by three members of the QEP Leadership Team who had returned from a November 6-9 Institute for Creative Inquiry in the Arts and Humanities offered by the Council for Undergraduate Research (CUR). Based on the literature about HIPs (see the box below), HIPs seemed to provide the curriculum and instruction piece that could generate problem solving skills, experiential learning, and self-direction that had been emphasized during the Dialogue Phase.

### Summary of Relevant High-Impact Practices for CSU

High-impact experiences are associated positively with student learning and retention. High-Impact Practices (HIPs) are pedagogical strategies that create experiences for students that are meaningful and memorable. HIPs share several traits: They demand considerable time and effort, facilitate learning outside of the classroom, require meaningful interactions between faculty and students, encourage collaboration with diverse others, and provide frequent and substantive feedback. As a result, participation in HIPs can be life-changing (Kuh, 2008). National Survey of Student Engagement (NSSE) founding director, George Kuh, recommends that institutions should aspire for all students to participate in at least two HIPs over the course of their undergraduate experience—one during the first year and one in the context of their major (NSSE, 2007).

The Leadership Team was interested in several high-impact practices measured by the NSSE for potential incorporation into QEP initiatives.

<table>
<thead>
<tr>
<th>Research with Faculty</th>
<th>Internships/Field Experiences</th>
<th>Culminating Senior Experiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Council for Undergraduate Research (CUR) defines research as “an inquiry or investigation conducted by a student that makes an original intellectual or creative contribution to the discipline scaled to an undergraduate level, is mentored by faculty, and is shared or disseminated with others.” CUR offers three models of research activity:</td>
<td>These experiences differ as appropriate to the discipline, such as clinicals in healthcare settings, practicums in schools such as student teaching, and co-op or internship experiences in business settings.</td>
<td>These culminating courses or projects occur near the end of a degree program and call for the student to integrate all of his/her learning experiences in order to</td>
</tr>
</tbody>
</table>
Mindful of knowledge gained by attending the Institute of Creative Inquiry regarding student learning needs and department-specific deficits identified by NSSE, the Leadership Team recommended strengthening CSU’s established HIPs as part of the QEP design process.

**Summary of QEP Topic Selection Phase**

The most common response to a campus survey regarding student needs was to strengthen students’ abilities to solve real-world problems. Further, the campus dialogue that requested feedback from campus constituents on four potential QEP topics (created by the Leadership Team) yielded a similar preferred topic: creativity and problem-solving skills. There was additional interest expressed by members of the Leadership Team (based on NSSE data, conference training, and campus feedback regarding student research needs) for incorporating high-impact practices as part of the QEP topic/focus on improving real-world problem solving.

By the end of the Topic Selection phase in December 2014, there was collective agreement to move forward with the topic of **creative, real-world problem solving** for the 2016-2021 QEP.
Chapter 3
Focus Phase—Development of Logo and Detailed Focus with Learning Outcomes, Goal, and Program Outcomes

After topic selection, a QEP Design Team (see Appendix C) was assembled to work on two aspects of the QEP. First, the Design Team worked on developing a logo and slogan to represent the selected QEP topic. Concurrently, the Design Team worked on the larger task of developing the topic into a detailed plan for achieving the focus of the QEP. The process and results of these tasks of the Design Team are described in this chapter.

QEP Logo and Slogan Development

Members of the QEP Design Team and staff members in University Relations worked together to develop logo, name, and tagline for the QEP that would play a critical role in sharpening CSU’s focus on creative, real-world problem-solving skills. The logo contains the name of the QEP and the key message of "We Solve It!" that serves as a central rallying point for the faculty, staff and students at CSU and for members of the greater Columbus community. This short name directly states that we (faculty, staff, and students) solve problems here at CSU.

Along with the name, We Solve It!, the world puzzle graphic conveys the "real-world" and "problem-solving" elements of the QEP topic, as well as CSU’s aspirations for global reach and impactful service contributions. The two figures solving the puzzle problem indicate that problem solving at CSU is an active and collaborative process.

The additional tagline of "Discover Design Deliver" was incorporated into the logo as the problem-solving process was examined and articulated further by the Design Team. Discover Design Deliver refers to three key processes of problem solving that provided a framework for the student learning outcomes described later in this chapter. Including these processes in the logo allows the campus community to remain focused on student engagement and learning related to those three processes and outcomes.

As a whole, the We Solve It! name and logo will be critical for raising awareness of the QEP across campus and for promoting the involvement of faculty, staff, and students in all of the QEP initiatives. We believe the logo provides a clear picture of the QEP topic and purpose, and that the logo will be an invaluable communication tool when sharing the QEP initiatives with stakeholders, parents of students, and other community members. The name will also be used further in additional marketing campaigns. (See the Marketing plan outlined in this chapter for more details about We Solve It! Marketing.)

QEP Focus Development

An acceptable and successful QEP should have a clear focus on what it expects to achieve.
Such a focus, described in this chapter, includes a succinct purpose statement, operational definitions of key terms, student learning outcomes that are aligned with the purpose statement, and appropriate goals and program outcomes for changes in the learning environment as a function of successfully completing the QEP's implementation.

Purpose of the QEP

While there was consensus about the topic for the emphasis of the QEP, initial attempts to compose a succinct QEP Purpose Statement resulted in broad and unwieldy combinations of learning outcomes to be achieved through high-impact practices. Preliminary drafts of a Purpose Statement composed in December and January 2014 included the following:

- The focus of CSU’s QEP is to produce graduates who can demonstrate relevant professional skills and values acquired through meaningful Capstone Experiences that result in original creative works, performances, or research.

- The purpose and focus of CSU’s QEP is to graduate more students from all baccalaureate degree programs who have made meaningful connections of their academic learning with creative real-world problem solving in capstone educational experiences and projects that resulted in notable professional accomplishments in their disciplinary fields.

- The purpose of CSU’s QEP is to engage more students from all academic programs in specific high-impact learning experiences: research with faculty, internships/field experiences, and culminating senior experiences. These high-impact experiences will increase students’ initiative, self-direction, productivity, and accountability, key skills for 21st Century life and work.

The Focus Workgroup, a subset of members from the Leadership Team and the Dialogue Workgroup, eventually returned to the first and most oft-repeated topic that had emerged from the Dialogue process and simplified its expression:

- To produce students who demonstrate the ability to creatively solve real-world problems in the classroom and through experiential learning opportunities.

That purpose statement subsequently was pared down further:

QEP’s Purpose: To prepare students to creatively solve real-world problems.

In addition to finding an appropriate and narrow focus for the QEP, the Focus Workgroup produced drafts of student learning outcomes and learning environment outcomes for the consideration of the QEP Design Team. In mid-March 2015, CSU leadership presented the Purpose Statement of the QEP along with the following clarifications and definitions of key terms to the campus community.

Definitions of Key Terms in the QEP’s Purpose Statement

The Leadership Team and Dialogue Workgroup identified creative, real-world problem solving as the topic of CSU’s QEP (2016-2021). When educators and employers describe the most
valuable attributes college graduates bring to an organization, their list invariably includes the ability to creatively solve problems. But what does it mean to creatively solve problems? Once this topic of the QEP was selected and shared, members of the Leadership Team and Design Team began developing a working definition of creative, real-world problem solving.

Motivation for a clear working definition came from two sources:
1. Campus feedback requesting clarification of what the QEP topic means.
2. A need to generate specific learning outcomes for students.

**Defining Problem Solving**

The first aim was to develop an overarching definition of problem solving for the entire CSU community. The literature contained many broad approaches to problem solving that fit the topic and purpose of We Solve It! and provided a framework for conceptualization of student learning outcomes. According to Mourtos, DeJong Okamoto, and Rhee (2004) problem solving is “a process used to obtain a best answer to an unknown” (p. 1). The authors further argue that problem solving does not include repeated completion of problem sets; instead, problem solving involves addressing novel situations for which solutions are unknown or not apparent. True problem solving, then, requires the solver to determine and develop steps for problem completion. Antonenko, Jahanzad, and Greenwood (2014) articulate this same approach to problem-solving skills and openly criticize the historical trend within K-12 and higher education of teaching problem-solving strategies to students when the problems are clearly defined and structured.

Kitchener (1983) differentiates between well-defined problems and problems that are deemed ill-defined. Well-defined problems involve a correct solution where there is a clear method for reaching that solution. Ill-defined problems, by comparison, are those involving varied solutions often with conflicting opinions, ideas, perspectives, and evidence. We Solve It! aims to improve the skills of students in processing and solving ill-defined problems, which enhance the ability of students to generalize beyond current learning or practice situations. These domain-general skills will benefit CSU graduates in career and life. Ill-defined problems represent the types of problems that more often occur in the real world when problem definition, direction, and boundaries are ambiguous.

Two other components of a problem-solving definition were deliberated. The Design Team discussed (1) whether to include implementation of problem solutions as part of our definition/target and (2) whether to include dissemination of problem solutions as part of our definition/target.

**Solution Implementation.**

There exist several definitions and approaches to problem solving that include implementing solutions and evaluating them as part of the problem-solving process (e.g., Beecroft, Duffy, & Maron, 2003; Restructuring Associates, Inc., 2008). The Design Team also considered that the initial learning outcomes drafted by the Focus Workgroup contained the ability to implement problem solutions. Although implementation is a critical component of problem solving in practice, it was determined that including implementation as a required aspect of problem solving would limit the number of problems and disciplines that could be included in We Solve It! initiatives. An example is English 1101 where students study and propose solutions to problems, such as hunger, for which solutions cannot be implemented within the framework of the class. Another specific example of valuable problem solving that did not incorporate solution
implementation is an interdisciplinary study abroad program created by Mariko Izumi (Communications) and Carmen Skaggs (English). They challenged students with the task of designing a counter monument to honor victims of the Holocaust. Students traveled to Germany to study the Holocaust and to view various monuments in Europe. Students then individually designed counter monuments, created models of them, and presented their proposed counter monuments as part of CSU Tower Day (an annual celebration of student scholarship, research, and creative endeavors). Other disciplines that often engage students in problem solving that does not include solution implementation include History and Nursing.

Solution Dissemination.
The formal presentation of solutions to a public audience is not always included in definitions of problem solving, nor was it included in drafts of learning outcomes from the Focus Workgroup, but Design Team members believed the skills of sharing problem solutions to be important for CSU students. The ability to select a specific strategy or solution and to present it addressed an additional student need identified during institutional assessments. One of the five needs identified was the ability to communicate effectively. The ability to communicate clearly also was identified by the Partnership for 21st Century Skills as a need in today’s work environment that currently is under-addressed in higher education. Including public presentation of solutions as part of the We Solve It! problem-solving definition also addresses another set of skills that the Partnership for 21st Century Skills argued is important for this generation: information and communication technology skills. Delivery of problem solutions by CSU students will occur in various formats, which are likely to include performances and video presentations.

To summarize, the Design Team determined that the We Solve It! definition of problem solving should include delivery of problem solutions that are designed to address ill-defined (i.e., unstructured) problems, but that problem solutions do not need to be implemented for problem-solving skills to be learned.

Defining Real World

Perhaps the most controversial component of the We Solve It! topic was the specification that we are targeting real-world problem solving in students. Classically juxtaposed, activities and efforts within academic domains and activities within real-world settings may seem misaligned. CSU leadership believed this lack of intuitive connection between academic goals and real-world goals was precisely the reason to include real-world as a part of the We Solve It! topic. If faculty and staff struggled to see real-world relevance of curricular and co-curricular work, certainly students also fail to see such connections between their academic life and the real world. Ironically, in conversations with students via survey and focus groups, it was apparent that real-world connections are precisely what they desire from their educational experiences. CSU students reported a need for education and action that connects clearly to the real world (beyond the campus and classroom).

Gray (2014) defined real-world for the purposes of research as “any setting where human beings come together for communication, relationships, or discourse” (p. 4). Real-world does not include abstract or theoretical problems, conversations, and stakeholders. Real-world requires that problems and solutions address something about the world in which we humans live and operate. Real-world does not include imagined or theoretical factors and events, nor does it include simulated factors and events. It involves action within actual contexts.

For the purpose of the QEP, real-world problems also refer to problems that push students’ skills and learning beyond a particular domain or isolated case/problem. In other words, real
world refers to the usefulness of problem solutions for someone in practice. Schraw, Dunkle, and Bendixen (1995) recognized that domain-specific knowledge, work, and/or expertise is not enough to generate effective problem solving in the real world. People can learn to effectively solve similar problems repeatedly within a specific context, but this type of problem solving does not produce real-world skills. Problem-solving skills in one domain do not generalize easily to problem-solving skills in other domains unless a person is trained generally in problem solving rather than trained with a skill set specific to a particular area of expertise. To generate problem-solving skills that are effective within areas of expertise and beyond, We Solve It! will target versatile skills for solving problems in various everyday settings rather than focusing on domain-specific content and skills that address theoretical or simulated events.

**Defining Creative**

An additional element of the We Solve It! topic was the issue of creativity. DeHaan (2009) defines some characteristics of creativity, such as cognitive flexibility, impulse control, and the ability to communicate socially. Partnership for 21st Century Skills defined creativity within Learning and Innovation Skills:

“To think creatively means to: (1) Use a wide range of idea creation techniques (such as brainstorming), (2) Create new and worthwhile ideas (both incremental and radical concepts), (3) Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts, (4) View failure as an opportunity to learn, (5) Understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes, and (6) Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur.

To work creatively with others means to: (1) Develop, implement and communicate new ideas to others effectively, (2) Be open and responsive to new and diverse perspectives, incorporate group input and feedback into the work, and (3) Demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas.”

According to the Association of American Colleges and Universities (AAC&U), creativity involves innovation/novelty, but also “taking risks, embracing contradictions, and making connections or synthesizing.” In fact, the AAC&U includes solving problems as an element of creativity. Torrance (1979) identified four basic elements in his framework for creative thinking: Fluency/Understanding, Flexibility, Elaboration, and Originality. Common threads of each of these respected approaches to creative process are

- Understanding multiple perspectives and having appreciation for diversity and contradiction,
- Making connections or synthesizing elements of ideas, events, or information,
- Producing an innovative, novel, or original work/outcome.

Successful creativity, then, requires both divergent and convergent thinking (DeHaan, 2009). Divergent thinking refers to the abilities to view something from multiple perspectives and generate varied solutions, which are often novel and “outside the box.” This divergent thinking is the main skill that most laypeople consider when they hear the term creative. It includes the generation of ideas and idealistic approaches. Being successfully creative in practice, however, requires not only that a person generate many meaningful and novel ideas; it also requires that the person be capable of comparing and selecting among those ideas. This latter process is convergent thinking. For our purposes, convergent thinking is as important as divergent thinking.
for students to become effective problem solvers. That is, we wanted our students to be able to
generate possible solutions and to identify the most appropriate solution(s).

Ideally, students will gain skills in divergent thinking when they creatively explore and generate possible solutions and in convergent thinking when they test and select from those possible solutions. The dissemination component of the problem-solving process provides another opportunity for students to practice and demonstrate creativity.

**Student Learning Outcomes of the QEP**

Within the context of the purpose statement calling for creative real-world problem solving and the operational definitions of key terms in that statement, the expected student learning outcomes (SLO) were identified. The defined purpose of *We Solve It!* is the preparation of CSU seniors to:

<table>
<thead>
<tr>
<th>SLO</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>DISCOVER: Demonstrate high levels of analytical skills in identifying and diagnosing challenging, ill-defined problems in everyday settings and in critically exploring and evaluating many possible solutions.</td>
</tr>
<tr>
<td>2.</td>
<td>DESIGN: Demonstrate high levels of logic and creativity in designing reasonable solutions to diagnosed real-world problems.</td>
</tr>
<tr>
<td>3.</td>
<td>DELIVER: Articulate highly sophisticated and persuasive presentations of proposed solutions to stakeholders of diagnosed real-world problems.</td>
</tr>
</tbody>
</table>

These three key skills of creative real-world problem solving constitute three of the five student learning outcomes identified for *We Solve It!* The Design Team added a fourth SLO:

<table>
<thead>
<tr>
<th>SLO</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>REFLECT: Exhibit high levels of insight and awareness of what was learned from the completion of real-world problem-solving experiences and what should be done differently in the future to improve their DISCOVER, DESIGN, DELIVER, and REFLECT skill levels and performances.</td>
</tr>
</tbody>
</table>

When students practice and strengthen skills of reflection, they can learn to grow and draw independently from problem-solving experiences. These reflection skills improve students’ abilities to solve subsequent real-world problems. The Design Team added this fourth SLO based on the following considerations:

**Literature from Educational Needs and Best Practices**

The McMaster Problem-Solving program and Antonenko et al. (2014) include problem-solving reflection as a critical component of successful problem solving. This reflection and evaluation piece is part of a larger concept or skill known as *metacognition* (i.e., awareness of one’s own thinking and learning). The Partnership for 21st Century Skills identified “Reflect critically on learning experiences and processes” as an important piece of thinking and problem solving.

**Existing Measures of Problem Solving**

Several validated measures of problem solving reported in the literature include a reflection component where respondents/students report overall conclusions or views of their problem-solving skills and their personal weaknesses or strengths. Soliman (2014), for example, developed a problem-solving inventory based on reflective judgments of one’s skills.

**Campus Needs and Feedback**

One of the weaknesses identified during topic selection for this QEP was the lack of “learning
to learn” or metacognitive strategies in students. Adding a learning outcome to address this student need brings further alignment between institutional needs and the identified learning outcomes for **We Solve It!**. During the summer of 2015, the Design Team shared its drafted learning outcomes with the CSU faculty and staff to garner feedback. Multiple faculty members from the College of Letters and Sciences, College of Education and Health Professions, and the Honors College suggested that the learning outcomes include a reflection piece so that students could practice thinking about past activities and processes, and then articulate the efficacy of those activities and processes. Many of these faculty members based their recommendation on their successful use of reflection items within their assignments in the past.

Finally, because each element in the problem-solving process (i.e., discover, design, deliver, and reflect) is integral to the product of overall problem solving ability, a fifth student learning outcome was added to the QEP to address the final product - enhanced overall problem-solving ability.

**5. OVERALL PROBLEM-SOLVING ABILITY**: Demonstrate an enhanced ability to creatively solve real-world problems.

A visual representation of the relationships among these creative real-world problem-solving skills (SLOs) is shown in Figure 3.01. The larger Discovery SLO represents the broad, foundational nature of this outcome for effective creative, real-world problem solving. The Deliver SLO is shown in the apex of the triangle to indicate the focused climax of this outcome within a framework of creative, real-world problem solving. The bottom half of the figure represents the reflection on the problem solving process and its impact on the first three learning outcomes and overall development of problem-solving skills. Because each of these elements is integral to the product of overall problem solving ability, the entire image represents the SLO for Overall Problem-Solving Ability.

![Figure 3.01. Diagram of Discover, Design, Deliver, and Reflect Processes of Creative, Real-World Problem Solving](image)

Connections between the five SLOs and identified institutional needs and goals are displayed below in Table 3.01.
Table 3.01
Student Learning Outcomes (numbered in top panel) and Connections between Student Learning Outcomes and Institutional Needs and Goals (bottom panel).

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Institutional Needs and Goals (See Chapter 2)</th>
<th>Related Student Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSU Seniors will:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLO 1. <strong>DISCOVER</strong>: Demonstrate high levels of analytical skill in identifying and diagnosing challenging, ill-defined problems in everyday settings and in critically exploring and evaluating many possible solutions.</td>
<td><strong>Writing effectively in a variety of forms and contexts.</strong></td>
<td>3, 4, 5</td>
</tr>
<tr>
<td>SLO 2. <strong>DESIGN</strong>: Demonstrate high levels of logic and creativity in designing reasonable solutions to diagnosed real-world problems.</td>
<td><strong>Applying sound reasoning to making choices and solving problems.</strong></td>
<td>2, 3, 4, 5</td>
</tr>
<tr>
<td>SLO 3. <strong>DELIVER</strong>: Articulate highly sophisticated and persuasive presentations of proposed solutions to stakeholders of diagnosed real-world problems.</td>
<td><strong>Correctly framing, analyzing, and solving problems.</strong></td>
<td>1, 2, 3, 5</td>
</tr>
<tr>
<td>SLO 4. <strong>REFLECT</strong>: Exhibit high levels of insight and awareness of what was learned from the completion of real-world problem-solving experiences and what should be done differently in the future to improve their DISCOVER, DESIGN, DELIVER, and REFLECT skill levels and performances.</td>
<td><strong>Applying analytical skills, creativity, and evaluative skills in information processing.</strong></td>
<td>1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>SLO 5. <strong>OVERALL PROBLEM-SOLVING ABILITY</strong>: Demonstrate an enhanced ability to creatively solve real-world problems.</td>
<td><strong>Monitoring one’s own understanding and learning needs.</strong></td>
<td>1, 3, 4, 5</td>
</tr>
<tr>
<td><strong>Institutional Needs and Goals (See Chapter 2)</strong></td>
<td><strong>Faculty &amp; Staff Needs</strong></td>
<td><strong>CSU Goals (Strategic Plan, 2013-2018)</strong></td>
</tr>
<tr>
<td>Writing effectively in a variety of forms and contexts.</td>
<td>Faculty training and support related to QEP programs.</td>
<td>1, 3, 4, 5</td>
</tr>
<tr>
<td>Applying sound reasoning to making choices and solving problems.</td>
<td><strong>Focus 1, Priority 1, Goal 1: Improve CSU’s name recognition, academic reputation, and ranking.</strong></td>
<td>1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>Correctly framing, analyzing, and solving problems.</td>
<td><strong>Focus 1, Priority 1, Goal 2: Increase number of student scholars.</strong></td>
<td>1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>Applying analytical skills, creativity, and evaluative skills in information processing.</td>
<td><strong>Focus 1, Priority 1, Goal 3: Continue to offer a “best value” educational experience</strong></td>
<td>1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>Monitoring one’s own understanding and learning needs.</td>
<td><strong>Focus 1, Priority 2, Goal 1: Improve the quality of instruction through improvements in...professional development, instructional quality and instructional technology.</strong></td>
<td>1, 2, 3, 4, 5</td>
</tr>
<tr>
<td><strong>CSU Goals (Strategic Plan, 2013-2018)</strong></td>
<td><strong>Focus 1, Priority 3, Goal 1: Promote student participation in CSU’s global, academic, and experiential learning programs.</strong></td>
<td>1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>Improve CSU’s name recognition, academic reputation, and ranking.</td>
<td><strong>Focus 1, Priority 3, Goal 2: Cultivate student participation in CSU’s cultural and social activities.</strong></td>
<td>2, 3, 4, 5</td>
</tr>
<tr>
<td>Increase number of student scholars.</td>
<td><strong>Focus 2, Priority 1: Sustain the University’s growth by focusing resources in areas with strong potential based on emerging opportunities.</strong></td>
<td>1, 3, 4, 5</td>
</tr>
<tr>
<td>Continue to offer a “best value” educational experience</td>
<td><strong>Focus 2, Priority 3: Promote student participation in CSU’s global, academic, and experiential learning programs.</strong></td>
<td>1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>Improve the quality of instruction through improvements in...professional development, instructional quality and instructional technology.</td>
<td><strong>Focus 2, Priority 1: Sustain the University’s growth by focusing resources in areas with strong potential based on emerging opportunities.</strong></td>
<td>1, 3, 4, 5</td>
</tr>
<tr>
<td>Promote student participation in CSU’s global, academic, and experiential learning programs.</td>
<td><strong>Focus 2, Priority 3: Promote student participation in CSU’s global, academic, and experiential learning programs.</strong></td>
<td>1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>Cultivate student participation in CSU’s cultural and social activities.</td>
<td><strong>Focus 2, Priority 2: Improve the quality of instruction through improvements in...professional development, instructional quality and instructional technology.</strong></td>
<td>1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>Sustain the University’s growth by focusing resources in areas with strong potential based on emerging opportunities.</td>
<td><strong>Focus 3, Priority 3: Promote student participation in CSU’s global, academic, and experiential learning programs.</strong></td>
<td>1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>Improve stewardship through leadership in sustainability programs, use of resources, and external partnerships.</td>
<td><strong>Focus 3, Priority 2: Improve the quality of instruction through improvements in...professional development, instructional quality and instructional technology.</strong></td>
<td>1, 2, 3, 4, 5</td>
</tr>
</tbody>
</table>

Refining and strengthening the problem-solving skills associated with the student learning outcomes by CSU students will require substantial enhancement of CSU’s current learning environment and campus culture. CSU students will hone and practice their creative, real-world problem-solving skills frequently across the curriculum, as well as in co-curricular activities a
variety of contexts and everyday settings. Clarifying the QEP’s goals and expected outcomes for improvements of the learning environment and campus culture to facilitate the advancement of the SLOs was the final challenge of the Design Team during the Focus Phase of the QEP’s development.

**Five-Year Goals & Learning Environment Outcomes of the QEP**

With student-learning outcomes defined and connected to the We Solve It! purpose statement and campus needs, the Design Team identified an overarching goal of the QEP’s successful implementation: to create a campus culture for discovering problems, designing solutions, and delivering those solutions. The overarching five-year goal has since been refined, and an additional goal added to better reflect all of the QEP’s SLOs as well as the Learning Environment Outcomes (LEOs) defined below:

**Goal 1:** Enhance student ability to solve real-world problems, thereby enhancing critical analysis, by discovering problems, designing solutions, delivering those solutions, and reflecting on the problem-solving process.

**Goal 2:** Cultivate a Learning Environment of Real-World Problem Solving

The second goal references expected improvements in the QEP’s Learning Environment Outcomes over the course of the next five years of implementation. A number of the original QEP’s program outcomes were revised and supplemented to create five Learning Environment (LE) outcomes for the QEP. A large array of QEP initiatives were created and described in the original QEP that, when implemented, were expected to improve the learning environment and campus culture for student skill development in creative real-world problem solving. The five LE outcomes below address those initiatives and their expected impact on enhancing the learning environment to better support creative real-world problem-solving skill development.

The five LE outcomes replace the program outcomes articulated in the original QEP and address the Committee’s interests in a stronger presence of “formative assessment.” Issues raised by the Committee about the number of faculty trained each year in the We Solve It! model and the number of courses and activities incorporating We Solve It! problem-solving experiences are now addressed in LE outcomes 2-4. We believe that these five LE outcomes clearly demonstrate compliance with the Commission’s and the Committee’s expectations for acceptable goals for improving the learning environment as important components of the QEP’s assessment plans.

**Between the first year of We Solve It! implementation (2016-17) and the fifth year of We Solve It! implementation (2020-21), CSU will:**

**Learning Environment Outcome 1:** Maintain a high level of positive ratings of QEP leadership and initiatives on the annual We Solve It! Effectiveness Survey.

**Learning Environment Outcome 2:** Implement training programs/incentives for campus members in the use QEP real-world problem-solving assignments in the curriculum.

**Learning Environment Outcome 3:** Increase the number of faculty and staff who have been engaged in the We Solve It! workshops on implementation, strategies, evaluation, rubric usage, and in the incentive programs involving project grants, course-based stipends, and rubric scoring by at least 5% each academic year.

**Learning Environment Outcome 4:** Increase the cumulative number of courses and co-curricular student activities that incorporate creative, real-world problem-solving experiences consistent with the We Solve It! Initiatives by at least 5% each academic year.

**Learning Environment Outcome 5:** Achieve internal and external recognition in the use of creative, real-world problem-solving opportunities throughout the student
Chapter 4
QEP Initiatives to Expand Creative, Real-World Problem Solving Skill Development at CSU

The CSU community embraced the selected topic of creative real-world problem solving skill development that echoed a current need of employers and graduate programs (see literature reviewed in Chapter 2) and echoed multiple needs of our students (e.g., research and assessment skills, collaboration skills, and communication skills). Once the identified topic and clarified purpose statement, student learning outcomes, five-year goals, and expected learning environment outcomes of the QEP were identified, the We Solve It! Design Team developed the array of QEP initiatives designed to achieve those aims. This chapter reviews those proposed initiatives.

The following sections describe each We Solve It! initiative and how it will help to improve student learning and program outcome attainment based on best-practices literature and successful models in practice.

QEP Initiatives Focused on Addressing Student Learning Outcomes

The five SLOs of the QEP will be spotlighted in every creative real-world problem solving experience by having students complete a standard report of their experience in creatively solving a real-world problem. The completed reports will be evaluated by faculty and staff members using a standard rubric to generate a direct assessment of the students’ skill levels in creative real-world problem solving.

We Solve It! Report & Rubric

The Design Team created a standard problem-solving report and evaluator’s rubric from various existing rubrics. A faculty learning community tested them during the fall of 2015 (see Chapter 6). Faculty or staff who supervise students’ problem solving as part of We Solve It! will require students to complete a We Solve It! Report electronically. The We Solve It! Report requests information about the student’s experiences at the four stages of the creative real-world problem-solving process (Appendix L).

The We Solve It! Rubric calls for each student report to be evaluated on each of the five SLOs. Student performance on each SLO is judged using the rubric and falls within one of four skill level categories (Minimal, Developing, Competent, or Accomplished). More detail on the report’s content and its accompanying We Solve It! Rubric is presented in Appendix I of this document and is discussed further in Chapter 6 which contains a detailed plan for assessment.
We Solve It! - Columbus State University’s Quality Enhancement Plan

How will the We Solve It! Report & Rubric improve student problem solving?
The report and rubric are a critical aspect of We Solve It! as they unify the problem-solving process across the various disciplines, personnel, and students involved in myriad activities. We detail the use of We Solve It! as an assessment tool in Chapter 6, but here we identify three purposes of the report and rubric as a program/environmental change:

1. Framework of Problem Solving. Students will be provided with the report and rubric to serve as a guideline for problem-solving activities. Students will review the report, including its reflection items, and the report will prime and direct approaches to solving problems. This report, then, provides a scaffold for student learning.

2. Feedback Mechanism. Faculty, staff, and graduate students who review students' problem-solving work can a) provide feedback using a standard We Solve It! Rubric provided for grading the report, and b) provide descriptive feedback to students about student answers and/or activities. The use of the rubric to score and provide feedback to students will be important for student learning and reflection. The feedback provided should inform and improve subsequent problem solving.

3. Pedagogical Guide. The standard report and rubric will have pedagogical impact as they guide the way instructors frame problem-solving activities in their courses and/or co-curricular activities. This effect of the report and rubric on teaching was not intentional, but became apparent during the pilot test of the report and rubric during fall of 2015. Several faculty in the group commented on the report's influence on their teaching strategies, beginning with how they framed problems or assignments for students through the reflective items.

Evidence from Literature Regarding Reports and Evaluation Rubrics:
The content of the report and rubric was developed from various examples in the literature for defining problem-solving processes and for measuring complex skills, such as problem solving, using a rubric:

Problem-Solving Processes & Reflection, Antonenko et al. (2014) articulated a set of skills required to solve problems effectively in the real world (based on Dunbar, 2000):

1. Analyze context and identify problems.
2. Explore and discuss information resources.
3. Consider the impacts of various solution strategies.
4. Share the solution strategies with an audience.
5. Reflect on the problem-solving process and effectiveness.

Based on these skills of real-world problem solving, Antonenko et al. further specified their DEEPER Framework designed for teaching collaborative problem solving to students. The Framework is composed of Define, Explore, Explain, Present, Evaluate, and Reflect steps. The conceptual approach to problem solving of We Solve It! – including its report and rubric – is closely aligned to this DEEPER Framework.

Partnership for 21st Century identified the following as components of problem solving:

1. Analyze how parts of a whole interact with each other to produce overall outcomes in complex systems.
2. Effectively analyze and evaluate evidence, arguments, claims, and beliefs.
3. Analyze and evaluate major alternative points of view.
4. Synthesize and make connections between information and arguments.
5. Interpret information and draw conclusions based on the best analysis.
6. Reflect critically on learning experiences and processes
We Solve It! - Columbus State University’s Quality Enhancement Plan

Measuring Problem Solving with a Rubric. The first draft of the We Solve It! Rubric was created based on the topic of creative, real-world problem solving, the specific items included in the We Solve It! Report, and on five existing rubrics from the literature:

- AAC&U’s Problem Solving Rubric
- PULSE (Partnership for Undergraduate Life Science Education) – Vision & Change Rubrics
- Department of Chemical Engineering (West Virginia Department of Education) – Problem-Solving Rubric
- Georgia Gwinnett College - STEM (Science, Technology, Engineering and Math) Initiative Rubric
- Florida Atlantic University - “Distinction through Discovery” Rubric

The current version of the rubric (Appendix I) is an adaptation of the LEAP VALUE Problem-Solving Rubric. This is one of 16 rubrics designed by teams of educators and other content area experts of the Valid Assessment of Learning in Undergraduate Education (VALUE) project sponsored by the Association of American Colleges and Universities (AAC&U). The rubric aligns with the five student learning outcomes identified in the QEP. The institution also added an element to address creative problem-solving through the use of innovative thinking from the LEAP VALUE Creative Thinking Rubric. The revised We Solve It! Rubric will provide data that will inform the university on how well students are able to creatively solve real-world problems.

Models of Reports and Rubrics in Practice: Problem-Solving Processes & Reflection. Other universities who selected problem solving or similar topics for their QEPs identified similar processes to target in students and for student learning.

- College of the Albemarle included very similar problem-solving steps to We Solve It! They also include a final reflection piece as part of their measure.
- Coastal Carolina University included number of ideas, originality of ideas, and reflection on processes as part of their experiential learning measures.
- University of Tennessee at Knoxville included six steps of problem solving in their QEP similar to the ones of We Solve It! but the sixth step is different – we chose to focus on public dissemination of ideas whereas UT-Knoxville chose to include implementation of solutions.

Measuring Problem Solving and Reflection with a Rubric. There are other examples of QEPs that involved development and implementation of self-reported learning and reflection measurements and/or standard rubrics utilized throughout campus. The Design Team examined rubrics used by Texas Women’s University, College of the Albemarle, Coastal Carolina University, and the University of Alabama.

CSU’s We Solve It! Portfolio

The We Solve It! Portfolio will archive and highlight creative real-world problem solving reports. Students will submit We Solve It! Reports online at the time their assignments are completed. At the end of each semester, the We Solve It! Web Manager will review and archive reports from individual courses into a central store to serve as a permanent collection of problem-solving activities at CSU and as a rich source of data for determining the success of We Solve It! (see Chapter 6).

Completed reports will be available publicly. Student scores on the rubric will be available only to the students submitting the report, to the faculty, staff, and/or graduate students who evaluate the report, and to the We Solve It! administrative personnel. Although completed reports will be available publicly, students’ earned scores on the reports will not be available for public view.
How will the We Solve It! Portfolio improve student problem solving?
The portfolio will provide the campus community with a set of problem-solving activities completed successfully at CSU, and the availability of this portfolio will be advantageous for CSU in several ways:

1. **Inspiration.** The portfolio will provide inspiration to the campus community regarding the wide range of problems and scope of problems that can be addressed with the help of We Solve It! initiatives. This portfolio should provide concrete examples that will allow faculty and staff to envision how their work fits within a problem-solving framework and how their teaching can benefit from We Solve It! initiatives.

2. **Collaboration.** The portfolio should foster collaborations and interdisciplinary projects. The virtual visibility of problem-solving work by physically distant campus members should foster increased awareness and interest in projects from other disciplines.

3. **Models.** The collection of problem-solving examples will provide a standard of work to allow readers to get a sense of the difficulty and scale of problems and solutions already tackled for We Solve It!, and to gauge the typical level of work demonstrated by students. Over time, the public availability of these examples should result in the improvement of the quality of reports as campus members review exemplary examples of projects and reports and aim to achieve a similar level of performance.

4. **Understanding.** Students’ understanding of problem solving and how to describe their problem-solving processes should improve through their review and exposure to clear and logical work of other students in the portfolios.

Evidence from Literature Regarding Portfolios:
The use of electronic portfolios to showcase student work is growing (e.g., Taylor, Dunbar-Hall, & Rowley, 2012) and several educators from various disciplines have reported the benefits of portfolios on student learning (e.g., Buckley et al. in health professions). See Norton (2004) for a review on the benefits of student learning portfolios.

At institutional levels, portfolios also are beneficial. In 2009, an entire issue of Peer Review (a journal published by the AAC&U) was devoted to institutional e-portfolios. Yancey’s article in that issue articulates four areas of benefit to students and institutions from use of e-portfolios: creating, evidencing, connecting, and reflecting. Grant writing of faculty also has been archived into portfolio form to showcase and award work at some universities (Balaji, Knisely, & Blazyk, 2007).

Models of Portfolios in Practice:
Examples of successful uses of e-portfolios in higher education institutions include Spelman College and Rose-Hulman Institute. They used e-portfolios to archive student work, as well as to create a framework for assignments and assessments (Burnett & Williams, 2009). Ohio University College of Osteopathic Medicine developed an e-portfolio to manage, archive, and acknowledge external grant writing by faculty (Balaji, Knisely, & Blazyk, 2007). New York University history students (led by faculty members Wosh, Bunde, Murphy, & Blacker, 2007) created a portfolio of their work by creating centrally stored historical archives.

QEP Initiatives Focused on Improvements of the Learning Environment Affecting the SLOs

The We Solve It! initiatives CSU will implement to support the student learning outcomes, the learning environment outcomes and the two overarching are described in this section. A summary of We Solve It! initiatives is provided in Table 4.01. All of these initiatives involve changes to the CSU learning environment and campus culture to target the improvement of
We Solve It! - Columbus State University’s Quality Enhancement Plan

creative real-world problem-solving skill development.

Table 4.01
Actions to be implemented in the CSU Environment.

<table>
<thead>
<tr>
<th></th>
<th>We Solve It! Initiatives of the QEP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUPPORTIVE INFRASTRUCTURE &amp; LEADERSHIP</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>We Solve It! Center</td>
</tr>
<tr>
<td>2</td>
<td>Director of We Solve It! Center &amp; Initiatives</td>
</tr>
<tr>
<td>3</td>
<td>Assistant Director for We Solve It! Assessment</td>
</tr>
<tr>
<td>4</td>
<td>Administrative Assistant to the We Solve It! Director and Assistant Director</td>
</tr>
<tr>
<td>5</td>
<td>We Solve It! Advisory Board</td>
</tr>
<tr>
<td>6</td>
<td>We Solve It! Web Manager</td>
</tr>
<tr>
<td>7</td>
<td>We Solve It! Website &amp; Virtual Resource Room</td>
</tr>
<tr>
<td>8</td>
<td>We Solve It! Marketing</td>
</tr>
<tr>
<td><strong>FACULTY &amp; STAFF DEVELOPMENT</strong></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>We Solve It! Workshops</td>
</tr>
<tr>
<td>10</td>
<td>We Solve It! Communities &amp; Consultants</td>
</tr>
<tr>
<td>11</td>
<td>We Solve It! Days</td>
</tr>
<tr>
<td>12</td>
<td>We Solve It! External Conferences</td>
</tr>
<tr>
<td>13</td>
<td>We Solve It! Expert Dialogues</td>
</tr>
<tr>
<td>14</td>
<td>We Solve It! External Connections</td>
</tr>
<tr>
<td><strong>FACULTY &amp; STAFF INCENTIVES</strong></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>We Solve It! Project Grants</td>
</tr>
<tr>
<td>16</td>
<td>Course-Based We Solve It! Stipends</td>
</tr>
<tr>
<td>17</td>
<td>We Solve It! Evaluation Fees</td>
</tr>
<tr>
<td>18</td>
<td>We Solve It! Certificates</td>
</tr>
<tr>
<td><strong>CELEBRATION &amp; RECOGNITION</strong></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>We Solve It! Celebration (Tower Day)</td>
</tr>
<tr>
<td>20</td>
<td>We Solve It! Co-Director of Tower Day</td>
</tr>
<tr>
<td>21</td>
<td>We Solve It! e-Publication</td>
</tr>
<tr>
<td>22</td>
<td>We Solve It! Awards</td>
</tr>
</tbody>
</table>

**Supportive Infrastructure & Leadership**

1. **We Solve It! Center**

This is an office for the QEP Director and QEP Assistant Director and will serve as a We Solve It! resource for faculty and staff. The Center will entail two workspaces for the Director and Assistant Director of We Solve It!, and a collaborative workspace (“problem-solving playground”) for faculty, staff, students, and visitors. The Center also will include a meeting
space that can be used by the office staff and/or QEP groups, such as the We Solve It! Communities (described below).

The Center will be located on Main campus and will provide support and resources for the implementation of We Solve It! initiatives. Guidance will be available for faculty, staff, and students regarding problem-solving opportunities and application processes. The collaborative workspace element of the We Solve It! Center will be important for fostering the planning and completion of various activities related to problem solving, where campus members gather to review materials, meet with community members, and rehearse dissemination. This space also could provide collaboration technology for campus members who do not have such technology readily available to them in individual departments.

**How will the We Solve It! Center improve student problem solving?**

The We Solve It! Center will improve student learning by providing a trusted space and contact pipeline for students to become more aware of We Solve It! initiatives and to access opportunities for engaging in problem-solving activities and completing problem-solving projects. The center also will provide space for collaborating with other campus members, thereby improving teamwork experiences and skills.

**Evidence from Literature Regarding Centers of Problem Solving:**

The efficacy of collaborate spaces for generating creativity and solutions is still being examined. There are advantages and disadvantages of arranging primary workspace in open ways to foster human interaction (Congdon, Flynn, & Redman, 2014). Our use of collaborative spaces, however, will be a unique space that supplements workspaces (e.g., faculty and staff offices, library study rooms) that provide solitude and personal control. This collaborative space will be available during business hours (or later, if scheduled) and will be used when campus members desire interaction with and the resources of others.

Following suggestions by Vischer (2008) and Knoll (2013), the collaborative space will be a mid-sized space for gathering teams to work on unified goals. It will contain elements of a casual feel, flexible furniture, proximity to technology, and a mobile white board. Ideally, the room also will contain natural lighting.

**Models of QEP and Problem-Solving Centers in Practice:**

Many successful QEP initiatives involve the development of campus spaces devoted to QEP topics, particularly if the QEP topic is something novel to the campus or something that reaches all disciplines on campus. Some examples of new office spaces created to facilitate the profile and success of QEP initiatives include GA Gwinnett College’s Undergraduate Research Office, Tusculum College’s Reflective Judgment Resource Center, Carnegie Mellon’s Entertainment Technology Center (Schell, 2003), and Georgia Institute of Technology’s Library Renewal Project (2014).

2. **Director of We Solve It! Center & Initiatives**

Under the direction of the Associate Provost for Undergraduate Education, the Director of We Solve It! Center & Initiatives will provide leadership and organization in implementing and completing all elements of We Solve It! The following list contains the duties and responsibilities of the director:

- Provide leadership for successful implementation and evaluation of We Solve It!
- Work in concert with CSU community to ensure success of We Solve It!
We Solve It! - Columbus State University’s Quality Enhancement Plan

- Collaborate and consult with the Assistant Director for We Solve It! Assessment
- Supervise the Administrative Assistant for the We Solve It! Center
- Supervise the We Solve It! Web Manager.
- Recruit and lead the We Solve It! Advisory Board.
- Recruit and lead the We Solve It! Consultants.
- Collaborate with the We Solve It! Director of Tower Day
- Educate CSU community about We Solve It!
- Oversee and manage the We Solve It! budget and payment allocations.
- Stay current on best practices related to We Solve It!

3. Assistant Director for We Solve It! Assessment

The Assistant Director for We Solve It! Assessment will work closely with the Director of We Solve It! Center & Initiatives to track, measure, and report changes in student learning and QEP initiatives. The Assistant Director will prepare and (with approval of the Director) submit all required reports to the institution and to outside agencies associated with Quality Enhancement Plans. The following list contains the duties and responsibilities of the Assistant Director:

- Assist with faculty development and understanding of the We Solve It! Report & Rubric.
- Collaborate with the We Solve It! Web Manager to ensure proper administration and recording of completed We Solve It! Reports & Rubrics.
- Manage assessment of student learning outcomes and program outcomes.
- Provide feedback to the Director to inform potential changes to initiatives.
- Ensure alignment between We Solve It! and Southern Association of Colleges and Schools Commission on Colleges (SACS) standards.
- Teach at least one course per semester.

4. Administrative Assistant to the We Solve It! Director and Assistant Director

This person will be a full-time staff member to help complete tasks related to the We Solve It! initiatives being managed by the Director and Assistant Director. This staff member will be available for 40 hours per week to assist in direction and oversight, or other tasks as deemed necessary and reasonable by the Director of We Solve It! Center & Initiatives.

5. We Solve It! Advisory Board

This group is comprised of faculty, staff, student, and community representatives for the purposes of support and guidance in We Solve It! initiatives. The Board membership will include up to two faculty members from each college and the library, two student affairs professionals, two staff, two students, and two community members from outside CSU. These Board members should be engaged in creative real-world problem solving and serve as advocates and leaders of We Solve It! in their colleges or student support divisions. One of the major tasks of this group is to review proposals for the We Solve It! Project Grants and Course-Based We Solve It! Stipends. This Advisory Board also will help, at the discretion of the Director of We Solve It! Center & Initiatives, make decisions regarding implementations of initiatives (e.g., choice of invited experts, schedules of events). The We Solve It! Advisory Board also will be a communication device between the campus community and the We Solve It! Leadership (e.g., Director) as board members will remain vigilant and aware of their colleagues’ reactions to We Solve It! initiatives. Finally, the Advisory Board will play a role in selection of recipients of the We Solve It! Awards.
6. We Solve It! Web Manager

A Graduate Assistant, hired and managed by the Center of Online Learning (COOL), will be responsible for maintaining the We Solve It! Website & Virtual Resource Room as well as the We Solve It! Portfolio of Creative, Real-World Problem-Solving. This Manager will provide help to campus members (faculty, staff, and students) who have difficulty using the We Solve It! Report & Rubric. Although this person’s office will be located in COOL, he/she will report directly to the Director of We Solve It! Center & Initiatives, and much of his/her work will occur in virtual environments. The help provided to campus members may occur in live sessions, but also can occur via video tutorials, online chat sessions, e-mail, and other synchronous or asynchronous environments.

How will the We Solve It! Leadership improve student problem solving?
The We Solve It! Leadership (Director, Assistant Director, Administrative Assistant, Advisory Board, and Web Manager) will improve student learning through the guidance and support they provide to the We Solve It! initiatives and student activities. Leadership is a critical component of translating initiatives into action where they affect student experiences and learning. These personnel also will play a crucial role in recording and tracking student progress (as measured by the number and quality of We Solve It! Reports) to inform the efficacy of initiatives and determine whether changes are necessary to increase their impact on students.

Evidence from Literature Regarding Leadership and Its Impact:
Trapp (2014) argues that leadership is crucial to timely and quality completion of projects in the workplace. The We Solve It! Leadership will be integral to its success by remaining focused on We Solve It! initiatives and remaining flexible in the face of contrary feedback or lack of student learning. In this sense, the Director and Assistant Director will be leaders more than mere managers (see Bennis, 2015). Other sources refer to active and directive leadership as “functional management” (Elatta, 2014) and emphasize the importance of personal relations in effective leadership of extended teams (Levinson, 2008; Madsen, 2014), as in the We Solve It! initiatives.

Models of QEP Leadership in Practice:
Most institutions who launch successful QEPs do so through the leadership of new administrative and staff positions. For the size of CSU and the scope of its QEP, one full-time administrator, one part-time assistant director, and one web manager are necessary yet adequate for implementation of We Solve It! Other institutions that effectively managed QEP initiatives with these positions include Armstrong Atlantic State University, Fort Valley State University, and Clayton State University. It is also a successful model on our campus and other campuses to use a committee of colleagues to review and award grants.

7. We Solve It! Website & Virtual Resource Room

The We Solve It! website was launched in the summer of 2015 and will be updated over time to reflect recent and current QEP activities and initiatives. It will continue to be a rich resource for the campus community to stay informed about the QEP. The website and resource room will contain at least:

- We Solve It! purpose and student learning outcomes
- We Solve It! initiatives and outcomes
- We Solve It! Report & Rubric, along with resources for help with the report and rubric
We Solve It! - Columbus State University’s Quality Enhancement Plan

- Information about getting involved in We Solve It!
- Announcements regarding We Solve It!
- Application and proposal forms for We Solve It! incentive initiatives
- Video archives of We Solve It! training initiatives
- Video tutorials for We Solve It! initiatives and procedures
- A campus collaboration environment for discussions about We Solve It! activities.

The website will be maintained by the We Solve It! Web Manager with help from undergraduate student assistants, and the Web Manager will collaborate with the professional writing students who will create the e-publication (described below).

How will the We Solve It! Website & Virtual Resource Room improve student problem solving?
The We Solve It! Website & Virtual Resource Room will provide a virtual counterpart to the physical space known as the We Solve It! Center for Creative Real-World Problem Solving. The website and included room of resources will provide students a better understanding of the purpose and rationale for We Solve It! and provide justification for their involvement. It also will encourage student engagement in problem solving by providing appealing examples of recognized achievements in problem solving by campus members. Finally, the website will educate students about processes in problem solving, how to improve skills involved in problem solving, where to seek help with problem-solving activities, and how to complete the We Solve It! Reports. All of these elements aim to improve students’ problem-solving skills.

Evidence from Literature Regarding Websites and Their Impact:
Overall use of the internet by college students continues to rise. Students reported positive attitudes towards use of internet for academic tasks (Jones, Johnson-Yale, Millermaier, & Perez, 2008). Further, university websites that contain forums for dialogue and discussion had greater student retention rates and participation in their programs (Gordon & Berhow, 2009).

Models of QEP Websites in Practice:
CSU’s Design Team reviewed many QEP websites from schools in the region. CSU’s We Solve It! Website was modeled from appealing elements selected from QEP websites at Auburn University, Clayton State University, and Georgia Gwinnett College.

8. We Solve It! Marketing

We Solve It! Marketing will ensure the campus community is aware of We Solve It! and aware of how to become involved in We Solve It! initiatives. Marketing will be a joint effort of the We Solve It! personnel and Office of University Relations. Marketing strategies will vary in form and scope; they might include distribution of promotional products, signage and other visual reminders, e-mail notifications, and advertisements/articles in university publications. The Marketing program also will share information about We Solve It! with the community outside CSU, perhaps with e-newsletters, mailed invitations to collaborate, and other marketing strategies. Here is the plan for promoting We Solve It! starting in January 2016:

QEP Communications Plan | Fall 2015-Spring 2016
Launch Date: Monday, Jan. 25 | Completion Date: Tuesday, Feb. 23

Web: Create campus-wide web stories
Initiative overview and theme news story, including link to CSU’s QEP page
New director feature, including link to CSU’s QEP page
How QEP is working across campus/in community feature, including link to CSU’s QEP page

**Social Media: Post digital fliers, updates, photo stories & videos**
Educating about what QEP means on Facebook and Twitter
Reinforcing QEP theme on Facebook and Twitter
Sharing original photo and video stories on Facebook, Twitter and YouTube

**Photography: Capture classroom & community experiences**
Action shots of professors/students problem solving
Action shots of students individually and collectively problem solving
Action shots of students and community members problem solving

**Video: Film mini QEP examples on and off campus**
Initiative overview and theme
In the classroom experiences
In the community experiences

**Email: Send out engaging blasts and reminders**
Overview/theme press release emailed to faculty, staff, students, alumni, community/media
*In The Know* announcement about initiative and new director emailed to campus
Posts from the President’s iPad reminders to campus

**Publications: Print advertorials**
QEP overview and updates in the university’s alumni magazine
Creation of a QEP booklet documenting the university’s problem-solving strategies
(Here is a link to a long-term project produced by Georgia College & State University: [https://engageatgc.files.wordpress.com/2015/09/00-qualityenhancementplan.pdf](https://engageatgc.files.wordpress.com/2015/09/00-qualityenhancementplan.pdf))

**Other Campus Marketing Visuals** include themed t-shirts, custom banners, and promotional stickers.

**How will We Solve It! Marketing improve student problem solving?**
*We Solve It!* Marketing will encourage involvement of faculty and students in *We Solve It!* initiatives. Because marketing increases the likelihood that the community (on and off campus) understands the purpose of *We Solve It!*, promotions should directly impact the number of students and faculty engaged in problem solving. In addition, external promotions should increase the number of connections made with members of the community who have real-world problems to solve. Therefore, more problem-solving opportunities will arise from promotions.

**Evidence from Literature Regarding Marketing of Programs:**
Institutional programs, even if internally developed, require promotional strategies to inform institutional members and stakeholders of the program purpose, scope, and opportunities. Common examples in business include promotion of employee health and safety programs. Centers for Disease Control and Prevention, for example, provide a “toolkit” of marketing strategies for employers to encourage healthy habits in workplaces and the New York Department of Health has a published list of strategies for employers to encourage safe practices at work.
Increasingly in higher education institutions, marketing is used to support success of academic programs, co-curricular programs (e.g., study abroad), and new campus-wide initiatives. Hanover Research (2014) summarizes key elements to effective marketing in higher education, including consistent branding, strategic positioning, and use of social and digital media. Other suggestions/strategies for effective promotions of new programs include the use of the practice/activity as a promotion element itself (Rowley, 2011) and the use of multiple curricular options (Trostle, 2003). Also important in effective promotion of institutional programs are a centralized office of resources, an informative website, and active personnel who promote the program (see Snow, DeCosmo, & Shokair, 2010).

**Models of QEP Marketing in Practice:**
Nearly every example QEP we reviewed during program development contained a marketing protocol, often specified over time. Examples available online include Hillsboro Community College, Alvin Community College, Miami Dade College, and South Plains College.

**Faculty & Staff Development**

9. **We Solve It! Workshops**

These one-day workshops will occur off or on campus and will involve multiple interactive sessions to engage faculty and staff in problem-solving ideas, collaborations, etc. The workshops will be designed to achieve several goals:

1. Increase interest and participation in We Solve It! initiatives;
2. Increase ideas and connections to resources for solving real-world problems;
3. Increase understanding of the We Solve It! Report & Rubric;
4. Increase progress of faculty and staff towards planning problem-solving initiatives.

The workshops are planned to occur twice per year, once prior to each semester near (or as part of) existing faculty planning week. Each workshop will be videotaped and available for 24/7 access in the Virtual Resource Room.

**How will the We Solve It! Workshops improve student problem solving?**

The We Solve It! Workshops will play an important role in educating faculty and staff to use the We Solve It! Report and Rubric, helping faculty to identify methods for using the report in their courses and the rubric in consistent ways, and creating valid records of problem solving at CSU. The workshops also will encourage faculty participation in QEP initiatives by providing vision and clarity regarding use of the We Solve It! Report and Rubric.

**Evidence from Literature Regarding Developmental Workshops:**

Published reports of workshop efficacy for faculty development to enhance program understanding and collaboration are numerous (e.g., Ellis & Israel, 2015; Hanson & Stultz, 2015). Walsh and Cuba (2009) recommend workshops to facilitate interdisciplinary engagement and minimize barriers between college coursework and issues present “outside the bubble” of academic life. Their Ruhlman Conference and Tanner Conference at Wellesley College became models for other schools in how to bring aboard faculty into curriculum changes and trends in education.

**Models of Faculty & Staff Workshops in Practice:**

The We Solve It! Workshops were modeled after other examples being used currently by other institutions as part QEP training, including Florida Atlantic University’s undergraduate research and supervision assessment workshop; University of Alabama’s experiential learning best
practices workshop, Savannah State University’s workshop on teaching writing, and Alabama A&M’s critical thinking workshop.

10. We Solve It! Communities and Consultants

These learning communities will exist across the University. There will be at least one faculty and staff learning community for each college with faculty (College of Letters and Sciences - COLS, College of the Arts - COA, Turner College of Business and Computer Science - TCOBCS, College of Education and Health Professions - COEHP, and Library), and each community will be led by a faculty or staff consultant. Each consultant will manage members of the learning community who are participating in We Solve It! initiatives. The consultants will meet with community members on multiple occasions throughout the semester to provide support and resources.

There will also be a student-level consultants program. Two students from each college that houses disciplines/majors (COLS, COA, TCOBCS, and COEHP) will serve as peer consultants for real-world problem-solving activities. These students will collaborate with other students on Discover, Design, Deliver, and Reflect processes.

How will the We Solve It! Communities & Consultants Program increase student problem solving?
The We Solve It! Communities & Consultants Program will be an educational and social support tool. The Communities & Consultants Program will occur at the level of faculty and staff and of students. Students will benefit indirectly from the faculty and staff communities and mentors through their classroom experiences because their instructors and supervisors will utilize better problem-solving strategies and teaching methods for conveying problem-solving processes. Students will benefit directly from the student communities and mentors program because they will learn first-hand from peers about problem-solving processes and/or how to improve them (e.g., discovery or delivery strategies).

Evidence from Literature Regarding Communities and Consultants:
Learning communities are one of the high-impact practices identified by Kuh (2008) and measured by the NSSE. Kriner et al. (2015) reported increased self-efficacy, and independence, as well as increased emphasis on learning process rather than outcome, when learning took place through an organized community of peers. Roth (2014) argued similarly that faculty-learning communities are one of the best ways to improve teaching methods, especially if the communities share similar goals and provide a venue for reflection and support. Beyond teaching efficacy, Roth argues that learning communities positively affect motivation and satisfaction. These demonstrated impacts of learning communities should apply to the faculty communities and the student communities that will be part of We Solve It! initiatives.

Models of Communities and Consultants in Practice:
Existing learning communities for faculty and students at other institutions include
- St. Petersburg College – Faculty Champions (faculty QEP peer guides)
- University of Idaho – Faculty Brown Bag Sessions (Gergens & Van Noy, 2015)
- University of Pennsylvania – Course-based problem solving “consultants” (Mulhere, 2014)
- Miami University – Faculty Learning Community on Scholarly Communication (Bazely, Waller, & Resnis, 2014).
Columbus State University also has successful examples of learning communities:
- Freshman Learning Communities for first-year students.
- Faculty Learning Communities of pedagogical improvement (e.g., a flipped classroom learning community managed by Kim Shaw and Tim Howard)

11. **We Solve It! Days**

These half-day sessions will occur twice per semester: once prior to classes beginning and once prior to the end of each semester (around Week 14-15). They will allow faculty the time and resources to plan, propose, and/or publicize problem-solving projects. Faculty can use the time to write grant proposals or to write posters or papers based on problem-solving work. Representatives from the **We Solve It!** Center, the Library, and from the Institutional Review Board will be present to assist faculty.

**How will the We Solve It! Days improve student problem solving?**

**We Solve It!** Days will be used to jumpstart problem-solving activities on campus. By providing social support and resources, these days should help faculty, staff, and students find the time and resources needed to plan, start, and finish problem-solving processes. These Days will not only increase the number of problem solving activities on campus, but they will also allow for collaboration and the exchange of ideas to improve the scope and quality of problem-solving activities. Students can learn directly from participation in Days or learn indirectly from them through experiences provided by faculty and staff attendees.

**Evidence from Literature Regarding Focused Work Days:**

**We Solve It!** Days will emphasize project planning, grant writing, and dissemination. Sanders (2014) argued that writing “boot camps”, as they sometimes are called, are a great way to create social support and accountability for writing. Many faculty members delay scholarship and writing tasks, so these Days are intended to increase participation and productivity of campus members in their problem-solving projects. Many schools, including West Virginia University and Harvard University, host day-long events where faculty are encouraged and helped in grant writing. Duke University maintains a Faculty Writing Program, consisting of Writing Workshops, Writing Communities, and Writing for Teaching elements.

**Models of Work Days in Practice:**

**We Solve It!** Days are based on the following models:
- Columbus State University - Writing Boot Camps – Managed by the Faculty Center
- Columbus State University—Freshman Learning Community Faculty Institute (May, 2015)
- Georgia Gwinnet College – Writing Days – Managed by STEM Initiatives
- Elon University – Writing Boot Camps – Managed by the Center for Writing Excellence
- Princeton University – Graduate Writing Days (including Debriefing Groups)

12. **We Solve It! External Conferences**

Faculty and staff members (8-10 per year) will be selected to attend conference(s) and/or workshops that have a problem-solving focus or theme. Upon return to CSU, they will share what they learn either (1) in a live presentation (that will be archived), or (2) in a video report.

**How will the We Solve It! External Conferences improve student problem solving?**

The **We Solve It!** External Conferences will improve student learning by educating the entire campus community about new ideas, strategies, and dissemination possibilities. Faculty and
staff who attend the problem-solving conferences will return to campus and share new information, enhancing the CSU community’s knowledge about problem solving. While it is possible that students will be exposed directly to the information brought back from the conferences, it is more likely that they will benefit indirectly through the education of faculty and staff on campus who then will put into practice their newly gained knowledge or training.

**Evidence from Literature Regarding External Conferences:**
Attending conferences is one of the most effective ways for educating and energizing faculty about teaching strategies. (See Weimer, 2009, and Baldwin & Chang, 2007, for anecdotes of changes created by conference attendance). Conferences allow faculty to meet other teachers (within and outside their disciplines) and foster collaborative work among members of various institutions.

**Models of External Conference Programs in Practice:**
Most colleges and universities support faculty travel to conferences and symposia focused on specific areas of interest or expertise. Some include DeAnza College’s Faculty Conference Fund, the College of Wooster’s Faculty Travel Benefit, and Columbus State University’s Teaching and Learning Development Travel Grants.

13. **We Solve It! Expert Dialogues**

The Expert Dialogues will involve visits from outside problem-solving experts to engage CSU campus members in meaningful conversations about creative real-world problem solving. Experienced real-world problem-solvers or educators of real-world problem solving will be invited to visit campus to discuss the Discover, Design, Deliver, and Reflect processes. The plan is to invite two to three experts per year (depending on travel costs).

**How will the We Solve It! Expert Dialogues improve student problem solving?**
The We Solve It! Expert Dialogues are designed to encourage campus members to move beyond the problem solving initiatives already in place on campus and to expose the entire campus community to accomplished problem solving elsewhere, likely sparking new ideas and approaches. Other possibilities include dialogue sessions with experts in community or world connections who can help campus members gain access to and participation in various off-campus projects or initiatives.

**Evidence from Literature Regarding Expert Dialogues:**
The dialogues between guest experts and CSU campus members are aimed to inspire and educate people at CSU to engage in real-world problem solving. Hornum and Asprakis (2007) documented the use of visiting experts at Drexel University as an effective faculty support mechanism. Many first-year experience programs incorporate visiting experts to speak to students about real-world topics (e.g., Finley & Staub, 2007).

**Models of Expert Dialogues in Practice:**
It is a regular practice for colleges and universities to invite experts/consultants from various fields to campus to share expertise and help campus members learn new skills or approaches. Examples include Union University, Old Dominion University, and Columbus State University – Faculty Symposium (January 2016).

14. **We Solve It! External Connections**

External Connections sessions will occur with the assistance of the Center for Career Development to enhance the skills of faculty and staff in making connections with community
members for problem-solving initiatives. Successful sessions will result in faculty and staff members at CSU becoming more knowledgeable and skilled in networking and staying connected with members of the surrounding community. CSU students should also become better connected to the “real world” (i.e., the surrounding community and culture) through this program. The Center for Career Development, which plays a key role in partnerships for student internships and career opportunities, will provide information to faculty, staff, and students about community members who offer opportunities for problem solving or who have problems that CSU might help them solve.

**How will We Solve It! External Connections Program improve student problem solving?**

We Solve It! External Connections are designed to create a greater number of problem-solving opportunities for our campus community. More opportunities and connections to the surrounding community will translate into more problem solving activities that CSU students will be able to complete.

**Evidence from Literature Regarding External Connections:**

Gavigan (2014) reported the success of faculty involvement in students’ internships and external connections. Further, students were more likely to take advantage of services provided in the campus-based Career Services after participating in the internship program. Grant (2011) identified internships and getting “outside the bubble” as key networking devices for college students; service learning has been shown repeatedly to bolster students’ sense of connection and accomplishment (e.g., Bruce-Davis, & Chancey, 2012). The We Solve It! External Connections will produce opportunities for these invaluable educational experiences by opening lines of communication between community members/outlets and CSU students.

**Models of External Connections Programs in Practice:**

- Wheaton College – Summer Internships for Connections
- Orange-Ulster BOCES – Work-Based Learning Program
- Northern Arizona University – CRAFTS initiative for community and civic engagement

**Faculty & Staff Incentives**

15. We Solve It! Project Grants

These grants are designed to support problem-solving activities that last for 3-12 months.

There will be two rounds of Project Grants awarded each year, but each faculty or staff member may receive only one award per academic year. These grants will provide funds for supplies, travel, or other appropriate expenses for campus members who develop unique and extended problem-solving opportunities to students. Here is a listing of the requirements:

- Proposals will each be 2-4 pages.
- Proposals will be reviewed by a QEP Advisory Board.
- Proposed initiatives may be course-embedded or independent course work.
- Students of all grant recipients must complete the We Solve It! Report, which includes public communication of problem-solving work.

Grant recipients must score the problem-solving reports using the We Solve It! Rubric.

**How will the We Solve It! Project Grants improve student problem solving?**

The We Solve It! Project Grants are designed to encourage campus members to seek meaningful projects that challenge their skills and extend their prior problem-solving efforts to issues that are of larger scale and/or reach. These grants should afford campus members the...
capabilities to solve problems that otherwise would not be within reach. Because these grants can support novel and larger-scale projects, they should increase students’ engagement in problem solving and in more challenging problems.

**Evidence from Literature Regarding Project Grants:**
Although faculty often engage students in projects and research for intrinsic reasons, such as student development or progression of a project, many faculty need extrinsic motives initially to begin the time-consuming processes of planning and completing projects with students (Webber, Laird, & BrckaLorenz, 2013). **We Solve It!** Project Grants would motivate faculty by compensating faculty for their effort and by covering the cost of projects. That is, this grant program will combat a common threat to student engagement: lack of funding (see Jones & Davis, 2014).

**Models of Project Grants Programs in Practice:**
Nearly every institution manages internal grants programs to encourage faculty and students to improve teaching or scholarship (e.g., Armstrong Atlantic State University, University of Iowa), and internal grants programs are used successfully at Columbus State University to support faculty development. This same model will be extended by **We Solve It!** to support faculty, staff, and student engagement in solving real-world problems.

16. **Course-Based We Solve It! Stipends**

These stipends are designed to support problem-solving initiatives lasting 2-4 months that are linked to coursework. Each stipend will be $500-1500 with 10-30 stipends awarded per semester.

There will be two rounds of stipends per year; projects must be completed within a semester. These grants will provide faculty or staff money/stipend for time and work involved in including new instructional activities or approaches that target problem solving in their courses. Here is a listing of the requirements:

- Proposals will each be 2-4 pages.
- Proposals will be reviewed by a QEP Advisory Board.
- A course-embedded problem-solving component must involve changing some aspect of teaching.
- Students of all grant recipients must complete the **We Solve It! Report**, which includes public communication of problem-solving work.
- Grant recipients must score the problem-solving reports using the **We Solve It! Rubric**.

**How will the Course-Based We Solve It! Stipends improve student problem solving?**
The **We Solve It!** Stipends are designed to provide incentive for faculty and staff to create and develop novel pedagogical strategies to engage students in problem solving in their courses. These stipends are designed to transform students’ experiences in existing courses by encouraging faculty and staff to incorporate new problems into the class activities.

**Evidence from Literature Regarding Stipends:**
These stipends are intended to encourage faculty and staff to increase problem-based strategies in their courses by emphasizing engagement and active-learning teaching strategies. Changes in pedagogy require extensive time and effort. If these stipends are sizeable and contingent upon faculty completion of projects, they should improve motivation for faculty participation in problem solving initiatives (see Gneezy, Meier, & Rey-Biel, 2011). Further, there are many examples where monetary incentives were used to jump-start pedagogical trends and then successfully faded over time in a way that enhanced teaching strategies were sustained.
without continued monetary incentives (Cooper, 2014; Herman, 2013).

**Models of Stipends in Practice:**
Most universities provide extra pay for faculty work that is exemplary or within a particular domain targeted by the institution. Examples include

- University of West Florida—pays faculty for submission of external grant applications;
- University of Kentucky—pays faculty for grant writing (Research Enrichment Program);
- At CSU, there exists this model of Course-based Stipends program: Interdisciplinary Grants.

**17. We Solve It! Evaluation Fees**

Each Semester faculty and staff who use the standard *We Solve It! Rubric* to score students’ *We Solve It! Reports* will receive $10.00 for each completed and scored Rubric. One caveat is that faculty and staff who receive a *We Solve It! Stipend* or *We Solve It! Project Grant* will not be paid this fee. Use of the *We Solve It! Report* and *Rubric* will be required to receive a stipend or grant. This fee is aimed to encourage faculty and staff to use the Report and Rubric, even when they are not tackling problems that are reviewed or approved by *We Solve It*! personnel. The Design Team hopes that many campus members will ask students to complete the *We Solve It! Report*, even if the problem-solving activities were already incorporated into courses. The Reports will provide a record of student problem-solving activities and a standard way of measuring those activities and judging their quality. Offering this fee will encourage faculty and staff to utilize the main measurement device, especially in larger courses when use of the *We Solve It! Rubric* might require several hours of work on the part of the faculty or staff member.

**How will the We Solve It! Evaluation Fees improve student problem solving?**
The *We Solve It! Report* and Rubric provide a scaffolding and feedback mechanism for students. Having the Rubric scored with the problem-solving mentor’s comments and suggestions provides a feedback mechanism. The Design Team believes that student learning will increase the most if the problem-solving mentor (rather than a teaching or staff assistant) evaluates the Reports. The scoring process, particularly for large enrollment sections, could be time consuming, so this fee is intended to encourage the mentors to provide meaningful feedback and consistent scores for their students’ *We Solve It! Reports*.

The evaluators will also learn from scoring their students’ Reports; they will learn where pitfalls and successes occurred during the problem-solving and reflection processes. This exposure to student Reports will inform and improve the mentors’ subsequent teaching of problem solving.

**Evidence from Literature Regarding Evaluation Fees:**
Grading student work is perhaps the least preferred activity of faculty members. Tierney (2013) discusses various aspects of grading that contribute to its unappealing nature, including the stress of trying to remain fair, worry over inhibiting student creativity through judgment, and the tedious and repetitive nature of the task. The *We Solve It! Rubric* makes the grading process smoother, but the Design Team believed there still was reason to provide external incentives for faculty’s willingness to grade the *We Solve It! Reports*. This idea was based on other existing practices where award programs, scholarships, etc. require the work of external reviewers/graders to evaluate materials. Those graders earn supplemental pay for their work. According to the internet, typical pay for such grading work ranges from $10-20 dollars per hour.
18. We Solve It! Certificates

The We Solve It! Center will provide certificates to all successful grant/stipend recipients to be included in their annual reviews and in applications for tenure and/or promotion. Faculty and staff members who receive a Problem-Solving Project Grant or a Course-Based Problem-Solving Stipend can include the activity in the area of Teaching when they submit support documentation for their annual reviews. When possible, the quality and scope of problem-solving work may be weighed, such that work that is more substantial should contribute more positively to the faculty member’s rating during the review processes.

How will the We Solve It! Certificates improve student problem solving?
The We Solve It! Certificates will improve student learning by providing an incentive for faculty and staff to enhance the problem-solving skills of their students. Increased faculty and staff participation should result in a greater number of CSU students who are engaged in problem solving. If more students are solving problems, more We Solve It! Reports will be completed, and more CSU students will gain skills in the problem-solving processes.

Evidence from Literature Regarding Certificates:
Faculty and staff are evaluated annually at Columbus State University. As at many institutions where a major focus is teaching effectiveness, CSU’s faculty are expected to hone their teaching skills. It is common practice to include faculty participation in new teaching and learning initiatives as a contribution towards excellence in Teaching.

Models of Certificates in Practice:
There are numerous examples of institutions where faculty receive special recognition for efforts in teaching due to participation in faculty development programs:
- University of South Florida – Guidelines for Tenure and Promotion
- Georgia Southern University – Faculty Evaluation Criteria
Other institutions (e.g., University of West Georgia and Georgia Gwinnet College) have a separate category of review for faculty – Professional Development & Growth. Columbus State University, however, has only three areas of review: Teaching, Scholarship, and Service.

Celebration and Recognition

19. We Solve It! Celebration

The current Tower Day at CSU, an annual celebration of student scholarship, research, and creative endeavor, will be expanded and rebranded into a larger celebration of creative real-world problem solving. The new event will launch in the fall of the 2017-2018 Academic Year. In addition, each semester there will be a day within the CSU Academic Calendar devoted to the We Solve It! Celebration (see Figure 4.01, p. 47).
In coordination with the Honors College, the Design Team developed a larger-scale Tower Day, the **We Solve It!** Celebration, that will differ from the existing celebration in several ways:

- Frequency of occurrence.
- A day devoted to the celebration as part of the academic calendar.
- Removal of the undergraduate research language.
- Greater involvement of College of the Arts members.
- Inclusion of staff and administrative problem-solving initiatives.
- Increased interactive exhibits.
- Varied dissemination formats.

Beyond the expansion in scope and feasibility of the **We Solve It!** Celebration, perhaps the greatest impact of this event on the campus community will be its enhanced collaboration of various institutional components. Cohesion of campus activities, particularly across campuses, is something needed at CSU. The Celebration will bridge connections between academic disciplines as well as various support services that will collaborate to produce the event. In addition to faculty and student presentations from every College of the University, the Celebration will involve students solving the “problem” of hosting this event. Communication students, for example, will help record the “Tower Talks” and design lighting for exhibits. Professional writing and communication students will create print/electronic media to advertise and summarize the event, and environmental science students will plan ways to minimize waste. Staff and support services (e.g., print shop, ARAMARK catering, Student Affairs), Student Government and other campus organizations also will be involved through organizing exhibits and volunteering to help with various elements such as decorations.

**How will the We Solve It! Celebration improve student problem solving?**

The **We Solve It!** Celebration will enhance student learning in two major ways:

1. **Dissemination Outlet.** It will provide a free and convenient mode of experience for the Delivery activities identified in Student Learning Outcome #3. Without this event, it might be difficult for students to complete the entire problem-solving processes we identified. We believe the public presentation of solutions is an important aspect of problem solving as it challenges a different set of skills than the Discover and Design processes. This celebration will provide a broad (i.e., real-world) audience for students’ solutions. The presentations can occur in various formats, and there are plans already underway to include musical performances, computer science game rooms, research talks via simulcast (i.e., “Tower Talks”), and art and theatre exhibits.

2. **Event as a Collaborative Problem.** Because this celebration will be hosted and achieved by the entire campus, the planning and execution of the event, including its individual sessions, will serve as real-world problems. Students will play critical roles in the success of the **We Solve It!** Celebration, not only in their dissemination activities but also in additional roles played by students. Some examples include work by theatre students to provide décor, communication students to light exhibits and archive activities, marketing students to promote the event, and Honors students to organize and present awards.
Evidence from Literature Regarding Celebrations in Higher Education:
Dissemination of work was identified by Kuh and O’Donnel (2013) as a critical feature of high-impact experiences for undergraduates. It provides a culminating experience for students while also providing a channel for feedback. The We Solve It! Celebration also will serve as a first conference experience for many students, thereby creating networking opportunities and professional exposure (see Otero-Iglesias, 2015). Kim (2014) reported that participation in conferences allows students to practice their soft skills, network with people within and beyond their disciplines, observe professional exchanges, and participate in many workshops or professional development opportunities offered by the conference.

Models of Celebrations in Practice:
Although there are few institutions that display or emphasize problem solving per se, many institutions host a variety of events to showcase student work in various domains. Some examples include:
- Creative Education Foundation – Creative Problem Solving Institute (conference)
- Wright State University – Celebration of Research, Scholarship, and Creative Activities
- Lewis University – Celebration of Scholarship
- Cambridge Public Schools – Day of Problem Solving
- University of West Georgia – Research Day/Big Night

20. We Solve It! Co-Director of Tower Day
Each academic year, a faculty or staff member will serve as an organizer, communicator, and overall liaison for the campus problem-solving celebration known as the We Solve It!
Celebration. This **We Solve It!** Co-Director will work closely with the Dean of the Honors College (manager of the current Tower Day) and Director of **We Solve It!** Center & Initiatives during Academic Year 2016-17 to plan the first **We Solve It!** Celebration held in fall semester 2017.

### 21. We Solve It! e-Publication

Each semester, selected problem-solving activities will be summarized or reprinted into an electronic exhibition piece to be shared with the campus and surrounding community. The e-Publication will be disseminated directly to CSU stakeholders, family and friends of CSU, and community members in the surrounding counties/region; the e-Publication also will have permanent public status on the **We Solve It!** Website. The plan involves launching the e-Publication (name, logo, etc. to be determined) at a Launch Party event held each semester during the **We Solve It!** Celebration.

**How will the We Solve It! e-Publication improve student problem solving?**

The e-publication will increase awareness of **We Solve It!** initiatives and goals, provide clarity to the campus community concerning various problems and how CSU might address them, and encourage campus members to become engaged in problem solving. Students may view the completed work in the e-publication as a goal in itself and, in turn, be more likely to seek problem-solving opportunities on campus.

Because the e-Publication will be distributed beyond the CSU community, it should open doors and opportunities for members of surrounding communities who read the **We Solve It!** e-Publication and would like to partner with members of the CSU community on a problem-solving project. These expanded opportunities should improve learning because they will increase the number, variety, and reach of problems for our students to address. These problem-solving experiences will improve our students’ skills and understanding of problem solving. The e-Publication, similar to the portfolio, will provide examples and a standard of achievement for faculty, staff, and students. The standard of problem solving showcased by the e-publication should improve across the five years of **We Solve It!**

A final way the e-Publication is linked to student learning is that it will be a project/problem for CSU professional writing students. The e-Publication will be managed by a group of professional writing interns who, in turn, will be guided by a faculty mentor. The mentor will receive a small stipend for overseeing the students’ work and reviewing the publication. The **We Solve It!** e-Publication will provide a unique opportunity to create a publication with a large audience.

**Evidence from Literature Regarding e-Publications:**

Electronic publications exist today in a wide array of formats and for a wide array of purposes. Their advantages include cost effectiveness, accessibility, use of colors and graphics, and ability to be more inclusive given fewer constraints on space (Langston, 1996). According to the American Association of University Professors (2014), electronic communications are a great way to highlight work of faculty members that occurs outside the classroom but might not fit within the framework for traditional publication outlets. Several sources of suggestions for creating effective e-publications exist in the literature (e.g., MarketingSchools.org, 2012; Soskey, 2015). Some effective strategies include a deep reservoir of content, thorough review
of existing e-publications and newsletters, understanding of readership, and collection of feedback.

**Models of e-Publications in Practice:**
Successful e-publications of student work include
- Georgia Tech – Annual Reports summarize scholarly work across disciplines
- Marquette University – e-Publications program, part of the Institutional Repository
- Austin College – e-Newsletters of scholarship and work
- The University of Utah – several open-access journals published through University Libraries

Columbus State University currently publishes various open-access sources of information to highlight scholarship on campus:
- CSU ePress – a store of institutional scholarship maintained by the Library
- *Perspectives in Learning* – an open-access peer-reviewed journal managed by the COEHP
- Newsletters – Separate colleges, the Office of Sponsored Programs, and others produce these.

### 22. We Solve It! Awards

**We Solve It!** Awards will be created to recognize faculty, staff, and students who achieve excellence in creative real-world problem-solving activities. Award recipients will be recognized at the **We Solve It!** Celebration and in the **We Solve It!** e-Publication. The CSU Design Team hopes these awards will increase engagement in problem solving and encourage higher quality real-world problem solving by faculty, staff, and students. Increased quantity and quality in problem solving by our campus community is likely to improve the problem-solving skills of our students.

The **We Solve It!** Awards also will recognize students who complete **We Solve It! Reports** each year of their time at CSU. For students who complete four years of problem solving, a graduation honor will be awarded to them. This honor will be identified in print on the graduation bulletin and in part of the regalia worn by the students at graduation. This program will begin in Year Four of the QEP when it will be possible for students to have completed four years of problem solving. This aspect of the **We Solve It!** Awards is designed to encourage repeated problem solving by students (probably in various disciplines/domains), which should generate deeper understanding of problem solving by students.

**How will the We Solve It! Awards improve student problem solving?**
The **We Solve It!** Awards program is designed to motivate and maintain ongoing problem-solving activities that are deemed useful in the real world. Further, the awards program will encourage members of the campus community to become involved in problem solving and to encourage higher quality problem solving by the campus community. By serving as models of high-quality work, Awards recipients can generate interest and provide standards of problem solving. As with the other **We Solve It!** initiatives, increasing the frequency and quality of problem-solving activities by the campus community means that more students will be engaged in problem solving and, therefore, more students will be gaining problem-solving skills.

**Evidence from Literature Regarding Awards:**
Wolcott and Betts (1999) reported that awards provide formal acknowledgement appreciated by faculty in a way that positively affects motivation and that a lack of recognition is an obstacle for
faculty motivation. Huggett et al. (2012) also reported that awards work to motivate faculty, and they offer suggestions on how to develop effective awards programs.

**Models of Awards Programs in Practice:**

Many universities use awards programs to encourage faculty work in particular areas, including Wayne State University’s Outstanding Faculty Mentor Awards, University of Colorado’s awards for excellence in advising and scholarship, and Columbus State’s Outstanding Instructor of Writing Award, instituted during the 2006-2011 QEP.

Many universities also use awards to encourage and motivate student work and participation: University of Georgia, Georgia Southern University, and University of West Georgia have student awards programs for scholarship and/or community service. Columbus State University currently uses awards programs to acknowledge outstanding faculty work in areas of teaching, scholarship, and service, and to acknowledge outstanding student performance within and across disciplines.
Chapter 5
Institutional Involvement and Capability

Broad-based Involvement in QEP’s Development

Recapping the extensive detail provided in Chapters 2 and 3 concerning the QEP’s topic formation, topic selection and subsequent clear focusing of the QEP’s purpose, definitions of key terms, student learning outcomes, five-year goals, and learning environment outcomes, there were literally many hundreds of faculty, staff, students, and community stakeholders who participated on committees, responded to surveys, attended focus groups and open forums, and responded to emails over the course of an entire year during those early phases of the QEP’s development. Clearly, participation was widespread and broad-based during that time.

With the QEP topic selected, the QEP Design Team began work in March 2015 to develop the initiatives, assessments, budget, and implementation plan for We Solve It! The 13-member Design Team included constituents from across the university, including faculty representatives from all colleges, as well as the Assistant Vice President for Student Affairs, the Dean of Libraries, the Director of the Faculty Center for the Enhancement of Teaching and Learning, the Chair of the Institutional Review Board, and the Director of the Center for Career Development.

The Design Team met twice during spring semester 2015. At the first meeting, the Team discussed organization of the QEP document and sources of baseline data for problem-solving skills of students prior to the implementation of the We Solve It! initiatives. The Design Team also discussed the development of the QEP logo and ideas for pilot programs. At the second meeting, members discussed ways to disseminate information about the QEP across campus and how best to use student surveys to collect baseline data. For a summary of activities by the Design Team, see Appendix D.

Two all-day workshops and one Design Team meeting were held during summer 2015. At the first workshop, Design Team members broke into small groups to clarify the learning objectives for the QEP initiatives to enhance student problem solving and the ways to measure growth in student problem solving. At the second workshop, Design Team members generated names for the QEP and identified ways to meet the QEP learning objectives. Faculty members from a variety of disciplines attended the workshop for a panel discussion on their successful use of problem-solving activities in their classes. The Team discussed the role of, and potential candidates for, the QEP lead evaluator. At the third Design Team meeting, members of the Design Team selected “We Solve It!” as the title for the QEP. Design Team members also worked on the problem-solving report and rubric, discussed the QEP budget and incentives for faculty and staff, and discussed using an expanded Tower Day as an outlet for students to present their results from We Solve It! activities.
The Design Team launched a website in the summer of 2015 to disseminate information about We Solve It! and to act as a platform for input from all campus constituents on the development of the report, rubric, and initiatives associated with the QEP.

During the fall semester of 2015, members of the Design Team disseminated information about the QEP across campus, finalized the problem-solving report and rubric, and identified candidates to serve as the QEP Lead Evaluator. Members were also actively working on writing sections of the QEP document.

Drafts of the We Solve It! Report and Rubric were posted on the QEP website with a request for feedback from faculty, staff, and students. Through email, campus members completed short Qualtrics surveys and provided written comments. The Design Team modified both the Report and Rubric to address all suggestions, comments, and concerns from the survey and from emails sent directly to the Design Team co-chairs.

The Team also solicited feedback on early versions of the We Solve It! Faculty Incentives Program via a Qualtrics survey posted on the QEP website. Most respondents reported that they would, if given the opportunity, apply for funding to modify one or more of their courses to improve the problem-solving skills of their students (17 out of 18 respondents). When asked the minimum amount of money that would be needed to buy equipment and supplies to modify one of their courses to enhance the problem-solving skills of their students, most respondents indicated that they would require between $500 - $1000 (11 out of 16). Fourteen out of 17 respondents indicated that they would prefer having more faculty members receive smaller grants than fewer faculty members receiving larger grants (82%). Feedback was also received from administrative staff via emails sent directly to the Design Team co-chairs. All feedback from the surveys and the emails was used to modify to We Solve It! Faculty and Staff Incentives.

In June 2015, members of the Design Team met with 18 undergraduate students from the ROAR Orientation Team to get their feedback about the initiatives and assessments associated with We Solve It! The students on the Orientation Team lead new students and parents on campus tours during eight student orientation sessions in the summer. The students who participated in the focus group included five seniors, nine juniors, and three sophomores. They represented a cross-section of majors: Art History, Biology (n=2), Communication (n=2), Criminal Justice, Engineering, Exercise Science, Health Science, Marketing, Nursing, Psychology, Special Education (n=3), and Theatre Education (n=2). Students in the focus group answered questions in a short survey and then the members of the Design Team led a discussion about the questions. All of the students that participated in the focus group were interested in/excited about the new opportunities that will be available as part of We Solve It! They were especially interested in more opportunities to gain hands-on experience in their fields of study prior to completing their degrees.

To ensure that We Solve It! impacts students from across the academic disciplines, the Design Team sent emails to all department chairs during the summer of 2015. Chairs provided information on how they conceptualized or defined creative, real-world problem solving in their content areas. They also provided examples of typical problems solved in their disciplines, descriptions of their discipline-specific problem-solving processes, and/or instances of problem-solving solutions and strategies from their students.

At the start of the fall semester of 2015 members of the Design Team attended meetings to notify campus members about We Solve It! and to solicit feedback and participation. The
following meetings were attended by Design Team members: Faculty Senate, Chairs Assembly, Meetings for all colleges (when approved by deans), and Department meetings for all departments.

Clearly, throughout the design phase of the QEP’s proposed initiatives, hundreds of members of the CSU campus community continued to be informed about and engaged in helping to shape the content of the QEP.

**Broad-based Involvement in QEP’s Proposed Implementation**

It should be clear from reading Chapters 3 and 4 that **We Solve It!** is a QEP that will have a university-wide impact on the advancement of creative, real-world problem solving skill development for CSU students. The five-year goals of **We Solve It!** is to fundamentally change CSU’s learning environment and campus culture in ways that will significantly strengthen the students’ skill sets for creative real-world problem solving (Discover, Design, Deliver and Reflect). Consequently, the **We Solve It!** initiatives are designed to engage faculty, staff and students in all colleges and instructional departments as well as the co-curricular student life domain in strengthening these skills. Representation from all of those key constituent groups is expected in advisory boards, faculty and staff development opportunities, incentive initiatives, and award ceremonies to raise and praise the level of student achievement in creative real-world problem solving at CSU over the course of the next five years and beyond. Clearly, the aims of **We Solve It!** are wide-ranging and broad-based in their commitment to improve student learning at CSU.

**Institutional Capability**

Through **We Solve It!** CSU will increase the number of faculty and staff that provide curricular and co-curricular opportunities for students to engage in mentored problem-solving activities. To expand the culture of problem solving at CSU, we will build on the best practices already being used within our institution and begin implementing new problem-solving initiatives.

**Ongoing Problem Solving at CSU**

CSU has faculty and staff who are qualified and committed to engaging students in processes involved in solving problems with real-world relevance. Case studies of problem solving by CSU faculty members from a variety of disciplines are described in Table 5.01.

<table>
<thead>
<tr>
<th>Case Study 1: Cultural Geography and the Community (Dr. Amanda Rees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students in CSU’s advanced geography courses take part in community-oriented projects in the city and surrounding counties. Recently one class participated in a project to develop content and interpretive materials for a “History from the River” program for river guides of Whitewater Express, a water-recreation company conducting white water raft tours down the Chattahoochee River rapids running through Columbus. The students mapped the major historical and geological sites along the route, developed micro-histories for the sites, and took the raft tour to ensure that future rafters would be able to see the locations. Students with GIS...</td>
</tr>
</tbody>
</table>
(Geographical Information Systems) expertise developed two map activities: one printed map identified each historic site on the 2.5-mile route; another located and named the rapids. In reflecting on their experiences of bringing theory and practice together, students mentioned their own richer understanding of local history and the impact of humans on the landscape.

Case Study 2: Creative Problem Solving in Theatre (Dr. Becky Becker)

In a production of Mr. Burns: A Post-Electric Play, students found that the third act was actually a mini-musical, but it had no musical score to accompany the script. Students had to create the musical from scratch. To develop music appropriate for the play’s trajectory, students approached the problem from several angles. They looked closely at the text for clues to music that was already being used or implied. They conducted private and collaborative vocal experimentation with the text’s lyrics to discover what might work for them, and researched musical scoring that could be modified to fit the play’s lyrics. In some cases, they made up melodies. The result was a medley based on their textual and creative understanding of the music what would fit the play’s characters. They then worked out how to perform the song and dance medley, which was choreographed by a student choreographer, without instrumentation. The result of this problem-solving process was that the student actors truly owned the work since they had a significant hand in creating it.

Case Study 3: Environmental Science (Dr. Troy Keller)

An effective way to engage students is to challenge them to use research to answer important and applied problems. One interdisciplinary project investigated the feasibility of using algae to remove pollution from wastewater. Graduate students in the Ecology Methods course created a poster, “Growing our way to a cleaner and ‘greener’ University” that one first prize at the EPA (Environmental Protection Agency) Region 4 Youth Symposium. Following up on this project, Dr. Keller and Dr. Jauregui from the D. Abbott Turner College of Business applied for and received an EPA People, Prosperity, and the Planet grant to assess the technical and economic feasibility of using algae to clean wastewater. They incorporated the grant’s research goals into the graduate business and environmental science courses in the fall of 2014. Students successfully accomplished their research goals and competed in the EPA’s National Sustainability Design Expo in Washington, D.C. This project can serve as a model of interdisciplinary education, allowing students from business and science to work collaboratively to help answer key questions related to sustainability. The ultimate goal is to create opportunities that transform students into life-long learners with a passion for serving the greater good.

Case Study 4: Teacher Leader M.Ed. Online Graduate Program (Dr. Iris Saltiel)

Students in this program begin their first course, Adult Learners and Learning, by describing three hypothetical teachers: the “dream” teacher, the “nightmare” teacher, and the “challenging” teacher. They use the Georgia Assessments for the Certification of Educators: Georgia Teacher Leadership Standards to analyze these teachers and post their descriptions to a discussion board. Then students are tasked with leading a committee of their “three teachers” to do a school-wide project, employing adult learning strategies as they work out how to engage their colleagues as peers and facilitate the process toward the project. They post descriptions of how they would work with committee members for class critique and discussion. Through this hypothetical project, students learn to apply strategies of adult learning theories as they acquire skills to facilitate, not direct, the work process. The goal of the assignment is to develop and sustain a trusting, productive, and supportive collaborative group.
During the fall 2015 semester, 17 faculty members from 14 disciplines and three colleges piloted We Solve It! projects in 22 separate classes, ranging from large freshmen lecture-based courses (e.g., PHYS 1111 – 70 students), mid-sized graduate discussion-based courses (e.g., EDUF 6115 – 38 online students), to small honors courses (e.g., PSYC 1101H – 17 students). The diversity of the pilot group demonstrates the capability of our faculty and students to engage in problem solving activities, generate the We Solve It! Reports, and utilize the We Solve It! Rubric across the disciplines. The size of the pilot group was also remarkable in light of the short planning period and lack of both monetary and non-monetary incentives in place for piloting faculty; pilot group faculty participated solely based on their dedication to improving the learning of their students and in their belief and support of We Solve It! By implementing important aspects of the QEP, the pilot group was able to provide valuable feedback for improving the standardized We Solve It! Report and Rubric. The Rubric was updated and modified to address all comments from the pilot group members. The revised version of the Report and Rubric will be used in the spring semester 2016 for faculty and staff implementing We Solve It! activities. The pilot group also successfully implemented a We Solve It! Communities and Consultants program; members of the pilot group met monthly to discuss how they incorporated We Solve It! activities in their classes, student feedback about the Report, and strengths and weakness of the Rubric. The Design Team co-chairs functioned as the Consultants for the pilot group Community.

Real-World Connections

CSU is committed to supporting problem-solving initiatives and is unique in its strong connection to the surrounding community. For example, the Center for Career Development (CCD) strives to enhance student success through the development and implementation of learning opportunities aimed at career preparation and life skills competencies. As a part of these opportunities, the CCD connects to the community through various programs, including employer relations, career/financial success, and community outreach. Its community outreach office partners with over 90 local non-profits in a variety of missions. Students volunteer weekly with organizations such as Boys and Girls Club, House of Heroes, Columbus Area Habitat for Humanity, Midtown Medical Center, and Columbus Botanical Garden. For the past academic year (AY 2014-2015), CSU students served 336,844 community hours. These outreach efforts provide students with a chance to give back to the community while gaining valuable field experience and networking opportunities. The CCD is committed to students’ career success and provides extensive opportunities for community connections through experiential education including internships, cooperative education (co-op), and job shadowing, as well as on-campus recruiting/interviewing, job fairs, and employer site visits. The employer relations program connects students to employment opportunities with more than 650 companies locally, regionally, nationally, and internationally, including continued partnerships with companies such as Aflac, Accounting Principals, Auto Owners Insurance, Columbus Water Works, Enterprise, State Farm, and Waffle House. Additionally, the CCD is engaged in the career-readiness and job preparation of students and provides extensive training in core competency areas such as financial success, communication/interpersonal skills, leadership, professionalism, and practical skills including problem solving. Representatives of local companies including SunTrust, Kinetic, Merrill Lynch, and Goodwill support and partner with the CCD to present these training opportunities. The CCD will be integral to the success of We Solve It!
QEP Structure and Organization

Campus Personnel

University President
The University President is ultimately responsible for administrative oversight of all university initiatives, including CSU’s Quality Enhancement Plan We Solve It! The President is also responsible for informing and updating the Board of Trustees and the Board of Regents about We Solve It! initiatives. The President is on record as being very supportive of the QEP and its full implementation. See his support letter in Appendix E.

Vice Presidents
Reporting to the University President, the Vice Presidents will provide support for the personnel within their areas that are directly responsible for the successful implementation, marketing, and promotion of We Solve It! initiatives. The VP for Academic Affairs will, whenever possible, prioritize We Solve It! budget requests, will support faculty involvement in We Solve It!, and will supervise and evaluate the Director of We Solve It! Center. The VP for Academic Affairs will also provide guidance and recommendations to enhance all initiatives by reviewing and providing feedback from ongoing assessments. See their support letter in Appendix F.

Academic Deans
Reporting to the Provost and Vice President for Academic Affairs, the Academic Deans will support, encourage, oversee, and facilitate faculty involvement in We Solve It! initiatives. Deans will communicate information regarding We Solve It! to Department Chairs, as well as faculty and staff members within each of their Colleges. See their support letter in Appendix G.

Director of We Solve It! Center & Initiatives
Reporting to the Associate Provost for Undergraduate Education, the Director of We Solve It! Center & Initiatives will provide leadership and organization in implementing, assessing, promoting, and disseminating information about all initiatives. (See Figure 5.01 below.) The Director will oversee the work of the Assistant Director of We Solve It! Programs and will work closely with the faculty and staff members of the We Solve It! Advisory Board. The Director will also be responsible for budget management, daily operations, promoting visibility of We Solve It! and completing and submitting all required QEP reports to the institution and to outside agencies. An internal search was completed December 11, 2015, when Dr. Mariko Izumi accepted the position, beginning January 2016.
Organizational Structure

The We Solve It! Leadership will report directly to the Associate Provost for Undergraduate Education, as shown in Figure 5.01.

Figure 5.01. Organizational structure of the CSU constituents involved with the implementation and assessment of We Solve It! initiatives.
**We Solve It! - Columbus State University’s Quality Enhancement Plan**

**QEP Implementation Timeline and Budgetary Expenditures**

This section contains a description of the timing and budgetary commitments made to implement all major QEP initiatives, described in detail in Chapter 4. See Appendix H for a general timeline of planning and implementation of each **We Solve It!** Initiative.

**Supportive Infrastructure & Leadership**

1. **We Solve It! Center**
   The QEP Leadership Team formed a committee in fall semester 2015 to plan the space for the **We Solve It!** Center, which will house the offices of the Director of **We Solve It!** Programs and the Assistant Director. The Center will be housed temporarily in Tucker Hall while Arnold Hall undergoes renovation, to include a portion of the ground floor designed specifically for the QEP Center. The plan is to have the Center fully operational in time for the official implementation of **We Solve It!** in the fall of 2016. Costs for establishing and operating the Center are budgeted at $25,000 in Year One. For subsequent years, $10,000 is budgeted annually to cover the operating costs of the Center.

2. **Director of We Solve It! Center & Initiatives**
   A search for the Director of **We Solve It!** Programs was conducted in fall 2015, and the Director was named in December 2015. The Director will officially begin in January 2016. Initial responsibilities will include hiring an Assistant Director for Assessment and an Administrative Assistant and working with the Associate Provost for Undergraduate Education to select and recruit members for the Advisory Board.

   An annual salary of $70,000 plus fringe benefits ($21,000) is allocated for Year One for the Director of **We Solve It!** Programs, with annual increases in salary budgeted for each year as appropriate. Such salary increases will depend on the performance of the Director and the assessment by the Associate Provost for Undergraduate Education. The Director will teach one course per year to personally demonstrate and experience the provision of creative real-world problem-solving skill development opportunities for students.

3. **Assistant Director of We Solve It! Assessment**
   An Assistant Director of **We Solve It!** Assessment will be hired by the Director of **We Solve It!** Center and will begin work in fall 2016. The Assistant Director for Assessment will be a full-time employee with some teaching responsibilities, and an annual salary of $60,000 plus fringe benefits ($18,000 based on 30% of the annual salary). Annual increases in salary will be budgeted for subsequent years as appropriate, depending on the performance of the Assistant Director and the assessment by the Director of **We Solve It!** Programs. The Assistant Director will teach one course per semester to personally demonstrate and experience the provision of creative real-world problem-solving skill development opportunities for students.

4. **Administrative Assistant to the Director and Assistant Director**
   A full-time (40 hours per week) Administrative Assistant position for the Center will be filled when Year One commences at an annual salary of $28,080 plus benefits ($7,862).

5. **We Solve It! Advisory Board**
   The Advisory Board will contain faculty, staff, and community members who collect and report feedback, advise the leadership, and help disseminate **We Solve It!** initiatives. This group will work voluntarily and, therefore, no money will be allocated for support of this initiative.
6. We Solve It! Web Manager
In October 2015, the We Solve It! Report and Rubric were made available online on CougarView (i.e., CSU’s Desire2Learn learning management system) for students, faculty and staff piloting We Solve It! initiatives. In fall 2016, a CSU graduate assistant will be hired to act as the We Solve It! Web Manager who will help to organize student reports and scored rubrics generated during the fall 2015 pilots and will begin maintaining the We Solve It! Website & Virtual Resource Room. The Manager will also provide help and support for students, faculty, and staff members accessing and utilizing the online report and rubric.

The $12,000 budgeted for the Manager each year includes an $6,000 stipend ($3,000 per semester) and a $4,000 tuition waiver for the student ($2,000/semester).

7. We Solve It! Website & Virtual Resource Room
In the summer of 2015, the We Solve It! Website was updated and launched by the QEP Design Team. Starting in fall 2016, the We Solve It! Manager will take over management of the Website to ensure that the campus community is kept up-to-date on important information and developments regarding We Solve It!. Costs are included in the first two years of the QEP for the development of the Website ($1,500 total).

8. We Solve It! Marketing
In Summer 2015, the QEP Design Team and University Relations personnel created the official logo for We Solve It! and updated and launched the We Solve It! Website. During the start of the fall 2015 semester, pens with the We Solve It! logo were distributed to faculty and staff members to raise awareness across campus about the QEP. The Design Team sent emails to all faculty and staff members during the summer and fall of 2015 promoting the QEP and asking for feedback on the We Solve It! Report and Rubric, as well as the Faculty and Staff Incentive Initiatives, which were both posted on the We Solve It! Website. Members of the QEP Design Team attended fall semester 2015 college and departmental meetings to notify campus members about We Solve It! and to solicit feedback and participation.

A committee was formed in fall 2015 by the QEP Leadership Team to develop an official marketing plan for We Solve It!. In preparation for the on-site visit in February 2016 and for the launch in spring 2016, several modes of marketing are being planned to raise awareness and to communicate its purpose and many benefits to the community both on and off campus. In both Years One and Two of the QEP, $4,000 is budgeted for promotions to ensure that awareness about We Solve It! reaches all on- and off-campus constituents. After the initial marketing campaign, it is anticipated that fewer resources may be needed to maintain involvement.

Faculty & Staff Development

9. We Solve It! Workshops
Beginning fall semester 2016, The Director of We Solve It! Center & Initiatives will organize and lead one-day workshops at the start of each semester. The workshops will provide training and support for faculty and staff who are engaged in We Solve It! problem-solving activities or who are interested in learning more about getting involved. The Director of We Solve It! Center & Initiatives will also train faculty and staff members to use the standardized We Solve It! Reports and Rubrics during the Workshops. All workshops will be videotaped and posted on the Website & Virtual Resource Room. Costs associated with the all-day Workshops (approximately $2,000 per workshop) will include renting space, if necessary, and food for Workshop participants.
10. We Solve It! Communities & Consultants
The We Solve It! Communities & Consultants Program will also be implemented starting in fall 2016, under the direction of the Director of Center & Initiatives. Up to five CSU faculty members with expertise in problem solving will be selected to act as We Solve It! Consultants each year ($5,000). Each consultant will receive a $1,000 stipend for mentoring other faculty members who are participating in We Solve It! Communities. Other costs associated with the communities will include providing refreshments (2-4 per semester) during meetings and purchasing shared resources for group members (e.g., books).

There will also be a student-level consultants program. Up to eight CSU undergraduate students will be selected to act as peer mentors each year and they each will receive a small stipend/scholarship ($250/semester) for mentoring other students on We Solve It! processes.

11. We Solve It! Days
We Solve It! Days will begin in spring 2017. Money budgeted for these half-day working sessions ($1,500 - $4,000 per year) will cover costs of refreshments and small stipends for support staff.

12. We Solve It! External Conferences
The Director of We Solve It! Center and Initiatives will implement the We Solve It! External Conferences beginning fall 2016. The Director will provide up to $1,000 to support the conference attendance of two faculty members per college or the student affairs division per year to attend a professional conference ($7,000 - $8,500 total expenditure per year) where real-world problem solving is featured or where the individuals will make a conference presentation on creative, real-world problem solving at CSU. The individuals receiving these travel funds will be obligated to prepare a written report of what was learned from that experience to share with CSU colleagues, which will be posted on the Website and Virtual Resource Room.

13. We Solve it! Expert Dialogues
The Expert Dialogues will begin in fall 2017. Two to three (depending on travel costs - $5,000 - $5,500 per year) outside experts in real-world problem solving will be invited to campus each year to provide meaningful dialogue with campus members about problem solving.

14. We Solve It! External Connections
The External Connections will begin in fall 2017. Costs associated with the We Solve It! External Connections will include catering in food for participants ($1,000 per year).

Faculty and Staff Incentives

Under the leadership of the Director of We Solve It! Center & Initiatives, all faculty and staff incentive initiatives (described in detail in Chapter 3) will begin in fall 2016, including the competitive We Solve It! Project Grants and the Course-Based We Solve It! Stipends, as well as the We Solve It! Evaluation Fees. Requests for proposals will be solicited at the start of each semester, beginning fall semester 2016, and the We Solve It! Advisory Board will select recipients for the Project Grants and the Course-Based Stipends. Any faculty or staff member utilizing problem-solving activities but who are not recipients of the competitive grants or stipends will be eligible to receive We Solve It! Evaluation Fees for the We Solve It! Reports they evaluate, starting in fall 2016.
15. **We Solve It! Project Grants**
Competitive **We Solve It!** Project Grants, that range from $1,000 - $5,000, will be awarded to 10 - 20 faculty or staff members each year (total per year = $30,000).

16. **Course-Based We Solve It! Stipends**
Course-Based **We Solve It!** Stipends, that range from $500 - $1,500, will be awarded to 10 - 30 faculty and/or staff members each semester (total per year = $20,000-$24,000).

17. **We Solve It! Evaluation Fees**
Faculty and staff members who evaluate their students’ completed **We Solve It! Reports** using the **We Solve It! Rubric** will receive a $10.00 **We Solve It!** Evaluation Fee per Report. $5,000 - $7,000 is budgeted for such fees over the five-year plan.

18. **We Solve It! Certificates**
Also starting in fall semester 2016, faculty and staff members who receive a competitive Project Grant or Course-Based Stipend will receive **We Solve It!** Certificates to be used to document their involvement in **We Solve It!** initiatives for their annual performance reviews. A small sum ($150) is budgeted each year for the costs of printing the Certificates.

**Celebration and Recognition**

19. **We Solve It! Celebration (Tower Day)**
In the summer and fall of 2015, QEP Design Team members worked with the Dean of the Honors College to plan an expanded Tower Day (the **We Solve It!** Celebration) that will act as an outlet for students to communicate the results of their **We Solve It!** endeavors. Tower Day is the annual showcase of undergraduate research and creative endeavors at CSU, where students from across the disciplines present their scholarly activities to the CSU community. Tower Day occurs in the spring each year on CSU’s main campus, on a day with regularly scheduled classes.

The new expanded **We Solve It!** Celebration is planned to be launched in the spring of the 2017-2018 Academic Year and will occur twice each year, once in the fall and again in the spring to offer more opportunities for CSU students to present the results of their problem-solving activities. Each semester there will be a day within the CSU Academic Calendar devoted to the Celebration without regularly scheduled classes, so that more members of the campus community can participate and attend.

The costs associated with the new **We Solve It!** Celebration include promoting and organizing the event, as well as providing refreshments for participants and attendees each semester ($11,000 - $13,075 per year).

20. **We Solve It! Co-Director of Tower Day**
In the fall 2015, Dr. Hannah Israel, a faculty member in the Department of Art, agreed to serve as the **We Solve It!** Co-Director of Tower Day. The Co-Director will work closely with the Dean of the Honors College to plan the first **We Solve It!** Celebration that will be held in fall 2017. The Co-Director will receive a small stipend ($5,000 per academic year) to help organize the new **We Solve It!** Celebration, and the stipend will begin fall 2017.

21. **We Solve It! e-Publication**
Students who present the results of their problem-solving activities at the **We Solve It!** Celebration will have their abstracts published in the **We Solve It!** e-Publication. The first issue of the e-Publication will be created during the spring of 2017. CSU undergraduate students from
We Solve It! - Columbus State University’s Quality Enhancement Plan

the Department of English majoring in professional writing and students from the Department of Communications will be recruited and paid to create the e-Publication. The professional writing and communications major(s) will work closely with the We Solve It! Web Manager and the Director of We Solve It! Center & Initiatives to assemble problem-solving works and disseminate them via the We Solve It! Website or other means. The e-publication will be launched each year at the We Solve It! Celebration (Tower Day).

The professional writing majors from the Department of English will receive hourly payment for work on their creation of the We Solve It! e-Publication. Up to $1,500 per year is budgeted to pay these students.

22. We Solve It! Awards
At the inaugural We Solve It! Celebration in fall 2017, the first We Solve It! Awards will be distributed to faculty, staff, and students that have achieved excellence in problem-solving activities. The We Solve It! Advisory Board will select recipients of the awards. The first We Solve It! Graduation Honors, for students who have completed four years of problem-solving at CSU, will be awarded at the spring 2020 graduation ceremony.

Funding ($350 – $500 per year) is budgeted for printing We Solve It! Award certificates, as well as for graduation chords that will be worn by the students who have completed four years of problem solving at CSU.

Assessment

23. Critical Thinking Assessment Test
The Critical Thinking Assessment Test (CAT) will be administered beginning in 2016-2017 to assess students’ overall problem solving ability. This will be administered specifically to students in the First Year Seminar (or other core curriculum courses) and seniors in upper division We Solve It! Courses. Approximately 270 tests will be purchased ($5,175) and scored annually ($11,750) for an estimated annual expense of $16,925.

Budget

We Solve It! is a major priority for CSU, and the institution is fully committed to supporting all We Solve It! initiatives. The president, chief academic officer, and chief fiscal officer have accepted this budget plan and are committed to funding it. The QEP Design Team carefully developed the We Solve It! implementation plan and established annual budgets (see Table 5.02) to reflect the anticipated resources needed to carry out the plan. As the implementation of We Solve It! progresses, budget adjustments likely will be needed. All budget-related expenses will be tracked and evaluated by the Director of We Solve It! Center & Initiatives under the supervision of the Provost and Vice President for Academic Affairs.
We Solve It! - Columbus State University’s Quality Enhancement Plan

Table 5.02 *Budget for We Solve It! Initiatives.*

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<tr>
<td>8 We Solve It! Marketing (Materials)</td>
<td>4,000</td>
<td>4,000</td>
<td>4,000</td>
<td>4,000</td>
<td>3,000</td>
</tr>
<tr>
<td><strong>Faculty &amp; Staff Development</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 We Solve It! Workshop</td>
<td>5,075</td>
<td>4,000</td>
<td>4,000</td>
<td>4,000</td>
<td>3,000</td>
</tr>
<tr>
<td>10 We Solve It! Communities &amp; Consultants</td>
<td>7,000</td>
<td>7,000</td>
<td>7,000</td>
<td>7,000</td>
<td>7,000</td>
</tr>
<tr>
<td>11 We Solve It! Days</td>
<td>1,500</td>
<td>3,000</td>
<td>3,500</td>
<td>3,750</td>
<td>4,000</td>
</tr>
<tr>
<td>12 We Solve It! External Conferences</td>
<td>7,000</td>
<td>8,000</td>
<td>8,000</td>
<td>8,250</td>
<td>8,500</td>
</tr>
<tr>
<td>13 We Solve It! Expert Dialogues</td>
<td>0</td>
<td>5,000</td>
<td>5,500</td>
<td>5,500</td>
<td>5,500</td>
</tr>
<tr>
<td>14 We Solve It! External Connections</td>
<td>0</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td><strong>Faculty &amp; Staff Incentives</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 We Solve It! Project Grants</td>
<td>30,000</td>
<td>30,000</td>
<td>30,000</td>
<td>30,000</td>
<td>30,000</td>
</tr>
<tr>
<td>16 Course-Based We Solve It! Stipends</td>
<td>20,000</td>
<td>23,575</td>
<td>24,000</td>
<td>24,000</td>
<td>24,000</td>
</tr>
<tr>
<td>17 We Solve It! Evaluation Fees</td>
<td>5,000</td>
<td>6,000</td>
<td>6,500</td>
<td>7,000</td>
<td>7,000</td>
</tr>
<tr>
<td>18 We Solve It! Certificates</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td><strong>Celebration and Recognition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 We Solve It! Celebration (Tower Day)</td>
<td>0</td>
<td>11,000</td>
<td>12,575</td>
<td>13,075</td>
<td>13,075</td>
</tr>
<tr>
<td>20 We Solve It! Co-Director of Tower Day</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
</tr>
<tr>
<td>21 We Solve It! e-Publication</td>
<td>750</td>
<td>1,500</td>
<td>1,500</td>
<td>1,500</td>
<td>1,500</td>
</tr>
<tr>
<td>22 We Solve It! Awards</td>
<td>350</td>
<td>350</td>
<td>400</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td><strong>Assessment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23 Critical Thinking Assessment Test</td>
<td>16,925</td>
<td>16,925</td>
<td>16,925</td>
<td>16,925</td>
<td>16,925</td>
</tr>
<tr>
<td><strong>Projected Annual Cost</strong></td>
<td>$343,750</td>
<td>$354,500</td>
<td>$360,550</td>
<td>$364,150</td>
<td>$365,150</td>
</tr>
</tbody>
</table>

¹Year One includes the initial set up costs of the Center as well as the annual operating expenses.
²All personnel costs reflect the salary and benefits appropriate to the position.
Chapter 6: Assessment & Improvement Plans

The We Solve It! assessment plan addresses two overarching goals that describe changes sought through the implementation of the Quality Enhancement Plan (QEP). This chapter will articulate the two goals, outline the student learning outcomes and learning environment outcomes for the respective goals, define the assessment methods for each outcome, specify the criteria established for each outcome, describe the proposed analysis plan, and clarify the establishment of baseline data. Recommendations from the on-site reaffirmation committee are embedded and addressed throughout this chapter.

**Goal 1:** Enhance student ability to solve real-world problems, thereby enhancing critical analysis, by discovering problems, designing solutions, delivering those solutions, and reflecting on the problem-solving process.

Problem solving operationalized as product and process is in line with Pike’s (2011) exemplar assessment of problem solving through multiple measures of this complex construct as an outcome in higher education. The first goal of the Quality Enhancement Plan is to enhance student ability to solve real-world problems, thereby enhancing critical analysis, by discovering problems, designing solutions, delivering those solutions, and reflecting on the problem-solving process. Embedded in this goal is the improvement of the student’s overall ability to creatively solve real-world problems as well as the improvement of the student’s ability in performing each of the four elements that comprise the problem solving process. Because each element of the process is integral to the product of overall problem solving ability, it is necessary that the student learning outcomes of the QEP address both the elements in the problem-solving process (i.e., discover, design, deliver, and reflect) as well as the final product - enhanced overall problem-solving ability (see Table 1).

**Table 1. We Solve It! Student Learning Outcomes**

<table>
<thead>
<tr>
<th>Columbus State University seniors will:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SLO 1. DISCOVER:</strong> Demonstrate high levels of analytical skills in identifying and diagnosing challenging, ill-defined problems in everyday settings and in critically exploring and evaluating many possible solutions.</td>
<td></td>
</tr>
<tr>
<td><strong>SLO 2. DESIGN:</strong> Demonstrate high levels of logic and creativity in designing reasonable solutions to diagnosed real-world problems.</td>
<td></td>
</tr>
<tr>
<td><strong>SLO 3. DELIVER:</strong> Articulate highly sophisticated and persuasive presentations of proposed solutions to stakeholders of diagnosed real-world problems.</td>
<td></td>
</tr>
<tr>
<td><strong>SLO 4. REFLECT:</strong> Exhibit high levels of insight and awareness of what was learned from the completion of real-world problem-solving experiences and what should be done differently in the future to improve their DISCOVER, DESIGN, DELIVER, and REFLECT skill levels and performances.</td>
<td></td>
</tr>
<tr>
<td><strong>SLO 5. OVERALL PROBLEM-SOLVING ABILITY:</strong> Demonstrate an enhanced ability to creatively solve real-world problems.</td>
<td></td>
</tr>
</tbody>
</table>
We Solve It! - Columbus State University’s Quality Enhancement Plan

Assessment Data Collection Tools for Student Learning Outcomes

The Reaffirmation Committee observed that the original QEP’s assessment plans relied heavily on student self-assessment of their performance. The We Solve It! Rubric and the Critical Thinking Assessment Test will provide direct measures of student performance. The student self-evaluation on the We Solve It! Report is an indirect measure that will also be used to assess Criteria #3 for each SLO as student self-evaluations are compared to the evaluations faculty/staff members. Each assessment method is described below.

We Solve It! Rubric

The revised We Solve It! Rubric is an appropriate evaluation measure of student work products in creative, real-world problem solving (Appendix I). As noted in the review of relevant literature in the field of problem solving processes, key components of problem-solving cited in the literature are incorporated into the conceptual model and content of the We Solve It! Rubric. The original We Solve It! Rubric has been replaced with an adaptation of the LEAP VALUE Problem-Solving Rubric. This is one of 16 rubrics designed by teams of educators and other content area experts of the Valid Assessment of Learning in Undergraduate Education (VALUE) project sponsored by the Association of American Colleges and Universities (AAC&U). The rubric aligns with the five student learning outcomes identified in the QEP. The institution also added an element to address creative, real-world problem-solving through the use of innovative thinking from the LEAP VALUE Creative Thinking Rubric. The revised We Solve It! Rubric will provide data that will inform the university on how well students are able to creatively solve real-world problems.

The LEAP VALUE rubrics were designed to evaluate common student learning outcomes of colleges and universities. The AAC&U posits that the rubrics have face and content validity, as evidenced by the robust use of content experts in developing the rubrics and the rubrics being utilized by over 3000 organizations and academic entities. The AAC&U Rubric development team also assessed reliability with 4 of their rubrics using 44 faculty members from differing academic institutions and disciplines and without completing calibration training. They found that the study participants were in perfect agreement approximately 32% of the time. When standards were relaxed from perfect agreement to approximate agreement, inter-rater agreement ranged between 57% and 80% (Rhodes & Finley, 2013). Rhodes and Finley (2013) also note that the rubric can be adjusted to meet institutional context, thus some elements were modified to correlate specifically to the We Solve It! Quality Enhancement Plan.

Students, faculty, and staff members will be trained in the use of the We Solve It! Rubric. It should be clear throughout the QEP that faculty and staff will be instructing students in the We Solve It! model of DISCOVER, DESIGN, DELIVER, and REFLECT for the advancement of their overall creative real-world problem-solving ability. Faculty and staff will also be instructing students in the use and interpretation of the We Solve It! Rubric.

A description of the use of We Solve It! Rubric is as follows:

1. Student will complete a problem-solving assignment (e.g. research paper, presentation, etc.) and the We Solve It! Report to describe their problem-solving process and rate their overall problem solving ability. The student will then self-assess their skill in each element of problem solving using the We Solve It! Rubric.

2. The faculty member will assess the student’s problem-solving assignment (e.g. research paper, presentation, etc.) and We Solve It! Report using the We Solve It! Rubric.
3. A secondary set of trained raters will annually assess a random sample of 25% of the student We Solve It! Reports using the We Solve It! Rubric.

Secondary Raters
The pilot process has shown that individual faculty assessment might be influenced by outside concerns connected to grading student work. Faculty will be trained on appropriate use of the rubric and, as an additional validity check, a random sample of 25% of the reports will also be evaluated by a team of faculty and staff each year calibrated and trained on the use of the rubric for institutional assessment.

Clearly, exceptional skill level scores require achieving the highest possible performance ratings consistently and uniformly. That is, after all, a true definition of accomplished. It should be noted that We Solve It! Reports which are highly rated by the sponsoring faculty or staff member as reflecting Competent or Accomplished skill will need to obtain comparable ratings by another independent faculty or staff member, confirming such high achievement levels, before those reports are spotlighted for their excellence in public recognitions or used for granting awards for distinguished accomplishment.

The institution will electronically archive the We Solve It! Reports, rubrics and assignments. Over the course of the QEP’s full implementation from Year 1 to Year 5, this archive will grow cumulatively and substantially. Data will be drawn from the archive by independent raters to analyze the extent to which the five SLOs are achieved.

Critical Thinking Assessment Test
Students will be administered the Critical Thinking Assessment Test (CAT) to assess their overall problem solving ability. This will be administered specifically to students in the First Year Seminar (or other core curriculum courses) and seniors in upper division We Solve It! Courses. To ensure 95% confidence in our estimates, a sample size of approximately 235 seniors is required.

The Critical Thinking Assessment Test requires respondents to create short essays to respond to real-world scenarios, and each response is assessed using a detailed rubric. Prior work shows the CAT is sensitive to changes in critical thinking over time with the mean critical thinking score for seniors from 200 institutions increasing to 18.5. (Harris, Stein, Haynes, Lisic,& Leming, n.d.)

Because of the emphasis on faculty assessment using the rubrics, training sessions are offered by the Center for Assessment and Improvement in Learning at Tennessee Technological University to support reliability in scoring. The CAT has demonstrated a Cronbach’s alpha of .70, scoring reliability of .92 between 2 raters, and test-retest reliability greater than .80. The test developers argue the CAT has good face validity for measuring critical thinking, and has demonstrated significant relationships (or criterion validity) with GPA, SAT scores, ACT scores, the California Critical Thinking Skills Test, the CAAP Critical Thinking Module, and five items from the National Survey of Student Engagement.

The tests will be scored by assessment team with the Center for Assessment and Improvement of Learning at Tennessee Technological University in the baseline year. CSU will send a team of faculty and staff to a regional Train-the-Trainer session to support faculty and staff scoring subsequent administrations of this tool.

We Solve It! Report
Students will complete the We Solve It! Report to assess their overall problem solving ability as well as their ability in each of the elements of the problem-solving process. The report will be completed electronically at the time that the problem-solving assignment is due. It is comprised of
questions addressing discovery, design, delivery, and reflection as well as an assessment of the student’s own problem-solving ability. The Report has been revised based on the implementation of the pilot and the overall revisions suggested by the Reaffirmation Committee (see Appendix L for the revised We Solve It! Report).

Completion of the We Solve It! Report by students will follow a standard content outline that requires students to provide detailed descriptions of their real-world problem-solving experience. The content outline contains specific items for each of the five SLOs of DISCOVER, DESIGN, DELIVER, REFLECT, and OVERALL PROBLEM-SOLVING ABILITY. The content in each element corresponds to the wording of the SLO and the related items in the We Solve It! Rubric.

The Report concludes with several items of identifying information. The report can be submitted by a single student or a team of identified students. Student identification numbers are requested to enable aggregation and disaggregation of the Reports as needed to include analysis by criterion, individual student, class level (i.e., freshman, sophomore, junior, senior, and graduate), discipline, and course level. The institution will provide an online method used for completing and submitting the We Solve It! Report which will be stored in CSU’s We Solve It! archive.

Overview of Assessment Plans for Student Learning Outcomes

In this QEP, the We Solve It! Reports are student work products whose content describes the students’ We Solve It! experiences of creative real-world problem solving that were incorporated into their CSU courses or co-curricular activities. The content of those Reports will be assessed in the QEP using a standardized rating form called the We Solve It! Rubric to determine the skill level at which each of the five SLOs were achieved by the students in their real-world problem-solving experiences. The rubric operationally defines four levels of student performance or skill in creative real-world problem solving (i.e., Minimal, Developing, Competent, and Accomplished) for each of the five SLOs (i.e., DISCOVER, DESIGN, DELIVER, REFLECT, and OVERALL PROBLEM-SOLVING ABILITY).

The QEPs assessments are based on direct measures of student performance (i.e., faculty/staff scoring of the We Solve It! Rubric; secondary raters of the We Solve It! Rubric; and use of the Critical Thinking Assessment Test). Indirect measures (i.e., student completion of the We Solve It! Report and the We Solve It! Rubric) are used when student rubric ratings are compared to the corresponding rubric ratings completed by their faculty/staff member. The use of such direct and indirect measures of student skill level for each of the SLOs will be central to the determination of the extent to which each SLO is achieved.

Four specific criteria have been established to assess each of the five SLOs in the We Solve It! Quality Enhancement Plan. The criteria are as follows:

Between the first year of implementation (2016-2017) and the fifth year of implementation (2020-2021):

1. All CSU seniors completing a problem-solving task will perform at the level of “competent” or “accomplished” on each of the five items on the We Solve It! Rubric.
2. The number of CSU seniors rated by the faculty and staff as “competent” or “accomplished” on all five items on the We Solve It! Rubric will increase by 5% annually.
3. Differences between the self-evaluations of seniors using the We Solve It! Rubric and the corresponding faculty or staff evaluations of seniors using the We Solve It! Rubric will decrease by 5% annually.
4. The Critical Thinking Assessment Test scores of CSU Seniors will improve each year and will be at or above the national norm of 18.5 in critical thinking by the conclusion of the fifth year of the plan.

Table 2 illustrates the student learning outcomes and their corresponding assessment instruments, criteria for success. The specific assessment analysis plan for each criteria follows the table.

Table 2: Assessment of Student Learning Outcomes

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Instrument</th>
<th>Specific, measurable, and quantifiable criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SLO 1. DISCOVER:</strong> Demonstrate high levels of analytical skill in identifying and diagnosing challenging, ill-defined problems in everyday settings and in critically exploring and evaluating many possible solutions.</td>
<td>We Solve It! Rubric (Faculty, staff, secondary raters) We Solve It! Report/Rubric (Student)</td>
<td>1. All CSU seniors completing a problem-solving task will earn a minimum rating of “competent” or “accomplished” on the discover element(s) in the We Solve It! Rubric. 2. The number of CSU seniors rated by the faculty and staff as “competent” or “accomplished” on the discover element(s) on the We Solve It! Rubric will increase 5% annually. 3. Differences between the self-assessment of CSU seniors on the discover element(s) of the We Solve It! Rubric and the corresponding faculty or staff evaluations of seniors on the discover element(s) of the We Solve It! Rubric will decrease by 5% annually.</td>
</tr>
<tr>
<td><strong>SLO 2. DESIGN:</strong> Demonstrate high levels of logic and creativity in designing reasonable solutions to diagnosed real-world problems.</td>
<td>We Solve It! Rubric (Faculty, staff, secondary raters) We Solve It! Report/Rubric (Student)</td>
<td>1. All CSU seniors completing a problem-solving task will earn a minimum rating of “competent” or “accomplished” on the design element(s) in the We Solve It! Rubric. 2. The number of CSU seniors rated by the faculty and staff as “competent” or “accomplished” on the design element(s) on the We Solve It! Rubric will increase by 5% annually.</td>
</tr>
</tbody>
</table>
**We Solve It! - Columbus State University’s Quality Enhancement Plan**

<table>
<thead>
<tr>
<th>SLO 3. DELIVER:</th>
<th>Articulate highly sophisticated and persuasive presentations of proposed solutions to stakeholders of diagnosed real-world problems.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>We Solve It! Rubric</strong></td>
<td>(Faculty, staff, secondary raters)</td>
</tr>
<tr>
<td><strong>We Solve It! Report/Rubric (Student)</strong></td>
<td></td>
</tr>
<tr>
<td>1. All CSU seniors completing a problem-solving task will earn a minimum rating of “competent” or “accomplished” on the deliver element(s) in the <strong>We Solve It! Rubric</strong>.</td>
<td></td>
</tr>
<tr>
<td>2. The number of CSU seniors rated by the faculty and staff as “competent” or “accomplished” on the deliver element(s) on the <strong>We Solve It! Rubric</strong> will increase by 5% annually.</td>
<td></td>
</tr>
<tr>
<td>3. Differences between the self-assessment of CSU seniors on the deliver element(s) of the <strong>We Solve It! Rubric</strong> and the corresponding faculty or staff evaluations of seniors on the deliver element(s) of the <strong>We Solve It! Rubric</strong> will decrease by 5% annually.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 4. REFLECT:</th>
<th>Exhibit high levels of insight and awareness of what was learned from the completion of real-world problem-solving experiences and what should be done differently in the future to improve their DISCOVER, DESIGN, DELIVER, and REFLECT skill levels and performances.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>We Solve It! Rubric</strong></td>
<td>(Faculty, staff, secondary raters)</td>
</tr>
<tr>
<td><strong>We Solve It! Report/Rubric (Student)</strong></td>
<td></td>
</tr>
<tr>
<td>1. All CSU seniors completing a problem-solving task will earn a minimum rating of “competent” or “accomplished” on the reflect element(s) in the <strong>We Solve It! Rubric</strong>.</td>
<td></td>
</tr>
<tr>
<td>2. The number of CSU seniors rated by the faculty and staff as “competent” or “accomplished” on the reflect element(s) on the <strong>We Solve It! Rubric</strong> will increase by 5% annually.</td>
<td></td>
</tr>
<tr>
<td>3. Differences between the self-assessment of CSU seniors on the reflect element(s) of the <strong>We Solve It! Rubric</strong> and the <strong>We Solve It! Report/Rubric (Student)</strong> will decrease by 5% annually.</td>
<td></td>
</tr>
</tbody>
</table>
We Solve It! - Columbus State University’s Quality Enhancement Plan

| SLO 5. **OVERALL PROBLEM-SOLVING ABILITY**: Demonstrate an enhanced ability to creatively solve real-world problems. | We Solve It! Rubric (Faculty, staff, secondary raters)  
We Solve It! Report/Rubric (Student)  
Critical Thinking Assessment Test ® | 1. All CSU seniors completing a problem-solving task will earn a minimum rating of “competent” or “accomplished” on the Overall Problem-Solving Ability element in the We Solve It! Rubric.  
2. The number of CSU seniors rated by the faculty and staff as “competent” or “accomplished” on the Overall Problem-Solving Ability element on the We Solve It! Rubric will increase by 5% annually.  
3. The Critical Thinking Assessment Test scores of CSU Seniors will improve each year and will be at or above the national norm by the conclusion of the fifth year of the plan. |

**Specific Assessment Analysis for Student Learning Outcomes**

The extent to which the five SLOs are achieved will be analyzed by the four criteria presented above. Descriptive statistics will be produced showing the frequency and percentage distributions of the students’ demonstrated skill through the faculty/staff completion of the We Solve It! Rubric across the skill levels from Minimal to Accomplished for each SLO. The scores from the CAT will also provide descriptive statistics used to demonstrate the extent to which students demonstrate the learning outcomes. The results for Year 1 (i.e., the first year of the We Solve It! model’s incorporation into educational experiences at CSU) will constitute the QEP’s baseline, against which the results from subsequent years will be compared for evidence of improvement. ANOVAs will be used to determine whether there are statistically significant increases in SLO student performance in subsequent years.

It should be noted that the wording of the SLOs contains the expectation that DISCOVER, DESIGN, DELIVER, REFLECT, and OVERALL PROBLEM-SOLVING skill levels will be high for CSU seniors. The extent to which such high levels of skill will be demonstrated annually by CSU seniors in their We Solve It! Reports over the next five years will be a principal focus of the QEP’s assessment plans. Certainly, improvements are expected in the percentages of seniors who demonstrate high levels of creative real-word problem solving in their We Solve It! Reports over the course of the next five years. The success of the QEP will be based more on the improvement of demonstrated skills by seniors in the DISCOVER, DESIGN, DELIVER, REFLECT, and OVERALL PROBLEM-SOLVING components of creative real-world problem solving.
**Specific Assessment Analysis for Criteria 1**
Criteria 1: All CSU seniors completing a problem-solving task will perform at the level of “competent” or “accomplished” on each of the five items on the We Solve It! Rubric.

The We Solve It! Rubrics completed by faculty/staff for seniors will be analyzed to determine the extent to which Criteria 1 is achieved annually from Year 1 to Year 5 for the elements of DISCOVER, DESIGN, DELIVER, REFLECT, and OVERALL PROBLEM-SOLVING. For each of the five SLOs, the skill level ratings of seniors will be clustered into two groups—one for those with ratings of Accomplished or Competent ratings and the other for those with ratings of Minimal or Developing. The proportional distributions of those two skill categories of seniors from Years 2 through 5 will be compared to those for the Year 1 baseline to determine the extent of improvement and trends in improvement in these creative real-world problem solving skills over the course of the QEP’s full implementation. By Year 5, the proportion (percentage) of seniors with Accomplished or Competent skill scores on each of the five SLOs will be compared to the proportion of seniors with those high skill levels in the Year 1 baseline to determine the extent to which the expected doubling of those high skill levels has occurred and whether such improvement has been realized for all SLOs. Annual assessment results that do not meet expectations will be used develop targeted strategies for corrective action in specific SLO areas of identified weakness.

**Specific Assessment Analysis for Criteria 2**
Criteria 2: The number of CSU seniors rated by faculty or staff as accomplished or competent on each of the five items on the We Solve It! Rubric will increase by 5% annually from Years 2-5 as compared to the Year 1 baseline data.

The data analysis for this criteria uses the ratings on the We Solve It! Rubric completed by faculty/staff for an analysis of the extent to which this criteria is achieved from Year 1 to Year 5 of the QEP’s implementation. The number of seniors placing in each category on the rubric will be calculated and compared year-to-year to determine whether the 5% increase has been achieved. Assessment results that deviate from expectations will lead to the implementation of different or additional strategies to produce the desired year-to-year gains in SLO skill levels.

**Specific Assessment Analysis for Criteria 3**
Criteria 3: Differences between the self-evaluations of seniors using the We Solve It! Rubric and the corresponding faculty or staff evaluations of seniors using the We Solve It! Rubric will decrease by 5% annually.

The data analysis for this criteria uses the ratings on the We Solve It! Rubric completed by the faculty/staff will be compared to the rating on the rubric completed by the seniors. This will be analyzed using an ANOVA to determine the extent to which differences between the groups remain unchanged or shrink to statistically insignificant each year from Year 1 to Year 5. Assessment results that do not meet expectations will be used to re-examine and modify instructional strategies to help students better understand the elements of creative real-world problem solving.

**Specific Assessment Analysis for Criteria 4**
Criteria 4: The Critical Thinking Assessment Test scores of CSU Seniors will increase annually from Years 2-5 as compared to the Year 1 baseline data and will be at or above the national norm by the conclusion of the fifth year of the plan. Assessment results that do not meet expectations will be used to re-examine and modify instructional strategies related to students’ overall problem-solving ability.
The second goal of the We Solve It! Quality Enhancement Plan is to cultivate a learning environment of real-world problem solving. This goal will be achieved through five outcomes which will result in changes in the campus culture or learning environment.

Table 3: We Solve It! Learning Environment Outcomes

<table>
<thead>
<tr>
<th>Learning Environment Outcome</th>
<th>Assessment Method</th>
<th>Specific, measurable, and quantifiable criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEO 1. Maintain a high level of positive ratings of QEP leadership and initiatives on the annual We Solve It! Effectiveness Survey.</td>
<td>We Solve It! Effectiveness Survey</td>
<td>At least two-thirds of the annual We Solve It! Effectiveness Survey ratings for QEP leadership and initiatives are expected to be in the “effective” or “highly effective” categories each year, with a majority of the ratings falling in the highly effective category by the fifth year.</td>
</tr>
<tr>
<td>LEO 2. Implement effective training programs/incentives for campus members in the use QEP real-world problem-solving assignments in the curriculum.</td>
<td>Faculty and Staff development survey</td>
<td>At least two-thirds of the Faculty and Staff development survey ratings for QEP training programs and initiatives are expected to be in the “good” or “excellent” categories each year, with a majority of the ratings falling in the excellent category by the fifth year.</td>
</tr>
</tbody>
</table>
LEO 3. Increase the number of faculty and staff participating in the We Solve IT! workshops on implementation, strategies, evaluation, rubric usage, and in the incentive programs involving project grants, course-based stipends, and rubric scoring.

Number of faculty and staff engaged in the We Solve IT! workshops on implementation, strategies, evaluation, rubric usage, and in the incentive programs involving project grants, course-based stipends, and rubric scoring will increase by 5% annually from Years 2-5 as compared to the Year 1 baseline data.

LEO 4. Increase the cumulative number of courses and co-curricular student activities that incorporate creative, real-world problem-solving experiences consistent with the We Solve It! initiatives.

Cumulative number of courses and co-curricular student activities that incorporate creative, real-world problem-solving experiences consistent with the We Solve It! initiatives will increase by 5% annually from Years 2-5 as compared to the Year 1 baseline data.

The cumulative number of submissions of We Solve It! Reports and rubrics will increase by 5% annually from Years 2-5 as compared to the Year 1 baseline data.

Assessment of Learning Environment Outcomes

Assessments of the extent to which the five Learning Environment Outcomes are achieved will involve an analysis of a variety of direct measures. Learning Environment Outcome 1 will examine annual levels and trends of the effectiveness of the QEP's various initiatives as rated by faculty, staff and students in the Annual We Solve It! Effectiveness Survey. The number of faculty and staff trained in We Solve It! workshops, courses and co-curricular activities offering We Solve It! real-world problem-solving experiences, and submissions of We Solve It! Reports and Rubric Evaluations to CSU's We Solve It! Portfolio will be analyzed for the extent to which Learning Outcomes 2, 3 and 4 are achieved. The number of awards granted to the faculty, staff, and students will be used to examine the achievement of LEO 5.

Annual We Solve It! Effectiveness Survey

This QEP contains numerous strategic initiatives for instituting changes in the campus culture and learning environment supporting the advancement of creative, real-world, problem-solving skill development of CSU students—seniors in particular. Monitoring progress in the implementation and effectiveness of those QEP initiatives is vital for determining the success of the QEP and the achievement of its SLOs and Goals. The Annual We Solve It! Effectiveness Survey instrument is the principal vehicle for faculty, staff and students to evaluate the effectiveness of the QEP’s many initiatives.

The Annual We Solve It! Effectiveness Survey is presented in Appendix J. It calls for CSU students, faculty and staff to annually rate the effectiveness of each of the QEP’s initiatives on a
scale of 1-highly ineffective, 2-ineffective, 3-neutral in effectiveness, 4-effective, and 5-highly effective. Additional items identify the respondent classification, the engagement level of the respondent in We Solve It! activities, and optional comments. Such effectiveness ratings are central to the assessment of the extent to which LEO 1 is achieved.

Faculty and Staff Development Survey
The faculty and staff development survey is presented in Appendix K. It calls for CSU faculty and staff to rate the effectiveness of each of the QEP’s training programs and initiatives on a scale of 1-unsatisfactory, 2-fair, 3-satisfactory, 4-good, and 5-excellent. Additional items include: identification of two outstanding components of the session, two suggestions for improving the session, and any additional comments about the session. Such effectiveness ratings are central to the assessment of the extent to which LE Outcome 2 is achieved.

Specific Assessment Analysis for Learning Environment Outcome 1
Each spring, CSU faculty, staff, and students will be invited to respond to the We Solve It! Effectiveness Survey. That survey will produce respondent ratings on the judged effectiveness of each of the QEP’s major initiatives to promote and support the development of student skills in creative real-world problem solving. The top two of the five rating categories in that survey instrument are identified as “effective” and “highly effective.” Frequency distributions of the five effectiveness ratings for all respondents on each initiative will be calculated, with separate analysis for faculty/staff from students. Analysis of those frequency distributions will determine how many QEP initiatives received the expected two-thirds response level for top effectiveness ratings and whether the majority of ratings are in the highly effective category by the fifth year of the QEP’s implementation. Initiatives that do not receive the expected effectiveness ratings will be examined further to determine what might be done differently to boost their effectiveness ratings in the future.

Specific Assessment Analysis for Learning Environment Outcome 2
Records will be kept from year to year on the cumulative numbers of faculty and staff who: 1) participated in We Solve It! workshops; and 2) received We Solve It! financial incentives. Those two sets of numbers will be charted for the five years of the QEP. The analysis of the data will determine whether the participation rate has increased by 5% each Year from years 2–5 as compared to the Year 1 baseline. Assessment results that deviate from expectations will lead to the implementation of different or additional strategies to produce the desired year-to-year gains in the LE outcome.

Specific Assessment Analysis for Learning Environment Outcome 3
Records will be kept from year to year on the cumulative number of faculty and staff who incorporate We Solve It! instructional strategies and creative real-world problem solving experiences into their courses or co-curricular student activities. Those numbers will be charted for the five years of the QEP. The analysis of the data will determine whether the participation rate has increased by 5% each Year from years 2–5 as compared to the Year 1 baseline. Assessment results that deviate from expectations will lead to the implementation of different or additional strategies to produce the desired year-to-year gains in the LE outcome.

Specific Assessment Analysis for Learning Environment Outcome 4
Records will be kept from year to year on the cumulative number of We Solve It! Reports and Rubric Evaluations of those Reports in CSU’s We Solve It! Portfolio. Those numbers will be charted for the five years of the QEP. The analysis of the data will determine whether the participation rate has increased by 5% each Year from years 2–5 as compared to the Year 1 baseline. Assessment results that deviate from expectations will lead to the implementation of
different or additional strategies to produce the desired year-to-year gains in the LE outcome.

**Specific Assessment Analysis for Learning Environment Outcome 5**
The number of faculty, staff, students recognized will increase by 5% annually from Years 2-5 as compared to the Year 1 baseline data.

**Summary of Assessment Plans**

As described above, annual data from the We Solve It! Effectiveness Survey, annual number of We Solve It! workshop trainees, annual number financial incentive recipients, annual number of We Solve It! courses and co-curricular activities, and annual number of We Solve It! Portfolio submissions will be used to assess the extent to which the Learning Environment outcomes are achieved.

At the end of each academic year, a variety of statistical analyses will be performed on the direct measures of SLOs (i.e., the SLO ratings from the Rubric and CAT). Annual summaries of the results will be produced for trend analysis across the five years of the QEP’s full implementation.

Assessment results will be used for guiding improvements throughout the implementation of the QEP over the next five years. The Assistant Director for Assessment in the We Solve It! Center will be responsible for completing annual assessment reports as outlined in this chapter.

Assessment results will be posted on the We Solve It! website for public access. Those annual assessment reports will be presented to the Center Director, Advisory Board, President’s Cabinet, Deans, and Department Chairs. After the presentation to these groups, their feedback will be used to modify and improve implementation plans.

In that regard, annual assessment results of SLO achievement will be used for identifying specific SLOs that need greater attention in curricular and co-curricular venues for SLO skill development. An item analysis will be conducted for elements on the We Solve It! Rubric to identify specific areas needing greater attention. Discrepancies between student self-assessment on the We Solve It! Rubric and the faculty evaluations of student performance on that rubric will be used to make changes that will improve student understanding of the We Solve It! model for creative real-world problem solving as well as use of the We Solve It! Evaluation Rubric.

As the five SLOs and five Learning Environment Outcomes suggest, annual assessment results will be analyzed in the context of stated expected levels and trends of performance from the baseline of Year 1 to QEP completion in Year 5. When results deviate from those expected levels and trends, necessary changes will be made in an effort to achieve all ten of the QEP’s Outcomes and expected results by Year 5.

**Expected Contributions to the Fifth-Year QEP Impact Report**
The ongoing and systematic assessment and improvement plans outlined above for the five SLOs and five LEOs of the We Solve It! QEP at CSU are expected to generate valuable information and documentation that will be included in the Fifth-Year QEP Impact Report. Many of the assessment results should validate the success of the QEP. The full implementation of this QEP over the next five years will significantly impact our students’ creative problem solving abilities and the CSU learning environment. This impact is expected to be notable and worthy of emulation in academe.
We Solve It! - Columbus State University’s Quality Enhancement Plan

References


Ellis, L., & Israel, M. J. (2015). We can’t do it alone: How New York City is building strong school libraries with leadership, partnerships, and outreach. Teacher Librarian, 42, 18-21.


We Solve It! - Columbus State University's Quality Enhancement Plan


## Appendix A: Leadership & Dialogue Workgroup Memberships

### Members of the We Solve It! Leadership Team and their CSU Affiliations

<table>
<thead>
<tr>
<th>Name</th>
<th>Campus Position/Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom Hackett</td>
<td>Provost and Vice President for Academic Affairs</td>
</tr>
<tr>
<td>Tina Butcher</td>
<td>Associate Provost for Undergraduate Education</td>
</tr>
<tr>
<td>Gina Sheeks</td>
<td>Vice President for Student Affairs</td>
</tr>
<tr>
<td>Dan Rose</td>
<td>Director/Psychologist, Counseling Center</td>
</tr>
<tr>
<td>Susan Lovell</td>
<td>Director, Military Enrollment</td>
</tr>
<tr>
<td>Kristin Williams</td>
<td>Director, Graduate and International Recruitment</td>
</tr>
<tr>
<td>Gena Stone</td>
<td>Chief Financial Officer, CSU Foundation</td>
</tr>
<tr>
<td>Neal McCrillis</td>
<td>Director, Center for International Education</td>
</tr>
<tr>
<td>Jill Massas</td>
<td>Assistant Director, Institutional Research</td>
</tr>
<tr>
<td>Spence Sealy</td>
<td>Associate Vice President for Development</td>
</tr>
<tr>
<td>Cindy Ticknor</td>
<td>Dean, Honors College</td>
</tr>
<tr>
<td>Susan Hrach</td>
<td>Director, Faculty Center for the Enhancement of Teaching and Learning</td>
</tr>
<tr>
<td>Robin Snipes</td>
<td>Professor, Marketing &amp; Management (COB)</td>
</tr>
<tr>
<td>Michele McCrillis</td>
<td>Associate Professor, Art History (COA)</td>
</tr>
<tr>
<td>Brian Tyo</td>
<td>Associate Professor, Health, Physical Education, &amp; Exercise Science (COEHP)</td>
</tr>
<tr>
<td>Paula Adams</td>
<td>Associate Professor/Head of User Services, Library</td>
</tr>
</tbody>
</table>

### Members of the We Solve It! Dialogue Workgroup and their CSU Affiliations

<table>
<thead>
<tr>
<th>Name</th>
<th>Campus Position/Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Susan Hrach, Chair</td>
<td>Director, Faculty Center for the Enhancement of Teaching and Learning</td>
</tr>
<tr>
<td>Paula Adams</td>
<td>Associate Professor/Head of User Services, Library</td>
</tr>
<tr>
<td>Stephanie da Silva</td>
<td>Associate Professor, Psychology (COLS)</td>
</tr>
<tr>
<td>Brian Tyo</td>
<td>Associate Professor, Health, Physical Education, &amp; Exercise Science (COEHP)</td>
</tr>
<tr>
<td>Greg Blalock</td>
<td>Associate Professor, Special Education (COEHP)</td>
</tr>
<tr>
<td>Tamara Condrey</td>
<td>Assistant Professor, Nursing (COEHP)</td>
</tr>
<tr>
<td>Chris McCollough</td>
<td>Assistant Professor, Communication (COA)</td>
</tr>
<tr>
<td>Rodrigo Obando</td>
<td>Associate Professor/Assistant Dept. Chair, Computer Science (TCOB)</td>
</tr>
<tr>
<td>Stuart Rayfield</td>
<td>Director, Servant Leadership</td>
</tr>
<tr>
<td>Cedricia Thomas</td>
<td>Graduate Student</td>
</tr>
<tr>
<td>Victoria Hargrove</td>
<td>Undergraduate Student</td>
</tr>
<tr>
<td>Christa Mitchell Robbins</td>
<td>Communications Specialist, University Relations</td>
</tr>
<tr>
<td>Zane Everitt</td>
<td>Project Management Office, UITS</td>
</tr>
<tr>
<td>Dan Rose</td>
<td>Director/Psychologist – Counseling Center</td>
</tr>
</tbody>
</table>
Appendix B: Campus Feedback & Core Values

Preferences for QEP Topics and CSU Core Values

Data for recommendation to Leadership Team
April online survey

Top Skills to Address
- Writing
- Critical thinking
- Problem solving
- Information literacy/processing
- Self-direction
- Reading

Key Words
- International learning
- FYE (First Year Experience)
  - Experiential learning
  - Study skills
- Life skills/self-direction
- Interactive teaching and learning
- Inter-/cross-disciplinary partnerships
- Student/faculty research projects
- Student participation in academic events outside of classroom

(85 responses, where “+” denotes item selected)

September—Departmental/Organizational Meetings & Survey
Teacher Ed, math, hist & geog, ILC faculty, psych, nursing, HPEX, chairs’ assembly, chem, bio, earth & space sciences, music, [communication, art, theatre], SGA, Honors online survey (40 responses)

Key Words
- Global cultural knowledge/international awareness
- Modern/classical language skills
- Diverse reference points
- Self-direction
- Problem-solving
- Sustainability
- Ethics
- Learning skills
  - Reading skills
  - Study skills
  - Writing skills
  - Computational thinking
  - Information literacy
  - Advising/counseling
  - FYE

- Creativity
- Engagement
- Mentoring
- Experiential learning
Undergraduate research++
Internships
Across the curriculum
Adult students
Online students
Grad students
Life-long learning
Grit (--) 
Faculty development 
  Part-time faculty
  Coherence in teaching loads and enrollment numbers
Interdisciplinary approaches

October Open Forums

RiverPark faculty
Problem-based, inquiry-based interdisciplinary work
FYE
  Development for adjuncts
  Development for all FY instructors on interactive methods
Convocation model to encourage intellectual curiosity and cross-disciplinary exchange
  events simulcast for both campuses
Global studies is a strength to build on
Flexibility in credit hour structures and blended learning to encourage more out-of-class,
Intellectually stimulating engagement

RiverPark students
Creative thinking skills
Interactive teaching++
Experiential learning
Events outside of classes
Purposeful living
Degree credit for outside of class events
Tap into personal passion

Main Campus faculty
Experiential learning++
  Across campus
  Internships
  Study abroad
Problem-solving ++
  Multi-disciplinary approach
Interactive teaching
Inquiry-based research
Events outside of classes
Global citizenship
Purposeful living
Flexibility and time for faculty development
Student affairs involvement

Main Campus students
Problem-solving
We Solve It! - Columbus State University’s Quality Enhancement Plan

Study skills
Interactive teaching++
Experiential learning
Events outside of class time
  Improved grades
  Credit towards degree
Certificate/curriculum options
Global citizenship

Trustees
Creative thinking
Problem solving
Interactive teaching++
Experiential learning
Inquiry-based research
Events outside of class
Purposeful living

What our community needs from CSU graduates
Fresh perspectives
  Innovative thinking
Remaining in community++
  Providing jobs
  Volunteering, community involvement++
  Staying involved at CSU
Taking pride in workmanship
Tech savvy

Staff survey (2 responses)
Problem-solving
Experiential learning+++ 
Interactive teaching++
Inquiry-based learning
Certificates and curricular options
Global citizenship
Purposeful living

Core Values

From the 2014-15 Columbus State University catalog

Excellence – Commitment to best practices in teaching and learning, scholarship and creative activity, student engagement, cultural enrichment and campus environment.
Engagement – Active civil participation by students, faculty and staff in the university experience.
Creativity – The pursuit of distinction through inquiry and innovation, challenging convention and focusing on solutions.
Servant Leadership – Effective, ethical leadership through empowerment and service.
Inclusion – Fostering and promoting a campus that embraces diverse people, ideas, views, and practices.
Sustainability – Commitment to behaviors that recognize and respect our environmental context.
## Appendix C: Design Team Membership

Members of the **We Solve It!** Design Team and their CSU Affiliations

<table>
<thead>
<tr>
<th>Name</th>
<th>Campus Position/Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stephanie da Silva, Co-Chair</td>
<td>Associate Professor, Psychology (COLS)</td>
</tr>
<tr>
<td>Jennifer Newbrey, Co-Chair</td>
<td>Assistant Professor, Biology (COLS)</td>
</tr>
<tr>
<td>Susan Hrach</td>
<td>Director, Faculty Center for the Enhancement of Teaching &amp; Learning</td>
</tr>
<tr>
<td>Amanda Rees</td>
<td>Associate Professor, History &amp; Geology (COLS)</td>
</tr>
<tr>
<td>Sue Tomkiewicz</td>
<td>Associate Professor, Music/Director, RiverPark Honors</td>
</tr>
<tr>
<td>Iris Saltiel</td>
<td>Professor, Counseling, Foundations, &amp; Leadership (COEHP)</td>
</tr>
<tr>
<td>Kyle Christensen</td>
<td>Associate Professor, Political Science</td>
</tr>
<tr>
<td>Jennifer Brown</td>
<td>Assistant Professor, Foundation (COEHP)</td>
</tr>
<tr>
<td>Yuichiro Komatsu</td>
<td>Associate Professor, Art (COA)</td>
</tr>
<tr>
<td>Mark Flynn</td>
<td>Dean, Libraries</td>
</tr>
<tr>
<td>Kimberly McElveen</td>
<td>Assistant Vice President, Student Affairs</td>
</tr>
<tr>
<td>Shamim Khan</td>
<td>Professor, Computer Science (TCOB)</td>
</tr>
<tr>
<td>Lynn Riggsby-Gonzalez</td>
<td>Director, Center for Career Development</td>
</tr>
</tbody>
</table>
## Appendix D: Summary of the Activities of the Design Team

<table>
<thead>
<tr>
<th>Date</th>
<th>Meeting/Event</th>
<th>Agenda/Accomplishments</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 7</td>
<td>Focus Statement Meeting</td>
<td>Refine Focus Statement</td>
</tr>
<tr>
<td>Jan 30</td>
<td>Focus &amp; Goals Statement</td>
<td>Meeting of VPAA for Undergraduate Education, QEP Dialogue Leader, and QEP Design Team Co-Chair to discuss focus, learning outcomes, and goals of QEP.</td>
</tr>
<tr>
<td>Feb 17, 2015</td>
<td>QEP Leadership Team</td>
<td>QEP Topic Refinement</td>
</tr>
<tr>
<td>Feb 2015</td>
<td>CUR Dialogues in Washington, DC</td>
<td>Council for Undergraduate Research conference &amp; workshop on Grant Writing</td>
</tr>
<tr>
<td>March 10, 2015</td>
<td>Design Team Leader &amp; Dialogue Chair</td>
<td>Discussion of QEP Focus and Design Responsibilities</td>
</tr>
<tr>
<td>March 2015</td>
<td>Design Team Assembled</td>
<td>Multiple e-mail invitations and face-to-face conversations occurred to generate a representative group of campus members.</td>
</tr>
<tr>
<td>March 19, 2015</td>
<td>Design Team Co-chairs Meeting</td>
<td>Familiarized co-chairs with the requirements for QEPs</td>
</tr>
<tr>
<td>March 20, 2015</td>
<td>Design Team Co-chairs Meeting</td>
<td>Continued discussion on the focus of the QEP and first steps for planning the QEP</td>
</tr>
<tr>
<td>March 24, 2015</td>
<td>Design Team Co-chairs Meeting</td>
<td>Discussed QEP budget, writing the document, and baseline measures</td>
</tr>
<tr>
<td>March 26, 2015</td>
<td>Design Team Recruitment</td>
<td>Meeting with potential faculty for design team membership.</td>
</tr>
<tr>
<td>April 2015</td>
<td>Design Team Co-Chair and Member, Kyle Christensen</td>
<td>Discussed use of Qualtrics survey to collect pilot data for QEP.</td>
</tr>
<tr>
<td>April 9, 2015</td>
<td>Design Team Co-chairs Meeting</td>
<td>Worked on preparing for the first Design Team Meeting</td>
</tr>
<tr>
<td>April 13, 2015</td>
<td>QEP Design Team Meeting 1</td>
<td>Introduced Design Team members to QEPs and how they are evaluated, started logo and branding process, discussed baseline data and ideas for pilot programs</td>
</tr>
<tr>
<td>April 27, 2015</td>
<td>Design Team Co-chairs Meeting</td>
<td>Prepared for budget meeting with the associate provost</td>
</tr>
<tr>
<td>April 27, 2015</td>
<td>Design Team Co-chairs Meeting</td>
<td>Met with the associate provost regarding the QEP budget</td>
</tr>
<tr>
<td>April 30, 2015</td>
<td>QEP Design Team Meeting 2</td>
<td>Discussed baseline measures and dissemination of QEP-related information</td>
</tr>
<tr>
<td>May 5, 2015</td>
<td>STEM Symposium &amp; Workshop at Georgia Gwinnett College - Undergraduate Research for All: Embedding Research in Your Courses</td>
<td>Three members of the Design Team attended the workshop to learn more about a successful problem-solving program in the region</td>
</tr>
<tr>
<td>May 12, 2015</td>
<td>QEP Design Team Workshop 1</td>
<td>Identified QEP learning objectives, discussed ways to enhance student problem-solving and ways to measure growth in student problem solving</td>
</tr>
<tr>
<td>May 12, 2015</td>
<td>Design Team Co-Chairs</td>
<td>QEP synopsis written for the new CSU president, Dr. Markwood, to introduce him to the QEP topic and tentative plan.</td>
</tr>
<tr>
<td>Date</td>
<td>Event Description</td>
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</tr>
<tr>
<td>May 22, 2015</td>
<td>Design Team Co-Chair &amp; University Relations</td>
<td></td>
</tr>
<tr>
<td>June 2015</td>
<td>QEP Website</td>
<td></td>
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<tr>
<td>June 2015</td>
<td>E-Mail Correspondence with Paula Adams &amp; Alison Sperry (Libraries)</td>
<td></td>
</tr>
<tr>
<td>June 2015</td>
<td>E-Mail Correspondence with Faculty re Case Studies of Problem Solving</td>
<td></td>
</tr>
<tr>
<td>June 1, 2015</td>
<td>Design Team Co-Chair &amp; Paul Luft</td>
<td></td>
</tr>
<tr>
<td>June 3, 2015</td>
<td>QEP Design Team Workshop 2</td>
<td></td>
</tr>
<tr>
<td>June 7, 2015</td>
<td>Derek Olsen and Design Team Co-Chairs</td>
<td></td>
</tr>
<tr>
<td>June 9, 2015</td>
<td>Developing and Executing a QEP Assessment Plan &amp; Strategy Webinar</td>
<td></td>
</tr>
<tr>
<td>June 10, 2015</td>
<td>Design Team Co-Chairs Meeting</td>
<td></td>
</tr>
<tr>
<td>June 11, 2015</td>
<td>QEP Website Meeting</td>
<td></td>
</tr>
<tr>
<td>June 16, 2015</td>
<td>Design Team Co-Chair, Member, and Leadership</td>
<td></td>
</tr>
<tr>
<td>June 19, 2015</td>
<td>Design Team Co-chairs Meeting</td>
<td></td>
</tr>
<tr>
<td>June 24, 2015</td>
<td>Focus Group - Undergraduate Students</td>
<td></td>
</tr>
<tr>
<td>June 25, 2015</td>
<td>Conference Call with Marketing Salesperson</td>
<td></td>
</tr>
<tr>
<td>July 2015</td>
<td>E-Mails to Chairs</td>
<td></td>
</tr>
<tr>
<td>July 7, 2015</td>
<td>Design Team Survey re Lead Evaluators</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Event Description</td>
<td>Details</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>July 17, 2015</td>
<td>Design Team Co-Chairs -- Conference Call</td>
<td>Discussion of Faculty Survey results about QEP initiatives and the best ways to provide incentives for faculty participation.</td>
</tr>
<tr>
<td>July 24, 2015</td>
<td>QEP logo</td>
<td>Logo development complete</td>
</tr>
<tr>
<td>July 24, 2015</td>
<td>Design Team Co-Chairs -- Conference Call</td>
<td>Discussion of Logo and additional branding plans; also discussed the report &amp; rubric.</td>
</tr>
<tr>
<td>July 24, 2015</td>
<td>Design Team Co-Chair and Faculty</td>
<td>Conference call between Design Team Co-Chair and a faculty with SoTL experience. Qualitative feedback about the report and rubric was gathered.</td>
</tr>
<tr>
<td>July 28, 2015</td>
<td>Marketing Order Placed</td>
<td>Design Team Co-Chair placed order for pens and other promotional items.</td>
</tr>
<tr>
<td>July 29, 2015</td>
<td>Feedback request sent to faculty and staff</td>
<td>Email sent to faculty and staff to solicit feedback on the report and rubric posted on the QEP website.</td>
</tr>
<tr>
<td>July 30, 2015</td>
<td>Conference Call with Cindy Ticknor</td>
<td>Discussion of Tower Day expansions; Design Team co-Chairs and Tower Day Director.</td>
</tr>
<tr>
<td>July 31, 2015</td>
<td>QEP Design Team Meeting 3</td>
<td>Selected “We Solve It” as the QEP title, reviewed problem-solving report and rubric, discussed the QEP budget and incentive initiatives for faculty and staff, identified Tower Day expansion as a way for students to present their results from problem-solving activities.</td>
</tr>
<tr>
<td>August 2015</td>
<td>Recruitment of Fall Pilot Group</td>
<td>Multiple E-Mails to Faculty to recruit participation in fall 2015 pilot group.</td>
</tr>
<tr>
<td>August 5, 2015</td>
<td>Design Team Co-Chair and Administration</td>
<td>E-mail exchange to discuss dissemination plans for QEP during opening week of fall semester.</td>
</tr>
<tr>
<td>August 6, 2015</td>
<td>Conference Call – Design Team Co-Chair and Leadership Team Representative</td>
<td>Discussed the term creative and its importance in the QEP topic; also reviewed the progress of the document and timeline for its completion.</td>
</tr>
<tr>
<td>August 10, 2015</td>
<td>Design Team Co-Chair and Asst. Provost for Undergraduate Education</td>
<td>Discussed consistency between QEP topic/plan and the new General Education requirements.</td>
</tr>
<tr>
<td>August 12, 2015</td>
<td>Department Meetings and Design Team Co-Chair or Members</td>
<td>Design Team Co-Chair visited Department of Chemistry and Department of Mathematics to introduce QEP initiatives and request feedback. Design Team Members visited Department of History &amp; Geography and Department of Earth &amp; Space Sciences to introduce QEP initiatives and request feedback.</td>
</tr>
<tr>
<td>August 13, 2015</td>
<td>Faculty Breakfast</td>
<td>Disseminated QEP materials and discussed the initiatives and plan with faculty in various conversations. Casual feedback received.</td>
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<td>Date</td>
<td>Event Description</td>
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<tr>
<td>August 13, 2015</td>
<td>University Address</td>
<td>President Markwood and Provost Hackett promoted the QEP to faculty &amp; staff during their address to the entire campus community.</td>
</tr>
<tr>
<td>August 13, 2015</td>
<td>College Meetings</td>
<td>Representatives from the QEP Design Team attended every college meeting (except College of Letters &amp; Sciences) to formally introduce the QEP plan to faculty. College of Letters &amp; Sciences departments were addressed individually throughout the semester.</td>
</tr>
<tr>
<td>August 14, 2015</td>
<td>Design Team Co-Chair and Department of Psychology</td>
<td>Design Team Co-Chair visited Department of Psychology to introduce QEP initiatives and request feedback.</td>
</tr>
<tr>
<td>August 17, 2015</td>
<td>Design Team Co-Chairs Meeting</td>
<td>Discussed dissemination effects, feedback from website surveys, and campus feedback from opening week. Also created a timeline and meeting plan for fall semester.</td>
</tr>
<tr>
<td>August 17, 2015</td>
<td>Design Team Co-Chairs and Faculty Senate</td>
<td>Co-Chairs presented the current plan and request for feedback about the plan to the Faculty Senate.</td>
</tr>
<tr>
<td>August 28, 2015</td>
<td>Chairs Assembly</td>
<td>Design Team Representative attended Chairs Assembly to introduce QEP initiatives and solicit feedback from Chairs.</td>
</tr>
<tr>
<td>August 28, 2015</td>
<td>QEP Budget Meeting</td>
<td>Design Team co-chairs met with the Provost/Vice President of Academic Affairs, the Associate Provost for Undergraduate Education, and the Faculty Affairs Budget and Operations Manager to get approval for the QEP budget.</td>
</tr>
<tr>
<td>August 28, 2015</td>
<td>Design Team Co-Chairs and Design Team Member</td>
<td>Discussion of plans for fall pilot group – goals, assessment, meeting schedule &amp; agendas.</td>
</tr>
<tr>
<td>September 1, 2015</td>
<td>Graduate Council Focus Group</td>
<td>Interview graduate students to determine interest &amp; stake in QEP topic &amp; initiatives.</td>
</tr>
<tr>
<td>September 2015</td>
<td>Grant Applications -- E-mails and Meetings</td>
<td>A Subcommittee of the Design Team, Shamim Khan, Sue Tomkiewitz, and Brenda Ivey, created application forms for the QEP grants and stipends initiatives.</td>
</tr>
<tr>
<td>September 2015</td>
<td>Writing &amp; Editing Team – E-mails and Meetings</td>
<td>Recruitment and discussion of writing personnel for QEP document.</td>
</tr>
<tr>
<td>September 1, 2015</td>
<td>Design Co-Chair and Faculty Pilot Member</td>
<td>Discussed use of We Solve It! Report &amp; Rubric in fall 2015 course of Education.</td>
</tr>
<tr>
<td>September 8, 2015</td>
<td>QEP Co-chairs Meeting</td>
<td>Design Team co-chairs discussed the QEP document and met with the Dean of the Honors College.</td>
</tr>
<tr>
<td>September 15, 2015</td>
<td>QEP Pilot Group Meeting</td>
<td>Faculty piloting the We Solve It! Report and rubric in fall 2015 met to discuss how they were implementing problem-solving activities in their classes.</td>
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<tr>
<td>Date</td>
<td>Event Description</td>
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<tr>
<td>September 16, 2015</td>
<td>Dept. of Modern Languages and Design Team Co-Chair visited Department of Modern Languages to introduce QEP initiatives and request feedback.</td>
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<tr>
<td>September 21 &amp; 23, 2015</td>
<td>Phone calls to potential Lead Evaluator Candidates</td>
<td>Design Team Co-Chair called potential candidates for the role of QEP Lead Evaluator to determine their willingness to be nominated for the role.</td>
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<tr>
<td>September 22, 2015</td>
<td>QEP Co-chairs Meeting</td>
<td>Design Team Co-Chairs met to work on the QEP document.</td>
</tr>
<tr>
<td>September 22, 2015</td>
<td>Tower Day Expansion Meeting</td>
<td>Design Team Co-Chairs met with the Dean of the Honors College and a faculty volunteer to discuss expanding Tower Day into a We Solve It! Problem-solving festival.</td>
</tr>
<tr>
<td>September 30, 2015</td>
<td>Hiring QEP Director Meeting</td>
<td>Design Team co-chairs met with the Associate Provost for Undergraduate Education, the Director of the Faculty Center, and Director of Servant Leadership to discuss the hiring of the QEP Director.</td>
</tr>
<tr>
<td>October 2015</td>
<td>E-Mails and Meetings</td>
<td>Multiple e-mails and meetings between Center of Online Learning, Design Team Members (Shamim Khan) and Faculty Pilot Testers to create an electronic version of the We Solve It! Report &amp; rubric.</td>
</tr>
<tr>
<td>October 6, 2015</td>
<td>QEP Co-Chairs Meeting</td>
<td>Worked on the QEP document.</td>
</tr>
<tr>
<td>October 8, 2015</td>
<td>Academic Calendar Meeting</td>
<td>Registrar, Asst. Registrar, Tower Day Director, and Design Team Co-Chair met to discuss possible day in Academic Calendar that would be devoted to the problem-solving celebration/festival.</td>
</tr>
<tr>
<td>October 13, 2015</td>
<td>QEP Co-Chairs Meeting</td>
<td>Met with the QEP managing editor to discuss formatting and organization.</td>
</tr>
<tr>
<td>October 13, 2015</td>
<td>Marketing Discussion</td>
<td>Phone conversation between Design Team Co-Chair and Brett Cotton (Design Team member) to recruit Marketing faculty for work on marketing and promotions of QEP.</td>
</tr>
<tr>
<td>October 26, 2015</td>
<td>QEP Facilities Meeting</td>
<td>CSU Administrators, VPAA Finance, Plant Operations, and Design Team Co-Chair discussed location of QEP Center/Office.</td>
</tr>
<tr>
<td>October 27, 2015</td>
<td>Faculty Symposium – Problem-Solving Training for Faculty</td>
<td>Director of Faculty Center and Design Team Co-Chairs discussed inclusion of problem solving as part of faculty training in January (2016) faculty symposium.</td>
</tr>
<tr>
<td>November 3, 2015</td>
<td>Joe McCallus Meeting</td>
<td>Discussed Involvement of Professional Writing Students in QEP e-Publication.</td>
</tr>
<tr>
<td>November 4, 2015</td>
<td>QEP Writing Conference Call</td>
<td>Design Team Co-Chair and Writing Team Co-Chair discussed progress of document.</td>
</tr>
<tr>
<td>November 11, 2015</td>
<td>QEP Pilot Group Meeting</td>
<td>Faculty piloting We Solve It! in fall 2015 met to discuss students’ feedback about the report and rubric and an alternative format of the report and rubric.</td>
</tr>
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</table>
Appendix E: Letter of Support from the President

December 15, 2015

Dr. Larry Earvin
Vice President
Commission on Colleges
Southern Association of Colleges and Schools
1866 Southern Lane
Decatur, Georgia 30033

Dear Dr. Earvin and Members of the Reaffirmation Committee:

I am pleased to enthusiastically provide this letter of support for Columbus State University’s second Quality Enhancement Plan, “We Solve It: Discover, Design, Deliver.” The plan, focused on strengthening the creative real-world problem solving skills of our students, is based on institutional planning and addresses key institutional needs.

As I interface with local business and community leaders, they frequently emphasize the need for graduates who are able to analyze problems, identify potential solutions, and implement and evaluate the best solution. This plan will provide students opportunities to participate in academic and non-academic problem solving activities throughout their programs of study. It will enable them to view themselves as empowered problem solvers capable of effecting change in the world.

As President, I am prepared to provide the administrative and financial support needed to fully implement and assess this plan. I believe this will engage students in essential learning experiences critical for success in their intended careers or future studies. I am confident that this plan will have a long-lasting impact on our students.

I will be happy to discuss our plan in more detail as needed.

Sincerely,

Dr. Chris Markwood, President
Columbus State University
Appendix F: Letter of Support from the Vice Presidents

December 15, 2015

Dear Dr. Earvin and Members of the Reaffirmation Committee:

We are writing to express our full and wholehearted support of the Quality Enhancement Plan developed at Columbus State University. This plan, entitled “We Solve It: Discover, Design, Deliver” is designed to develop real-world problem-solving skills in our students. The QEP design team worked with faculty throughout the institution to develop a plan that addresses the needs of the university and surrounding community. As the region served by Columbus State University becomes increasingly a participant in the global economy, stakeholders in business, government, and education call for graduates who can analyze and address real-world problems, who can work with others in problem-solving, and who can use the knowledge they gain in the classroom in devising creative solutions to issues that exist in the community and in the business world.

Those of us who lead divisions at Columbus State are excited to do our part to support this important initiative aimed at preparing students for success in the 21st Century global economy. An educated workforce for the region served by Columbus State University and for Georgia must be comprised of educated graduates who can put that education to work in solving the problems related to continued economic growth for the region and state. It is to this idea that we are committed.

Sincerely,

Tom Hackett, Provost and Vice President for Academic Affairs

Tom Helton, Vice President for Business and Finance

Gina Sheeks, Vice President for Student Affairs

Alan Medders, Vice President for University Advancement

Abraham George, Vice President for Information and Technology
Appendix G: Letter of Support from the Deans

December 16, 2015

Dear Dr. Earvin and members of the reaffirmation Committee:

Please allow us to express our support of the Quality Enhancement Plan developed by the Columbus State University QEP design team. This QEP is named “We Solve It” Discover, Design, Deliver” and is aimed at developing real-world problem-solving skills in our students through pedagogies that enable students to utilize their knowledge in collaborative problem-based learning activities. These are the types of skills that regional business leaders, leaders in government, and leaders in the field of education tell us are valuable for graduates entering the workplace. More and more, say these leaders, their organizations operate in an economy and geopolitical landscape that is international. Our graduates must perform successfully in a changing global environment and apply skills in team-based problem-solving approaches to dealing with issues in the workplace.

As deans at Columbus State University, we are committed to ensuring that the QEP is successful in developing students for the current global economy. We have heard our stakeholders and agree that the time is right to develop graduates who can work in teams, graduates who can apply knowledge in real-world situations, graduates who can solve problems in the workplace and in the community. We are delighted to express our support in this letter.

Sincerely,

Linda Hadley, Dean, Turner College of Business

Richard Baxter, Dean, College of Arts

Dennis Rome, Dean, College of Letters and Sciences

Deirdre Greer, Dean, College of Education and Health Professions
### Appendix H: QEP Implementation Timeline

* = planning, # = hiring/assembling, → = implementation/utilization

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<thead>
<tr>
<th>Action</th>
<th>Pre-implementation</th>
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<td><strong>Supportive Infrastructure &amp; Leadership</strong></td>
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<td><strong>We Solve It! Center</strong></td>
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<td><strong>Director of We Solve It!</strong></td>
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<td><strong>Assistant Director for We Solve It!</strong></td>
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<td><strong>Admin. Assistant to We Solve It!</strong></td>
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<td><strong>We Solve It! Advisory Board</strong></td>
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<td><strong>We Solve It! Web Manager</strong></td>
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<td><strong>We Solve It! Website &amp; Resource Room</strong></td>
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<td><strong>We Solve It! Marketing</strong></td>
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### Appendix H: QEP Implementation Timeline (Continued)

* = planning, # = hiring/assembling, → = implementation/utilization

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<th>Action</th>
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<th>Year One</th>
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<td>We Solve It! Workshop</td>
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<td>We Solve It! Communities &amp; Consultants</td>
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<td>We Solve It! Days</td>
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<td>We Solve It! External Conferences</td>
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<td>We Solve It! Expert Dialogues</td>
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<td>We Solve It! External Connections</td>
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### Appendix H: QEP Implementation Timeline (continued)

* = planning, # = hiring/assembling, → = implementation/utilization

<table>
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<th>Action</th>
<th>Pre-implementation</th>
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<th>Year Two</th>
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<td>We Solve It! Evaluation Fees</td>
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<td>We Solve It! Certificates</td>
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<td>We Solve It! Celebration (Tower Day)</td>
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<td>We Solve It! Co-Director of Tower Day</td>
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<td>We Solve It! e-Publication</td>
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<td>We Solve It! Awards</td>
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Appendix I: We Solve It! Rubric

Columbus State University We Solve It! Rubric
adapted from LEAP VALUE Problem Solving Rubric and LEAP VALUE Critical Thinking Rubric

The VALUE rubrics were developed by teams of faculty experts representing colleges and universities across the United States through a process that examined many existing campus rubrics and related documents for each learning outcome and incorporated additional feedback from faculty. The rubrics articulate fundamental criteria for each learning outcome, with performance descriptors demonstrating progressively more sophisticated levels of attainment. The rubrics are intended for institutional-level use in evaluating and discussing student learning, not for grading. The core expectations articulated in all 15 of the VALUE rubrics can and should be translated into the language of individual campuses, disciplines, and even courses. The utility of the VALUE rubrics is to position learning at all undergraduate levels within a basic framework of expectations such that evidence of learning can be shared nationally through a common dialog and understanding of student success.

Definition

Problem solving is the process of designing, evaluating and implementing a strategy to answer an open-ended question or achieve a desired goal.

Framing Language

Problem-solving covers a wide range of activities that may vary significantly across disciplines. Activities that encompass problem-solving by students may involve problems that range from well-defined to ambiguous in a simulated or laboratory context, or in real-world settings. This rubric distills the common elements of most problem-solving contexts and is designed to function across all disciplines. It is broad-based enough to allow for individual differences among learners, yet is concise and descriptive in its scope to determine how well students have maximized their respective abilities to practice thinking through problems in order to reach solutions.

Glossary

The definitions that follow were developed to clarify terms and concepts used in this rubric only.

- Contextual Factors: Constraints (such as limits on cost), resources, attitudes (such as biases) and desired additional knowledge which affect how the problem can be best solved in the real world or simulated setting.
- Critique: Involves analysis and synthesis of a full range of perspectives.
- Feasible: Workable, in consideration of time-frame, functionality, available resources, necessary buy-in, and limits of the assignment or task.
- “Off the shelf” solution: A simplistic option that is familiar from everyday experience but not tailored to the problem at hand (e.g. holding a bake sale to "save" an underfunded public library).
- Solution: An appropriate response to a challenge or a problem.
- Strategy: A plan of action or an approach designed to arrive at a solution. (If the problem is a river that needs to be crossed, there could be a construction-oriented, cooperative (build a bridge with your community) approach and a personally oriented, physical (swim across alone) approach. An approach that partially applies would be a personal, physical approach for someone who doesn't know how to swim.
- Support: Specific rationale, evidence, etc. for solution or selection of solution.

Columbus State University Adaptation

Columbus State University (CSU) adapted the Problem Solving VALUE Rubric by adding two elements which specifically focus on an assessment of the student’s ability to construct an end product. One item was constructed by the institution to address the effectiveness of the end product. The second element specifically addresses creative, real-world problem-solving through the use of innovative thinking from the LEAP VALUE Creative Thinking Rubric. The revised instrument which we call the We Solve It! Rubric, combines process and end-product to provide the evaluator the ability to measure the student’s skill in the processes as well as the end-product – the student’s overall problem-solving ability.
Problem solving includes both the process and end product. The process includes the student's ability to identify/discover problems; design solutions; evaluate outcomes and deliver solutions; and to demonstrate high levels of insight and awareness of what was learned and what could be improved. The product developed through the problem-solving process closes the loop and evaluates an end product – the student's ability to solve creative, real-world problems.

*Evaluators are encouraged to assign a zero to any work sample that does not meet the minimal level performance.*

<table>
<thead>
<tr>
<th>SLO 1. DISCOVER: Demonstrate high levels of analytical skill in identifying and diagnosing challenging, ill-defined problems in everyday settings and in critically exploring and evaluating many possible solutions.</th>
<th>Accomplished</th>
<th>Competent</th>
<th>Developing</th>
<th>Minimal</th>
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<tbody>
<tr>
<td><strong>Define Problem</strong></td>
<td>Demonstrates the ability to construct a clear and insightful problem statement with evidence of all relevant contextual factors.</td>
<td>Demonstrates the ability to construct a problem statement with evidence of most relevant contextual factors, and problem statement is adequately detailed.</td>
<td>Begins to demonstrate the ability to construct a problem statement with evidence of most relevant contextual factors, but problem statement is superficial.</td>
<td>Demonstrates a limited ability in identifying a problem statement or related contextual factors.</td>
</tr>
<tr>
<td><strong>Identify Strategies</strong></td>
<td>Identifies multiple approaches for solving the problem that apply within a specific context.</td>
<td>Identifies multiple approaches for solving the problem, only some of which apply within a specific context.</td>
<td>Identifies only a single approach for solving the problem that does apply within a specific context.</td>
<td>Identifies one or more approaches for solving the problem that do not apply within a specific context.</td>
</tr>
<tr>
<td><strong>Propose Solutions/Hypotheses</strong></td>
<td>Proposes one or more solutions/hypotheses that indicates a deep comprehension of the problem. Solution/hypotheses are sensitive to contextual factors as well as all of the following: ethical, logical, and cultural dimensions of the problem.</td>
<td>Proposes one or more solutions/hypotheses that indicates comprehension of the problem. Solutions/hypotheses are sensitive to contextual factors as well as the one of the following: ethical, logical, or cultural dimensions of the problem.</td>
<td>Proposes one solution/hypothesis that is “off the shelf” rather than individually designed to address the specific contextual factors of the problem.</td>
<td>Proposes a solution/hypothesis that is difficult to evaluate because it is vague or only indirectly addresses the problem statement.</td>
</tr>
<tr>
<td><strong>Evaluate Potential Solutions</strong></td>
<td>Evaluation of solutions is deep and elegant (for example, contains thorough and insightful explanation) and includes, deeply</td>
<td>Evaluation of solutions is adequate (for example, contains thorough explanation and includes the following: considers history of problem, reviews)</td>
<td>Evaluation of solutions is brief (for example, explanation lacks depth) and includes the following: considers history of problem,</td>
<td>Evaluation of solutions is superficial (for example, contains cursory, surface level explanation) and includes the following:</td>
</tr>
<tr>
<td>SLO 3. DELIVER:</td>
<td>Deliver Solution</td>
<td>Delivers the solution in a manner that addresses thoroughly and deeply multiple contextual factors of the problem.</td>
<td>Delivers the solution in a manner that addresses multiple contextual factors of the problem in a surface manner.</td>
<td>Delivers the solution in a manner that addresses the problem statement but ignores relevant contextual factors.</td>
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<tr>
<td>SLO 4. REFLECT:</td>
<td>Evaluate Outcomes</td>
<td>Reviews results relative to the problem defined with thorough, specific considerations of need for further work.</td>
<td>Reviews results relative to the problem defined with some consideration of need for further work.</td>
<td>Reviews results in terms of the problem defined with little, if any, consideration of need for further work.</td>
</tr>
<tr>
<td>SLO 5. OVERALL PROBLEM-SOLVING ABILITY:</td>
<td>Effectively Solves Real-World Problem</td>
<td>Constructs a final product which demonstrates complete understanding and identification of the problem, solves all aspects of the problem and presents a compelling case that this solution is superior to alternative options.</td>
<td>Constructs a final product that demonstrates accurate understanding and identification of the problem, solves most aspects of the problem and presents an adequate case that the solution is superior to alternative options.</td>
<td>Constructs a final product that demonstrates some understanding and identification of the problem, addresses some aspects of the problem and presents a weak explanation of why the solution is superior to alternative options.</td>
</tr>
<tr>
<td>Creatively Solves Real-World Problem using Innovative Thinking</td>
<td>Extends a novel or unique idea, question, format, or product, to create new knowledge or knowledge that crosses boundaries.</td>
<td>Extends a novel or unique idea, question, format, or product.</td>
<td>Experiments with creating a novel or unique idea, question, format, or product.</td>
<td>Reformulates a collection of available ideas.</td>
</tr>
</tbody>
</table>

Potential overall scores range from 0-32

**Total:**

*Rubric Revised from LEAP VALUE RUBRIC’s Problem Solving and Critical Thinking, https://www.aacu.org/value-rubrics*

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Appendix J: Annual We Solve It! Effectiveness Survey

The We Solve It! Leadership requests your candid and anonymous evaluation ratings and specific suggestions for improvement of each of the major initiatives implemented and listed below as part of CSU’s Quality Enhancement Plan, We Solve It!, which promotes creative real-world problem solving skill development throughout CSU’s educational environment.

Based on your awareness of these initiatives and experience with them, please rate the effectiveness of each listed initiative on a 5-point scale from highly ineffective (1), ineffective (2), neutral in effectiveness (3), effective (4) and highly effective (5). Record a “U” rating for any initiative you are unable to rate because of a lack of familiarity or experience with it. Please provide specific suggestions for improving the effectiveness of any or all of these initiatives.

Thank you for your feedback!

<table>
<thead>
<tr>
<th>Effectiveness Rating (1-5 or U)</th>
<th>Each We Solve It! (QEP) Initiative to be Rated</th>
<th>Suggestions for Improving the Effectiveness of Each We Solve It! Initiative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>We Solve It! Center Operations</td>
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<tr>
<td></td>
<td>We Solve It! Website</td>
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<td>We Solve It! Virtual Resource Room</td>
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<td>Director of We Solve It!</td>
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<td>Associate Director for We Solve It!</td>
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<td>Assessment</td>
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<td>We Solve It! Advisory Board</td>
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<td></td>
<td>We Solve It! Workshops for Faculty &amp; Staff Development</td>
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<tr>
<td></td>
<td>We Solve It! Communities &amp; Consultants</td>
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<td></td>
<td>We Solve It! Days</td>
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<td></td>
<td>We Solve It! External Connections</td>
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<td></td>
<td>We Solve It! Expert Dialogues</td>
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<tr>
<td></td>
<td>We Solve It! External Conferences &amp; Presentations/Travel Support</td>
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<td></td>
<td>We Solve It! Incentives: Project Grants</td>
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<tr>
<td></td>
<td>We Solve It! Incentives: Course-based Stipends</td>
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</tbody>
</table>
We Solve It! - Columbus State University’s Quality Enhancement Plan

<table>
<thead>
<tr>
<th>We Solve It!</th>
<th>Incentives: Rubric Scoring Fees</th>
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<tbody>
<tr>
<td>We Solve It! Participation Certificates</td>
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<tr>
<td>We Solve It! Marketing &amp; Communication</td>
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<tr>
<td>We Solve It! Celebration (Tower Day)</td>
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<td>We Solve It! e-Publication</td>
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<td>We Solve It! Awards</td>
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<tr>
<td>We Solve It! Report Format &amp; Submission Process</td>
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<tr>
<td>We Solve It! Evaluation Rubric</td>
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<tr>
<td>Annual We Solve It! Effectiveness Survey Format &amp; Submission Process</td>
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<tr>
<td>Overall Effectiveness of We Solve It! Implementation to Date</td>
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</tbody>
</table>

Respondent Characteristics (check one):

___ Instructional Faculty member with senior rank
___ Instructional Faculty member with junior rank
___ Staff member
___ Administrator
___ First-Year student
___ Sophomore student
___ Junior student
___ Senior student
___ Graduate student

We Solve It! Engagement Level of the Respondent (check one)

___ I am or have been this year actively engaged in one or more of the We Solve It! initiatives.
___ I have not been engaged in any of the We Solve It! initiatives this year.

Additional Comments or Suggestions (optional):
Appendix K: Faculty & Staff Development Survey

SAMPLE Evaluation Form -- We Solve It! Workshops

Name of Session ___________________________ Date ________________________

Indicate your current position.

○ Faculty (Unit: ____________)
○ Staff (Unit: ____________)

Rate the listed items using the rating scale as they pertain to this session.

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>a. Format of the session.</td>
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<td>b. Achievement of instructional objectives.</td>
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<td>c. Content provided during the session.</td>
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<td>d. Usefulness/Application of the activities to real-world problem solving</td>
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<td>e. User-friendliness of materials.</td>
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<td>f. Pacing of the session.</td>
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<td>g. Organization of the facilitators.</td>
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<td>h. Overall professional development experience.</td>
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Directions: Respond to the following prompts in the space provided.

1. List two outstanding components of this session.

2. Give two suggestions for improving this session.

3. Provide any additional comments about this session.

4. How did you hear about this session (e.g., e-mail, colleague)?

We appreciate and value your input. Thank you!
Appendix L: We Solve It! Report

We Solve It! Report

Student ID: [Student ID]
Title of Assignment (if applicable): [Title]
Date: [Date]
Instructor: [Instructor]
Type of Assignment: [Assignment]

DISCOVER Process of Creative Real-world Problem Solving:

1) What was the real-world problem that you or your team addressed and why was it challenging to solve?

DESIGN Process of Creative Real-World Problem Solving:

2) What were the approaches to the problem that you or your team identified, considered, analyzed, and evaluated, and why did some of those solutions appear stronger than others?

3) What were the creative solution(s) that you or your team selected and developed for addressing the identified real-world problem?

4) Why should your or your team’s proposed solution to the real-world problem be considered creative, reasonable, and powerful?

DELIVER Process of Creative Real-World Problem Solving:

5) How did you or your team present the proposed solution for the real-world problem?

6) Describe the audience to whom your presentation was made and their receptivity to your proposed solution.

REFLECT Process of Creative Real-World Problem Solving:

7) What new learning or insights did you or your team gain about your DISCOVER, DESIGN, and DELIVER skill levels of creative real-world problem solving from this experience?

8) What would you or your team do differently to improve your DISCOVER, DESIGN, and DELIVER skills of creative real-world problem solving in the future?

OVERALL PROBLEM-SOLVING ABILITY

9) How would you evaluate the overall problem-solving ability of you or your team?