2015 Annual Performance Report

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U.S. Department of Education

Title III Part A - Predominantly Black Institutions - Formula Grants

ED 524B Cover Sheet

1. PR/Award #:   P031P110026
2. Grantee NCES ID#:   184481
3. Project Title: Predominantly Black Institutions Program - Formula Grants
4. Grantee Name: Essex County College
5. Grantee Address: 303 University Avenue Newark, NJ 7102
6. Project Director Name: Stephanie Aisha Steplight Johnson   Title: Dean of Liberal Arts
       Ph #:   (973) 877-3496   Fax #:
       Email Address: ssteplig@essex.edu

Reporting Period Information

7. Reporting Period: From: 10/01/2014   To: 09/30/2015

Budget Expenditures *(To be completed by your Business Office.)*

8. Budget Expenditures:

	Federal Grant Funds	Non-Federal Funds *(Match/Cost Share)*
a. Previous Budget Period	$250,000.00	$0.00
b. Current Budget Period	$273,404.00	$0.00
c. Entire Budget Period *(For Final Performance Reports only)*		

Indirect Cost Information *(To be completed by your Business Office.)*

9. Indirect Costs
   a. Are you claiming indirect costs under this grant?   No
   b. If yes, do you have an Indirect Cost Rate Agreement approved by the Federal Government?
   c. If yes, provide the following information:
       Period Covered by the Indirect Cost Rate Agreement: From: To:
       Approving Federal agency: __ED__ Other *(Please specify):*
       Type of Rate:
       (For Final Performance Reports only)
   d. For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:
       Is included in your approved Indirect Cost Rate Agreement?
       Complies with 34 CFR 76.564(c)(2)?

Human Subjects (Annual Institutional Review Board (IRB) Certification)

10. Is the annual certification of Institutional Review Board (IRB) approval attached?   N/A

Performance Measures Status and Certification

11. Performance Measures Status
    a. Are complete data on performance measures for the current budget period included in the Project Status Chart? Yes
    b. If no, when will the data be available and submitted to the Department?

12. Authorized Representative Name: Dr. Gale E. Gibson
        Date: 02/01/2016
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        E-mail: GGibson@essex.edu

Executive Summary

Essex County College is an open-door public community college that is committed to providing quality educational programs and life-long learning activities at the most affordable cost. Essex offers a wide range of associate degree programs, academic certificate programs, and certificates of completion through the following academic divisions: (1) Bilingual Studies, (2) Biology & Chemistry, (3) Business, (4) Engineering Technologies and Computer Sciences, (5) Humanities, (6) Mathematics & Physics, (7) Nursing & Allied Health, and (8) Social Sciences. Its students are diverse, representing over 50 different countries, and they have a wide variety of backgrounds and abilities.

The foundation of the college's strategic plan consists of 7 strategic directions—(A) Student Success and Completion, (B) Supporting High Quality Faculty, (C) State of the Art Technology and Support Services, (D) Modernized Facilities, (E) Collaborative Partnerships with the Community, (F) Organizational Culture, and (G) Resource Development. The main campus is located in the heart of University Heights in Newark, New Jersey. The West Essex campus located in West Caldwell, New Jersey, meets the educational and training needs of people who live and work in the western part of Essex County. Essex also has a Police Academy located in Cedar Grove, NJ.

The PBI formula grant has enabled Essex County College to expand its capacity to serve students. With the support of the PBI formula grant, Essex County College implemented seven activities during October 1, 2014 through September 30, 2015:
1. Center for Academic Foundations Supplemental Developmental Education
2. Graduation Math
3. Supplemental Instruction in Math
4. Intensive English Workshops
5. Completion Project
6. Online Learning
7. External Assessment

1. Center for Academic Foundations Supplemental Developmental Education
The PBI grant funds supported the development of an adaptive/self-regulated learning model in developmental math courses for 2014-2015. The specific courses that were supported were Introductory Algebra (AFM 083) and Elementary Algebra (MTH 092). The new learning model is composed of two components: self-regulated learning and adaptive math technology. The self-regulated learning curriculum reflects the latest research from a number of research centers and was implemented for the first time in Fall 2013 with 450 developmental math students and has been offered every semester since then. One of the biggest challenges with teaching developmental math is the wide range of abilities of the students. The advantage of adaptive technology is that it can analyze the work each student has done correctly, the mistakes each one has made, and based on that history predict what each student is ready to learn and serve that to them so they are never bored and never lost. So, a key advantage of technology is that it individualizes learning.

2. Graduation Math
The Graduation Math courses were originally designed for math repeaters whose graduation and progress was delayed by either the need to repeat Math 092 and/or a college level Math. Later, the name was changed from Repeaters Math to a more positive name—Graduation Math. Instead of focusing solely on repeaters, avoiders were added, since it was clear that anyone who waited until the last couple of semesters to tackle math and some very high levels of anxiety and were dreading the math requirement. The goal of Graduation Math is to increase the number of graduates and improve retention by offering students who are struggling with math more tutoring and smaller class sizes; reducing their anxiety levels to improve their success. Graduation Math successfully increased the number of graduates and students eligible for graduation by moving them from developmental placement to satisfaction of their college level general education math requirement. Graduation Math classes are unique because the class sizes are small; Teaching Assistants are assigned to the specific courses and shadow the professor; and the developmental math requirement of Math 092 is waived for students taking Math 101 and 103. The Graduation Math student is part of a highly motivated cohort close to graduation.

3. Supplemental Instruction in Math
PBI funds enabled Teaching Assistants (TAs) to be used to enhance student academic success in their Math 100 class. Results from the Student Perception/Attitude Assessment Survey administered to all students enrolled in Professor Figueiras' and Dr. Gaulden's Spring 2015 MTH 100 classes revealed the following: 100% said they would recommend other MTH 100 students use the PBI tutors; 97% said the tutoring 'absolutely' or 'somewhat' improved their performance in MTH 100; 79% said they felt more comfortable going to the tutoring since they knew at least one tutor; 76% and 62% said they went to tutoring for help with WebAssign homework and for help with math topics presented in class, respectively; and 64% said the tutoring hours were not convenient for them and many students expressed a need and desire for more tutoring hours. At least two of the TAs are now aiming to become math teachers. The others have become better professionals, more mature and responsible, and have honed their interpersonal, communication and math skills as a result of working as PBI grant-funded MTH 100 TAs.

4. Intensive English Workshop
The goal of the Intensive English Workshop (IEW) project was to have 200 incremental students enroll in the Intensive English Workshops and Tutorial Program. However, 500 students ended up participating in the program. While initially the program struggled to enroll students, more than 500 participants ended up signing up for the workshops by the end of 9/30/2015. This was made possible because of the implementation of new creative strategies to maximize enrollment.
a. The Mid-Term Intervention Workshops are designed to help students who are struggling to pass ENG 085 & ENG 096. Students are recommended by their instructors to get help to target areas that they are most deficient at.
b. In-between semesters IEW are geared towards students who are misplaced or felt they could have done better on placement tests had they been given another opportunity to brush up on their essay and writing fundamentals. The above are all non-credit workshops.
c. Two combined ENG 085 & ENG 096 credit courses were piloted in the Center of Academic Foundation in Summer II 2015 as a result of our partnership with the department.

The student success rate is an end result of the implementation of effective and sound strategies in the classroom that are conducted by seasoned faculty, supplemental instructors, and one-on-one tutors. Also, the workshops use the latest technology to cater to the needs of our students with different learning styles, particularly visual students.

5. Completion Project
The overall goal of the project is to increase the number of students who graduate within three years of joining the Completion Project. Students signal their participation in the project by signing the Completion Pledge. Completers are assigned Academic Advisors, Graduation Coaches and Retention Specialists who work with the student to create an academic roadmap that allows the student to graduate in three years or less. Personnel track their students on a weekly basis, offering resources, intrusive advisement, and timely interventions as required. As the objective is to help participants graduate in three years or less, this year, we did not add additional pledges. Rather, the project is focused on
a. moving previous participants to graduation (this is the third year of the completion project)
b. identifying best practices developed as a result of this grant, and
c. integrating completion project best practices into our overall institutional practice and policy

In the past, we monitored fall to fall and fall to spring completion rates for our incoming cohort. As we are focused on moving existing pledge signers to completion, this year we have adjusted the performance measurements to focus on tracking graduation rates and progression towards graduation.

The Completion Project exceeded all PBI performance measurements. Graduation rates for the project participants is 33.1 points above the PBI target. Retention rates for advisement weeks were improved by the additional of target-specific programs. Importantly, the College has begun to shift some of the grant-related costs to college lines. This early shift demonstrates the move to institutionalize this program.

6. Online Learning
The Office of Academic Affairs was charged with Developing and implementing online coursework and degree programs. Essex was using course shells and content from an outside institution/3rd party vendor until Spring 2014. The course content did not match our syllabi, nor did it resemble the face to face courses. In addition, some

instructors voiced concerns about the course content and difficulty with the online course shells. The purpose of the original proposal was to provide faculty with stipends to develop courses for the institution based on our current text books and publishers. The use of these funds have allowed this office to compensate full and part time faculty for developing course shells and content and to gain additional professional development experiences as a result. More importantly, this funding secured the successful development of a new area.

The new ECC Online Faculty Training Certification was developed and continues to be administered. Through our partnership with Pearson Publishing, we have identified and launched 10 Virtual Learning Environment modules as a part of our Online Instructor Certification Program.

Professional development enabled staff to effectively create a new department, processes, procedures, course work and also implement training. The Course Developer and Associate Dean, were able to develop and implement workshops on an ongoing basis for all online and face to face faculty dealing with the specific functionalities of Moodle and Best Practices in online education. In addition, Power Point slides and other conference information, materials were disbursed electronically and also embedded into the Moodle course shell where appropriate.

7. External Assessment

The grant period October 1, 2014 through September 30, 2015 began with a continued relationship with the past external evaluator--the Rutgers University John Heldrich Center for Workforce Development Edward J. Bloustein School of Planning and Public Policy. The evaluator met with the Acting Vice President for Academic Affairs and Chief Academic Officer. Also the Acting VPAA/CAO, and six activity heads subsequently held a conference call with the evaluator and her supervisor to provide feedback about prior assessment and to give input about assessment going forward. However the evaluator went out on maternity leave and her supervisor sent an email stating that the Heldrich Center could not do any additional work for Essex County College at the time. Thus, during the Spring 2015 semester a new external evaluator had to be found, briefed, met with (first with the Acting VPAA/CAO, and then with the six activity heads), and subsequently recommended for contracting by the Acting VPAA/CAO and approved by the Board of Trustees. Therefore the external assessment is still currently being completed.

The replacement external evaluator is Dr. Deborah Hecht who is Senior Evaluator and Project Director at The Center for Advanced Study in Education, City University of New York Graduate Center. She earned a PhD in Educational Psychology with a specialization in Psychoeducational Measurement, Research and Evaluation, at New York University.

Section A: Performance Objectives

Project Objective: Task #3--Supplemental Instruction in Math--Improve performance in Math courses through use of peer tutors for sections in MTH 100.

Check if this is a status update for the previous budget period.

Performance Measure	Measure Type	Quantitative Data					
		Target			**Actual Performance Data**		
		Raw Number	Ratio	%	Raw Number	Ratio	%
3a. The number of peer tutors ("Recitation Assistants" or "RAs") hired to support MTH 100 classes in AY 2014 – 2015. (NOTE: Data given is from Dr. Gaulden's (SG) and Professor Figueiras's (IF) Fall 2014 (F14) and Spring 2015 (S15) four MTH 100 classes. The data is presented separately for each semester. Data is averaged for these charts.) Fall 2014-- 4 RA's provided in-class support (i.e., attended every class) and were available for outside-of-class tutoring for students in a total of 4 MTH 100 sections. Spring 2015--5 RA's provided in-class support (i.e., attended one class every two weeks) for students in a total of 10 MTH 100 sections and were available for outside-of-class tutoring for all MTH 100 students.	Project	6	/		5	/	
3b. The percentage of students in each class who completed 70% or more of the assigned WebAssign online homework.	Project		60 / 100	60		66 / 100	66
3c. The average percentage of completed WebAssign online homework.	Project		70 / 100	70		74 / 100	74
3d. The number and percentage of MTH 100 students in each class who were tutored by the RAs outside of class.	Project	36	60 / 100	60	22	36 / 100	36
3e. The number of outside-of-class hours of student-TA interaction. (NOTE: Average number of hours/student: IF F14: 7.52 hrs/student, SG F14: 6.30 hrs/student; IF S15: 12.58 hrs/student, SG S15: 3.50 hrs/student.)	Project	30	/		138	/	
3f. The percentage of students who passed each test/exam.	Project		60 / 100	60		51 / 100	51
3g. The average score on each test/exam.	Project		65 / 100	65		63 / 100	63
3h. The pass rate in each math class. (NOTE: Pass rate is calculated as the number of students who received an A, B+, B, C+, or C in the class divided by the number of students who did not withdraw (i.e., all students who received an A, B+, B, C+, C, D, or F in the class). The recent College-wide MTH 100 pass rate is 56%.)	Project		65 / 100	65		69 / 100	69
3i. The success rate in each math class. (NOTE: Success rate is calculated as the number of students who received an A, B+, B, C+, or C in the class divided by the number of students who were enrolled in the class (i.e., all students who received an A, B+, B, C+, C, D, F, or W in the class.)	Project		55 / 100	55		56 / 100	56

Explanation of Progress (Include qualitative data and data collection information)

• In the 10 Spring 15 MTH 100 sections that were assigned biweekly in-class TA support, 65 students attended PBI grant-funded tutoring outside of class. An additional 18 students from MTH 100 sections without in-class TA support attended PBI grant-funded tutoring as well. Therefore, the presence of a TA in the classroom even biweekly might increase the likelihood of students seeking outside-of-class tutoring.

• Of all MTH 100 students who attended PBI grant-funded tutoring outside of class in Spring 2015, the ratio of tutees who were taught by full-time mathematics department faculty members to tutees who were taught by part-time mathematics faculty was 68:15. Furthermore, students from 11 of 13 non-late start daytime sections taught on the main campus by full-time faculty attended tutoring versus students from 3 of 11 non-late start daytime sections taught by part-time faculty. This might imply that part-time faculty need to be made more aware and be more promote the availability of this tutoring to their students.

• Completion of online homework was better for students in both Professor Figueiras' and Dr. Gaulden's Fall 2014 classes when the TAs were in class more frequently.

• The average number of hours each student spent in tutoring varied for students in both Professor Figueiras' and Dr. Gaulden's classes from a low of 3.5 (Dr. Gaulden, Spring 2015) to a high of 12.6 (Professor Figueiras, Spring 2015).

• Class pass rates were slightly better for both Professor Figueiras' and Dr. Gaulden's classes in Fall 2014 when the TA was frequently in the classroom offering support.

• Results from the Student Perception/Attitude Assessment Survey administered to all students enrolled in Professor Figueiras' and Dr. Gaulden's Fall 2014 MTH 100 classes revealed the following: 89% said their professor is helpful; 98% said the class TA is a great help; 48% said they have math test anxiety and 39% said they have a weak math background; and many indicated they loved having a TA in class and said it was good for the students, it helped the flow of the class, and it was a confidence booster.
• Results from the Student Perception/Attitude Assessment Survey administered to all students enrolled in Professor Figueiras' and Dr. Gaulden's Spring 2015 MTH 100 classes revealed the following: 100% said they would recommend other MTH 100 students use the PBI tutors; 97% said the tutoring 'absolutely' or 'somewhat' improved their performance in MTH 100; 79% said they felt more comfortable going to the tutoring since they knew at least one tutor; 76% and 62% said they went to tutoring for help with WebAssign homework and for help with math topics presented in class, respectively; and 64% said the tutoring hours were not convenient for them and many students expressed a need and desire for more tutoring hours.

• Attendance issues greatly affect students' performance in MTH 100. There is a direct correlation between missed classes and overall course grades. Of Dr. Gaulden's Spring 2015 MTH 100 students who passed the class, the average number of missed classes was 4.4 (out of 43 total classes in the semester). In comparison, of Dr. Gaulden's Spring 2015 MTH 100 students who did not pass the class, the average number of missed classes was 14.9.

• One huge indirect benefit of the MTH 100 PBI grant-funded project is the positive work and math review experience of the TAs. At least two of the TAs are now aiming to become math teachers. The others have become better professionals, more mature and responsible, and have honed their interpersonal, communication and math skills as a result of working as PBI grant-funded MTH 100 TAs.

Project Objective: Task #4--Intensive English Workshop--Improve performance in developmental English courses through Intensive English Workshops and one-on-one tutoring with a focus on moving ENG 085& ENG 096 students into college composition courses more expediently to achieve retention and student success.

Check if this is a status update for the previous budget period.

Performance Measure	Measure Type	Quantitative Data					
		Target			Actual Performance Data		
		Raw Number	Ratio	%	Raw Number	Ratio	%
4a. Success rate in ENG 085 & ENG 096 will be 73% by 9/30/2015—College wide.	Project		73 / 100	73		69 / 100	69
4b. Number of students served will be 200.	Project	200	/		500	/	
4c. Success rate in ENG 085 & ENG 096—The IEW cohort.	Project		73 / 100	73		89 / 100	89

Explanation of Progress (Include qualitative data and data collection information)

The success rate is defined as the ratio of the number of students who received A through C, divided by the number of students who received A through W. For 2013-14, we included Fall 2013, Spring 2014, Summer I & Summer II of 2014.

The Intensive English Workshop (IEW) cohort success rate, however, is determined by the number of students who moved up either to ENG 096 or ENG 101.

4a. The goal of the project was to have 200 incremental students enroll in the Intensive English Workshops and Tutorial Program. However, 500 students ended up participating in the program. While initially the program struggled to enroll students, more than 500 participants ended up signing up for the workshops by the end of 9/30/2015. This was made possible because of the implementation of new creative strategies to maximize enrollment.
i. The Mid-Term Intervention Workshops are designed to help students who are struggling to pass ENG 085&ENG 096. Students are recommended by their instructors to get help to target areas that they are most deficient at.
ii. In-between semesters IEW are geared towards students who are misplaced or felt they could have done better on placement tests had they been given another opportunity to brush up on their essay and writing fundamentals. The above are all non-credit workshops.
iii. Two combined ENG 085& ENG 096 credit courses were piloted in the Center of Academic Foundation in Summer II 2015 as a result of our partnership with the department. We did not, however, include the courses in our qualitative data as this is outside the scope of the PBI proposal.

4b. The target for success rate* in ENG 085 &ENG 096 as set forth in the proposal is 73%- an increase of 5.5% from the baseline: 68.5%. While the workshops have improved ENG 085 & ENG 096 student success rate to 69.5%, approximately 1% increase college wide, we still did not achieve our target of 73%. This can be ascribed to the fact that this study is too small to have an impact college wide. That being said,

4c. The quantitative data of the cohort, however, has increased to 89% among students who consistently attended the workshops compared to the data of the rest of the college. In fact, the data shows that the workshops have even helped students who at least attended the IEWs twice, and they have contributed a great deal in retention outcomes as the chart shows.

*The student success rate is an end result of the implementation of effective and sound strategies in the classroom that are conducted by seasoned faculty, supplemental instructors, and one-on-one tutors. Also, the workshops use the latest technology to cater to the needs of our students with different learning styles, particularly visual students. The IEWs use ePortfolio, computer-assisted courses, Overhead Projectors, and IPads. Using PBI grant funds, we were able to purchase 15 IPads. The students use them to conduct web research, for MLA presentations and my skills labs, access exercises in the Norton MLA Handbook, and the Little Seagull, among other resources that can enrich and supplement the learning experience of students in the class room.

Challenges:
1- Because the workshops are conducted during the semesters, it is extremely difficult to recruit students since they are already committed to their schedules, work, and other family obligations.
2- The workshops are non-credit and therefore less appealing to students.
3- Locating a viable space to run the classes is extremely difficult.
4- New appointments of administrators.
5- Reassignment of personnel.
6- Internal employment policies limit the number of hours an Adjunct Faculty member can work, and limit the employment of Adjunct Faculty to one organizational unit of the college.

Future Recommendations:
1- Improve advisement to encourage enrollment by specific student targets. It is important for academic advisors and faculty members to verify placement results for students who score high on the reading component of the placement exam but score low on the writing component of the exam. These are our target students that we believe the program can help the most.
2- Work closely with the office of Retention and Academic Advisement to identify the target students.
3- Create a new pool of seasoned instructors.
4- Recruit and train new adjuncts.
5- Work with all the stakeholders to institutionalize new combined ENG 085& ENG 096 credit courses in the curriculum at ECC.
6- Make the IEWS part of the faculty syllabi to encourage students to enroll.

Project Objective: Task #6--Online Learning--Increase student success, retention, and completion through development of online learning options.

Check if this is a status update for the previous budget period.

Performance Measure	Measure Type	Quantitative Data					
		Target			Actual Performance Data		
		Raw Number	Ratio	%	Raw Number	Ratio	%
6a. Develop 20-30 Essex County College course shells based on faculty input, current text books, and current publishers by Fall 2015.	Project	28	/		47	/	
6b. Research, Develop and implement an ECC Online Instructor Training Certificate by Fall 2015. All current and prospective online instructors will enroll in the training prior to teaching online and hybrid courses.	Project	30	/		45	/	
6c. Administrator and staff will have attended a minimum of 2 conferences and will implement findings at the institution.	Project	4	/		11	/	

Explanation of Progress (Include qualitative data and data collection information)

6a. The Office of Online Learning has been in the process of converting 3rd party course content shells to Essex County College content and text course shells developed by our faculty. Our structure now consists of working with 3 main publishers, Pearson, Mc Graw Hill and Cengage and a Lead Faculty Course Developer. Fully executed contracts with the Publishers have yielded the following results: streamlined course content, a replicated online course, access to all Ebooks and supplemental software for instructors and in course shell development.

Current list of 100% Online courses at ECC based upon Objective 1 (9/5/2014): ART 100, 101, and 102. ENG 098, ENG 101 and 102, ENG 105, ENG 151, ENG 205, ENG 215, HST 101 AND 102, HST 111 AND 112, HST 121 and 122, BUS 101, 211, 201, 204, 231. POL 104. PSY 101, 102, 219, and 232. CIS 107, 131 and 135. SOC 101 and 108. MUS 100, MTH 101 and 103, ACC 101, ACC 102 and 232. ECO 101 and 102. CSC 137 and 235. BIO 101 and 102 (Hybrid only). ITL 101 *, FRN 101 and 102*. SPN 101, 102* and 201. (Please note language courses FRN, ITL and SPN have been launched but are still in development due to ongoing technical issues with the Publishers).

Overall, this area has achieved it's goal of moving away from our former methods, developing new course shells and content, engaging ECC faculty in the process and working continuously with our Publishing partners.

Our cycle is continual as we have already begun the development cycle, process and launch schedule for Fall 2015, A partial listing of new courses will include: CHM 101 and 102, EDU 101, CSS 101, CIN 101, PHY 101, BUS 207, MTH 127, MUS 109, EDU 205, ENG 200 Literature Courses (6 pending new contract agreement with Publisher).

6b. The new ECC Online Faculty Training Certification was developed and continues to be administered. Through our partnership with Pearson Publishing, we have identified and launched 10 Virtual Learning Environment modules as a part of our Online Instructor Certification Program. Phase 1 of the training is Modules 1-5 which consists of online student engagement, pedagogy, etc. Phase 2 is hands on Moodle Training, Phase 3 is Modules 6-10 which consist of assessment etc. All online modules are self-paced and using Pearson Publishing content. The current process is as follows: Instructors are required to complete 3 modules of training to include 2 self-paced online components and an in person Moodle navigation seminar. After the 3 modules of training are complete, Faculty will receive an Essex County College Online Teaching Certificate. Our full time faculty and adjuncts have embraced this additional professional development and have been allowed to teach online with completing Phase 1 and 2.

A total of 45 Faculty both full and part time, either have earned their certificate in the ECC training or is 2/3 of the way through to completing the certificate. Ongoing Moodle in person training has taken place in one on one environment and overall training sessions are held at the beginning of each semester. Ongoing efforts to continually train and advise online teaching faculty are imperative to our program succeeding.

6c. Conferences attended by Online Staff: The Sloan Consortium, CITE for Online Educators by Pearson, NJEdge Conferences, NJEdge workshops, and Emerging Technologies.

The purpose of attending the Conferences and training was to benefit the development, organization and new structure of the Online Learning Area. The professional development enabled staff to effectively create a new department, processes, procedures, course work and also implement training. The Course Developer and Associate Dean, were able to develop and implement workshops on an ongoing basis for all online and face to face faculty dealing with the specific functionalities of Moodle and Best Practices in online education. In addition, Power Point slides and other conference information, materials were disbursed electronically and also embedded into the Moodle course shell where appropriate.

Project Objective: Task #7--External Assessment--Assess the implementation of the Six (6) Essex County College PBI tasks.

Check if this is a status update for the previous budget period.

Performance Measure	Measure Type	Quantitative Data					
		Target			Actual Performance Data		
		Raw Number	Ratio	%	Raw Number	Ratio	%
Contract with 1 external evaluator to assess implementation of the Essex County College PBI Formula Grant and submit preliminary and final findings.	Project	2	/		1	/	

Explanation of Progress (Include qualitative data and data collection information)

The grant period October 1, 2014 through September 30, 2015 began with a continued relationship with the past external evaluator--the Rutgers University John Heldrich Center for Workforce Development Edward J. Bloustein School of Planning and Public Policy. The evaluator met with the Acting Vice President for Academic Affairs and Chief Academic Officer. Also the Acting VPAA/CAO, and six activity heads subsequently held a conference call with the evaluator and her supervisor to provide feedback about prior assessment and to give input about assessment going forward. However the evaluator went out on maternity leave and her supervisor sent an email stating that the Heldrich Center could not do any additional work for Essex County College at the time. Thus, during the Spring 2015 semester a new external evaluator had to be found, briefed, met with (first with the Acting VPAA/CAO, and then with the six activity heads), and subsequently recommended for contracting by the Acting VPAA/CAO and approved by the Board of Trustees. Therefore the external assessment is still currently being completed.

The replacement external evaluator is Dr. Deborah Hecht who is Senior Evaluator and Project Director at The Center for Advanced Study in Education, City University of New York Graduate Center. She earned a PhD in Educational Psychology with a specialization in Psychoeducational Measurement, Research and Evaluation, at New York University. Dr. Hecht has assessed numerous projects funded by NSF,US-DOE, LSA, NY-SED, NJ-DOE, William T Grant Foundation, and Jumpstart. Dr. Hecht has also managed grants of up to $1.2M using both qualitative and quantitative methods. Dr. Hecht again met with the Acting VPAA/CAO and current activity heads one-on-one in January 2016 and obtained and discussed their activities, progress, challenges, assessment, ideas for going forward, and their annual reports. Dr. Hecht also reviewed the activity heads' PBI evidence binders.

Project Objective: Task #1--Center for Academic Foundations (CAF)--Improve performance in developmental Math courses and increase the success rates of students in the second level of developmental Math using adaptive software to individualize learning, mandatory tutoring sessions, and resource specialists.

☐ Check if this is a status update for the previous budget period.

Performance Measure	Measure Type	Quantitative Data

Explanation of Progress (Include qualitative data and data collection information)

Introduction

A $50,000 Predominantly Black Institution (PBI) grant was awarded to support the development of an adaptive/ self-regulated learning model in developmental math courses for 2014-2015. This is a continuation of grants received for the past four years. The specific courses that were supported were Introductory Algebra (AFM 083) and Elementary Algebra (MTH 092).

Program Description

The new learning model is composed of two components: self-regulated learning and adaptive math technology.

Self-Regulated Learning

The College worked with a consultant from the Center for Advanced Studies in Education at the SUNY Graduate Center to develop the self-regulated learning curriculum. Here is a brief synopsis of the lessons:

1. Introduction to Active Learning - This section presents the idea that being an effective learner depends on much more than IQ, and presents statistics on low graduation rates and low pass rates in math as attention-getting devices to create interest in understanding what students can do to increase their likelihood of success. Students read a definition of active learning, assess themselves on an active learning scale, and
discuss whether they are inherently "bad at math" or whether that attitude is just an excuse for not taking an active role in their own learning. This is a first step toward challenging the "fixed mindset" that is common among math students.
2. Learning Science - This section introduces students to the idea that intelligence is not fixed but can be developed through concentration, practice, and reflection, in other words a "growth mindset" vs. a "fixed mindset." We present the fact that knowledge is encoded in the brain as connections between neurons, and the growth of new connections depends on concentration and practice, much as the growth of new muscles depends on repetitive exercise. Dweck[1] has shown that students with a growth mindset make greater learning gains than students with a fixed mindset and has presented evidence that students with a growth mindset are able to remediate their mistakes because they experience failure as an opportunity to learn, while those with a fixed mindset do not.
3. Learning Communities - Uri Treisman's seminal study in the late 1970's demonstrated that a pattern of social and intellectual isolation among African-American students was a key factor contributing to high failure rates in math. The implementation of mandatory study groups, where students work through problems collaboratively with minimal guidance from an instructor, produced significant gains in student performance. In this unit we introduce students to Uri Treisman's work, and students are required to form study groups, exchange contact information, and work together on difficult math problems. Treisman's model has been replicated at hundreds of universities in different forms and there are multiple studies showing effectiveness in a variety of implementations.
4. Grit - Duckworth defines grit as "the tendency to sustain interest in and effort toward very long-term goals." In a 2005 article[2], Duckworth and Seligman showed that 8th grade students' self-discipline is a better predictor of their final grade than IQ, attendance, hours spent doing homework, and hours spent watching TV. Dozens of subsequent studies confirmed the importance of grit for success in long-term efforts such as school, marriage, career, and the military. Students are introduced to Duckworth's research and a self-assessment of "grittiness."
5. Goals and Strategies - Goals that are SMART (Specific, Measurable, Achievable, Relevant, Time-framed) are used to define success and make it visible, concrete. Strategies are specific behaviors or actions that help you attain the goal, such as turning off your phone when you study or creating a written schedule of study times. Taken together, goals and strategies represent a plan, which is a key component of Self-Regulated Learning (SRL). In this unit, students define one-week goals and strategies and review them with their peers. Students will revisit the goals and strategies in a week to assess their performance.
6. Self-Monitoring - This unit emphasized day-to-day monitoring of performance to ensure that strategies are being followed and progress is being made toward the goals. Students have check-lists to mark their progress during the week. Self-monitoring is essential to Self-Regulated Learning because it provides a record of practice and performance that will be used to support the evaluation stage of the self-regulated learning cycle.
7. Feedback a.k.a. Formative Assessment - Feedback is essential to learning, but as Dweck has shown, students with a fixed mindset often misinterpret corrective feedback as a negative judgment on their intelligence instead of as an opportunity to learn from their mistakes. In this unit we confront students' emotional responses to negative feedback, revisit "fixed" and "growth" mindsets, and then move beyond the visceral response to focus on the indispensable role of feedback in the learning process. The productive use of feed- back is central to self-regulated learning and logically follows the creation of measurable goals.
8. Time Management - The development of time management strategies and recognition of problems such as procrastination are the focus of this unit. Students have seen daily planners and Google calendar in the College Success course, but that doesn't mean they have employed those tools. In this unit, students create written schedules that will be tracked weekly to see how well they follow their own schedule. Tracking time-on-task is made easier for the instructor by the adaptive learning technology, which generates weekly reports on each student.
9. Self-Assessment - The ability to accurately predict future performance on an academic task such as an exam is one of the most advanced skills in self-regulated learning. Students almost universally overestimate future performance and thus under-prepare. In this unit we introduce a process for predicting performance before beginning a task, subsequently evaluating the accuracy of the prediction, and then explaining the discrepancy between predicted and actual performance. Repetition of this process over several weeks produces steady improvement in students' predictive abilities.
10. Recognizing Effective Strategies - This unit emphasizes action: making change based on feedback. When a goal has not been met, the strategies that were designed to attain the goal have to be examined for effective- ness. If studying before your work shift hasn't worked, then other study times have to be found. If asking your siblings not to interrupt you while you study at home has not worked, then another approach has to be taken. If putting your phone on vibrate doesn't prevent you from talking and texting when you should be studying, then something else has to be done with your phone. Self-regulated learning in its simplest form is a cycle of planning, practicing, and evaluating, and the evaluation phase requires more than just receiving feedback, it requires using feedback to improve performance.
11. Stereotype Threat - This unit explores recent research on stereotypes and how they interfere with academic performance[3,4]. When a student belongs to a group with a negative stereotype and is given a difficult task that is linked to the stereotype, the student performs below her ability whether she believes the stereotype or not. Women and math tests, blacks and IQ tests, whites and tests of athletic skill have all been shown to perform below their abilities when the task is linked to a negative stereotype and to perform in accordance with their abilities when an identical task is framed in a way that is not linked to the stereotype. In this unit we explore stereotypes of minorities, women, adult learners, people who are overweight, people with physical disabilities, etc. and how those stereotypes can undermine their academic performance even when they don't believe the stereotypes.
12. Planning for Learning - This unit integrates previous work on the cycle of planning, practicing, and self-evaluation and presents them as components of a holistic approach to the planning cycle self-regulated learning.
13. Stress Management - This unit examines the role of stress, why it is good and bad, and provides stress reduction exercises.
The self-regulated learning curriculum reflects the latest research from a number of research centers and was implemented for the first time in Fall 2013 with 450 developmental math students and has been offered every semester since then.

Adaptive Math Technology

One of the biggest challenges with teaching developmental math is the wide range of abilities of the students. Introductory Algebra (AFM 083) enrolls students with skill levels as low as fourth grade or as high as eleventh grade. Some are still learning their multiplication tables, while others are ready to graph equations in two variables. It is almost impossible to create a lesson plan that doesn't leave many students bored and many others lost.

The advantage of adaptive technology is that it can analyze the work each student has done correctly, the mistakes each one has made, and based on that history predict what each student is ready to learn and serve that to them so they are never bored and never lost. So, a key advantage of technology is that it individualizes learning.

The adaptive math technology divides each course into 200 to 250 small topics, and on the first day of class students take a 45-minute diagnostic exam to see how

many of those topics they already know. The results of the diagnostic exam for Introductory Algebra for Fall 2013 are shown below. It is immediately obvious that the least-prepared students know less than 5% of the course material while the best-prepared students know more than 70% of the course material, again reinforcing the fact that there is a wide range of pre-existing knowledge that requires an individualized approach.

Once the diagnostic is complete, students begin their work. Students attend class three times a week for 80 minutes just like a conventional class, but they spend class time actively solving problems and mastering new topics instead of passively listening. If they need help they can access it within the software or they can raise their hand and ask an instructor or assistant instructor.

The figure below shows an example of student progress in one class:
FIGURE DOES NOT PASTE
The horizontal axis represents the fall semester from September to December, and the vertical axis represents the topics in the course. Each line in the graph represents an individual student. (There are 19 lines representing 19 students.) In the upper left of the graph are two lines (two students) who started in September with pre-existing knowledge of about 135 and 175 topics. Both students mastered all the remaining topics in the course before the end of September, took the pencil-and-paper department-standard final exam, passed it, and immediately moved on to the next course in the sequence. They did not need to spend fifteen weeks in this course. About 5% of our students were able to finish two courses in a single semester. A second group of students started with pre-existing knowledge of about 75 to 100 topics. These students mastered 10 to 15 topics a week and finished the course in late November or early December. A third group started with pre-existing knowledge of less than 75 topics, and they mastered about 10 topics a week and didn't finish the course. But they didn't get a D or an F, they got an M for "Making Progress" and when the spring semester began they continued where they left off. We have one student at the bottom of the graph who made no progress because she never came to class; she will get a grade of N which means "Not Attending," and when that student registers for math again she will have to meet with an advisor to see how we can avoid repeating that behavior. Once again, the way we implement technology gives us insight into learning as a continuous process. It is also worth noting that on any particular day, each student is at a different point and is being served with material that is exactly at the level where they are ready to learn.

Methods
About 20% of developmental math courses were taught using adaptive/self-regulated learning (treatment courses), and the remainder were taught using conventional methods (control courses). Although some students begin their first math course in the fall and others begin in the spring, the majority of students begin in the fall, and in order to simplify the analysis we limited our study to students who took their first math class in the fall. Some students start with 80-level math, but others place out of 80-level math and start with 90-level math. The majority of students start with 80-level math, and these are the students who have the most trouble passing college-level math, so to simplify the analysis we limited this study to students who started in 80-level math.

We divided the students into three groups: (1) students who took their first math class in the Department of Math and Physiccs, which offers conventional lecture-based courses and is the control condition, (2) students who took their first math class in the Center for Academic Foundations prior to Fall 2013, which provided a standard lecture-based calendar-driven course supplemented by tutorials and ALEKS adaptive software and is the first treatment condition, and (3) students who took their first math class in the Center for Academic Foundations in Fall 2013 or later, which provided a mastery-based emporium-style course with ALEKS adaptive software as the primary means of math instruction accompanied by twice-weekly lessons in self-regulated learning and is the second treatment condition.

All students take their first math class in either the Department of Math and Physics (DMP) or the Center for Academic Foundations (CAF). Subsequent math courses may switch from one to the other. We find that about 98% of students who start in DMP and go on to take a second course will take their second course in DMP, while only about 22% of students who start in CAF and go on to take a second course will take their second course in CAF. The low rate of continuation in CAF is probably due to the fact that DMP offers far more sections of 90-level math than CAF and students primarily choose their courses based on what fits in their schedule. Once students complete 90-level math they take 100-level math, and all 100-level math courses are taught in the Department of Math and Physics using conventional lecture-style classes. So, students can switch between CAF and DMP, but we hypothesize that the first math class that they take can make a difference in whether they eventually pass college-level math. So, we examine students based on their first math class, and we understand that their subsequent math classes may be in traditional or non-traditional formats.

We tracked students who started their first math class from Fall 2011 to Fall 2014 and determined which students passed college-level math in two years or less. We analyzed the probability of passing based on whether the student's first math course was in CAF or DMP and the student's Accuplacer score in computational math (CM),a.k.a. arithmetic.

Results
The ultimate goal of the adaptive/self-regulated learning model for developmental math is to increase the percentage of students who complete college-level math within two years. The time-span of this report extends for two years for students who started in Fall 2013 or earlier but only five terms for students who started in Fall 2014. (There are four terms in a calendar year: Fall, Spring, Summer I & Summer II.) The table below compares students in treatment and control sections and shows the percentage of students who passed college-level math in two years or less based on their score on the arithmetic Accuplacer test (CM). A visual examination of the data shows that Accuplacer score is very important, and it also suggests that students in treatment sections have a higher probability of passing college-level math in two years compared to students in control sections. It is also apparent that treatment sections have larger proportions of students with very low Accuplacer scores.

Percentage of students who started in 80-level math and passed college-level math in 8 terms (2 years) or less
CM

Quintile	Fall 2011 Cohort		Fall 2012 Cohort		Fall 2013 Cohort		Fall 2014 Cohort	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
5	37% (n=49)	28% (n=336)	31% (n=62)	30% (n=259)	22% (n=46)	29% (n=257)	15% (n=20)	22% (n=264)
4	16% (n=61)	20% (n=309)	16% (n=80)	17% (n=327)	28% (n=60)	24% (n=338)	17% (n=24)	10% (n=311)
3	18% (n=33)	14% (n=234)	25% (n=53)	16% (n=188)	10% (n=58)	14% (n=215)	24% (n=17)	10% (n=201)
2	12% (n=178)	10% (n=297)	6% (n=87)	11% (n=277)	10% (n=111)	12% (n=336)	9% (n=45)	7% (n=376)
1	8% (n=203)	7% (n=250)	10% (n=177)	9% (n=249)	8% (n=165)	12% (n=244)	5% (n=56)	7% (n=286)
All	14% (n=524)							

avg(CM)=31.8 16% (n=1426)
avg(CM)=41.1 15% (n=459)
avg(CM)=34.6 17% (n=1300)
avg(CM)=40.0 13% (n=440)
avg(CM)=32.8 18% (n=1390)
avg(CM)=39.4 11% (n=162)
avg(CM)=33.6 11% (n=1438)
avg(CM)=38.7

We conducted a logistic regression with a model that says the probability of passing college-level math in two years depends on the Accuplacer quintile and whether your first math class is adaptive or not:

Pr(pass) = f(quintile, adaptivity)

The "adaptivity" variable has three levels: (1) conventional courses with no adaptivity, a.k.a. the control, (2) adaptive courses prior to Fall 2013 where adaptivity was not emphasized, and (3) adaptive courses from Fall 2013 onward where adaptivity was central to the course. The best-fit model of the logistic regression model provides estimates as shown in the table below.

Estimated probability of passing college-level math in two years or less based on CM quintile and type of course. Probabilities were generated by the statistical model.
CM Quintile Control
(Fall 2011-2013) (n=1726) Treatment
(Fall 2011-2012) (n=983) Treatment (Fall 2013) (n=440)

5 24% 30% 28%
4 16% 21% 20%
3 11% 15% 14%
2 8% 11% 10%
1 7% 9% 8%

The table shows that students in the treatment sections have a 2% to 5% higher probability of passing college-level math in two years or less compared to the control sections. The improvement is statistically significant at the 0.0001 level for the treatment group from Fall 2011-2012. The improvement is not statistically significant, but this is probably due to the comparatively small n.

If the model's estimates are correct, then switching all sections to the treatment condition would increase the number of students passing college-level math in two years or less from about 530 to about 640 per year (assuming 2,000 students take 80-level math each semester with 400 in each quintile), which is a 20% increase.

Discussion

The Center for Academic Foundations (CAF) has always offered an enhanced learning experience in develop- mental math for students with the lowest placement scores. Prior to Fall 2013, the classroom offered a traditional lecture but with a supplemental instructor in the classroom, and a dedicated tutorial session with the supplemental instructor and ALEKS software, but usage data show that students spent averaged than an hour per week on ALEKS. Starting in Fall 2013 the classroom was changed into an emporium-style mastery-based course with ALEKS as the primary vehicle for math instruction, and a dedicated tutorial session focusing on self-regulated learning. Passing rates in CAF before Fall 2013 were relatively high (60% or more), but passing rates from Fall 2013 onward are very low (about 30%), but the eventual pass rates in college-level math are comparable. So, one important observation is that when the course format changes significantly, in this case from an enhanced conventional format to a mastery-based emporium-style format, passing rates can represent different levels of learning. Waiting two years until many students are in college-level math provides a much more stable measure of learning.

It is worth noting that only the first cohort of students in the mastery-based courses are included in this analysis because two years have not elapsed since the start of the second cohort in Fall 2014. That first cohort, like many first cohorts, was subject to a lot of "learning" as the instructors adapted to the new format and learned to use ALEKS in ways that supported the new format. We expect the second and subsequent cohorts will perform better than the first cohort because the faculty have developed their skills at teaching in the new format.

Despite the fact that we only had the first cohort in the new format, the new format seems to be almost as effective as the previous format, and we believe subsequent cohorts will have success rates that surpass those of students in the previous format. Both new and old formats are effective: the probability of passing college-level math in two years or less is 2 to 5 percentage points higher than the traditional format, which results in approximately 20% more students passing college-level math in two years or less. Thus, the experiment with innovative teaching formats has produced positive results.

Project Objective: Task #5--The Completion Project--Improve retention and graduation through retention specialists, career coaches and other support activities. Students who participate in the completion project should graduate in three years or less.

Check if this is a status update for the previous budget period.

Performance Measure	Measure Type	Quantitative Data					
		Target			Actual Performance Data		
		Raw Number	Ratio	%	Raw Number	Ratio	%
5a. Three year graduation rate for students expected to graduate in Spring 2015.	Project		/		680	680 / 1579	43
5b. Number of students on track to graduate in Spring 2016.	Project		/		318	318 / 447	71
5c. Increase the number of advisement weeks.	Project	2	2 / 1	200	3	3 / 1	300
5d. Increase student participation in the completion rally.	Project	3	/		15	15 / 3	500
5e. Begin to shift PBI budget items to college lines.	Project	1	/		2	2 / 1	200
5f. Begin to shift PBI budget items to college lines.	Project	1	/		2	2 / 1	200

Explanation of Progress (Include qualitative data and data collection information)

The overall goal of the project is to increase the number of students who graduate within three years of joining the Completion Project. Students signal their participation in the project by signing the Completion Pledge. Completers are assigned Academic Advisors, Graduation Coaches and Retention Specialists who work with the student to create an academic roadmap that allows the student to graduate in three years or less. Personnel track their students on a weekly basis, offering resources, intrusive advisement, and timely interventions as required. As the objective is to help participants graduate in three years or less, this year, we did not add additional pledges. Rather, the project is focused on
a. moving previous participants to graduation (this is the third year of the completion project)
b. identifying best practices developed as a result of this grant, and
c. integrating completion project best practices into our overall institutional practice and policy
In the past, we monitored fall to fall and fall to spring completion rates for our incoming cohort. As we are focused on moving existing pledge signers to completion, this year we have adjusted the performance measurements to focus on tracking graduation rates and progression towards graduation. The chart below shows the raw data for the calculations used for this grant cycle. A definition of that data legends can be found in Appendix 1.

TABLE 1: Graduation Status of Completion Project Members
1,579 613 67 680
Start 3yrs Cohort Pop UA CP TotGrad %Grad NoGrad 30+ %OnTrack Total
OnTrack Total
OffTrack
F2012 S2015 CP14 1,579 613 67 680 43.1% 899 404 44.9% 88.0% 12.0%
F2013 S2016 CP15 447 193 4 197 44.1% 250 121 48.4% 92.5% 7.5%
F2014 S2017 CP16 1,867 153 2 155 8.3% 1,712 748 43.7% 52.0% 48.0%
F2015*
3,893 959 73 1036 26.5% 2,861 1,273 44.5% 72.0% 28.0%

Outcome of Graduation Status
The PBI target was to increase the three year graduation rate of program participants to 10%. The program exceeded this PBI goal.
Based on the three-year graduation period, students who joined The Completion Project in Fall of 2012 should graduate by Spring/Summer 2015. According to our statistics 43.1% (680 members) accomplished this goal. The 43.1% is well in excess of the PBI goal of 10%. Of the 899 students who did not graduate in three years, 44.9% (404) have accumulated 30 or more college credits. It is expected that these individuals would be able to graduate within one additional year. Retention specialists and graduation coaches will continue to move this cohort towards graduation in the fourth year.
Based on the three-year graduation period, students who joined The Completion Project in Fall of 2013 should graduate by Spring/Summer 2016. According to our statistics 44.1% (197 members) have already accomplished this goal. The 44.1% is well in excess of the PBI goal of 10%. The 44.1% is also already a one point increase the current report year's performance. Of the 250 students who did not graduate, 48.4% (121) have accumulated 30 or more college credits, moving the total number of students on track to graduate to 92.5%. 92.5% is well above the 30% PBI target.

Additional Measurements: Closing the Loop
In addition to the quantitative measurements listed above regarding graduation status, we worked to demonstrate continuous improvement by implementing the "recommendations for the future" that were submitted as part of assessing outcomes of last year's annual report. Table II summarizes these recommendations.
Table II: Recommendations for the Future (from Completion 2.0 Annual Report)
1. Increase the number of and types of advisement weeks. The new model will pilot an advisement month, in which specific targets are encouraged to register.
2. Increase student participation in the planning of the completion rally. Increasing the number of students involved in completion events, including the completion rally,

will allow us to improve engagement opportunities and increase peer to peer interactions around timely completion.
3. Readjust budget to include graduation scholarships and completion rally.
Outcome of Implementation of Future Recommendations
We met or exceeded all goals listed under recommendations for the future.

1. Increase Advisement Weeks. The number of advisement weeks were increased from one general program to three (+200%).
The advisement weeks were reorganized by student demographic. Although the total number of students advised did not increase, dividing the advisement weeks by student year greatly enhanced our ability to focus on and gather appropriate resources to respond to student needs. This was reflected in the strong registration rate for the next semester (150% for advisement conducted in F2014 and 83$ for advisement conducted in S2015).

a. Graduate Advisement Week occurred one week prior to the opening of on-line registration, allowing participants to chose their ideal schedule and guarantee required course placement. We also worked with graduates to secure course substitutions, grade changes, and independent studies in order to finalize their graduation within the three year timeframe.

b. General Advisement Week was timed to coincide with the opening of on-line registration. This advisement week is the most similar to the ones conducted during previous programs. However, we focused our outreach on sophomores rather than the entire college population. Faculty from the divisions were on-hand to provide centralized advisement to their majors.

c. Freshman Advisement Weeks took place inside of the College Success Seminar Courses (aa 3 credit Freshman Seminar). Although CSS is not mandatory, the majority of our Freshman register for this course. Advisement took place during the last week of class so that faculty could provide input on expected grades, which assisted in the advisement process.

TABLE 2: Next Semester Retention for Advisement Week Programs

AdvSem	Cohort	Pop	UA	CP	TotGrad	%Grad	NotGrad	RegNxt	Retention
F2014	F2016 AW7	301	115	18	133	44.2%	168	253	150.6%*
S2015	S2017 AW8	467	125	34	159	34.0%	308	255	82.8%

* Several students who had completed their degree registered for additional courses the following semester in an effort to transfer additional credits to their four-year institution.
2. Increase student participation in completion rally planning. Students were the primary participants in the completion rally program this year. The student participation increased from 3 students to 15 (400% improvement). Students conducted the skits, awarded the prizes, and responded to audience questions. Students were also 100% responsible for building the rally set and developing characters and costumes. Although we do not have survey data, student comments after the rally indicated that they were more engaged and more entertained due to the increased student presence. In addition, traffic in the advisement center increased 10% over same time last year – which we also attribute to the positive response to the rally.

3. Readjust budgets to include graduation scholarships and completion rally. We were unable to adjust the PBI budget to accommodate
these items. However, the College President recognized the importance of the completion scholarships and created a Presidential Graduation Scholarship for students who required assistance in order to complete their first year. Therefore we were able to meet the PBI goal of beginning to shift PBI budget lines to College lines.
Summary
The Completion Project exceeded all PBI performance measurements. Graduation rates for the project participants is 33.1 points above the PBI target. Retention rates for advisement weeks were improved by the additional of target-specific programs. Importantly, the College has begun to shift some of the grant-related costs to college lines. This early shift demonstrates the move to institutionalize this program.

Recommendations for the Future
We will continue to use graduation coaches and retention specialist to improve the three year graduation rate. The PBI target is to increase the graduation rate by one point to 45% for program participants.
We will continue to find ways to shift grant funding for this project to college lines in order to ensure the longevity of this successful initiative.
We will consider additional methods of advertising advisement weeks so that the number of students participating can be increased. The PBI target is to increase the overall advisement week participation by 5% while maintaining the strong retention ratio.

ATTACHMENT I: Data Definitions: Performance Measurements for Completion 3.0
CODE DESCRIPTION DEFINITION FORMULA
Start Start The Year the student matriculated at Essex. For example F2012 began in the Fall of 2012
3yrs Three Years The semester that marks the end of three years at Essex. For example, students beginning in the Fall of 2012 should graduate by the Spring/Summer of 2015 Fall/Spring/Sum (1yr)
Fall/Spring/Sum (2yr)
Fall/Spring/Sum (3yrs)
Cohort Cohort The attribute code that is assigned to this group in banner
POP Population Total number of students who signed the completion pledge (unduplicated)
UA Undergraduate Awarded Number of students who have been awarded an associate's degree
CP Completion Pending Number of students registered for their final courses. Students will be switched to UA after successfully completing the semester.
TotGrad Total Graduates Total number of students expected to have an associate's degree UA + CP = TotGrad
%Grad Percent Graduating Percentage of Population expected to have an associate's degree TotGrad/POP = %Grad
NotGrad Not Graduating Total number of students who are not graduating POP – TotGrad = NotGrad
30+ 30 or more Credits Number of students who have not graduated but have accumulated 30 or more college credits.
%OnTrack Percent on track Percentage of students who have not graduated but have accumulated 30 or more college credits. We have designated 30 or more college credits as being on track to graduate. 30+Cred/NotGrad = %OnTrack
TotOnTrack Total On Track to Graduate Percentage of students who have graduated or are on track to graduate by the end of the year %Grad + %OnTrack = TotOnTrack
TotOffTrack Total OffTrack to Graduate Percentage of students who have yet to graduate and have less than 30 college credits 100% - OnTrack = TotOffTrack

Project Objective: Task #2--Graduation Math--Improve performance in entry level and required math courses through use of teaching assistants.

Check if this is a status update for the previous budget period.

Performance Measure	Measure Type	Quantitative Data					
		Target			**Actual Performance Data**		
		Raw Number	Ratio	%	Raw Number	Ratio	%
2a. Acquire Flash drives for Math 911 dissemination	Project		/		900	/	
2b. Collaborate to disseminate Math 911 during Intake	Project		/		200	200 / 200	100
2c. Improve the performance of Graduation Math students initially placed in 08	Project		/		147	147 / 151	97
2d. Improve the performance of Graduation Math students at 092 placement level (C or better)	Project	503	503 / 1369	37	68	68 / 90	76
2e. Improve the level of Math Anxiety as measured by successful completion of a College level Math Course with a C or better	Project	762	762 / 1533	50	151	109 / 151	72
2f. Increase the placement for Math 092 (graduation impact) measured by students who passed College level math without fulfilling the Math 092 pre-requisite	Project		/		73	73 / 90	81
2g. Efficacy of waiving Math 092 for the highly motivated Graduation Math cohort in Math 101 and Math 103; evaluated waived students taught by full time faculty with C or better	Project		/		55	55 / 66	83
2h. Identify students who need Math to graduate—focus on students with 50+ credits	Project		/		151	151 / 151	100
2i. Select students with high degree of Math anxiety - defined as Repeaters and Avoiders	Project		/		141	141 / 151	93
2j. Accelerate graduation rate of students for students at MTH 092 placement by waiving MTH 092; measured by students who actually graduated	Project		/		90	73 / 90	81
2k.Graduate math avoiders and repeaters; thereby improving total number of graduates by increasing the number of students eligible by satisfying their Math requirement	Project		/		151	120 / 151	79

Explanation of Progress (Include qualitative data and data collection information)

Acquire Flash drives for Math 911 dissemination
• 900 Flash drives were purchased from CF Gear with the Math 911 software and PBI Grant prominently displayed on the case with the Essex Logo for dissemination to the appropriate students 102 102:135 76%
Collaborate to disseminate Math 911 during Intake
• 200 Math 911 flash drives were disseminated during intake and advisement by Retention and Academic Advisement. All academic advisors were trained on the PBI grant program and were required to use the MTH 911 software at least once to enhance their understanding of the student experience with this software.
Improve the performance of Graduation Math students initially placed in 08
• The majority (or 97%) of the 151 students who took a Graduation Math course during 2014-2015 period placed in the 08 level during initial placement
• 91 took 08-Level Math once
• 27 took 08-level Math twice
• 14 took 08-level Math three times
• 6 took 08-level Math four times
• 3 took 08-level Math five times or more
Improve the performance of Graduation Math students at 092 placement level
• Of the 90 students who took 101 or 103 without MTH 092, 68 (or 76%) received a C or better. This means that 68 students fulfilled their math requirements for graduation at least one semester in advance of their trajectory prior to the graduation math class.

Improve the level of Math Anxiety as measured by successful completion of a College level Math Course with a C or better
• A total of 109 (or 72%) of the 151 Graduation Math students received a C or better; 11 students passed the course with a D; 15 students failed the course and 16 were designated with "other" results
Increase the placement for Math 092 (graduation impact) measured by students who passed College level math without fulfilling the Math 092 pre-requisite
• 90 students were placed in Graduation Math sections through a waiver of the MTH 092 requirement
• 73 of the 90 students (81) successfully completed the course and were able to graduate at least one semester early because they were able to pass the college level math course without the developmental prerequisite and in many cases replace developmental credits with coursework that actually applied toward their degree.
Efficacy of waiving Math 092 for the highly motivated Graduation Math cohort in Math 101 and Math 103; evaluated waived students taught by full time faculty with C or better
• This model was tested using full time faculty to ensure that the waiving of Math 092 was pedagogically sound before any adjunct was permitted to teach these sections
• The difference between the success rate, that is a grade of C or better, of the waived students and the students that were not waived, overall was 5%;
• For Math 101, 33 of 35 students (or 94%) earned a C or better; the waived students had a higher success rate, that is had a grade of C or better, than the students who satisfied the pre-requisite;
• For Math 103, 22 of 31 students (or 71%) earned a C or better; the success rate, that is a grade C or better for the students who satisfied the pre-requisite was only 9% higher than the waived students, this difference was understandable, since the students with the highest level of math anxiety were placed in the 103 sections;

Full time Faculty Pedagogical Pilot (Spring 2013, Fall 2013 for Math 101 only, and Spring 2014) Students Waived 092 Waived Students A-C Success Rate for Waived Students Satisfied 092 Pre-requisite Satisfied 092 A-C Grade Success Rate for Satisfied Difference Waived vs. Not Waived
Course All Students (Waived & Satisfied 092) Total of All Receiving A-C Success Rate for All Students
Math 101 57 49 86% 35 33 94% 22 20 91% -3%
Math 103 41 31 76% 31 22 71% 10 8 80% +9%
Overall for Full Time Faculty 98
80
82% 66
55
83% 32 28 88% +5%

Full time Faculty Pedagogical Pilot of Waiving Math 092 (Spring 2013, Fall 2013 for Math 101 only, and Spring 2014)
Course Students waived 092 Total of All Receiving A-C Success Rate
Math 101 35 33 94%
Math 103 31 22 71%
Overall for Full Time Faculty 66
55
83%

Identify students who need Math to graduate—focus on students with 50+ credits
• The average number of credits for all students who took this class were 50 credits.
Select students with high degree of Math anxiety-defined as Repeaters and Avoiders
• For the 2014-2015 period, 141 Students who took graduation math classes were either repeaters or avoiders. It is safe to assume that these students had a high level of math anxiety. Students from this sample were not cherry picked for their math acumen; on the contrary--rather than select a population comfortable with math and eager to take these courses, our sample was comprised of students who under normal circumstances have repeated or avoided this required pre-requisite course, thus preventing their graduation .
• 90 never passed Math 092;
• 117 attempted 092 once;
• 32 attempted 092 twice;
• 17 attempted 092 three times;
• 5 attempted 092 four times;
• 3 attempted 092 five times;
• 0 attempted 092 more than five times;
• 47 attempted 100 level twice;
• 28 attempted 100 level three times;
• 12 attempted 100 level more than three times; and
• The success rate (A-C) for Math 092 is about 45% for the entire college. Students must achieve a C in order to progress to a College level math. Many of these students have attempted 092 without success; 81% of the students successfully negotiated the college level math course without 092.

Accelerate graduation rate of students by waiving Math 092
• For 73 graduates, waiving the MTH 092 requirement meant they were able to graduate at least one semester early because they were able to pass the college level math course without the developmental prerequisite and in many cases replace developmental credits with coursework that actually applied toward their degree.
• The success rate (A-C) for Math 092 is about 45% for the entire college. Students must achieve a C in order to progress to a College level math. Many of these students have attempted 092 without success; 81% of the students successfully negotiated the college level math course without 092.
Graduate math avoiders and repeaters; thereby improving total number of graduates by increasing the number of students eligible by satisfying their Math requirement
• Total of 151 students had 50+ credits; 120 (or 80%) of these Graduation Math Students successfully completed their math requirement (A-D) and therefore were eligible to graduate;

Assess impact on transfer
• Collated transfer information regarding transfer of Math 103 for 40 different institutions
o For years some of the faculty and the counselors have maintained that Math 103 does not satisfy the quantitative measurement requirement for general education at most of our main four-year receiving schools. The result is that some faculty and counselors will not recommend Math 103 and advise our students to take Math 100 instead. Institutional research shows that the Math 100 success rates are much lower than Math 103. Baseline ALL MATH MTH 100, 101 & 103
STUDENTS--886/1660 ALL MATH STUDENTS SUCCESS RATE 53.4% BREAK DOWN OF ALL MATH MTH 100 606/1283 (47.2%); MTH 101 167/248 (63.3%); MTH 103 113/129 (87.6%); WHEN GRADUATION MATH STUDENTS ARE NOT IN THE SAMPLE SUCCESS RATES DECLINE FOR MTH 101 110/196 (56.1%); MTH 103 53/63 (84.1%)

Course Baseline Success Rate Baseline w/o Graduation Math Success Rate Graduation Math Success Rate

Course	Baseline Success Rate	Baseline w/o Graduation	Math Success Rate	Graduation Math Success Rate
Math 100	606/1283 47.2%	599/1274 47%	7/9 78%	
Math 101	167/248 63.3%	110/196 56.1%	61/65 94%	
Math 103	113/129 87.6%	53/63 84.1%	66/75 88%	
total	886/1660 53.4%	762/1533 49.7%	134/149 90%	

o A list of four-year institutions that accept Math 103 for transfer and institutions that accept this class to satisfy the general education quantitative requirement was assembled and disseminated to Faculty, Advisors and Counselors

o A table that identifies all of the schools that accept Math 103, both as a transfer credit in math and for satisfaction of the quantitative general education requirement. The table is based on Transfer.org the official site for NJ. You will note that the primary Rutgers Newark receiving schools-- Newark College of Arts and Science (NCAS), Rutgers Business School, School of Criminal Justice (SCJ), School of Public Affairs and Administration (SPAA), or University College–Newark (UC-N) accept this course as "Math for Liberal Arts" and it does indeed satisfy the general education 3 credit quantitative reasoning requirement. Other colleges and universities such as NJCU, William Patterson, Seton Hall, Farleigh Dickinson, The College of New Jersey, Caldwell College, Centenary College, Rutgers Camden College of Arts and Science, Rutgers Camden University College, Rutgers School of Nursing, College of Saint Elizabeth, Felician College, Georgia Court University, and Monmouth also accept this course to satisfy the quantitative general education requirement.

NJ Transfer Website information on Essex County College Math 103 course equivalencies

Institution Equivalency Min Grade Accepted for credit Accepted as Math Accepted as General Ed
Berkeley College MAT271 (SPECIAL TOPICS IN MATHEMATICS) C Min 04.00
Max 04.00 Y no
Bloomfield College MTH103 (UNDERSTANDING OUR QUANTITATIVE WORLD) C Min 04.00
Max 04.00 Y no
Caldwell University MA112 (CONCEPTS/MATHEMATICS) C Min 04.00
Max 04.00 Y Mathematics
Centenary College MTH1111 "E0" (QUANTITATIVE LITERACY) 1 C- Min 04.00
Max 04.00 Y Mathematics
College of Saint Elizabeth MATH999 (MATHEMATICS ELECTIVE) C Min 04.00
Max 04.00 Y Mathematics and Computer Science
DeVry University Not Yet Evaluated No
Drew University Not Yet Evaluated no
Fairleigh Dickinson- Florham MATH1126 (CONTEMPORARY MATHEMATICS) C Min 04.00
Max 04.00 Y Mathematics
Fairleigh Dickinson- Metropolitan MATH1101 (COMPREHENSIVE MATHEMATICS) C Min 03.00
Max 03.00 Y Quantitative Analysis
Felician College MATH112 (Quantitative Reasoning) C Min 04.00
Max 04.00 Y Mathematics
Georgian Court University GENED "G6" (GENERAL ED)2 C Min 04.00
Max 04.00 Y Mathematics
Kean University MATHX1001 (MATHEMATICS - GESM)
As of Fall 2010 C Min 03.00
Max 03.00 Y
Monmouth University MA100 (Quantitative Reasoning and Problem) C Min 04.00
Max 04.00 Y Mathematics
Montclair State University EC (ELECTIVE CREDIT) C- Min 04.00
Max 04.00 Y
New Jersey City University MATH102 (Fund Of Math) C Min 04.00
Max 04.00 Y All University Requirements
NJ Institute of Tech Not transferable 0.00 cr N No
Ramapo College MATH199 (TRANSFER ELECTIVE) C Min 04.00
Max 04.00 Y
Raritan Valley Community College Not Yet Evaluated Min 04.00
Max 04.00
Richard Stockton College TRCREC (ELECTIVE TRANS CREDIT) C Min 04.00
Max 04.00 Y Elective Credit, Quantitative Reasoning Intensive Course
Institution Equivalency Min Grade Accepted for credit Accepted as Math Accepted as General Ed
Rider University MTH102 (Finite Mathematics) C Min 04.00
Max 04.00 Y
Rowan University MATH01115 (CONTEMP MATHEMATICS) D- Min 03.00
Max 03.00 Y
Rutgers Business School - New Brunswick Not transferable 0.00 cr N No
Rutgers-Camden-
CCAS-Camden College of Arts and Science,
UC-University College,
Nursing 50640103 (FUNDAMENTAL MATHEMATICS SYSTEMS I (R) C Min 04.00
Max 04.00 Y Mathematics (Graduation Requirement), Quantitative Skills (Gen Ed Area 2b)
Rutgers-Camden-School of Business 50640103 (FUNDAMENTAL MATHEMATICS SYSTEMS I (R) C Min 04.00
Max 04.00 Y
Rutgers-Edward Bloustein Sch of Planning & Policy Not transferable 0.00 cr N No
Rutgers-Ernest Mario School of Pharmacy Not transferable 0.00 cr N No
Rutgers-Mason Gross School of Arts Not transferable 0.00
credits N No
Rutgers-Newark- NCAS-Newark Campus School of Arts and Sciences,
RBS—Rutgers Business School, SCJ-School of Criminal Justice,
SPAA-School of Public Affairs and Administration,
UC-N-University College Newark 21640106 (MATH FOR LIBERAL ARTS) C Min 04.00
Max 04.00 Y Quantitative Reasoning
Rutgers-NB School of Arts and Sciences Not transferable 0.00 cr N No
Rutgers-School of Engineering Not transferable 0.00
credits N No
Rutgers-School of Env Biological Sciences Not transferable 0.00 cr N No
Rutgers-School of Man and Labor Relations Not transferable 0.00 cr N No
Rutgers-School of Nursing Not transferable 0.00 cr N No
Institution Equivalency Min Grade Accepted for credit Accepted as Math Accepted as General Ed
Saint Peter's University MA105 (FINITE MATHEMATICS I) C Min 03.00
Max 03.00 Y
Seton Hall University MATH1102 (MATHEMATICAL PERSPECT) C Min 03.00
Max 03.00 Y Arts & Sciences: Mathematics - BA
The College of New Jersey MAT101 (APPLIED LIBERAL ARTS MATHEMATICS) C Min 04.00
Max 04.00 Y Quantitative Reasoning
Thomas Edison State College "112" D Min 0.00
Max 04.00 Y See Footnote3

William Paterson University MATH1100 (CONTEMPORARY MATH) C Min 04.00
Max 04.00 Y Ways of Knowing: Quantitative Thinking

1 This course is equivalent to 4 credit hours at Centenary College. Therefore students will receive 3 credits for this course and must take an additional 1 credit elective.
2 This course will not fulfill a Gen Ed requirement if taken after the student is enrolled at Georgian Court University.
3 112 Thomas Edison State College will accept credit in transfer for courses completed at colleges and universities accredited by the six regional accrediting agencies recognized by the U.S. Department of Education. In
addition, the College offers a host of ways to earn credit for knowledge obtained in noncollegiate settings. For more information, please visit
www.tesc.edu/academics/catalog/Transfer-Credit.cfm

Going forward
• Math retests after the dissemination of the Math911 software needs to occur contemporaneously with completion of the program. The Testing Center plans to retest the students at will. This should eliminate some of these problems.
• Data regarding the efficacy of waiving Math 092 will be shared with the Mathematics Department to confirm the effectiveness of their initial suggestion to waive Math 092 for Math 101 and Math 103.
• The Transfer information concerning Math 103 has been disseminated to the Student body and incorporated in all Advisement discussions with students. Retention and Academic Advisement, collaborating partners on this activity, actively incorporates this information in their advisement activities.
• We will continue to improve the distribution of Math911 software before the semester begins.

Summary

The Graduation Math courses were originally designed for math repeaters whose graduation and progress was delayed by either the need to repeat Math 092 and/or a college level Math. Later, the name was changed from Repeaters Math to a more positive name—Graduation Math. This change was based on student feedback. Instead of focusing solely on repeaters, avoiders were added, since it was clear that anyone who waited until the last couple of semesters to tackle math and some very high levels of anxiety and were dreading the math requirement. Research also confirmed that some students actually thought about delaying their graduation because of their fear of taking or repeating the required math classes. The goal of Graduation Math is to increase the number of graduates and improve retention by offering students who are struggling with math more tutoring and smaller class sizes; reducing their anxiety levels to improve their success. Graduation Math successfully increased the number of graduates and students eligible for graduation by moving them from developmental placement to satisfaction of their college level general education math requirement. Graduation Math classes are unique because the class sizes are small; Teaching Assistants are assigned to the specific courses and shadow the professor; and the developmental math requirement of Math 092 is waived for students taking Math 101 and 103. The Graduation Math student is part of a highly motivated cohort close to graduation. The pedagogical soundness of the practice of waiving Math 092 was piloted by full time Math faculty before any adjunct faculty were assigned to teach these sections. Waiving Math 092 for these highly motivated individuals had no appreciable negative impact. Instead, students who would have been delayed at least one semester from graduation successfully negotiated the college level math class and graduated. The students who participated in this activity were students with a high level of anxiety about math. Yet, they clearly benefited from the small class size and individualized tutoring from the Teaching Assistants hired with the funding from this grant. In all categories, these students represented the challenged end of the spectrum; initial placement, subsequent performance in developmental and college level math courses, lack of persistence in math courses, and moderate to high math anxiety. Yet, their success rates exceeded all of the college's baseline indicators.

Section B: Budget Information

Essex County College had seven (7) funded activities under the PBI formula grant for the period October 1, 2014 through September 30, 2015. The award amount was $273,404 and a balance of $81,385 was available as of September 30, 2015 per our grant accountant. The balance is being used in the fifth and final year which began October 1, 2015. The Center for Academic Foundations (CAF)(Task #1) Supplemental Developmental Education program had the highest remaining balance, followed by Online Learning (Task #6). In addition as explained in the report, the external evaluator center sent late notification that it would not be able to continue to work on the PBI program, and thus a replacement evaluator had to be found late in the Spring 2015 semester and is still assessing the program year(Task #7).

We request use of the remaining balance for the continuing 7 activities as well as to add additional funding to the new Teacher Prep PRAXIS prep program that is a part of our October 1, 2015 through September 30, 2016 5th and final program year application. The funding would enable the college to offer a stipend to the Adjunct faculty member who is working with the full-time Teacher Education Coordinator in the Division of Social Sciences to develop and implement the program that expands our capacity to prepare future teachers.

Section C: Additional Information

We would like to continue the seven ongoing PBI funded activities as well as continue implementing the 3 new activities described in our grant application for our fifth and final year that began October 1, 2015 and ends September 30, 2016.

Uploaded Files:

Essex Figure and Table for APR FY15 Task 1 (Essex Fig Tables APR FY15 Task 1 CAF Dev Math.pdf)
Essex Tables for APR FY15 Task 2 (Essex Tables APR FY15 Task 2 Grad Math-Davis.pdf)
Essex Tables for APR FY15 Task 5 (Essex Tables APR FY15 Task 5 Completion-Mack.pdf)