At Bakersfield College, we have done a soft launch of the Renegade Promise: if the student will commit to 15 units per semester of degree-applicable courses, we promise to get them out in two years. In order to make this a reality, a guided pathways approach will need to be used, so we have begun calculating the financial impact in preparation for making the promise to the public later this spring. To share with you what we have calculated so far, I’m going to approach it as making a business case for guided pathways—does it make sense to spend money in this way to make it happen?

There are three audiences for this question: the student, the taxpayer, and the college. I will show you that there is a strong case in favor of guided pathways for the student and the taxpayer. It is not quite so clear cut for the college but as I’ll explain below, that’s okay!

**Students**

Students definitely benefit. The incentive provided by the Renegade Promise is that students who stick to the pathway will get an associate degree in two years with the corresponding increase in annual earnings. If we can get them to be on a track to a bachelor’s degree, the earnings benefit is even larger. In this section I will follow a general statement with the calculation I used in brackets and italics, so you can see the calculations.

**Earning benefit for associate’s**
The latest “Education Pays!” data from the U.S. Bureau of Labor Statistics show with the median annual earnings for an associate’s degree holder, that they will earn over $193,000 more than a high school graduate in 30 years. 

\[\text{Calculation: median earnings for an associate degree is $41,184 which is $6448 more than a high-school graduate. Over 30 years that amounts to $193,440 more in lifetime earnings.} \]

No attempt is made in any of the calculations in this paper to predict inflation and wage increases in the future.

**Earning benefit for bachelor’s**

If we can get them to be on a track to a bachelor’s degree, that boosts the lifetime bonus to more than $675,000 over the high school graduate. 

\[\text{Calculation: the median annual earnings for a bachelor’s is$57,252 which is$22,516 more than a high-school graduate. Over 30 years that amounts to $675,480 more in lifetime earnings.}\]

The “Education Pays!” is a broad brush-stroke of the entire United States. For California, we can use the “Salary Surfer” website at the California Community Colleges Chancellor’s Office to get much more fine-grained data on 154 associate’s degrees. The “Education Pays!” data set and “Salary Surfer” data set have different ways of grouping the income-education data. “Education Pays!” looks at all those 25-years and older who have a given highest level of educational
attainment while “Salary Surfer” looks at what people with a given degree earned 2 years before the degree, 2 years after getting the degree, and 5 years after getting the degree. “Salary Surfer” gives a truer value for attaining an associate degree than “Education Pays!” when we compare the means of what people earned two years before the 154 associate degrees and two years after the 154 associate degrees. The average annual income for people 2 years after attaining their associate’s is $36,701 which is $13,646 more than what they earned before the associate’s. Over 30 years that comes to $409,380 earnings bonus with the associate degree.

It is not known from the “Salary Surfer” data set how many of those in the “five years after” category had gone on to earn a bachelor’s in the same subject area as their associate’s, so it is impossible to determine a bachelor degree boost from that data set. Also, some of the associate degrees do not have a bachelor degree in the same subject area.

Cost savings for the student
The cost savings for the student comes from the lower number of units they take to get the degree. In a California Community college, a student pays $46/unit. Adding the cost of textbooks, living expenses while attending school and lost time not earning money at a job while attending classes, you need to multiply the cost savings by a factor of about 3. We do know that many of our students take more than 60 units to get a degree but we’re still crunching the numbers for how many units it takes the average student to get a degree. We also need to distinguish the units earned in remedial courses from the units in college-level/transfer courses.

However, numbers like 80 to 90 units are very plausible based on anecdotal evidence. A thirty-unit excess amounts to $1,380 in extra tuition or a total excess cost of about $4,140 per student. In 2014-15 Bakersfield College had about 950 students get an associate’s degree (many others go on to transfer to a four-year school without getting the associate). If half of them took 90 units to get their degree (again, this number of units is a very plausible number to use at Bakersfield College), then that comes to $1.97 million in wasted tuition dollars for the students.

One way we have already reduced costs to the students is by accelerating remediation and multiple-measuring students to place them at a higher level. Bakersfield College saved the students “2111 semesters” worth in Fall 2015 getting students into transfer-level courses. My calculation puts that at over $388,000 in saved tuition. Again multiply by 3 to get the total cost to the student.

\[
\text{Calculation: let’s assume that a student needs to take just one remedial class in English or Math before they can move on to college-level courses in the following semester. Remedial classes are either 3 units or 5 units, so let’s use an average of one four-unit class. The tuition cost = 2111*4*$46 = $388,424 in tuition.}\]

With the associate’s greater earning power and cost-savings with guided pathways, students definitely benefit!

Taxpayers

Taxpayers definitely benefit. The higher income due to earning an associate degree will bring more income tax revenue to the state. Also, the quicker we can get students through to get their
degree or certificate, the less FTES apportionment dollars the state will have to spend per student. Let’s look at the income tax boost first.

**Taxpayer benefit for associate’s**
The associate degree holder is going to bring in more to the state coffers because of higher income taxes. Using the “Education Pays!” data, it’s about $11,640 more in state taxes than a high school graduate over 30 years. “Salary Surfer” data gives a larger associate's income tax revenue boost of $18,590. Also, college degree holders make much less demands on publicly-funded programs associated with health care, welfare, and the criminal justice system.

*Calculation: Using the “Education Pays!” annual earnings of $41,184 for the associate degree, the annual California state income tax is $1206 with the “Education Pays!” associate degree holder. The annual earnings for a high school graduate is $34,736 with a state income tax of $818 = difference of $388 per year x 30 years. The mean “Salary Surfer” annual earnings 2 years after an associate degree is $36,701 with a state income tax of $937 but the 2 years before the associate degree is an average $23,054 with a state income tax of just $317. This is a difference of $620 per year x 30 years.* [Income tax data from http://www.tax-brackets.org/californiataxtable]

**Taxpayer benefit for bachelor’s**
It’s even better for a bachelor degree holder: about $49,350 more in state taxes than a high school graduate over 30 years.

*Calculation: Using the “Education Pays!” annual earnings of $57,252 for the associate degree, the annual California state income tax is $2463 = difference of $1645 per year x 30 years]*

**Cost savings to the taxpayer per student**
The cost savings to the taxpayer comes from the less units students have to take, results in less FTES funding the state has to provide. For example, the 2111 semesters saved through our accelerated remediation and multiple-measure work has saved the taxpayers over $1.3 million.

*Calculation: 2111*4 units /(30 units per FTES) *$4676 per FTES = $1,316,138]*

Once we find out the excess units above 60 units our students are taking to get a degree, we’ll convert that to FTES and multiply by the amount we get per FTES, now $4676. Multiply that by the number of students getting degrees to get the total savings to the taxpayers.

*How to find cost savings: \((X - 60)/30 * \$/FTES, where \$/FTES is now $4676.]*

Note that this will be the budget hit (cut in apportionment $$) to the college if we had no students on waitlists. However, BC continues in growth mode, so the students who would otherwise be taking up space by taking extra units are replaced by students who would have been on the waitlists.

With the increased income tax revenue from higher paying jobs made possible from a college degree and cost-savings with guided pathways, taxpayers definitely benefit!

**College**

For the college, we know that there will be increased expenditures. We have already begun laying the groundwork for implementing guided pathways through SSSP and Equity funding and
becoming more focused on proper placement of students and making sure they have a Student Education Plan. The SSPP and Equity funding has been used primarily to front load students onto a path but there are also expenses for follow-through. In 2014-15, we spent $2.3 million in SSPP money and $4.2 million in GUI matching funds in SSPP related activities for a total of $6.5 million in a college with 13,880 FTES and about 20,500 headcount. We have increased the number of counselors to 18 full-time, 4 part-time, and 17 full-time educational advisors and we have searches going on for 3 more advisors.

SSPP has five areas of expenditures: Orientation, Assessment, Counseling/Advising Other Ed Planning, Follow-up, and Coordination. The first three are for front loading the students onto an appropriate path. In 2014-15 we spent $1,672,649 of SSPP and $1,878,671 of GUI matching funds or a total of $3,551,320 for the first three areas.

Follow-up is for advising, mentoring, prodding students to stay on a path. For the Follow-up we spent $95,838 of SSPP and $347,317 of GUI matching funds or a total of $443,155. Coordination is for all of the administrative tasks. For the Coordination we spent $578,250 of SSPP and $744,640 of GUI matching funds or a total of $1,322,890. Another $1,217,365 of GUI money was spent for SSPP related activities in “Credit SSPP Research”, “Credit SSPP Technology” (software, web developers, IT director time on SSPP activities), and “Transitional Services” that includes Admissions & Records, transfer and Articulation services, Career services, other institutional research not already in the Credit SSPP Research, tutoring and supplemental instruction.

In ReDesigning America’s Community Colleges, Bailey, Jaggars, and Jenkins identify five areas of increased expenditures for creating guided pathways: 1) faculty time to re-evaluate programs and services; 2) professional development in key areas; 3) giving administrators time to communicate, coordinate, & engage the stakeholders; 4) upgrading our computer systems to track student progress; 5) hiring more counselors+advisors to help students choose appropriate paths at the start and keep them on the paths, especially providing support for the at-risk students.

We can map the SSPP funding onto these five areas. Here are two examples.

**Area #5: Counselor+advisors costs**
Bakersfield College’s FTES in 2014-15 was 13,880 (kccd.edu fast fact sheet). In 2014-15 we spent $1,173,186 with SSPP and $1,599,905 with matching GUI001 on counselors and educational advisors alone = $2,773,091. We spent $300,151 on counselors+ed advisors with Equity funds. That comes out to about $221/FTES . Missing from this is money coming from EOPS + DSPS.

**Area #4: Upgrading computer systems + Area #2: Professional development**
Amount of SSPP with GUI matching spent in 2014-15 for this area include: $343,583. Bakersfield College also used money spent on Achieving the Dream to upgrade our computer databases to better track students and for professional development of faculty and staff.
Ensuring no bottlenecks for Renegade Promise

For our Renegade Promise, we need to make sure there are no bottleneck courses that students are not able to get into due to lack of space. We need to be sure that there are enough additional instructors to teach additional sections of the identified bottleneck courses. How do we estimate that cost or determine if there are bottlenecks?

One way to estimate it is to find the number of students who were purged from the waitlists at census day (the date at which we determine our FTES for state apportionment funding). These students were not able to get rolled into registered status into the course due to lack of space. Finding this number is not a trivial task with our Banner information system.

With that data point, you divide by the typical class size or use the productivity ratio of 17 (FTES/FTEF). That gives you the additional sections we need to offer to remove bottlenecks. Multiply that by the cost of an adjunct/section or full-time/(5 sections). Also need to include utility costs for typical classroom and bathroom but a person’s salary probably accounts for 85% to 90% of the cost.

One study in Fall 2015 looked at 1200 students chosen at random from the over 6000 students who were on the waitlist ten days before census day. Of those 1200 students, just 64 were purged from the waitlist or just 5.3%. For a waitlist size of 6000 students, that is 320 students or 18 to 19 additional sections that need to be offered.

One major caveat, though, is that waitlists are used in two different ways at Bakersfield College. Some courses set their waitlist size at a low number to give the students on the waitlist the expectation that they will have a good chance of getting into the course. This then ignores the students who want to get into the course but cannot even get on the waitlist. Other courses have their waitlist size set to a large value to determine if additional sections need to be offered because they have a ready pool of adjuncts and classrooms available to handle the extra sections.

How many additional ed advisors/counselors are needed for those extra students who now get enrolled because the bottlenecks have been eliminated? Well, to even get on the waitlist, those students had to get counseling advisement, so there is no extra cost for that. However, if we use the number of students purged from the waitlist as a proxy for the amount of unmet demand, we use the ratio of counselors/ed advisors to students we now have and multiply that ratio by the number of students purged from the waitlists to find out the number of extra counselors/ed advisors we need to hire.

Number of counselors at BC is 18 full-time and 4 part-time and the number of educational advisors is 17 full-time advisors. This gives us 37 FTE counselor+ed advisors at BC (including the Delano Center). Bakersfield College’s headcount in Fall 2015 = 20,523. That’s a ratio of 554 students per counselor/advisor. One of the counselors is department chair and spends most of her time with administrative duties. That pushes the ratio to 570 students per counselor/advisor. If we have just 320 students that need courses, it looks like at most one additional advisor/counselor is needed.
It is unclear if you can make a business case for the college for guided pathways. There are still significant holes in our data and analysis to determine all of the costs and how much *additional* money it will take to fully implement guided pathways.

HOWEVER, the mission of the college is education, not making money. Education ensures the survival of our society. We’re in the people transformation business—that’s something on which you can’t really put a price. “If you give someone a fish, you feed them for a day. Teach someone to fish and you feed them for a lifetime.” Education is a “high-touch” endeavor if you want to do it right. It requires many, many one-on-one interactions. It is very people intensive! That requires money to pay all those people. However, with so many students wasting so much time because they don’t have a clear path, guided pathways are worth the expense.