Proposal for the Quality Enhancement Plan
The University of Alabama in Huntsville

Prepared for the Commission on Colleges of the Southern Association of Colleges and Schools
On-site visit
March 15-17, 2016

THE UNIVERSITY OF
ALABAMA IN HUNTSVILLE

Office of the Provost

January 25, 2016

Southern Association of Colleges and Schools
Commission on Colleges
1866 Southern Lane
Decatur, Georgia 30033-4097

Dear Review Committee:

The University of Alabama in Huntsville (UAH) has developed a Quality Enhancement Plan (QEP) for its 2016 Reaffirmation of Accreditation for the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC). We, the faculty, staff, students, and administration at UAH, believe that our QEP, Collaborative Learning, will be transformational for student learning and for our student learning environment at our institution.

With the understanding that the QEP is a fundamental and essential component of the SACSCOC reaffirmation process, the UAH faculty took on the charge to develop a QEP that meets the definition and goals of the QEP as stated in the *SACSCOC Handbook for Institutions Seeking Reaffirmation,* August 2011 Edition (pages 39 and 40). The *SACSCOC* Handbook states that the QEP "describes a well-defined topic or issue(s) related to enhancing student learning and/or the environment supporting student learning and accomplishing the mission of the institution." It continues that the plan "launches a process that can move the institution into a future characterized by creative, engaging, and meaningful learning experiences for students."

Through surveys, focus groups, and collaborative problem solving sessions, the faculty affirmed that students frequently feel isolated and find it difficult to succeed in their classes. One student captured the essence of the problem by saying, "You can't do UAH alone." Our faculty recognized this statement as both an insightful statement and a plea. The students were telling us that we as a university need to help our students find ways to become more connected to the institution and to the faculty and other students at the university. Being isolated often results in poor student learning and overall performance as well as poor persistence. As a faculty, we need to help students connect with their professors and their fellow students. Through these connections, we can help students become absorbed in their coursework and fully integrated into the very fabric of our university. The faculty realized that we must be intentional in our effort to provide students the learning mechanisms and academic environment that will spur their learning and give them the interconnections that will stimulate and develop their ability to think critically and provide a student networking support system for academic success.

For its 2016 reaffirmation of accreditation, UAH's QEP focuses on Collaborative Learning which is defined as, *UAH students and faculty working together to explore options and create solutions in pursuit of knowledge*. Through this Collaborative Learning QEP, UAH will create a

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Collaborative Learning Center for faculty and students. This university-wide effort will develop best practices in collaborative learning appropriate to our student body and make them part of every student's experience, improving how we teach and how students learn.

Our goal is to engage our faculty and students as essential partners in the teaching and learning environment. In our classrooms, laboratories and studios, we will bring students with varied backgrounds, experience, and knowledge to work and study together. Our students will be taught how to learn collaboratively. They will learn collaborative learning methodology and apply it in the classroom and in their study sessions. Together, they will learn to think critically about their course material and to formulate, interpret, and solve problems collaboratively, thereby deepening their understanding and enhancing their learning. The research and our trial efforts show that students working and learning together gain increased understanding of the subject matter and strengthen their relationships with each other and with UAH.

The entire campus community is supportive of our QEP on Collaborative Learning and believe that by implementing our Collaborative Learning QEP our students' learning will increase substantially. We are setting up a Collaborative Learning Center that will be linked with our Student Success Center that resulted from our last 2006 QEP. UAH is committed to a Collaborative Learning Center that will assist faculty in implementing collaborative learning in our classrooms and incorporating collaborative learning in study sessions led by our Student Success Center. UAH will provide new funding over a five-year period for our Collaborative Learning Center as shown in the budget included in the QEP proposal and will leverage the resources from our Student Success Center which will be deeply engaged with the Collaborative Learning Center.

The first director of our Collaborative Learning Center, Dr. Dan Rochowiak, has been named. Dr. Rochowiak has been involved with the QEP from the beginning of the planning process and is deeply committed to instituting collaborative learning as a vital part of our teaching and learning process. In addition, the Collaborative Learning Advisory Council is being constituted and will be charged and operational by the time of the On-Site Reaffirmation Committee visit.

The university is deeply committed to providing UAH students and faculty the opportunity to work together to explore options and create solutions in pursuit of knowledge through the Collaborative Learning QEP. We fully support the Collaborative Learning QEP.

Very truly yours,

Christine W. Curtis

Christine W. Curtis
Provost and Executive Vice President for Academic Affairs

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COLLABORATIVE LEARNING
The QEP for UAH

Students learning together at the Charger Union

Table of Contents

I. EXECUTIVE SUMMARY

Our Quality Enhancement Plan aims to transform the educational and cultural landscape of The University of Alabama in Huntsville (UAH) by placing Collaborative Learning at the center of instruction. This change will increase student engagement in the classroom; provide valuable enhancements in creativity, cooperation, and inquiry-based learning; and meet the needs of future employers. Equally important, Collaborative Learning will connect students to each other and to UAH by means of *academics*, replacing *isolated students* with *collaborative learners*, a change that we firmly believe will increase the chance of success for all UAH students.

We selected Collaborative Learning after a thorough process that involved input from all relevant university constituencies and a full review of the literature. Our process has been a long and involved one, but the result, based on feedback from faculty and students, and further reinforced by our baseline surveys, is a QEP that fits with UAH's current aims and goals.

Indeed, Collaborative Learning, as defined in this document, entails student learning outcomes that tie directly to UAH's mission to *"educate individuals in leadership, innovation, critical thinking, civic responsibility and inspiring a passion for learning."* Collaborative Learning meets these high-level institutional goals because it will lead students to value perspectives and approaches that differ from their own; to grasp the critical role communication plays in sharing and understanding diverse perspectives; and to know the benefits of probing deeply into challenging issues and problems. Learning itself will improve as students learn from their peers in ways that augment traditional teaching, and they will develop the ability to collaborate, which is a skill valued by employers and society at large.

Our plan for quality enhancement includes detailed definitions and principles of Collaborative Learning and a fully developed path to implement Collaborative Learning in the classroom. This plan includes the creation of an oversight committee, a Collaborative Learning Center (CLC), and two positions, the CLC Director and CLC Coordinator, that will have responsibility for ensuring that our proposed implementation deadlines are met. This institutional struture will also ensure that we carefully assess our students' knowledge of Collaborative Learning principles, the extent to which Collaborative Learning improves learning across the campus, and the degree to which Collaborative Learning principles have been put into place across the curriculum and the University. Furthermore, the aims and goals of the QEP are reflected in specific Learning Environment Outcomes, which will ensure that we can assess the overall effectiveness of our 2016 Quality Enhancement Plan.

The following is a narrative of our process; the data we collected and a literature review to support our findings; and the institutional procedures and plans for implementing and assessing Collaborative Learning.

II. PROCESS USED TO DEVELOP THE QEP

The development of the QEP started by forming a topic selection committee. Committee membership included representatives from every academic college, student affairs, international programs, advising, the student success center, FYE, and the student population, in hopes of achieving wide-ranging input and expertise. Interested parties were encouraged to attend, and members were added based on their interest and our needs.

Committee Member	University Position
Allen Wilhite, Chair	Professor of Economics, Chair of Accounting, Economics, and Finance
Chris Allport	Associate Professor of Accounting, Charger Success
T.J. Brecciaroli	Assistant Dean of Student Affairs, Student Engagement
Alan Constant	Director, Student Success Center
Rhonda Gaede	Associate Professor, Engineering, Charger Success
Laura Langley	Student, Mechanical Engineering
Ivey McKenzie	Assistant Professor of Management, Charger Success
Dan Rochowiak	Associate Dean, College of Science
Carolyn Sanders	Professor of Music, Charger Success
Suzy Steen	Director, Office of International Engagement
William Wilkerson	Dean, Honors College
Andrea Word-Allbritton	Director, Intensive Language and Culture and Chair, GER Review Committee

Once the Committee was formed, we put out a campus-wide solicitation for proposals. This resulted in developing an initial focus on student success. The committee then gathered data on student success at UAH and began a literature review of the same topic. As we worked through the data and the literature we came to the realization that we could enhance the quality of our instruction by creating an academically-based community in the classroom, which would aid in our students' success.

THE PROPOSAL STAGE

We began by issuing a campus-wide call for proposals for a QEP in May 2014. In response to this call we received 10 proposals from students, staff, and faculty members from across the University.

In July, the QEP committee and the SACSCOC Leadership Team met to review these proposals. There were many intriguing ideas, and although no specific proposal emerged as a clear favorite, more than half of the proposals focused on different aspects of student success. For example, two proposals suggested we augment our first year experience program to help freshmen transition from high school to college, while two other proposals focused on helping transfer students transition to UAH. Another proposal addressed the needs of our upper level students (juniors and seniors) by suggesting a peer mentoring initiative to help this population succeed.

Four of the other proposals centered on the theme of enrichment. For example, one suggested we focus on critical thinking, introducing basic concepts to freshmen and carrying the critical thinking theme through their university experience. Another proposed a broad-based program to foster undergraduate research, again introducing the idea of research to freshmen and preparing them to carry forward increasingly rich research experiences as they move through their curricula. Other proposals suggested we focus on an international experience or community service and service learning. None of the submitted proposals were specifically chosen by the committee; however, the recurring theme of student success greatly influenced their direction.

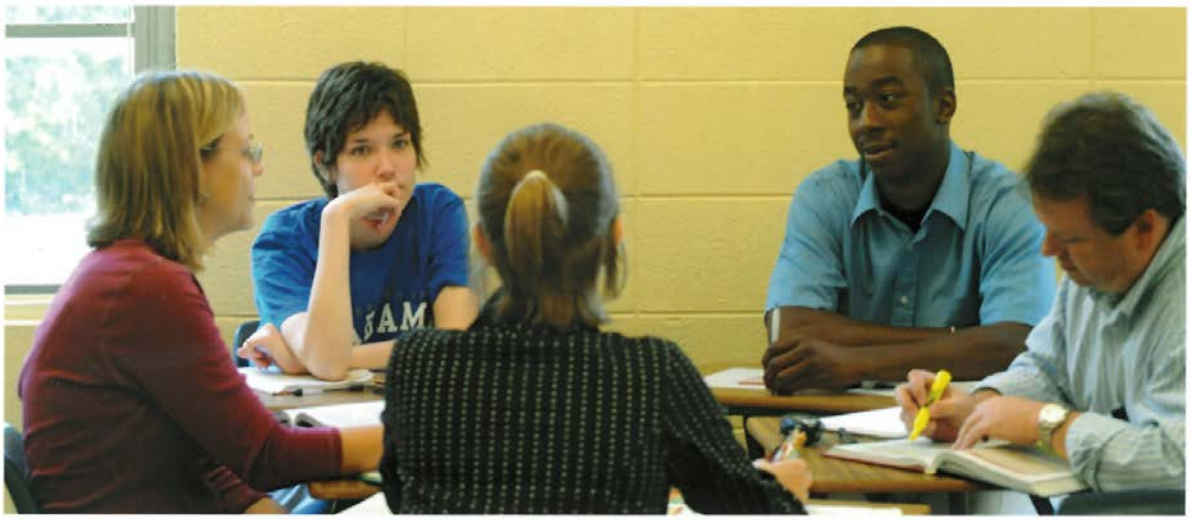
By the beginning of Fall 2014, we had chosen to focus on the learning environment in the hopes of enhancing student success. The committee met on a regular basis and invited individuals with specific domain knowledge to come speak to the committee, including the Dean of Students, the Director of Alumni Relations, and the Director of Online Learning. Continuing into the Fall we began our literature review by reading Dr. Vincent Tinto's book *Completing College: Rethinking Institutional Action*. The Dean's Council, as directed by the Provost and Associate Provost, joined us in reading this book.

Tinto's fundamental observation is that the only opportunity the institution has to reach all of its students is through the classroom. While there are other venues on campus access by many students, such as admissions, orientation, or registration, the classroom is the only place shared by transfer students, first-time freshmen, and those in both the beginning and the end of their academic careers. This focus on the classroom offered a solution to two problems faced by the QEP Committee. First, many students have vastly different levels of connection to UAH. For example, transfer students and commuters only feel a small connection to UAH; whereas, first-time freshmen who live on-campus feel like full members of "Charger Nation." We needed to find a way to address the needs of both populations. Second, we needed to find a way to help these students connect while also improving instruction and enhancing learning. By focusing on the classroom, the QEP will address the quality of instruction and will also reach *all* students on campus.

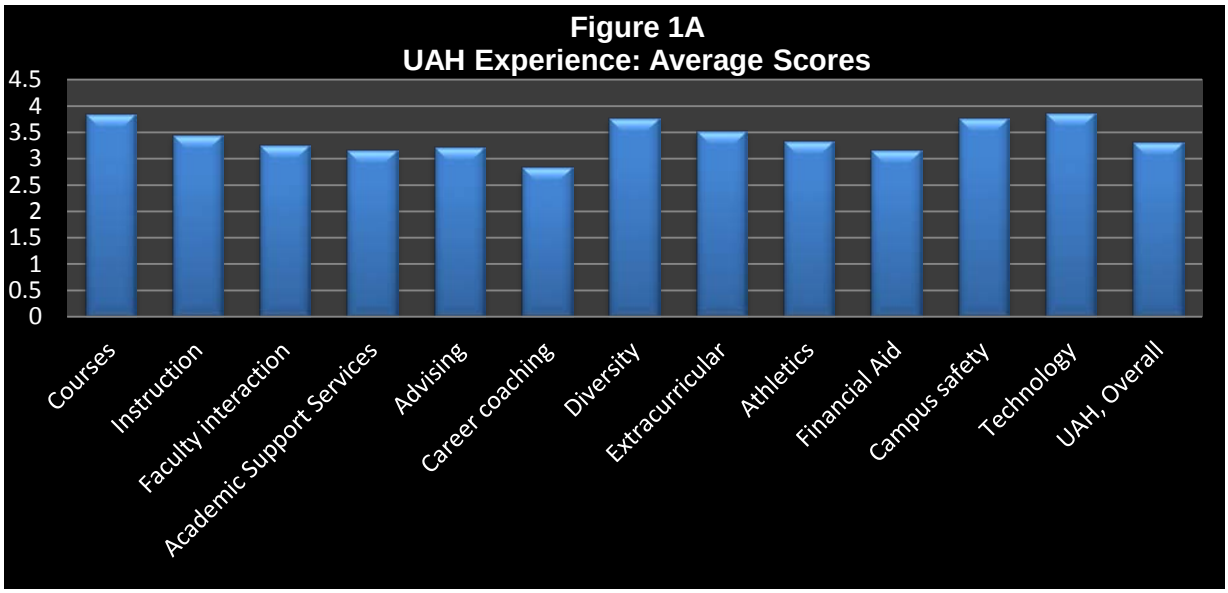
But how could we improve the quality of instruction in the classroom in order to meet the needs of our diverse student population, and which student needs should we address specifically? Those questions required additional institutional analysis.

FINDING DATA I: STUDENTS WHO LEFT THE UNIVERSITY AND WHY

To better understand why some UAH students are not successful, the committee sent out a survey (Appendix A) to students who had left our institution without graduating. The survey asked students about their UAH experience and why they left. A link for the survey was emailed to all undergraduate students who registered at UAH in either the Fall of 2012 or Fall of 2013, but who had neither graduated nor registered again. The survey was comprised of two sets of questions. The first asked about the students' experience at UAH, while the second probed their reason(s) for leaving.

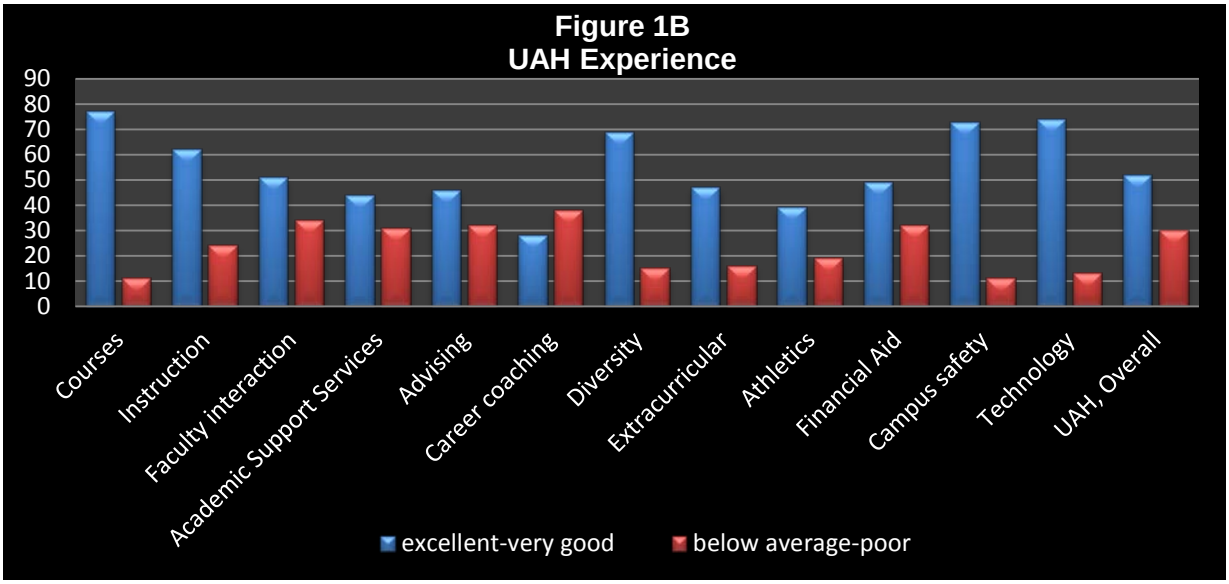


The survey was sent to 901 students and 129 responses were received for a 14.3% response rate. This is a fairly high response rate considering these students have no ongoing relationship with UAH and some of them may have never received the survey because of spam filters or reluctance to follow embedded links. Figure 1A shows the average responses reflecting their experience at UAH.



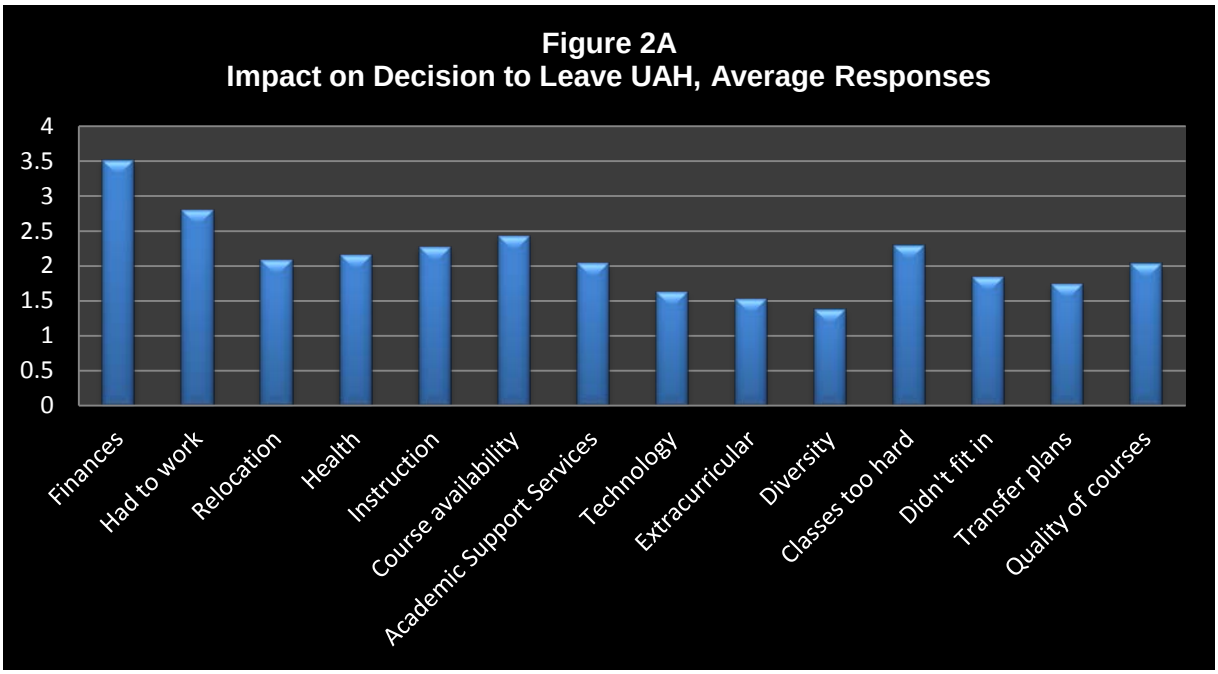
(Excellent = 5; Very good = 4; Average = 3; Below Average = 2; Poor = 1)

The feedback on the students' experience was quite positive, a pleasant surprise since this population of students decided to leave the University. Except for the category of academic coaching, UAH was rated above the mean score of 3. Because average scores can hide some of the underlying sentiments we also report the number of students reporting their experience as being very good or excellent and those reporting below average or poor (Figure 1B).



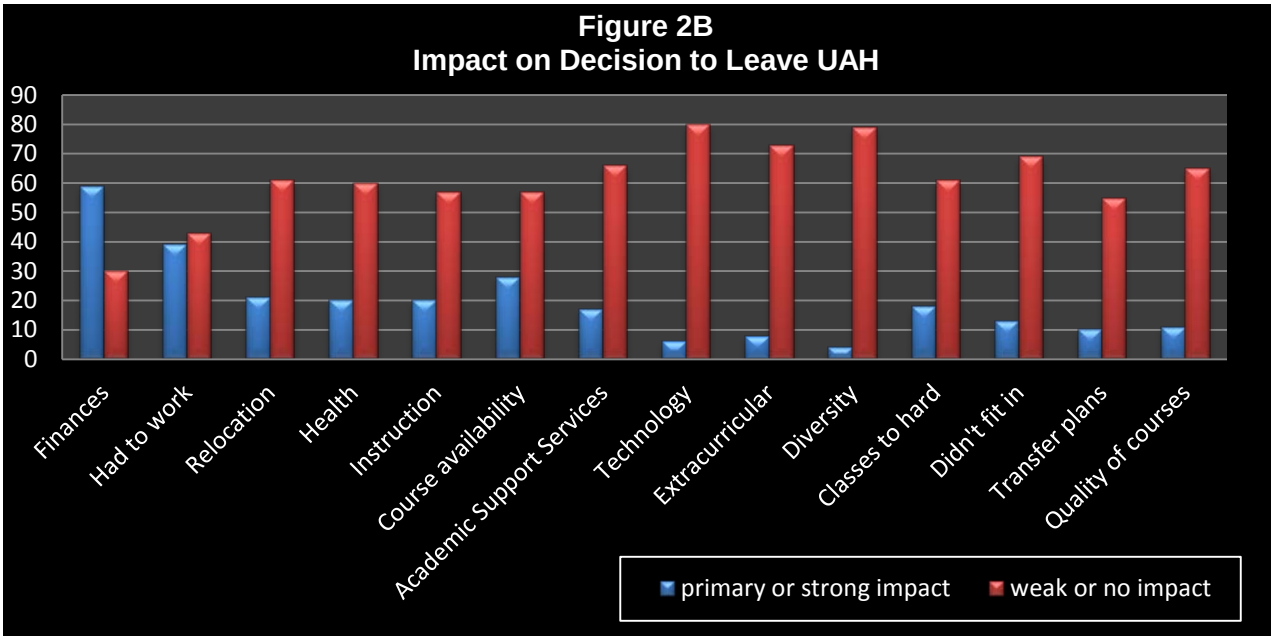
In every category except career coaching, the number of students rating us as excellent or very good exceeded the number rating their experience as below average or poor. In most cases, the differences were large. Remembering that these are students who left UAH and have not returned, this result demonstrates that their experiences at UAH were overwhelmingly positive.

After receiving feedback from students on their UAH experience, we asked why they left. Specifically, we offered 14 potential reasons students often give for leaving a university, based on the research of Johnson, Rochkind, Ott, & DuPont (2015) and DesJardins, Ahlburg, & McCall (1999). We also asked them to tell us whether any of those reasons had an impact on their decision to leave UAH. Students could include as many responses as they wished, and a five-point Likert-type scale was used to code the responses. Average responses appear in Figure 2A.



1 = No Impact; 2 = Weak Impact; 3 = Some Impact; 4 = Strong Impact; 5 = Primary Impact

Once again, since averages can disguise the strength of some of the reasons for a behavior, we also report the number of respondents who reported each reason was either the primary impact on their decision to leave or was a strong impact on their decision to leave, and those students who responded that this reason either had a weak impact on their decision or no impact at all (Figure 2B).



While "Finances" was the most frequently cited response in this survey, it only saw an average score of 3.5 on a five point scale, and only 26% of students selected "Finances" as being the

primary impact on their decision. Even though "Finances" did not receive a particularly high number of responses, there were still financial complaints given by students. Talking in focus groups before and after the survey, we found that the financial complaints were not limited to tuition. Parking fees, parking fines, text books, the mandatory meal plan, and high housing costs were all cited as issues. These concerns are not surprising given the financial pressures faced by most students.

This information has been given to the administration, but since finances are not directly a student learning endeavor this survey did not help to narrow the QEP topic decision. It should also be noted that the University has taken several steps to address the financial issues faced by students. A block tuition structure was developed, which allows students to register for courses and pay their tuition based on a credit hour range. For example, they will pay the same amount for 12 credit hours as they would for 18 credit hours. Also, a new scholarship matrix was developed, which offers significant tuition assistance for students who earn a high GPA in high school and perform well on their ACT or SAT entrance exams. While the block tuition and new scholarship matrix will address a significant student concern demonstrated by our survey, both of these changes were already in place prior to our survey so we cannot claim that our data moved this decision forward.

The student survey showed that students leave UAH for many reasons, which will help us plan institutionally; however, it failed to identify a single dominant issue of instructional quality.

FINDING DATA II: WHICH STUDENTS LEAVE AND WHY?

Because interviewing students who had left the University, and asking them *why* they left, did not reveal the insight we hoped to receive, we changed our focus to our current students. Instead of asking *why* students leave we decided to ask, *which* students leave? More precisely, is there a set of characteristics possessed by a significant portion of our student body that is correlated with those who are not successful? And, is there reason to expect this correlation to be causal?

This is an empirical question, and one for which we have extensive data. Taking the entire undergraduate student body from the Fall semester of 2014, we asked the statistical question, which characteristics consistently align with students who leave the University? And, which characteristics are correlated with higher or lower GPAs?

We started with *all undergraduates* enrolled for classes in Fall 2014 (n = 5554)

- We removed those who graduated at the end of the Fall semester
- We removed non-degree earning students (a unique group taking only one class)

This calculation gave us a large number of students (n = 5253) for whom we have the following information:

- Name and contact information: Address, Phone, Email (university and home)
- High school GPA
- ACT, SAT scores
  - Composite, Math, Verbal, Reading, Reasoning
- High school information
  - Name of high school
  - "Quality" score of high school (AHSGE score)
  - % of students in that high school who receive a free lunch

    - % Asian, Black, Hispanic, White students in high school
        - Note: High school information only on Alabama public high schools
- Number of hours transferred to UAH
    - Transfer from Community College (y/n)
    - Transfer from 4-year college (y/n)
    - Transfer Advanced Placement (AP) hours (number of hours)
- Demographics
    - Sex (male = 1, female = 2)
    - Asian, Black, Hispanic, White, other
    - Age
    - Married (y/n)
    - First generation college student (y/n)
    - Median income
    - % of population below the poverty line
    - % of population below 50% of poverty line
    - % White
    - % Black
    - % Hispanic
    - % with college degree
    - % “professionals”
- Academic standing: Dismissal, warning, probation
- Cumulative grade point average (GPA) at UAH
- Hours taken at UAH
- Transfer hours
- Athlete (y/n)
- Live on campus (y/n; N.b.: this means students not living on campus in Fall 2014; some of this group may have lived on campus for a time)
- Registered for classes in Spring 2015 (y/n)
- Classes taken in Fall 2014
- Grades received in Fall 2014

We used this extensive data set to explore the impact on two particular dependent variables, each of which reflects a type of student performance: (a) the likelihood that a student leaves the University, and (b) their GPA.

Table 2a: Probability of Leaving UAH without Graduating				
	Estimated Coefficient	**Standard Error**	**Odds Ratio**	**Standard Error**
College of Business Administration	-0.2657	0.1698	0.7667	0.1302
College of Liberal Arts (now CAHS)	0.2514	0.1626	1.2858	0.2091
College of Engineering	-0.1344	0.1575	0.8742	0.1377
College of Science	0.2524	0.1581	1.2871	0.2035
Male	0.3900**	0.1011	1.4770**	0.1493
Asian	-0.2333	0.2665	0.7919	0.2110
Black	0.5886**	0.2032	1.8014**	0.3661
Hispanic	0.1952	0.2981	1.2155	0.3623
White	0.0346	0.1805	1.0352	0.1869
Age	0.0452**	0.0072	1.0463**	0.0075
First Generation College	-0.0932	0.1079	0.9110	0.0983
Married	-0.1367	0.1644	0.8722	0.1434
Athlete	-1.7527**	0.4576	0.1733**	0.0793
On Campus	-0.9325**	0.1491	0.3936**	0.0587
% Transfer hours	0.5729**	0.1394	1.7733**	0.2472
% AP hours	-2.4217**	0.8589	0.0888**	0.0762
Total hours	-0.0084**	0.0011	0.9916**	0.0011
Constant	-2.5768**	0.2777	0.0760**	0.0211
	N = 4877		χ^2 = 275.7	

*Indicates significance at the 0.05 level and ** indicates significance at the 0.01 level.

To begin, we studied the likelihood that a student will leave the University based on the many attributes listed above, and to corroborate those findings we also looked to see how the same independent variables affect the students' GPAs. Looking at the entire undergraduate student population, minus non-degree seeking students, the results of the "likelihood of leaving" regression appear in Table 2a.

Naturally there is variation in the number of students having all of these data. For example, students who transfer to UAH after completing a year of school in a community college or another four-year institution do not provide their ACT or SAT exam scores. As a result, we do not have a test score for about 40% of the student population. Similarly, high school data are not required if students have demonstrated their ability at another university or community college, so high school data are also incomplete. High school demographics were only available for Alabama public schools. Fortunately, there are several measures that reflect similar attributes and by analyzing the data from multiple perspectives we were able to gain a robust picture of our student body.

Table 2b shows the companion results for GPA. In both tables, the estimated coefficients appear in the first column of results, followed by the standard error. Significance levels are indicated by an asterisk. Table 2a gives the odds ratio calculations, and Appendix B illustrates interpretations.

Table 2b Grade Point Average			
	Estimated Coefficient	**Standard Error**	**p Value**
College of Business Administration	-0.0463	0.0390	0.2350
College of Liberal Arts (now CAHS)	0.0474	0.0399	0.2350
College of Engineering	0.0360	0.0370	0.3310
College of Science	0.0417	0.0383	0.2770
Male	-0.1468**	0.0236	0.0000
Asian	0.1597**	0.0594	0.0070
Black	-0.4277**	0.0507	0.0000
Hispanic	-0.1545*	0.0719	0.0320
White	0.0416	0.0432	0.3360
Age	-0.0056**	0.0021	0.0080
First Generation College	-0.0828**	0.0260	0.0010
Married	0.2091**	0.0425	0.0000
Athlete	0.1021*	0.0478	0.0330
On Campus	0.0865**	0.0281	0.0020
% Transfer hours	-0.5197**	0.0346	0.0000
% AP hours	0.7893**	0.1155	0.0000
Total hours	0.0047**	0.0003	0.0000
Constant	2.8259**	0.0690	0.0000
N = 4877; adj. R^2 = 0.16; F = 54.8			

* Indicates significance at the 0.05 level and ** indicates significance at the 0.01 level.

A more detailed interpretation of the estimated coefficients presented in Tables 2a and 2b appear in Appendix B, but for discussion purposes the impacts of these student traits on student performance appear in Table 3.

Table 3 Primary Variables Impacting the Likelihood of Leaving and GPA		
	Likelihood of Leaving	**GPA**
Colleges	No difference across colleges	No difference across colleges
Male Students	More likely to leave	Lower GPA
African-American Students	More likely to leave	Lower GPA
Asian Students	No effect	Higher GPA
Older Students	More likely to leave	Lower GPA
First Generation College	No effect	Lower GPA
Athletes	More likely to stay	Higher GPA
Total hours	More likely to stay	Higher GPA
% AP hours	More likely to stay	Higher GPA
% Transfer hours	More likely to leave	Lower GPA
Commuters	More likely to leave	Lower GPA

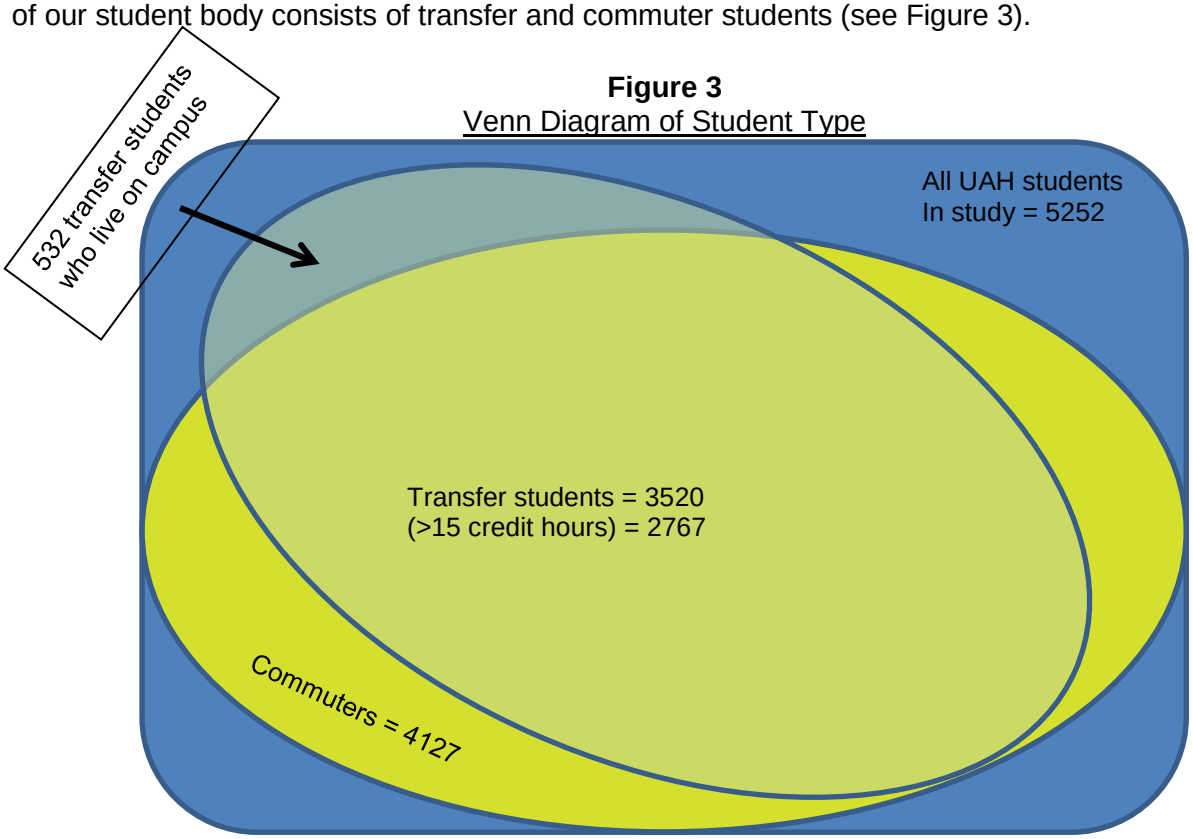
These results align with common sense. For example, students who transfer in more AP credits are more likely to have higher GPAs and are more likely to stay at the University. AP credits can function as a measure of high school ability and student motivation. We would expect students taking AP courses and AP exams to be more focused on their college career. Moreover, passing AP exams can demonstrate their academic ability. Similarly, the impact of total hours is positive in both regressions, which may reflect two effects. First, as students get closer to graduation, the payoff to their investment (a degree) becomes clearer and more immediate so they are likely to persist. Second, students who have accumulated hours have survived a winnowing process; they are demonstrating success while other students withdraw.

That these expected results emerge from our regression lends a degree of confidence to the remaining findings, some of which may not have been expected. For example, there was no observed difference between the colleges in either grade point or the likelihood of leaving. It would not have been surprising to find some colleges with significantly lower success rates than others because engineering and science are traditionally thought of as being difficult majors. However, we do not observe a difference in GPA or rates of dropouts across colleges at UAH.

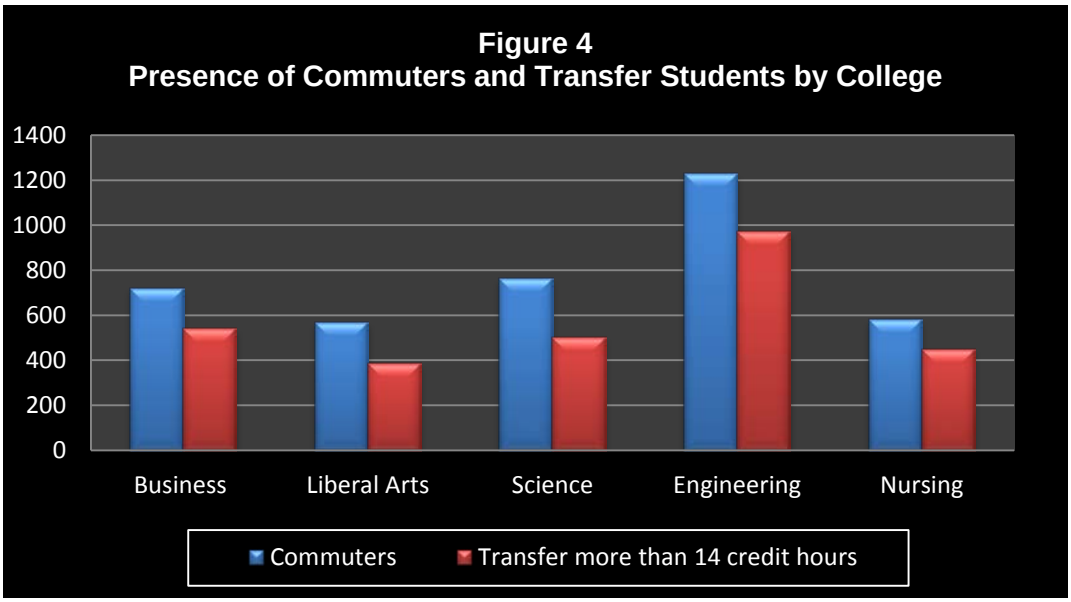
The most interesting findings from the point of view of the QEP appear in the last two rows of Table 3, the results for transfer students and commuters. All else equal, these two groups are more likely to leave the University without graduating and tend to have lower GPAs. This is significant because approximately 70% of our students live off-campus and these results suggest that they struggle. This result is remarkably robust. No matter how we probe the data, we get the same results. If we remove all of the transfer students and analyze a sample that approximates the official first-time, full-time (FTFT) freshman cohort, which includes both commuters and residential students, we find the same pattern emerges as in the full data set, just as we do if we remove commuters and look at on-campus students, a group consisting of both FTFT freshmen and transfers. In all cases, males have lower grades and are more likely to withdraw than females, athletes do better than non-athletes, and commuters and transfers have significantly lower GPAs and are more likely to leave the University.

It should be noted that our data did not allow us to separate students who once lived on campus and changed to commuters from those who never lived on campus. That some of these students once lived on campus should reduce size of the "off-campus effect." In other words, the impact of having never lived on campus may be even stronger than our data suggest. These results identify transfer students and students who live off-campus as individuals who consistently underperform. This result is especially important for UAH because the largest part of our student body consists of transfer and commuter students (see Figure 3).

Figure 3
Venn Diagram of Student Type



Furthermore, our off-campus students span the University; that is, they are enrolled in every college. A breakdown by college appears in Figure 4.



The identification of this large group of underperforming students drew the attention of the QEP committee. Further, it supported the long-standing perception of many faculty members that our commuters and transfer students underperform. This study was the first time that empirical evidence validated that perception. While this group does not include every student, it includes a large majority of them, and the SACSCOC Handbooks writes, *"While the QEP is not expected to touch the life of every student at the institution, the topic does need to be perceived as significant to the institution and as a major enhancement to student learning"* (*SACSCOC Handbook, 43*). Helping this group would indeed be a major enhancement to the University and would meet a major institutional need. However, we believe that the finished QEP will provide an enhancement to learning that should eventually reach *all* of our students.

"YOU CAN'T DO UAH ALONE" AND THE IMPORTANCE OF COLLABORATION

After identifying commonalities among our students who struggle, we conducted a series of student focus groups. We wanted to know how our successful students overcame the challenges they faced. Repeatedly, they stated that the fundamental breakthrough came when they made connections with other students. It is important to note that this theme was endorsed by not only residential students but by transfer and commuter students as well. Making friends, finding people to study and learn with, and having a group to work in is critical for success at UAH. In the words of one student, "you can't do UAH alone."

This sentiment, "you can't do UAH alone," was echoed by students belonging to every demographic. Successful students who have lived on campus for their entire college career and have a large number of friends reported that they could not cope with classes on their own. Commuter students relayed stories about their near decision to drop out, which was reversed after meeting someone to share their burden with. Transfer students felt lost, or inadequate, until they met someone struggling with the same issues.

How and where are these critical connections made? On-campus students were very clear that their connections usually happen in the classroom, while off-campus students make their

connections exclusively in the classroom because they neither have the time nor inclination to participate in extra-curricular activities. But in most cases they made *academic connections* in a class that encouraged or required students to work together and interact. This forged relationships that often persisted through time and carried over into other classes. Our students are living examples of Tinto's point that the one place a difference can happen is the classroom.

The concept of students working together in the classroom, becoming collaborative learners instead of isolated students, is key to the QEP. We quickly went through three refinements of the topic. Our first proposal focused on the benefits of student connections. We wrote a brief proposal called "Connections" and presented it to the faculty at a January 2015 meeting where we received positive feedback. Many faculty members had recognized the isolation of off-campus students, but did not have the empirical evidence to back up their observations. Yet, when we sent this short proposal to a colleague knowledgeable in SACSCOC expectations for QEPs, he strongly urged us to keep working and to refocus our efforts in a different way. Our proposal was aimed strictly at the environment of student learning (fostering greater interaction between students), but did not directly impact student learning. Following his suggestion, the committee discussed possible ways for us to directly enhance student learning that would foster greater interaction between students at the same time. This line of thinking led us to a second proposal called "Collaborative Problem Solving." Collaborative Problem Solving seemed to both address institutional needs and improve learning by allowing us to establish direct, classroom-based problems that students could approach collectively. This proposal would allow students to learn through collaborative solving of carefully posed problems, and at the same time engage in interactions that produce greater connections with other students. We spent the next two months presenting this updated topic, as well as the path that led to this topic, to virtually all constituencies on campus. We visited each college, the Student Government Association (SGA), the advisors, the Student Success Center (importantly the students who participate in our campus-wide Peer Assisted Study Session), the Council of Deans, the Faculty Senate, the Staff Senate, and additional student focus groups. The third and final refinement came at the behest of the University administrators, who were concerned that the focus on Problem Solving might appear to be designed exclusively for science and engineering students rather than all disciplines. They suggested a new title of "Collaborative Learning" which they felt was more inclusive and might engender greater support across the University. Because Collaborative Learning brings together classroom-based activity with an enhancement to student learning, and brings students together in an academic activity, we adopted **Collaborative Learning** as our QEP topic.

III. THE QEP TOPIC: COLLABORATIVE LEARNING

For the purposes of this QEP, Collaborative Learning will be implemented as:

UAH students and faculty working together to explore options and create solutions in pursuit of knowledge.

The phrase Collaborative Learning is intentionally broad, as the manifestations of collaborative activities are expected to vary across campus, across disciplines, and to evolve as students progress through their academic careers. The applications of Collaborative Learning may be different in engineering, art, nursing, or finance. However, as wide-ranging as the possible examples of collaborative activities may be, there are fundamental principles that underlie all. This implementation embodies the principles of Collaborative Learning; principles we want our students to incorporate into their lives.

THE PRINCIPLES OF COLLABORATIVE LEARNING:

- **Egalitarian**. Everyone in the collaboration is expected to contribute, which emphasizes the value of different knowledge, perspectives, and skill sets.
- **Discursive**. The involvement of all the collaborators necessitates their interaction, which opens their horizons to new ideas and requires communication.
- **Inquiry driven**. Collaborative Learning encourages students to ask questions and to consider a variety of approaches to problems.

These principles fall directly out of our implementation of Collaborative Learning. The sense of **togetherness** in the pursuit of knowledge refers to students sharing the ideas and knowledge of everyone in the group (Egalitarian). **Working together** requires the communication, expression and listening, from each member (Discursive). **Exploring options and creating solutions** encourages students to ask questions and explores different approaches (Inquiry driven).

RELATIONSHIP TO UAH'S MISSION, VISION, AND STRATEGIC PRIORITIES AND GOALS

Collaborative Learning directly supports the University's Mission, Vision, and Strategic Priorities and Goals. Engaging students to work together, pose questions, explore options, and create solutions, furthers the UAH Mission *"to explore, discover, create, and communicate knowledge"* and to *"educate individuals in leadership, innovation, critical thinking, civic responsibility and inspiring a passion for learning."* Collaborative Learning requires students to actively engage with their learning and to communicate with each other. Indeed, as the principles above demonstrate, Collaborative Learning is impossible without active engagement and communication. Similarly, integrating Collaborative Learning into our classrooms also helps to meet our vision to be "k*nown for instilling and inspiring…the ability to solve complex problems, and a passion for improving the human condition."* Collaborative Learning is an effective teaching method because students learn from their peers in ways that augment traditional teaching (Barkley, Major and Cross, 2014). They must consider multiple views, communicate,

solve problems, and find answers to questions in new ways. Furthermore, Collaborative Learning teaches individuals how to collaborate, which is a skill valued by employers and society (*Job Outlook 2015, National Association of Colleges and Employers*).

These attributes not only make Collaborative Learning a fit with SACSCOC directives for a QEP, but also with UAH's Strategic Priorities and Goals.

UAH Strategic Priority: *Recruit and retain an outstanding and diverse student body of broad interests, and of sufficient size, to ensure a rewarding campus life experience.*

Our proposed QEP, Collaborative Learning, is designed to help retention and graduation rates because collaboration engages students and creates links between students, their peers, and faculty. Those links build persistence, which leads to retention. Numerous scholars have explored this relationship; see for example Astin (1984); Kuh et al. (2005, 2008); Tinto (1975, 2012). As Tinto (2012) writes, "*The more students are academically and socially engaged with other people on campus, especially faculty and student peers, the more likely they will stay and graduate from college*" (64).

The benefits of Collaborative Learning, however, extend beyond this priority to the University's strategic goals.

UAH Strategic Goal: *Graduate students able to address problems through integration of knowledge across disciplines.*

Collaborative Learning furthers this goal in the most fundamental fashion: individuals do not just interact, but are given opportunities to apply different perspectives, choose from among them, and integrate the growing knowledge and skills those perspectives provide.

UAH Strategic Goal: *Be unique in opportunities to explore and experience the relationships among technology, culture, and the arts.*

Collaborative Learning not only exposes students to multiple perspectives, but also helps them see how the sharing of ideas enhances their understanding and enhances their creative abilities.

UAH Strategic Goal: *Ensure an environment where curiosity, discovery, innovation, and entrepreneurship are valued.*

Collaborative Learning augments lectures on how and why things are, with processes that foster students' own discovery and creativity.

A QEP TO CHANGE THE CULTURE AT UAH

In addition to the direct educational benefits from Collaborative Learning, this QEP will change the culture at UAH from one centered on isolated students to one that encourages and creates collaborative learners. This transformation will help the commuter students whose connection to other students at UAH is minimal. As we change the culture, we hope to connect students with each other through collaboration. We hope such collaboration will encourage students to compare class notes, become study partners, and share information about tutoring, mentoring,

and ways to succeed. Our data show that our off-campus students are more than twice as likely as residential students to leave UAH without a degree (see section II and Appendix B). This QEP will not only help to connect them to UAH, but it will also connect all the student groups at UAH, because it works through the classroom to reach all students.

Implemented through undergraduate instruction, Collaborative Learning allows the University to reach students in their primary shared context: the classroom. Regardless of the paths students follow into the institution—whether as first-time freshmen or as transfer students—or paths they follow within the institution—whether as on-campus residents or off-campus commuters—placing Collaborative Learning into specific courses across the curriculum will engage students in a comprehensive and meaningful way. It will provide community through academics, enhancing both at the same time.

In broad outline, we see the implementation of Collaborative Learning working from the ground up. Our initial target is the Freshman Year Experience class, Charger Success. Charger Success is required for all entering freshmen and has focused on helping students make the transition to college. This class thus provides a natural place to introduce Collaborative Learning as students enter UAH. Specific courses in the general education ("Charger Foundations") curriculum will be targeted for Collaborative Learning techniques and enhancements. Finally, the Collaborative Learning Center (CLC) Director will recruit Collaborative Learning instructors in certain upper-level courses across the University, courses populated primarily by juniors in their majors (several of these instructors have already indicated interest). Collaboration opportunities in these upper-level classes reach out to most of our transfer students and will also reinforce the Collaborative Learning process experienced by our native UAH students. Finally, many of the University's senior-level capstone courses already focus on teamwork through group projects, so it would be natural to further incorporate the features of Collaborative Learning into those activities.

A demonstrated ability to collaborate is a highly valued attribute in today's job market. Thus, this QEP will provide our graduates with documented collaborative experiences that can give them an edge in their evolving career.

THE GOALS OF THE QEP

The Quality Enhancement Plan has several major goals. These goals are naturally reflected in our Student Learning Outcomes, which allow us to assess the impact our QEP is having on instruction. They are also reflected in our Learning Environment Outcomes, which allow assessment of the overall transformational effects the QEP has on UAH.

1. Instruct students on the principles of Collaborative Learning.
2. Teach students how to collaborate through applications in their classes.
3. Encourage students to value and appreciate collaboration.
4. Improve student learning through Collaborative Learning.

And ultimately

5. Make Collaborative Learning a central feature of UAH's educational aims and academic culture.

We anticipate that a secondary result of these instructional, organizational, and cultural changes at UAH will be increased student success and a more unified, cohesive, and mutually supportive student body.

IV. LITERATURE REVIEW

As demonstrated by the focus groups and statistical analysis reviewed in section II, UAH's student population enters the University through two different venues: as first-time freshmen who, despite strong GPAs and incoming ACT scores, are sometimes underprepared for the rigors of college life; or as transfer students who feel a smaller connection to UAH. Given this, the QEP Committee's initial question was how we could improve student success and student learning among these two disparate groups of students. The answer, as we learned from Tinto (2012), is to look to the classroom for improvements, but simply acknowledging that the classroom is the best place to address these groups and enhance instructional quality does not bring effective change unless we understand how to transform the classroom. As stated earlier, for a variety of reasons, the QEP Committee settled on Collaborative Learning. The work of Tinto (2012) provides additional reasoning that connects classroom enhancements with Collaborative Learning.

In Tinto (2012) focuses on four conditions that work together to provide success in and through the classroom:

1. **Expectations**. These should be high (nobody rises to low expectations), fair, and articulated clearly and often.
2. **Support**. Support helps students realize expectations, and can take many forms: tutoring and additional instruction, an instructional skills course, or a summer bridge program.
3. **Assessment and feedback**. Students in college need continuous, meaningful feedback. Such feedback is most successful when it creates some dissonance between students' view of their performance and their actual performance. Such dissonance creates a sense of high expectations and can lead students to seek support.
4. **Engagement/involvement**. Tinto (2012) describes this as the binding condition of these four. Students must feel a sense of engagement, interest, and belonging in order to succeed. Students will neither rise to expectations, nor seek support, nor care about feedback if they do not feel engaged with their instruction.

Engagement refers to a student's sense of belonging to a particular university environment, and can be either academic or social, and perhaps works best when it combines the two. Specifically, striving for engagement means striving to connect students with faculty, with other students, and with the institution more broadly. Any QEP that focuses seriously on academic enhancement must find a way to enhance the quality of instruction in the classroom while simultaneously increasing engagement.

So-called "academic engagement" can take several forms, but one form that seems particularly appropriate for UAH students Tinto (2012) calls "pedagogies of engagement." These include Collaborative Learning, cooperative learning, and problem- and project-based learning. These forms of instruction serve the dual purpose of getting students more invested in their learning and also connecting them to other students and to faculty. (In short, they combine academics

with social). Collaborative Learning thus stands as one of the most important improvements we could make to our learning environment.

COLLABORATIVE LEARNING

We are thus led naturally to the question, what is Collaborative Learning, and how does one enhance it? There is a large literature on this topic; below we present some highlights that informed the development of our QEP.

To begin, although authors sometimes interchangeably use the terms “Cooperative Learning” and “Collaborative Learning,” there is a recognized debate and extensive materials on the distinction between *Cooperative* versus *Collaborative* Learning. In *Cooperative Learning* settings, instructors often create structured activities throughout a semester in which students learn in pairs or in very small groups. Students “work together to find the correct or best solutions to a given set of problems while the teacher keeps them on track by providing just-in-time instruction” (Davis and Arend 2013, 178). By contrast, *Collaborative Learning* encourages students to work together in small groups, and their work is often guided by loosely structured assignments with open-ended goals, where the teacher is part of a learning community and acts as a facilitator. Barkley, Cross, and Major (2004) note the importance of intentional instructional design in which faculty members structure Collaborative Learning activities or assignments so that students actively engage in working together towards specific stated learning objectives. Collaboration is about the common goal of the team rather than the individual student’s goals. Ideally, meaningful learning takes place through Collaborative Learning and should, at a minimum, increase students’ knowledge in their field or deepen their understanding of content (Barkley et al. 2004) and lead to higher quality products or projects.

While this QEP remains focused on Collaborative Learning rather than Cooperative Learning, we also intend to follow Barkley et al. (2004) in taking a pragmatic approach to the dispute between collaboration and cooperation. As they write, “As a practical matter in planning and operating college classroom learning groups, most teachers will not be concerned with the philosophical and semantic distinctions between cooperative and Collaborative Learning, but will use the level of authority and control that feels comfortable for them and that accomplishes their goals” (p. 7). In other words, getting people to collaborate is the more important challenge when one is working on the ground to enhance instruction and engagement.

Accordingly, we examined several definitions of Collaborative Learning in order to find our own. Some of the definitions that we found most helpful are detailed below.

- Collaborative teaching and learning is a teaching approach that involves groups of students working to solve a problem, complete a task or create a product (MacGregor 1990).
- Collaborative learning is an umbrella term for a variety of educational approaches involving joint intellectual effort by students, or students and teachers together. Usually students are working in groups of two or more, mutually searching for understanding, solutions, or meanings, or creating a product. Collaborative learning activities vary widely, but most center on student's exploration or application of the course material, not simply the teacher's presentation or explication of it (Smith and MacGregor 1992).
- Collaborative learning is based on the idea that learning is a naturally social act in which participants talk among themselves. It is through the talk that learning occurs (Gerlach 1994).
- Collaborative learning has as its main feature a structure that allows for students to talk with each other, and it is in this talking that much of learning occurs (Golub and NCTE Committee 1988).
- "Collaborative learning is a situation in which two or more people learn or attempt to learn something together. Two or more may be interpreted as a pair, a small group (3-5 subjects) or a class (20-30 subjects)" (Dillenbourg 1999, 1). "Learn something may be interpreted as follow a course…perform learning activities such as problem solving" and "together may be interpreted as different forms of interaction which may be face-to-face or computer mediated" (Dillenbourg 1999, 2).

It is from these various understandings of Collaborative Learning that we developed our working perception of Collaborative Learning. Obviously, these descriptions stress collaboration and cooperation among students. More significantly, they also explain the character and goals of this collaboration. Collaborative Learning must involve students working together as equals to solve problems or understand a concept, or understand a concept and contribute their own perspective. Students must learn to listen to others and communicate their own ideas. They must be focused on course content, which frequently takes the character of understanding a concept, process, or theory, solving a problem, or finding the answer to a question. From these observations we implement Collaborative Learning when: *UAH students and faculty work together to explore options and create solutions in pursuit of knowledge.*

Barkley et al. (2004) articulate the principles of design as stated above, that we use to guide implementation and assessment. These principles further expand the nature of Collaborative Learning as egalitarian, discursive, and inquiry driven.

The same authors also stress that activities must be intentionally designed as collaborative in order to qualify as Collaborative Learning. The instructor has a clear reason and purpose and thoughtfully creates collaborative activities. While the QEP committee believes this intentional design is a critical ingredient for the implementation of Collaborative Learning into the classroom, we chose not to include it as a fundamental principle of Collaborative Learning itself, because ideally all activities in a thoughtful curriculum are intentionally designed. Intentional design, unlike the other three principles, does not *distinguish* an activity as collaborative.

Collaboration in the classroom helps to build a trait commonly valued by employers – the ability to work with others. According to the Association of American Colleges and Universities, 83% of employers identify teamwork skills as one of the most important college learning outcomes. Similarly, the National Association of Colleges and Employers lists the ability to work in a team as among the most important attributes for college graduates. It is not difficult to understand why collaboration is highly valued as it brings many benefits: it can create synergy—ideas from different perspectives can lead to solutions that may elude independent review, and it leads to flatter or leaner organizational structures with less hierarchy. When individuals work as a group they are more flexible and responsive, improving an organization's ability to adapt to change. Working together also promotes a sense of camaraderie that can see individuals though hard times. These traits will help our students in the classroom and will also serve them well when they leave the University.

Knowing how to collaborate is just one part of our interest in Collaborative Learning; we expect Collaborative Learning to lead to better learning in general. There is significant educational research documenting how Collaborative Learning helps students absorb specific course content and seems to improve critical-thinking skills. For example, Gokhale (1995) documents an almost 50% increase in student scores on a series of "critical thinking" exam questions for students who had participated in Collaborative Learning activities. The theory (Bruner 1995) is that when students are confronted with different interpretations of a given situation, sorting through those alternatives helps to develop critical-thinking skills.

Concerning specific course content, Fenci and Scheel (2005) explored the impact of various teaching methods on students' self-efficacy and learning by non-physics majors in physics. Active teaching methods in general raise self-efficacy (a pre-cursor to learning), but in particular Fenci and Scheel write, "Most (especially collaborative learning and inquiry labs) have been shown to have positive effects on how well students learn physics" (p. 23). Ebert-May, Brewer, and Allred (1997) explored active learning methods in large lecture sections. They conducted a series of experiments in which different sections of the same biology classes were taught in the traditional lecture format and alternatively with small collaborative activities during class. Periodically, in the collaborative classes students would be given a question or problem, they would think about it individually for 30-60 seconds, then form small, informal groups of 2 or 3 people (selecting someone nearby), they shared their answers, listening carefully to others , reached a consensus, and reported it to the class. They found that students in these collaborative sections retained course material more readily (better performance on exams), they enjoyed the class and social interactions, and they reported the classes as friendly and dynamic. They also reported a sense of camaraderie because of their regular interaction with

their peers. Qualitatively, the instructors reported a higher level of classroom participation with scores of students raising their hands to answer questions rather than the normal few.

Rau and Heyl (1990) conducted a series of classroom experiments within sociology classes where parts of the course involved collaborative techniques, and other parts were presented in a more traditional lecture/discussion mode. In general their students earned higher test scores on the material that had incorporated Collaborative Learning techniques and in three out of the four semesters of trials, Collaborative Learning scores were higher by 10 to 20%. Again, the feedback from students was strongly positive as well, students thought the group efforts were effective, they viewed the groups as an opportunity to get to know others, and they felt they had a colleague they could call if they needed information or help.

Alavi (1994) studied the use of collaboration in a computer-mediated environment with MBA students and found a familiar story. Comparing students who used the collaborative software versus those who did not, she found no difference in the students' performance on their mid-term exams, but the final exams of the collaborative students were on average five points higher. She speculates that perhaps the benefits of collaboration might take some time to emerge. The students in her study also reported a higher perceived level of learning and they had a more positive evaluation of the classroom experience. Students specifically commented on how they could, "pursue others' comments; draw on their thought processes" and they appreciated the exposure to different perspectives.

Finally, we have some data from our own, in house, experiment. In the Summer of 2015, Professor Elizabeth Bowman taught a "Calculus A" class in a collaborative format. Each day she gave a brief overview of the techniques students were to learn that day and then students broke out into their pre-sorted groups of five. Those groups proceeded to work problems to learn that day's techniques as Professor Bowman walked around the class watching, coaching, and helping. While some students initially pushed back at the technique, those same students soon became some of the strongest advocates of the class. Of the 34 students who took the class, 30 (88%) completed the course successfully, while the typical success rate for Calculus A ranges from about 62% to 67%.

In the Fall, these students were followed to see if the knowledge transferred to the next level math class. Of the 30 successful students, only 16 registered for Calculus B (it is not required for some majors) and this class was not taught in a collaborative fashion. Of the 16 students, 13 successfully completed Calculus B, a success rate of 76%, and while this is a small sample, the usual success rate for Calculus B is only 56%. Professor Bowman now teaches all of her classes using collaborative techniques and is a Collaborative Learning pioneer for UAH.

V. STUDENT LEARNING OUTCOMES AND LEARNING ENVIRONMENT OUTCOMES

In the *SACSCOC Handbook* a student learning outcome (SLO) in the context of the QEP is described as "a statement that describes what students will be able to do as a result of the implementation of the QEP" (p. 44). In our Collaborative Learning initiative we identify four dimensions to our SLOs: the knowledge, skills, abilities, and perspectives that students acquire and can demonstrate after they have completed Collaborative Learning courses.

Our specific learning outcomes derive from the key principles of Collaborative Learning: we seek to create activities that are egalitarian, discursive, and inquiry-driven. Additionally, as stated above, these activities must be intentionally designed. Telling students to "go over the readings in your groups" is not an example of Collaborative Learning, nor will it teach students the principles of Collaborative Learning. With the guidance of the Collaborative Learning Center, our instructors will create specific Collaborative Learning opportunities, appropriate to their discipline and their specific courses. As students participate in collaborative activities, they will begin to internalize the three components of Collaborative Learning. They will learn that everyone is expected to participate because different perspectives offer a fuller understanding as they are integrated together. They will learn the importance of communication, as their success requires listening to others and expressing themselves clearly. Finally, collaborative exercises will encourage curiosity and creativity so that students will consider alternative approaches to the problems they address. As shown below, our SLOs advance step by step to increasingly embed the practice of Collaborative Learning into our students and the culture at UAH. This sequence unfolds following the acronym RAVE: Recognize, Apply, Value, and Enhance.

STUDENT LEARNING OUTCOMES (SLO) FOR WHICH IMPROVEMENT IS EXPECTED OVER THE NEXT FIVE YEARS

SLO #1: Recognize: *UAH students know and can differentiate the principles of Collaborative Learning.*

SLO #1 is listed as the first student learning outcome because it is the most basic learning objective. Do students understand what Collaborative Learning entails? As such, SLO #1 speaks directly to the knowledge and the perspectives components of student learning. There will be two instruments used to measure this SLO which are discussed in detail in the assessment plan in Section X.

Timing: SLO #1 will be the first student learning outcome implemented by the CLC with an initial test-phase set for the Spring of 2016 and full implementation when the QEP officially begins in the Fall of 2016.

SLO #2: Apply: *UAH students collaborate effectively.*

As Collaborative Learning techniques spread across the campus (see Learning Environment Outcomes) students will have increasing opportunities to apply the principles of Collaborative Learning to problems and activities in general education classes, in their major classes, and we expect some students to have an opportunity to collaborate in cross-discipline settings. These

applications address the skills, abilities, and perspectives components of student learning. Three distinct instruments will be used to assess the effectiveness of these activities and those instruments are discussed in the assessment plan, Section X.

Timing: SLO #2 is the second learning outcome to be implemented by the CLC and follows SLO #1 closely. The recruitment of instructors to implement discipline-specific Collaborative Learning activities will begin in the Spring, Summer, and Fall semesters of 2016, and courses with Collaborative Learning activities will be launched in the Spring semester of 2017. The first assessment of those activities will begin at the end of that semester.

SLO #3: Value: *UAH students recognize the merit of Collaborative Learning.*

For students to embrace Collaborative Learning as they advance through their college careers and into their professional and private lives, it is not enough that they recognize and can apply Collaborative Learning, they must value it. We recognize that assessing appreciation is inherently an indirect process—we can only rely on self-reported data. However, in this instance the students' perspective and self-reported data are appropriate.

Timing: A student survey of value will be distributed starting in the Spring of 2017.

SLO #4: Enhance: *UAH students having had Collaborative Learning courses will demonstrate evidence of better generalized learning.*

SLO #4 is the most profound objective because it suggests that this QEP will not only teach students about collaboration and how to use collaboration to solve problems, but it suggests that Collaborative Learning will improve our students' use of critical thinking and their performance in course specific material. Assessment involves a rigorous examination of student performance data, accounting for other impacts on learning and controlling for specific student attributes. Scores from the ETS proficiency profile will provide dependent variables, and regression will allow us to control for other influences. Details appear in Section X: Assessment Plan.

Timing: Because the dependent variables for this assessment come from the ETS exam, and since seniors take that exam, we plan to begin testing for Collaborative Learning effects in year three. From that point on, student performance is expected to increase as the opportunities for collaboration grow.

LEARNING ENVIRONMENT OUTCOMES (LEOS) OF THE NEXT FIVE YEARS

As milestones to assess the overall success of the QEP in transforming UAH, we also have three Learning Environment Outcomes. These objectives indicate the degree to which the institution is allocating sufficient energy and resources to the QEP to meet the Student Learning Outcomes, and whether the CLC is implementing the QEP as planned. In other words, when combined with the assessment of the Student Learning Outcomes, assessment of these Learning Environment Outcomes will ensure that the QEP is meeting its goals.

LEO #1: The number of faculty and staff who complete the Collaborative Learning development program will increase annually.

The target is to integrate Collaborative Learning into the Freshman Year Experience (Charger Success) in the first year. In each subsequent year, the target is to recruit and train at least two additional faculty members from each college in Collaborative Learning techniques. By the close of year 5, more than 60 faculty members will have been trained and will be actively integrating Collaborative Learning activities into at least one of their classes.

Timing: FYE in Fall semester of 2016 with additional classes added semester by semester.

LEO #2: The number of courses across the curriculum at all levels of instruction that engage students in Collaborative Learning activities will increase annually.

This Learning Environment Outcome is closely linked with LEO #1. Each faculty member interested in Collaborative Learning teaching techniques will integrate such activities in one or more of their classes. In general we would expect the number of courses using Collaborative Learning to grow more quickly than the number of faculty using such activities in their classes.

LEO #3: The number of student PASS (Peer-Assisted Study Session) leaders, student mentors, and tutors completing the Collaborative Learning development program will increase annually.

LEO #3 is tied to LEO #2 in that the number of mentors and PASS leaders will grow as the number of classes integrating Collaborative Learning also grows.

Timing: Annually, beginning Fall 2017.

VI. ACTIONS TO BE IMPLEMENTED: ACTIVATING COLLABORATIVE LEARNING

It is our hope and expectation that by engaging the students repeatedly in curricular and co-curricular educational experiences in which they are expected to work effectively with others, they will adopt the Collaborative Learning skills, attitudes, and behaviors to develop high quality solutions to challenging curricular content. Many UAH graduates may not experience Collaborative Learning unless the University's educational environment is intentionally transformed through this QEP to infuse more opportunities to learn and practice Collaborative Learning across the curriculum, inside and outside the classroom, as well as across the many dimensions of student life.

In order to enhance student learning through Collaborative Learning, faculty and staff will need to be prepared to:

- Design Collaborative Learning tasks
- Orient students to Collaborative Learning and related tasks
- Form collaborative groups
- Facilitate collaboration
- Assess and evaluate the quality of the collaboration process and product

The education of faculty and staff in Collaborative Learning techniques will be a Collaborative Learning activity in and of itself. Because the type of Collaborative Learning opportunities inside and outside the classroom varies significantly across the University, faculty and staff will have to work with the CLC Director to develop Collaborative Learning modules. The CLC Director will be able to share or teach known and understood best practices, which not only reduces the learning curve for faculty, but will make the resulting Collaborative Learning activities more effective. Essentially, the essence of Collaborative Learning is to design learning activities that engage students, ultimately affecting the way they interact with each other.

COLLABORATIVE LEARNING GRANTS

To ensure Collaborative Learning opportunities reach most of our students, the CLC will continually recruit faculty members and staff, perhaps in specific disciplines or courses, to incorporate Collaborative Learning techniques into their classes, and to oversee the dissemination of Collaborative Learning information and materials. To build on the enthusiasm that already exists for this initiative, the QEP implementation plan establishes a Collaborative Learning grant program. Each Fall and Spring the CLC will release a call for Collaborative Learning proposals. Instructors can propose any type of in-class or out-of-class collaborative activity. In a one-page proposal, instructors will briefly describe their Collaborative Learning plan and their perceived resource needs. In October and March of each year the Collaborative Learning Grant and Award Review Committee will select for funding the proposals that most effectively promote the campus-wide Collaborative Learning goals. These faculty members will become Collaborative Learning Faculty Fellows (CLFF) and they will be an integral part of the program's expansion and assessment. Depending on the depth and complexity of the Collaborative Learning proposal, grant awards can include faculty development fund transfers of up to $1,500 plus legitimate resource needs.

In addition to their financial resources, grant recipients will receive support from the CLC in how to best implement their particular Collaborative Learning technique. These instructors will meet individually with the CLC Director and eventually the Collaborative Learning Coordinator to review the fundamental principles and best practices of Collaborative Learning. The CLC Director or the Collaborative Learning Coordinator will continue to give pedagogical assistance as needed. They will also review the assessment needs and the Collaborative Learning Faculty Fellows will learn their role in the assessment protocol described in section X below. The faculty member's primary responsibility in assessment will be gathering and reporting data on their experience and their students' Collaborative Learning experience. The size of the eventual grant award will depend on the level of commitment required from the faculty member and the CLC, and the extent to which a particular course helps the QEP meet its campus-wide goals.

COLLABORATIVE LEARNING AWARDS

The CLC Director will establish two awards: a Collaborative Learning Teaching Award and a Collaborative Project Award. These awards may be given annually to high quality collaborative enterprises. Nominations for these awards may come from students, faculty, or administrators and will be reviewed by the Collaborative Learning Grant and Award Review Committee.

The Collaborative Learning Teaching Award recognizes exceptional contributions to Collaborative Learning that might be based on size (the number of students involved), particularly innovative applications, the degree of cross discipline involvement, or other factors.

The Collaborative Learning Collaborative Project Award goes to the students involved in a chosen collaborative experience. This positive reinforcement serves as a visible sign of the University's commitment to the importance of collaboration and motivates students' participation in Collaborative Learning.

VII. TIMELINE

YEAR (T-2): SPRING AND SUMMER 2014

- Formed QEP topic selection committee
- Called for proposals for potential QEP topics
- Reviewed proposals (no topic selected)
- Held weekly discussions of potential topics

YEAR (T-1): FALL 2014

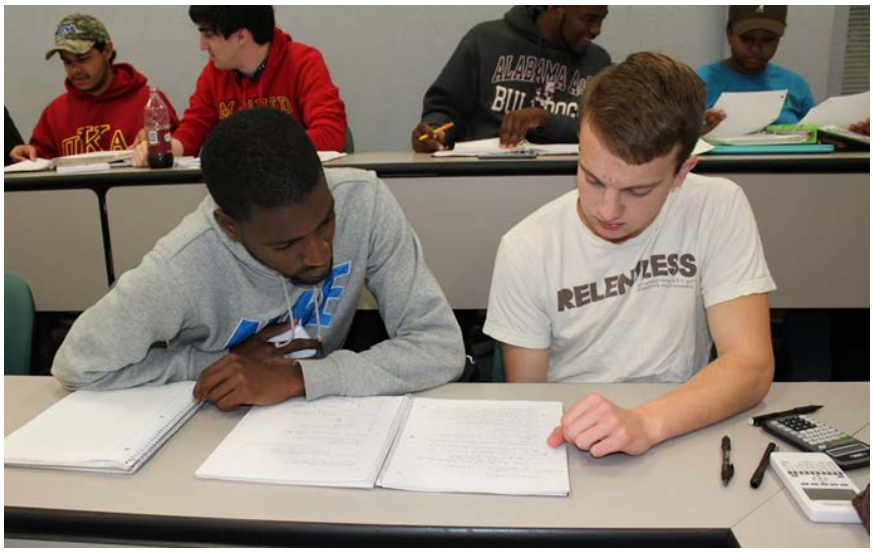
- Focused on student success
- Distributed survey to students who left UAH and have not returned
    - Asked about UAH experience
    - Probed into why they left
- Interviewed student focus groups
- QEP Committee and the Council of Deans read *Completing College: Rethinking Institutional Action*
- Investigated characteristics of successful and less successful students
    - Statistical analysis showed less persistence among commuters and transfer students

YEAR (T-1): SPRING 2015

- Presented progress to leadership and faculty
- Proposed topic on making connections between students
- Sent proposal to SACSCOC expert
    - Feedback suggested proposal was not an enhancement to student learning
    - Changed proposal to Collaborative Problem Solving
- UAH Administration suggested Collaborative Learning as a more inclusive topic
- QEP Topic selection committee finished – QEP Implementation committee initiated

YEAR (T-1): SUMMER 2015

- Committee read *Collaborative Learning Techniques*
- Claire Major (Collaborative Learning domain expert) invited to visit UAH and present her findings to faculty, chairs, staff, and administrators
- Committee refined SLOs and measurements



YEAR 0: FALL 2015

- Gathered baseline data from students: knowledge of key principles of Collaborative Learning
- Gathered baseline data from faculty: knowledge and use of Collaborative Learning
- Made offer to CLC Director
    - Assist QEP implementation committee on QEP SACSCOC report
- Invited speaker (Claire Major): *Collaborative Learning*
- Continued refinement of SLOs (Student Learning Outcomes) and LEOs (Learning Environment Outcomes)
- Continued refinement of measurement instruments for SLOs and OOs
- Continued to compile Collaborative Learning Resource Library (white papers, etc.)

Program Evaluation Plan

- Established the Collaborative Learning Advisory Council (CLAC)
- Designed QEP program evaluation plan: coordinating measurement instruments, target courses, and data gathering process
- Designed process for collecting assessment data from these experimental classes

Outreach

- Planned campus-wide, official introduction of QEP
    - Launch of Collaborative Learning Program by University Administration
    - Design Collaborative Learning Awareness Program

YEAR 0: SPRING SEMESTER 2016

- Kickoff of QEP Awareness Campaign
- Select Collaborative Learning Advisory Council
- Implement pilot test of Collaborative Learning techniques in FYE and assess student learning of Collaborative Learning Principles

- Recruit faculty for first year Collaborative Learning: call for grant proposals, selection (late March or early April)
- Prepare for SACSCOC team visit
- Collect data and assess piloted Collaborative Learning classes
    - Suggest improvements in assessment processes
    - Suggest improvements in Collaborative Learning execution based on assessments
- Initiate Collaborative Learning Resource Center
        - Collaborative Learning Scholarship (Framework/Principles)
        - Collaborative Methods (Strategies/Techniques)
        - Collaborative Assessment (Formative/Summative)
        - Collaborative Classroom Management
        - Collaborative Instructional Design

YEAR 1: 2016 - 2017

Initial implementation of QEP, Collaborative Learning

- Fall QEP Kickoff Event: UAH Collaboration
- Implement Collaborative Learning techniques in FYE courses across campus
- Conduct first round of assessment of Collaborative Learning on pre-test data
- Incorporate improvements based on assessment
- Familiarize campus community with Collaborative Learning Resource Center (Canvas)
- Recruit faculty for year 2 Collaborative Learning activities
- Collect and analyze assessment data for SLO #1
- Begin the delivery of a campus-wide professional development program on Collaborative Learning theory, methods, and techniques to faculty and staff
    - Integrate Collaborative Learning activities in all FYE (Charger Success) sections
- Create Collaborative Learning Faculty and Student Project awards

YEAR 2: 2017 - 2018

- Assessment of SLO #1 from Year 1 experience
- Incorporate improvements based on assessment
- Create annual report of QEP successes and challenges (for Associate Provost)
- Collect and analyze assessment data for SLO #1 and SLO #2
- Increase number of faculty participating in Collaborative Learning techniques professional development courses (OO #1)
- Increase number of courses incorporating Collaborative Learning techniques (OO #2)
- Cooperating with SSC, begin to explore how tutors and PASS leaders can be incorporated in Collaborative Learning activities (OO #3)

ANNUAL THEREAFTER

- Steady-state cycle of assessment-based continuous improvement for all SLOs and OOs
- Deliver ongoing professional development to incoming faculty and staff as part of onboarding process

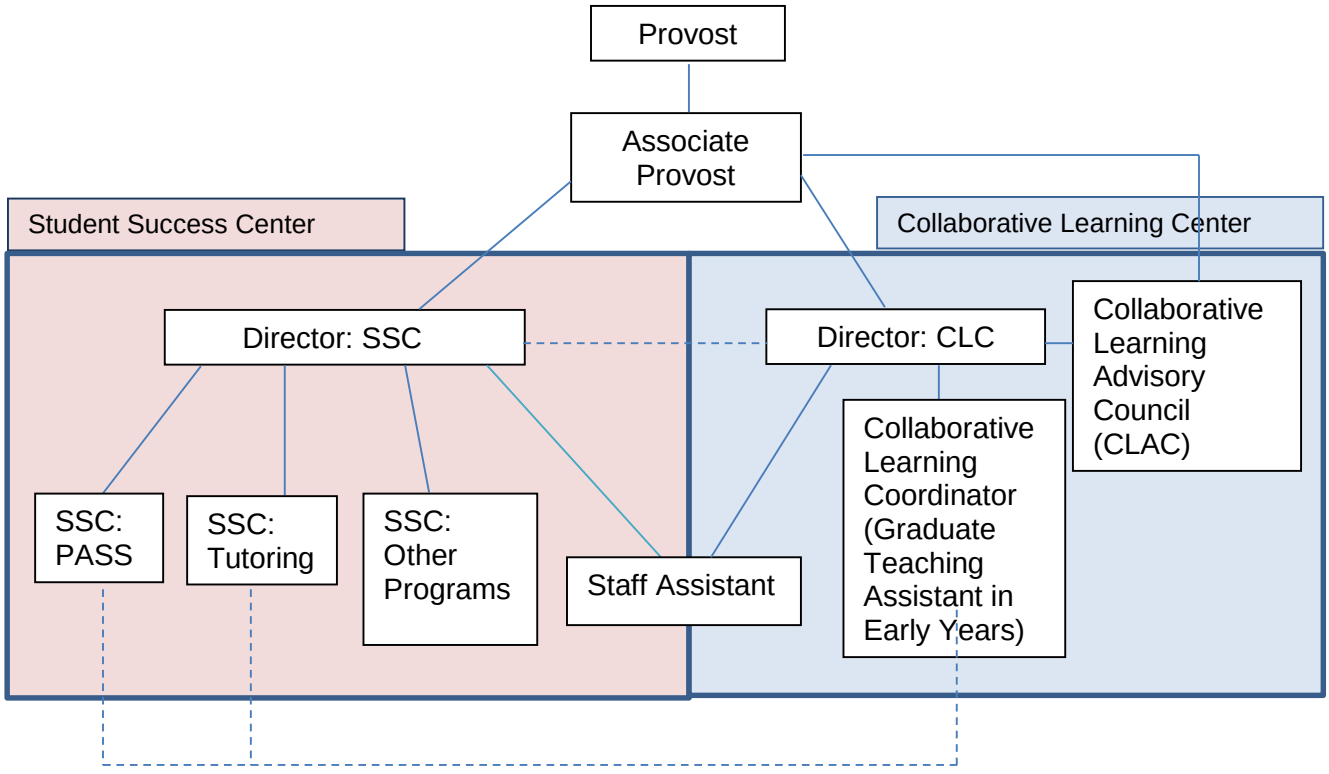
- Recruit and train additional instructors from existing faculty
- Five-year target is to have all undergraduates involved in Collaborative Learning experiences in at least four classes
- Coordinate curriculum development with Deans and appropriate Student Affairs personnel
- Develop in-classroom, hybrid, and online classroom technologies and tools as needed
- Submit annual report to Associate Provost and CLAC on annual progress and impact of QEP

VIII. ORGANIZATIONAL STRUCTURE

To be successful, it is imperative that specific individuals are charged with the implementation of the QEP, and that it be thoughtfully placed within the University structure. We have decided that because the QEP is specifically aimed at classroom instruction it makes sense for it to be closely aligned with the existing Student Success Center (SSC). The SSC at UAH owes its origin to the institution's first QEP, which targeted freshman learning through peer mentoring and study sessions. Its success grew into the existing and continuing SSC. Because both groups will be involved in classroom activities and since PASS students, tutors, and peer mentors will also be involved in Collaborative Learning activities, we are placing the CLC physically close to the SSC and ensuring that they will share certain resources such as conference rooms, training rooms, and a staff assistant.

COLLABORATIVE LEARNING PROGRAM ADMINISTRATIVE STRUCTURE

The Collaborative Learning Center and the Student Success Center will be a collaborative organization.



Note: solid lines indicate assignment and reporting responsibilities; dashed lines indicate collaboration.

The SSC Director's primary responsibility is for the continuation, assessment, and improvement of SSC initiatives, while the CLC Director's primary responsibility is for the implementation, assessment, and continued improvement of the QEP. Both directors report to the Associate Provost.

The **Collaborative Learning Advisory Council (CLAC)** consists of representatives from each degree-granting college, plus a representative from academic advising, and up to two student members. It has two primary subcommittees: (1) Assessment and Evaluation (providing feedback and recommendations for program adjustments based on assessment data) and (2) Grants and Awards Selection (reviewing and identifying successful Collaborative Learning grant proposals and identifying Collaborative Learning award recipients annually). Initially, up to four members of the QEP Implementation Committee will serve as members of the CLAC, or in an ex-officio capacity, to carry forth the QEP's institutional memory and to ensure continuity.

The CLC Director is responsible for the implementation of the QEP. This position will be filled by a faculty member who has been moved from a nine-month to a twelve-month appointment and who teaches half-time. This schedule gives the Director sufficient time to devote to the QEP, and yet also keeps that individual in the classroom.

The initial backup for the CLC Director is the Collaborative Learning Advisory Council (CLAC). This group's duties will evolve as the CLC grows and matures. Initially, they will be deeply involved in the recruitment of faculty for Collaborative Learning training, as well as in setting up the assessment data collection process, the data analysis process, and helping to troubleshoot the various unexpected challenges that arise.

In the second year (2017-2018) of the QEP, it is our plan to hire a second individual, a Collaborative Learning Coordinator, to focus primarily on the training aspect of the QEP and to assist the CLC Director in a variety of duties. Employing this second person will give additional depth to the talent and knowledge base of the CLC. In 2016-2017, a graduate teaching assistant will be employed to assist the CLC Director. A detailed job description for the CLC Director and the CLC Coordinator appears in Section IX: Resources.

After the first year, the duties of the CLAC will evolve to focus more on assessment review and making policy recommendations to the CLC based on those assessments. Their role in outreach to faculty across campus will continue.

IX. RESOURCES

BUDGET NARRATIVE

Initially, the Collaborative Learning Center will be located within the Student Success Center. These two groups are expected to work closely with one another and share administrative assistant help. Currently, the CLC is able to share conference and training rooms in the SSC, and will move into newly available space in the Library once the Student Services Building is completed in March 2016.

The budget, outlined on the next page, details the reorientation of a faculty member's responsibilities to those of the Collaborative Learning Center Director so that their primary focus is implementation and assessment of the QEP. This re-direction involves moving the faculty member from a 9-month contract to a 12-month contract, hiring an instructor to reduce their current teaching load, and releasing them from other service responsibilities. Staff assistance, outreach, and assessment support can be shared by the Student Success Center and Collaborative Learning Center.

Additionally, the budget includes the cost of the Collaborative Learning Coordinator, a position to be filled in AY 2017-2018.

THE BUDGET

Estimated Budget for Implemetation of QEP	Year 0 AY 2015-16	Year 1 AY 2016-17	Year 2 AY 2017-18	Year 3 AY 2018-19	Year 4 AY 2019-20	Year 5 AY 2020-21
A. SALARIES*						
1. Director, QEP*						
(re-assignment to reduce teaching load) Sp, 2016	$25,000	$51,000	$52,020	$53,060	$54,122	$55,204
move to 12-month contract	$33,000	$33,660	$34,333	$35,020	$35,860	$36,578
2. Half-time Instructor to cover load*	$0	$30,000	$30,600	$31,212	$31,836	$32,473
3. Graduate Teaching Assistant	$10,000	$16,000	$16,000	$16,000	$16,000	$16,000
4. Staff Assistant*						
(reassigned half-time from SSC)	$17,000	$17,340	$17,687	$18,041	$18,401	$18,769
B. FRINGE BENEFITS	$22,500	$39,600	$58,392	$59,560	$60,793	$62,009
Fringe New Monies	$15,000	$24,300	$24,786	$25,282	$25,109	$25,515
TOTAL SALARIES & FRINGE BENEFITS COST	$107,500	$187,600	$209,032	$212,893	$217,013	$221,033
NEW SALARY MONIES	$58,000	$103,960	$105,719	$107,514	$108,806	$110,566
C. OFFICE START UP						
computers / tablets, printer.	$2,000	$500	$2,000	$500	$500	$500
D. OPERATING						
Phones	$720	$720	$720	$720	$720	$720
Office Supplies	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Staff Development/Training	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Tuition	$6,000	$12,000	$12,500	$12,500	$13,000	$13,000
TOTAL OPERATING	$10,720	$16,720	$17,220	$17,220	$17,720	$17,720
E. ETS			$5,000	$5,000	$5,000	$5,000
F. GRANTS FOR COLLABORATING INSTRUCTORS	$7,000	$15,000	$15,000	$15,000	$15,000	$15,000
G. OUTREACH ACTIVITIES and WORKSHOPS	$10,000	$5,000	$5,000	$5,000	$5,000	$5,000
H. STUDENT AND FACULTY AWARDS	$0	$3,000	$3,000	$3,000	$3,000	$3,000
TOTAL ESTIMATED COST INCLUDES CL COORD.	$137,220	$227,820	$241,252	$258,613	$263,233	$267,253
% growth in budget		66.03%	5.90%	7.20%	1.79%	1.53%
note: * assuming 2% annual raises						
New Monies for QEP	**$87,720**	**$144,180**	**$152,939**	**$153,234**	**$155,026**	**$156,786**
Collaborative Learning Coordinator*	$0	$0	$60,000	$61,200	$62,424	$63,672
Total with Coordinator	$87,720	$144,180	$212,939	$214,434	$217,450	$220,458

The remainder of the budget in the first year is directed towards professional development for the QEP Director and staff, materials, supplies, and outreach activities.

QEP POSITIONS

Following an internal search, we hired the Collaborative Learning Center Director, Professor Dan Rochowiak, and he started in the position on January 6, 2016.

Dr. Rochowiak received his B.S. in chemistry from St. Bonaventure University, and his Ph.D. in logic and philosophy of science from the University of Notre Dame. He is currently an Associate Professor of Computer Science and was formerly the Associate Dean of the College of Science and the Director of the Intelligent Systems Laboratory.

Within the University, Dr. Rochowiak has filled multiple administrative and service roles that have led to the expansion of his understanding of and appreciation for the complexities of Collaborative Learning. Working with personnel from multiple disciplines and professions, Dr. Rochowiak helped to build the first University Internet presence and establish the University's Internet2 presence. Over the years he also worked to establish a technical writing concentration and developed teaching technology courses for the former Department of Education. In addition, he taught with faculty from biology, nursing, industrial and systems engineering, information systems, and other faculty in computer science, providing him with experiences that served to hone his understanding of cross-disciplinary perspectives and collaborative design. During his time as Director of the Intelligent Systems Lab, Dr. Rochowiak developed a student research group with members drawn from mechanical engineering, computer science, technical writing, electrical engineering, physics, information systems, philosophy, mathematics, and communications.

Dr. Rochowiak has extensive experience coordinating group efforts to achieve university and college-level goals. As Associate Dean of Science, he helped to introduce new learning technologies, such as student response systems and podcasting. He has also served on university committees for adopting and using learning management systems. Most recently he coordinated Strategic Plan - Task Force 3, focused on student retention, and represented the College of Science in developing Charger Foundations for general education. He was also a charter member of the University's Quality Enhancement Plan committee and that experience will help smooth the plan's move from conception to implementation.

In his teaching, Dr. Rochowiak has a history of developing course materials and activities that incorporate features of Collaborative Learning. For the last 15 years, Dr. Rochowiak has developed materials for and taught CS 321, a course that features a semester-long team project. The course is a central part of assessing ABET Student Learning Outcome D, "(a)n ability to function effectively on teams to accomplish a common goal". He has also introduced directed, collaborative discussion boards in his professional ethics and philosophy courses along with other in-class collaborative exercises.

Dr. Rochowiak's research agenda blends theory and practice and focuses on explanation, collaboration, and communication. His research efforts have been funded by the National Science Foundation, Marshall Space Flight Center, the US Army Missile Command, the Alabama Department of Economic and Community Affairs, and the Tennessee Valley Authority in areas ranging from intelligent control of AGVs (automated guided vehicles) to process planning for composite materials and high performance networks. His current research interests concern computer supported critiquing, collaboration, argumentation, and knowledge

presentation. His teaching interests focus on artificial intelligence, software development, the epistemology of science and technology, and professional ethics.

A second position, the Collaborative Learning Coordinator, is scheduled to be filled in the second year of the plan. A job description follows.

Title: Collaborative Learning Coordinator
Summary: This position is responsible for content creation and the collection and evaluation of data related to UAH's Collaborative Learning initiative.

Content Creation:

- Identify and track existing Collaborative Learning activities
- Identify, attend, and report appropriate conferences, webinars, and related development events and report new and emerging Collaborative Learning technologies
- Develop content items (white papers) on Collaborative Learning techniques
- Develop content for faculty development activities (workshops, seminars, lectures, demonstrations)
- Identify and facilitate development of pilot Collaborative Learning courses or sections of a course
- Develop LMS templates for appropriate Collaborative Learning activities

Assessment/Evaluation:

- Track the number of students and faculty involved in Collaborative Learning
- Track the number of Collaborative Learning events
- Develop templates and instructions for rubrics for grading of collaborative activities
- Track the progress and success of students that have and have not had Collaborative Learning experiences
- Track demographics of resident and non-resident students, as well as native and transfer students in collaborative activities

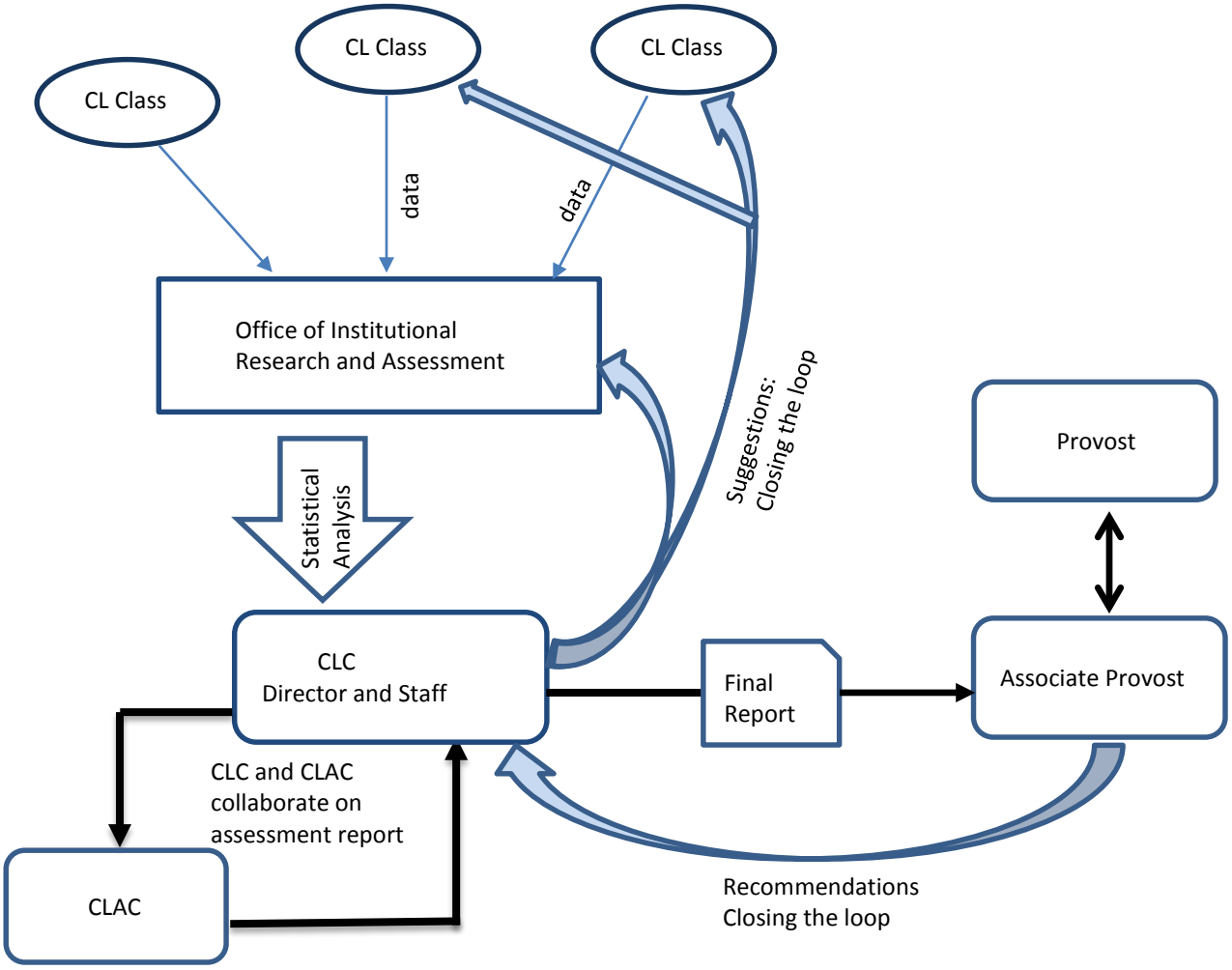
Outbound Communications:

- Prepare and write reports that analyze the data items of SLOs and OOs
- Coordinate and curate all reports for integration into the five year report

X. ASSESSMENT PLAN

The assessment plan for the Collaborative Learning initiative is designed to be effective and efficient. Efficiencies are reaped from both careful construction of the measurement instruments and their use, and also through specialization of effort. Assessment data will be gathered from two sources: faculty reports and student surveys. These data will be routed to the Office of Institutional Research and Assessment, where they will be organized and analyzed following a specified set of metrics. That analysis will then be sent to the CLC Director who will write a report that recommends changes and improvements to the Collaborative Learning activities, the assessment instruments, and the assessment process itself. That report will be sent to the CLAC, which will review and amend those recommendations. Their report will be returned to the CLC Director who will incorporate their comments, make a final report to the Associate Provost, and implement the recommended improvements to the Collaborative Learning program.

THE ASSESSMENT CYCLE



STEP ONE: GATHER DATA

Data will be gathered from the classes and extra-curricular groups in which collaborative activities take place. These classes will be identified by faculty teaching Collaborative Learning courses and through the Collaborative Learning grant program described in Section VI. The specific data and how they are collected will depend on the Student Learning Outcome (SLO) or Learning Environment Outcome (LEO) being assessed and the instrument being used. Specific data to be collected appear in the Data Report, the format of which appears in Step 2 below.

RAVE: Data collection
SLO #1: Recognize: *UAH students know and can differentiate the principles of Collaborative Learning.*

SLO #1 addresses the students' knowledge of the fundamental principles of Collaborative Learning. To assess that knowledge, the CLC will distribute an annual survey that contains two separate measures of knowledge.

Measure 1: Students will complete a questionnaire at the end of the semester containing 10 scenarios that vary in the extent to which they involve Collaborative Learning. Students will respond using a 5 point Likert scale, where 1 = "not at all collaborative" and 5 = "very collaborative." This gives a basic reflection of the students' ability to recognize the principles of Collaborative Learning.

Measure 2: Once the scenarios in Measure 1 are completed (and locked), the students will re-visit their responses to each scenario and will be given follow-up questions asking students to identify the key features of Collaborative Learning that are present in each scenario, or if the scenario is NOT collaborative they will identify what is missing. The follow-up questions comprise Measure 2 and will present five characteristics (three that are key features of Collaborative Learning and two that are foils/not features of Collaborative Learning). The foils are positive, potentially advantageous aspects of groups. Students who do not know the key features of Collaborative Learning and who might merely respond to positive aspects of the scenarios can thus be distinguished from those who genuinely know the principles of Collaborative Learning. After rating each scenario students will indicate the features of Collaborative Learning that are incorporated in the scenario (e.g., egalitarian, discursive, inquiry driven) by clicking radio buttons next to all concepts they believe are represented. Students who rate the scenario as being an instance of Collaborative Learning will be asked to indicate which of the five characteristics of Collaborative Learning *are* present in the scenario. Students who rate the scenario as not being an instance of Collaborative Learning will be asked to indicate which of the five characteristics of Collaborative Learning *are missing* in the scenario.

The characteristics from which students can choose for each scenario are:

- Everyone contributed (Egalitarian)
- Everyone communicated and interacted (Discursive)
- The group considered a variety of approaches to problems (Inquiry Driven)
- The group had a strong and effective leader (foil: Leadership/Delegation)
- The group relies on advice from an expert (foil: TA/Faculty-directed)

Table 10a
SLO #1 Scenarios and Relevant Collaborative Learning Principles

Collaborative Learning Principles Addressed	Scenarios
Discursive Inquiry Driven	Jenny and Scott have different views on how their group of four should proceed. The whole group decides which way to go.
Discursive Inquiry Driven	To ensure steady progress on their semester-long group project, Maggie, Juanita, and Tony meet to talk at least once a week to brainstorm.
Egalitarian	Mandy wants to contribute, but feels less knowledgeable than the others. She volunteers to be the note keeper for the project.
Not Collaborative Learning	Carson and Taylor have to develop a mathematical model to solve a problem. They make an appointment with the course's teaching assistant and ask her how she would model a solution.
Discursive Egalitarian	Mary and Prida discuss their progress on the group project and ask Andy for feedback on their ideas.
Inquiry Driven	Jackie and Sven disagree about their project direction so the group leader decides which way to go.
Egalitarian	Devon, Kim, John, and Frank have to do a literature review on a topic in their history class. John has already read on the topic, so the rest of the group decides to focus on finding material to support his position.
Discursive Egalitarian Inquiry Driven	Ben and Daniella have been tasked with identifying which of several formulas will solve a particular problem. Ben, a computer science student, tells Daniella he will work on creating a quick program to test each formula. Daniella, a math major, offers to run calculations to test the various formulas. They decide to compare results and see which method will allow them to identify the correct formula first.
Egalitarian	Naomi asks each person in the group what part of the project they would like to do.
Not Collaborative Learning	Katie has to make an A in Economics in order to keep her scholarship. She also has to attend a wedding that will conflict with the project timeline. She's feeling a lot of pressure to make sure the project goes well, so she tells everyone that she will take the lead on the project.
Not Collaborative Learning	Carl encourages the group to check in with the instructor each week to make sure they are on the right track.

SLO #2: Apply: *UAH students collaborate effectively.*

To assess SLO #2, student will be observed during their Collaborative Learning activities and their effectiveness at collaboration will be evaluated with the use of a rubric. Part of the duties of the Collaborative Learning Faculty Fellows will be to perform this assessment, and they will be trained appropriately to do so. The specific rubric, shown below, is a modification of the AACU Collaborations rubric.

RUBRIC FOR COLLABORATIVE LEARNING

Evaluators are encouraged to assign a zero if behavior does not meet baseline (cell one) performance.

Components of CL	4	3	2	1
Inquiry Driven	Group uses integrated insights to create new questions or perspectives on issue.	Group integrates ideas, seeking common themes and arguments to build solution.	Group evaluates ideas from members to select best solution.	Group encourages ideas from all members.
Discursive*	Group succeeds in all of the following: (i) Group communicates. (ii) Interactions are respectful, constructive, engaged. (iii) Positive vocal tone, facial expressions, and body language convey a positive attitude toward others' contributions. (iv) Group members elicit contributions from other members.	Group succeeds in three of the following: (i) Group communicates. (ii) Interactions are respectful, constructive, engaged. (iii) Positive vocal tone, facial expressions, and body language convey a positive attitude toward others' contributions. (iv) Group members elicit contributions from other members.	Group succeeds in two of the following: (i) Group communicates. (ii) Interactions are respectful, constructive, engaged. (iii) Positive vocal tone, facial expressions, and body language convey a positive attitude toward others' contributions. (iv) Group members elicit contributions from other members.	Group succeeds in one of the following: (i) Group communicates. (ii) Interactions are respectful, constructive, engaged. (iii) Positive vocal tone, facial expressions, and body language convey a positive attitude toward others' contributions. (iv) Group members elicit contributions from other members.
Egalitarian	All members contribute. Group encourages all members to contribute.	Group encourages all members to contribute. Some members do not contribute.	Some members of the group encourage members to contribute. Some members do not contribute.	Members of the group do not encourage others to contribute. Some members do not contribute.
Varied Perspectives	The group openly shares diverse perspectives and appreciates the contribution each brings to their deeper understanding.	The group shares opinions and looks for commonality or shared views.	The group shares diverse opinions from every member.	The group considers at least two different opinions.

*For online applications, language will be scanned for positive words and encouraging language rather than vocal tone and facial expressions.

SLO #3: Value: *UAH students recognize the merit of Collaborative Learning.*

In the Spring of each academic year, all juniors will be surveyed and asked about their views on the merit of Collaborative Learning. The survey items are shown below in Table 10b. Each principle of Collaborative Learning has three items and there are five items for students' impressions of CL's contribution to learning. Items are grouped by feature in Table 10b, but will be presented randomly in the survey.

Table 10b.
Merit of Collaboration Scale

Item	Feature
Being able to learn collaboratively is a valuable skill.	Value of CL/Preference
I enjoy working in collaborative groups.	Value of CL/Preference
Working in collaborative groups is better than working alone.	Value of CL/Preference
In group discussions, I like it when all group members participate.	Egalitarian
When working with others, I try to make sure that all members have the opportunity to participate.	Egalitarian
I make sure to contribute my share to group projects.	Egalitarian
Collaborative groups can find better solutions than individuals alone.	Inquiry Driven
Others' perspectives contribute to better answers.	Inquiry Driven
Hearing other students' perspectives helps us reach a better conclusion.	Inquiry Driven
In group discussion, it's important for all members to communicate with each other.	Discursive
Communication is key to successful collaboration.	Discursive
Healthy give-and-take in ideas is important for group process and success.	Discursive
Working in collaborative groups helps me understand the material better.	Learning
Some people are able to learn better in collaborative groups.	Learning
I am able to learn better in collaborative groups.	Learning
Explaining course material to others helps me understand the material better.	Learning
When other students describe course material, it enhances my understanding.	Learning

In total there are five measures, one measuring their overall impression of Collaborative Learning, three focusing on the three principles of Collaborative Learning and the fifth asking students to reflect on the effectiveness of Collaborative Learning on general learning. Students will rate each item on a 4 point Likert-type scale: strongly disagree, disagree, agree, or strongly agree.

SLO #4: Enhance: *UAH students having had Collaborative Learning courses will demonstrate evidence of better generalized learning.*

Each year a sample of graduating seniors take the ETS Proficiency Profile exam. Those scores will be used to assess the impact of Collaborative Learning on the students' critical thinking, reading, writing, and mathematical reasoning. There are many things that can influence a student's performance so it is imperative to account for as much as we can. Fortunately, as shown in Section II, we have considerable information on our students and we can control for many of these influences using regression analysis. In the following paragraphs we briefly describe the data and procedures to be used.

Data:
The dependent (left-hand-side) variables come from the ETS Proficiency Profile scores. Critical thinking, reading, writing, and mathematical reasoning are measured with a score that ranges from a low of 100 points to a high of 130 points. Statistically this is a continuous, but truncated, variable. However, for the last ten years UAH students have scored around the middle of those two end points with few scores hitting either extreme. Consequentially, the truncation is unimportant and we can treat this as a continuous dependent variable. The standard assumptions apply and ordinary least squares (OLS) is an appropriate estimation technique. If, over time, student scores rise significantly such that the upper bound is more frequently reached, a regression model that incorporates truncated or censored data may be necessary. There are several appropriate candidates for that contingency.

The explanatory (right-hand-side) variables consist of the various attributes of the students and/or their classes that help to explain their ETS performance. For example, we might expect students with a higher GPA to perform better, for English majors to excel in the reading portion of the exam, physics majors to excel in math, and philosophy students to excel in critical thinking. We can control for sex differences, compare the impact of living on or off campus, measure the impact of transfer credits on ETS performance, and so forth.

A critical step is to create a variable or variables reflecting the students' experiences with Collaborative Learning. Fortunately, the data needed to construct such measures have already been identified to help assess SLO #2 (students apply collaborative principles) and one of the Learning Environment Outcomes, LEO #3 (more PASS leaders become collaborative). Part of the assessment for SLO #2 collected data on the frequency of Collaborative Learning activities in classes and on various types of Collaborative Learning activities (see Table 10b). Similarly, to assess LEO #3 the CLC will collect data on which courses incorporate Collaborative Learning activities. The intersection of the Collaborative Learning data and student records allows us to construct two student-based measures of Collaborative Learning activities: (i) the number of courses taken by each student with Collaborative Learning content, and (ii) the number of Collaborative Learning activities experienced by each student. A regression of the following type can be estimated with these data.

$$\textit{Critical thinking score} = b_0 + b_1\,(\#CL\ classes) + b_2\,(GPA) + b_3\,(major) + b_4\,(female) + b_5\,(\%transfer\ credits) + b_6\,(commute) + \ldots + b_7\,(athlete) + e_0$$

The size, sign, and significance level of the estimate coefficients (the b_i s) indicates the impact of each variable on a student's ETS critical thinking score after controlling for other student attributes. Of central interest is the coefficient on the Collaborative Learning measure (b_1 in the above example). If Collaborative Learning is having the impact we expect, the estimated coefficient should be positive and significant meaning that students who have more classes containing Collaborative Learning activities earn higher scores than students with fewer

Collaborative Learning experiences. Substituting the number of Collaborative Learning *activities* for the number of Collaborative Learning *classes* provides a second dimension to the impact of collaboration.

Reading, writing, and mathematics are handled similarly, that is, each score is substituted for the critical thinking score in the above equation. Regressions are then run for each measure of Collaborative Learning.

Once these data have been analyzed a number of additional effects can be explored. For example, the CLC will have a description of different types of collaboration (see Table 10b) and with some manipulation we can test to see if one type of Collaborative Learning activity has a larger effect on proficiency than another. Similarly, we can test whether the timing of Collaborative Learning activities (earlier versus later in a student's career) has a greater impact or whether certain courses (general education versus courses in major) have a greater impact, and so on. Over time we will accumulate a growing body of information on Collaborative Learning, which is most effective, what is the best assessment tool, when should we focus on Collaborative Learning and so forth. Incorporating this information lets us evolve and focus on the most effective activities. Finally, with a little additional data we can also investigate the impact of Collaborative Learning on retention (year by year), DFW rates, and graduation rates. While these are not explicit objectives of the QEP, UAH has an interest in these institutional measures of performance.

STEP TWO: OFFICE OF INSTITUTIONAL RESEARCH AND ASSESSMENT (OIRA)

The survey data will be sent to the Office of Institutional Research and Assessment. Their primary task is to assemble, organize, and analyze the data statistically and pass their report on the effectiveness of the various measures of Collaborative Learning to the Director of the Collaborative Learning Center. At a minimum, the report will include the following measures:

From Students:

- Scores on "recognition of Collaborative Learning principles" by course level (100, 200, 300, and 400). These scores should be reported in disaggregated form, raw data, averages and standard deviations, and should be plotted over time.
- Reports on the extent to which the collaborative activities in their class incorporated the fundamental principles of collaboration. Again, these reports should be disaggregated by course level, by principle, given as raw data as well as by averages with standard deviations, and with plots over time.

From Instructors:

- How many intentionally designed Collaborative Learning activities were in this class?
- What type of activities were they?
- How successful were the students in completing the Collaborative Learning activity? By course, plotted over time.

Aggregated Statistics: Reported Over Time

- Number of instructors using Collaborative Learning teaching techniques
- Number of courses with Collaborative Learning activities
- Number of students involved in Collaborative Learning activities

STEP THREE: COLLABORATIVE LEARNING CENTER (CLC)

The analysis from Step 2 will be channeled to the Collaborative Learning Center where the Director will use it to assess the effectiveness of Collaborative Learning across the University and in specific courses, colleges, and disciplines. The CLC Director will assemble a report on the macro and micro effectiveness of the Collaborative Learning integration and will provide suggested improvements. The CLC Director will share the report, including the data and analysis from OIRA, with the CLAC. The CLAC and the CLC will work together to assess program, develop suggestions and recommendations to close the loop, and write a report that will be sent to the Associate Provost.

STEP FOUR: ASSOCIATE PROVOST

The Associate Provost will review the report, suggest improvements to the program, and share it with the Provost. After their collaboration, the Associate Provost will send questions, recommendations, and suggestions back to the CLC Director closing the loop.

STEP FIVE: THE 5 YEAR IMPACT STUDY

The CLC Director will implement improvements. After four years, the cumulative data and sequential reports will be incorporated into the five-year impact report for SACSCOC.

ASSESSING LEARNING ENVIRONMENT OUTCOMES: (LEOS)

There are three Learning Environment Outcomes. In general, the assessment of those objectives follows a similar path, although the initial step, collection of data, occurs at a different source.

LEO #1: The number of faculty and staff who complete the Collaborative Learning development program will increase annually.

LEO #2: The number of courses across the curriculum at all levels of instruction that engage students in Collaborative Learning activities will increase annually.

LEO #3: The number of student PASS leaders (Peer-Assisted Study Sessions), student mentors, and tutors completing the Collaborative Learning development program will increase annually.

Data on the number of faculty, courses, staff, and students completing Collaborative Learning training will be collected by the CLC and included in the annual report. The CLAC will survey a sample of those individuals to assess the effectiveness of the training.

ASSESSMENT SCHEDULE

Data measuring the student learning outcomes will be gathered each semester from each class engaged in Collaborative Learning activities. This step will involve pre- and post-class data. The data will be analyzed annually and suggested improvements will be communicated to the Collaborative Learning instructors and Collaborative Learning Center. Schedule details follow.

Assessment Schedule Data Collection		
	Fall	**Spring**
SLO #1		
Native knowledge of Collaborative Learning: Scenario survey part I	August	January
Post-Collaborative Learning knowledge of Collaborative Learning: Scenario survey part II	November/December	April/May
SLO #2		
Intentional design of one Collaborative Learning activity	August	January
Collaborative Learning faculty evaluate quality of Collaborative Learning artifact	November/December	April/May
Students indicate use of key Collaborative Learning features	November/December	April/May
SLO #3		
Count of Collaborative Learning classes collected by CLC Director		May/June
Count of Collaborative Learning activities within classes by CLC Director		May/June

Student performance data received from OIRA	Summer
LEO #1: Count collected and reported by CLC Director	May/June
LEO #2: Count collected and reported by CLC Director	May/June
LEO #3: Count collected and reported by CLC Director	May/June

Assessment Schedule Data Analysis, Reporting, and Continuous Improvement	
OIRA reports to CLC	July
Collaborative Learning Director and CLAC review and write report for Associate Provost	Fall Semester
CLOSING THE LOOP	
CLC Director implements improvements: Communicates assessment results with Collaborative Learning instructors	Fall Semester
Annual report from Director to CLAC and Associate Provost: Communicates suggestions to CLC	Spring Semester
5-year Impact Report	Spring Semester, 2020

BASELINE DATA: STUDENTS

In the Fall semester of 2015, the QEP implementation committee conducted a student survey to access their base knowledge and native understanding of Collaborative Learning. We also distributed a faculty survey to ascertain the existing level of Collaborative Learning activities already taking place at the University.

Student Survey: Native knowledge of Collaborative Learning
The student survey consisted of a series of student learning scenarios. Some were examples of Collaborative Learning and others were incorrect examples of collaboration (see Table 10a above). The survey was distributed to 1,006 first-time freshmen and 1,002 students taking select junior-level courses (courses numbered 300 or above) from across the University. There were 918 responses (a 45% response rate) consisting of 615 freshmen and 303 upper classmen. A summary of the findings appears in Table 10f.

Table 10f: Student baseline: Native understanding of the fundamental principles of Collaborative Learning		
Principles of Collaborative Learning	**Correct examples of Collaborative Learning**	**Incorrect examples of Collaborative Learning**
100 level courses (n = 615)		
Egalitarian: Everyone participates	3.81	3.35
Discursive: Communication involves everyone in group	4.22	3.77
Inquiry Driven: Asks questions from different perspectives	4.24	2.11
300 level courses (n = 303)		
Egalitarian: Everyone participates	3.90	3.38
Discursive: Communication involves everyone in group	4.28	3.95
Inquiry Driven: Asks questions from different perspectives	4.35	2.15

*Scoring is 1 – 5 (5 = correct identification of Collaborative Learning)

Baseline data suggest that students have a basic understanding of the idea of collaboration, but do not associate it with learning. As demonstrated in Table 10f, when students were presented with a scenario that correctly represented Collaborative Learning (for example: *Jenny and Scott have different views on how their group of four should proceed. The whole group decides which way to go*), they successfully identified Collaborative Learning more than half the time as the average responses ranged from 3.8 to 4.2 (3.0 is the midpoint). However, when presented with a "negative" scenario in which students were involved with each other on a project, but they violated one of the principles of Collaborative Learning (for example: *Carl encourages the group to check in with the instructor each week to make sure they are on the right track*), their performance was weaker. In every case, the drop in scores was statistically significant.

Partitioning the data by the 100 and 300 level courses allows us to determine whether upper level students (primarily juniors) have a different level of understanding than the lower level students (freshmen). There is a small difference between the two groups, but it is consistent enough that it is statistically significant. Upper level students do seem to have a better grasp of Collaborative Learning.

At the end of the semester we returned to survey the same students, asking them to evaluate the same collaborative scenarios. As expected, the response rate fell because students have already answered these questions once and at the end of the semester they are busy with finals, papers, and projects. Still, the response rate exceeded our expectations with 648 total responses, which is 70% of the initial respondents. More than 74% of the first year students and over 62% of the juniors responded.

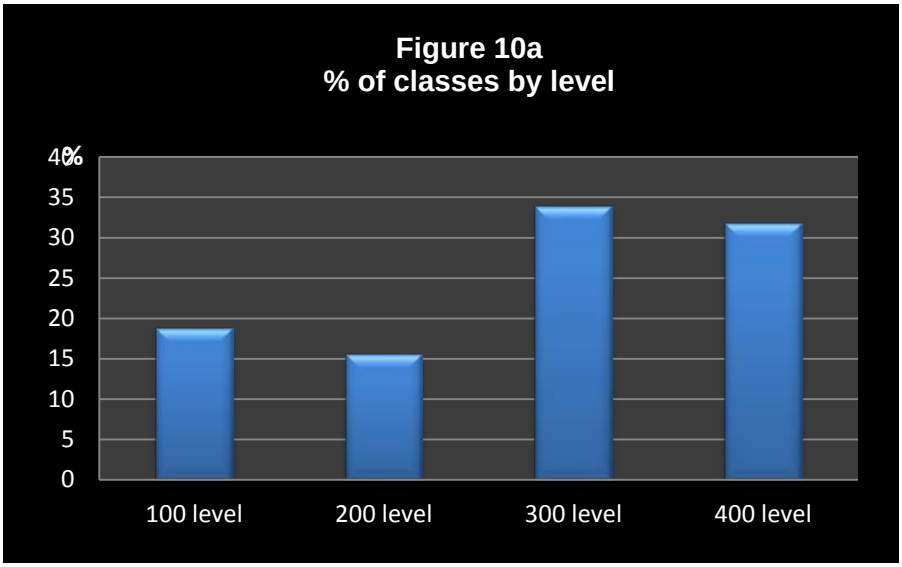
Table 10g: Student baseline: Native understanding of the fundamental principles of Collaborative Learning, end of semester		
Principles of Collaborative Learning	**Correct examples of CL**	**Incorrect examples of CL**
100 level courses (n = 460)		
Egalitarian: Everyone participates	4.16	3.28
Discursive: Communication involves everyone in group	4.32	3.70
Inquiry Driven: Asks questions from different perspectives	4.10	2.20
300 level classes (n = 188)		
Egalitarian: Everyone participates	4.23	3.27
Discursive: Communication involves everyone in group	4.39	3.90
Inquiry Driven: Asks questions from different perspectives	4.30	2.09

In general, there was a small and statistically significant increase in the correct identification of the egalitarian and discursive scenarios by both the first year students and the upper classmen, but a decline in the rate at which they identified inquiry driven scenarios. Similar to the previous results, students were less successful in identifying the incorrect examples of Collaborative Learning, although the upper-level students were once again more successful than the first year students. The change in the success rate from the beginning of the term to the end was also smaller and more erratic. While these differences met the standard statistical significance criterion, the size of the effect is negligible.

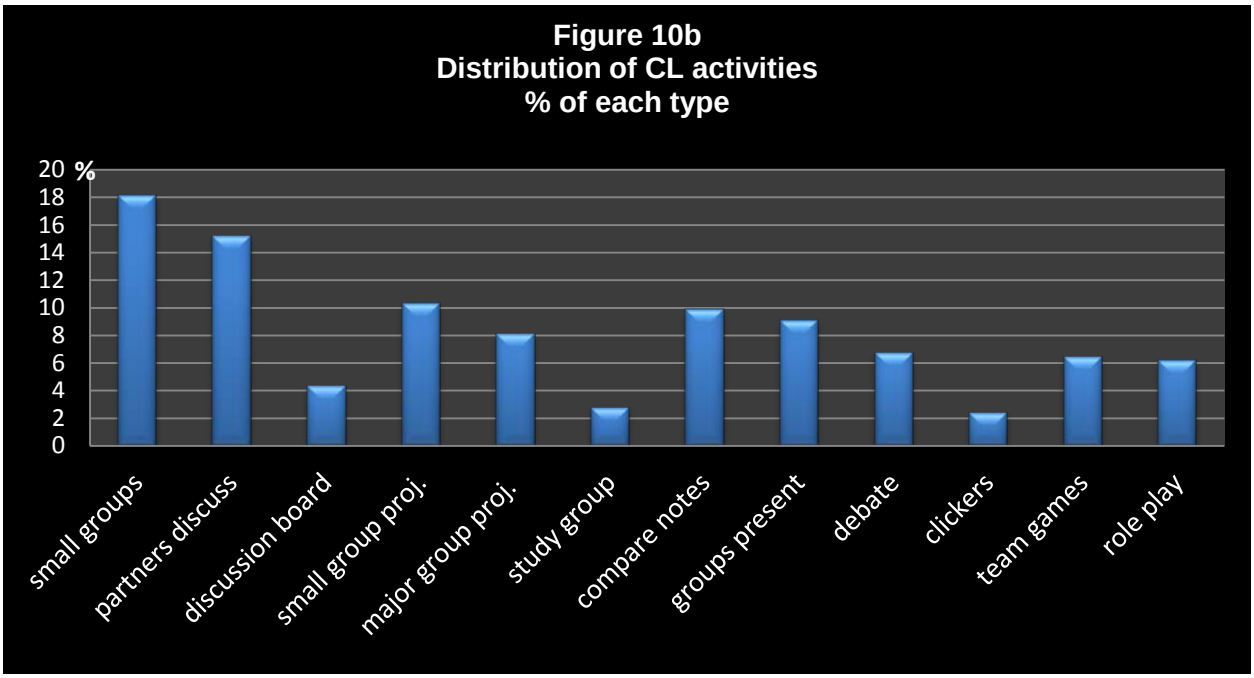
Because this survey was a baseline study, these students were neither purposively exposed to Collaborative Learning nor was any attempt made to instruct them in the principles. Consequently, we would not expect to see a consistent change over the course of the term. However, there did seem to be some improvement; the improvement was small but probably more than can be explained by randomness. There are two explanations for this improvement. First, the principles of Collaborative Learning are also fundamental components of a liberal university education; thus some improvement is not surprising. Students can learn about collaboration without being specifically guided in that learning. Second, there may be some "forward leakage" emerging. While there was no official kickoff of the Collaborative Learning QEP, there has been a constant university-wide chatter about the QEP, surveys, focus-groups, and some experimentation by faculty members. It seems likely that this activity may have been picked up by the second survey.

BASELINE DATA: FACULTY USE OF COLLABORATIVE LEARNING TECHNIQUES

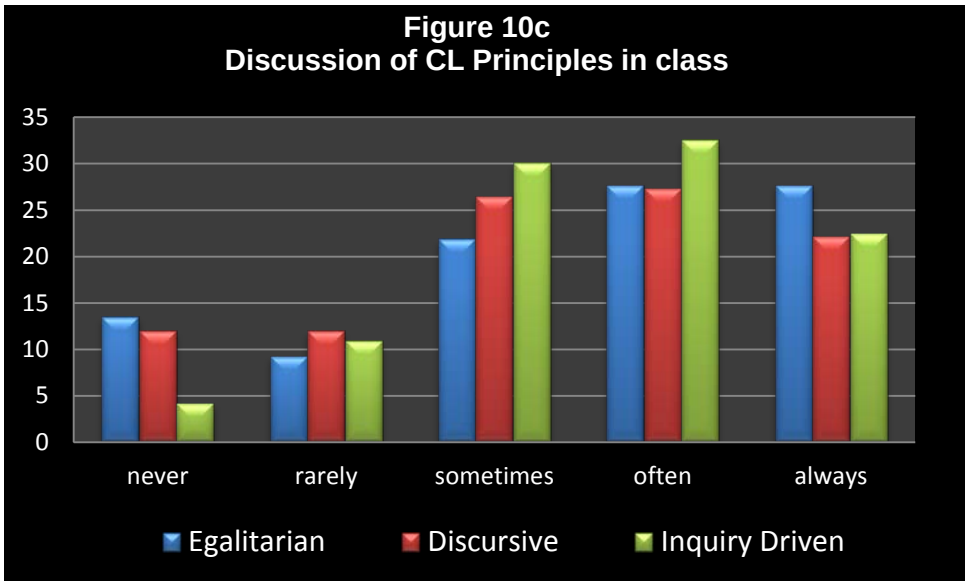
The QEP Committee knew that there were several examples of Collaborative Learning already taking place at the University, and so the faculty survey was designed to provide us with some baseline data on the amount of collaboration present in the classroom, the type of collaboration, and the extent to which the principles of Collaborative Learning were being discussed. We received 146 responses that represented more than 450 classes and over 1,000 Collaborative Learning activities. The distribution of classes by level is displayed in Figure 10a (100 level courses are primarily taken by freshmen, 200 level courses by sophomores, 300 level courses by juniors, and 400 level courses by seniors.)



There are a variety of different types of collaboration occurring in our classrooms. Figure 10b shows the percentage of usage of the 12 most frequent applications. Participation in small group discussions and discussions of a specified topic with a partner during class time were the two most frequently cited activities. Group work surfaced in several manifestations; in addition to the small group discussions, there were small group projects ("small" referring to the size of the project), major group projects, and group presentations. A comparison of these first two figures suggests group work tends to be more common in the upper level courses, and the data support this conclusion.



Finally, we asked the faculty members who use collaborative techniques in their classroom if they specifically discuss any of the Collaborative Learning principles: egalitarian, discursive, or inquiry driven, in their classes. To our surprise, most do. Nearly 50% of the faculty who reported the use of collaboration also said they discuss these principles often or always in their classes.



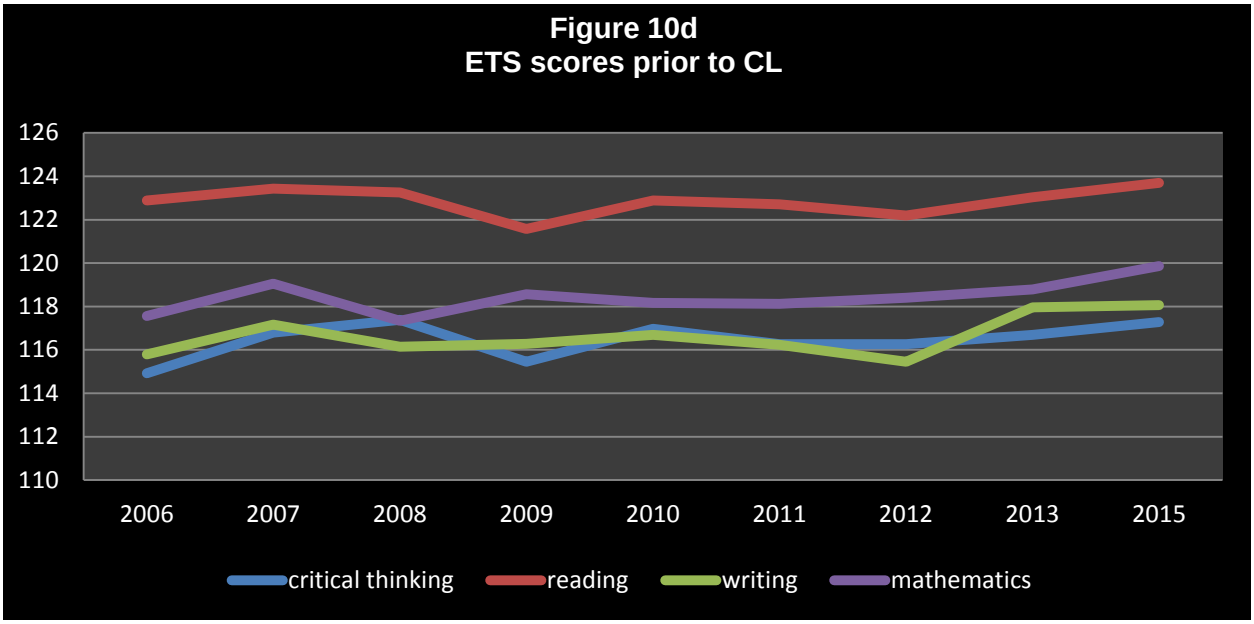
The conclusion of this survey suggests that we have a foundation on which to build. There is significant interest in Collaborative Learning, and it is already being incorporated in a variety of ways. This foundation improves the probability of success; the CLC Director will already have some allies and interested faculty. In those cases, the implementation will consist of fine-tuning

existing practices. Furthermore, the faculty members who already see the benefit of Collaborative Learning can help the program spread across campus.

ETS PROFICIENCY PROFILE BASELINE SCORES: TIME SERIES DATA ON EXISTING PERFORMANCE.

The SLO #4 focuses on the impact of Collaborative Learning techniques on student performance. Progress on this objective will be assessed using scores from the ETS proficiency profile on critical thinking, reading, writing, and mathematics. In addition to measuring the impact of Collaborative Learning on these specific scores, we are interested in how our students perform relative to previous years. Our final round of baseline data provides the starting point for that comparison.

UAH has a sample of graduating seniors take the ETS proficiency profile every year, starting in 2006 (although the exam was not given in 2014). Figure 10d shows this performance over time. Overall scores have held fairly constant, hovering just below the 50th percentile.



In addition to measuring the impact of Collaborative Learning on individual student's ETS proficiency profiles, it is the intent of the QEP that Collaborative Learning will eventually increase the University's overall ETS scores. In short, we hope to see scores rise in future years.

11. CONCLUSION

The QEP Committee hopes that the implementation of Collaborative Learning at UAH will transform our educational culture, improve our students' ability to think critically and work cooperatively, and create an academically centered community. If we are truly successful, Collaborative Learning may become a distinguishing feature of the UAH educational experience.

We firmly believe that we have outlined a process that has sufficient assessment and feedback to achieve these goals. This assessment and feedback process is critical, since our success will depend upon a continuous analysis of the data that distinguishes what works well from what needs improvement.

Collaborative Learning has already begun to generate excitement among faculty interested in learning the best practices of this exciting approach to teaching. We take this as a great sign that we have found a QEP topic that fits well with our University's culture and needs and that will continue to grow with the University as it grows.

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APPENDICES

A. STUDENT SURVEY: UAH EXPERIENCE AND REASON FOR LEAVING

The QEP Committee sent its first survey to students who left the University, did not graduate, and did not return. We asked them two sets of questions: the first addressing their experience while at UAH and the second set asking about their reasons for leaving. The results are presented in the QEP document. Below is a copy of the questions and a count of the raw responses.

UAH Experience Survey Report

Last Modified: 11/10/2014

12. Are you 19 years of age or older?

#	Answer		Response	%
1	Yes		126	98%
2	No		3	2%
	Total		129	100%

2. Our records indicate you recently left UAH and you have not returned. Is that correct?

#	Answer		Response	%
1	Correct. I am no longer a student at UAH.		113	97%
2	Incorrect. I am currently a student at UAH.		3	3%
	Total		116	100%

3. What were your educational plans when you first enrolled at UAH?

#	Answer		Response	%
1	I intended to earn a bachelor's degree at UAH.		98	85%
2	I intended to take classes at UAH and then transfer to another university.		11	10%
3	I intended to take classes at UAH but did not have specific plans to complete a degree.		8	7%
4	Other (please specify)		6	5%

13. Based on your experiences, how would you rate each of the following at UAH?

#	Question	very good	good	fair	Total Responses	Mean
1	Quality of curriculum/courses	45	26	10	81	2.57
2	Quality of instruction	43	27	18	88	2.72
3	Interaction with faculty	24	30	19	73	2.93
4	Academic support services	29	32	20	81	2.89
5	Academic advising	20	33	16	69	2.94
6	Career coaching	14	28	19	61	3.08
7	Respect for diversity	41	17	10	68	2.54
8	Extracurricular activities	26	21	8	55	2.67
9	Athletic events	23	26	11	60	2.80
10	Financial aid/support	31	22	13	66	2.73
11	Campus safety	45	28	7	80	2.53
12	Quality of technology	36	26	11	73	2.66
13	UAH, overall	32	32	24	88	2.91

14. There are several reasons why students leave college. Think back on your decision to leave UAH. How greatly did each of the following impact that decision?

#	Question	primary impact	strong impact	some impact	weak impact	no impact	Total Responses	Mean
1	Finances	34	25	15	6	24	104	2.63
2	Work	12	27	20	9	33	101	3.24
3	Relocation	14	8	6	10	51	89	3.85
4	Health	11	9	14	7	53	94	3.87
5	Quality of instruction	8	13	22	11	45	99	3.73
6	Availability of courses	15	14	14	9	47	99	3.60
7	Academic support services	4	14	14	11	55	98	4.01
8	Instructional technology	2	4	11	16	64	97	4.40
9	Extracurricular activities	4	4	6	4	69	87	4.49
10	Climate related to diversity	2	2	4	8	71	87	4.66
11	It was hard to keep up in my classes.	8	11	22	16	45	102	3.77
12	It was hard to fit in on campus.	7	6	10	7	61	91	4.20
13	I had planned to transfer elsewhere.	6	4	5	2	53	70	4.31
15	Quality of curriculum/courses	3	8	23	14	51	99	4.03

15. If you would like, tell us more about your primary reason(s) for leaving UAH.

Text Response

7. Are you currently enrolled at a college other than UAH or do you plan to do so in the future?

#	Answer		Response	%
1	Yes		70	62%
2	No		18	16%
3	Undecided		25	22%
	Total		113	100%

8. At which school will you enroll or have you enrolled?

Text Response

9. What attracted you to that school?

Text Response

10. Have you given any thought to re-enrolling at UAH?

#	Answer		Response	%
1	Yes		43	47%
2	No		32	35%
3	Undecided		17	18%
	Total		92	100%

11. What would help in easing your transition back into UAH?

Text Response

16. Is there anything UAH could (can) do to change your mind?

Text Response

17. We welcome your thoughts and suggestions on how to improve the student experience at UAH. Please, share your ideas.

Text Response

As reported in the body of this document, this survey did not point to any particular institutional shortcoming that led to a student exodus. To probe more deeply we matched the student responses with their UAH academic performance and check whether GPA, major, standing, transfer status, and other such factors impacted the reason they left. Other than the expected correlations (such as a student's GPA and the response "I had trouble keeping up in my courses") there were no other insights provided by this disaggregation.

B. STATISTICAL INTERPRETATION

Interpretation of estimated coefficients in Tables 2a and 2b.
The text presents the estimated coefficients of two types of regression equations. Investigating the probability of leaving (without graduating) uses a binary, categorical dependent variable, where 1 represents a student who left without graduating and 0 represents students who stay in school. Because the dependent variable is non-linear, ordinary least squares (OLS) estimation produces heteroscedastic errors and can lead to predicted probabilities outside the [0, 1] interval. To counter these issues we estimate a logit model which transforms the dependent variable by taking the natural log of the odds ratio (p/(1-p)) where p = the probability of leaving (Greene, 2003). Thus, the probability of an occurrence (leaving the University) or y = 1, given a set of predictors, x_i is

$$\Pr(y_i = 1|x_i) = e^z/(e^z + 1) \text{ where } z = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_k x_k.$$

The logit estimated coefficients, however, cannot be interpreted in the traditional fashion as marginal effects. Thus, to understand the size of the estimated effect, we calculate odds ratios (e^{β_i}) for each estimated coefficient β^i and report those in column 3 of Table 2a. The odds ratio measures the size of the impact of a coefficient on the ratio, the probability of leaving/probability of not leaving. Consider s student who lives on campus, the estimated coefficient is -0.93 and is significant at the 0.01 level. The odds ratio of 0.39 means that on campus students are 39% less likely to leave the University than students who live on campus. Or, since odds ratios can be inverted, the odds that an off campus student leaves the University before graduating is 1/0.4 = 2.5 times as high.

We also calculate the impact of these explanatory variables on the students' GPA. In this case OLS estimation is appropriate because the dependent variable is continuous. There is an issue in that the GPA is truncated at 0 and 4.0, but the proportion of all students who are constrained by those boundaries is small relative to the entire sample and the OLS estimates are unchanged when those constraints are considered. Thus the estimated coefficients can be interpreted as marginal effects. For example, the estimated coefficient on males is -0.147 and on Asian students it is 0.159. On average, males at UAH have a GPA that is 0.15 points lower than the GPA of females and Asian students have a GPA the is 0.16 points higher than the reference group students (other).

C. FACULTY AND STUDENT BASELINE SURVEYS

We conducted two base line surveys to assess conditions and knowledge prior to the implementation of the QEP, one for students and one for faculty

BASELINE SURVEY: STUDENTS

The student survey was sent to all students in the FYE courses (Charger Experience) and in select junior-level courses. Of the 2009 surveys we received 923 responses. The questions and raw responses to those questions are presented below.

Last Modified: 09/14/2015

1. Jenny and Scott have different views on how the group should proceed. The group decides which way to go.

#	Answer		Response	%
1	1 (not at all collaborative)		34	4%
2	2		54	6%
3	3		249	27%
4	4		276	30%
5	5 (very collaborative)		310	34%
	Total		923	100%

2. To ensure steady progress on their semester-long group project, Maggie, Juanita, and Tony meet to talk at least once a week.

#	Answer		Response	%
1	1 (not at all collaborative)		3	0%
2	2		43	5%
3	3		143	15%
4	4		279	30%
5	5 (very collaborative)		455	49%
	Total		923	100%

3. Mandy wants to contribute but feels less knowledgeable than the others. She volunteers to be the note keeper for the project.

#	Answer		Response	%
1	1 (not at all collaborative)		43	5%
2	2		187	20%
3	3		312	34%
4	4		242	26%
5	5 (very collaborative)		139	15%
	Total		923	100%

4. Carson and Taylor have to develop a mathematical model to solve a problem. They make an appointment with the course's teaching assistant and ask her how she would model a solution.

#	Answer		Response	%
1	1 (not at all collaborative)		20	2%
2	2		82	9%
3	3		221	24%
4	4		282	31%
5	5 (very collaborative)		318	34%
	Total		923	100%

5. Mary and Prida discuss their progress on the group project and let Andy know what they decide.

#	Answer		Response	%
1	1 (not at all collaborative)		242	26%
2	2		415	45%
3	3		169	18%
4	4		59	6%
5	5 (very collaborative)		38	4%
	Total		923	100%

6. Jackie and Sven disagree about their project direction so the group leader decides which way to go.

#	Answer		Response	%
1	1 (not at all collaborative)		231	25%
2	2		308	33%
3	3		268	29%
4	4		86	9%
5	5 (very collaborative)		30	3%
	Total		923	100%

7. Devon, Kim, John, and Frank have to do a literature review on a topic in their history class. John has already read on the topic, so the rest of the group decides to focus on finding material to support his position.

#	Answer		Response	%
1	1 (not at all collaborative)		144	16%
2	2		285	31%
3	3		307	33%
4	4		132	14%
5	5 (very collaborative)		55	6%
	Total		923	100%

8. Ben and Daniella have been tasked with identifying which of several formulas will solve a particular problem. Ben, a computer science student, tells Daniella he will work on creating a quick program to test each formula. Daniella, a math major, offers to run calculations to test the various formulas. They decide to compare results and see which method will allow them to identify the correct formula first.

#	Answer		Response	%
1	1 (not at all collaborative)		14	2%
2	2		32	3%
3	3		144	16%
4	4		231	25%
5	5 (very collaborative)		502	54%
	Total		923	100%

9. Naomi asks each person in the group what part of the project they would like to do. She indicates that she will decide which person takes which role if there is a conflict.

#	Answer		Response	%
1	1 (not at all collaborative)		103	11%
2	2		248	27%
3	3		345	37%
4	4		164	18%
5	5 (very collaborative)		63	7%
	Total		923	100%

10. Katie has to make an A in Economics in order to keep her scholarship. She also has to attend a wedding that will conflict with the project timeline. She's feeling a lot of pressure to make sure the project goes well, so she tells everyone that she will take lead on the project.

#	Answer		Response	%
1	1 (not at all collaborative)		265	29%
2	2		352	38%
3	3		229	25%
4	4		52	6%
5	5 (very collaborative)		25	3%
	Total		923	100%

11. Carson encourages the group to check in with the instructor each week to make sure they are on the right track.

#	Answer		Response	%
1	1 (not at all collaborative)		14	2%
2	2		66	7%
3	3		216	23%
4	4		349	38%
5	5 (very collaborative)		278	30%
	Total		923	100%

FACULTY BASELINE SURVEY

The second Baseline survey was sent to the faculty. Its primary purpose was to gather information on the amount and type of Collaborative Learning activities that already exist at UAH. We received 154 responses. The questions and raw responses are given below.

Last Modified: 10/27/2015

1. To which college are you assigned?

#	Answer		Response	%
1	Business Administration		48	33%
2	Education		9	6%
3	Engineering		10	7%
4	Arts, Humanities, & Social Sciences		31	21%
5	Nursing		28	19%
6	Science		20	14%
	Total		146	100%

2. What is your current faculty status?

#	Answer		Response	%
1	Full time		112	79%
2	Part time		29	21%
3	Teaching Assistant		0	0%
	Total		141	100%

3. How many different undergraduate courses did you teach Fall 2014 and Spring 2015, not including independent study? You will be asked to respond to questions for each class.

#	Answer		Response	%
1	1		37	26%
2	2		33	23%
3	3		18	13%
4	4		19	13%
5	5		9	6%
6	6 or more		9	6%
7	did not teach in the undergraduate program		17	12%
	Total		142	100%

4. Consider one of these courses.
What is the course prefix?

5. Course Level?

#	Answer		Response	%
1	100		28	25%
2	200		18	16%
3	300		38	34%
4	400		29	26%
	Total		113	100%

6. In a typical semester, how many times do you have students in this class:

#	Question	None	1-3	4-7	8-11	12+	Total Responses	Mean
1	Participate in small group discussion(s) in class	36	23	31	11	11	112	2.45
2	Discuss a topic with a partner during class time	46	29	15	12	8	110	2.15
3	Contribute to an online discussion board	85	8	8	3	5	109	1.49
4	Complete small group project(s)	62	37	10	1	1	111	1.58
5	Complete a major group project	64	45	0	1	0	110	1.44
6	Participate in an assigned study group	96	12	1	1	1	111	1.19
7	Compare notes with a partner during class	76	16	7	9	3	111	1.62
8	Deliver group presentations	61	42	5	1	2	111	1.57
9	Participate in a debate	83	15	6	0	5	109	1.43
10	Respond with clickers, to stimulate class discussion	90	1	3	6	9	109	1.56
11	Participate in team-based games	73	26	8	1	1	109	1.45
12	Participate in team-based educational simulations or role play	73	23	10	1	0	107	1.43
13	Other collaborative activity	24	3	6	0	4	37	1.84

Other collaborative activity:
Peer review
Large-group discussion
Work on the same document simultaneously
Critiques
Lab groups
Discussion
Discussion of current 'real world" topics
Flipped Lectures
In-class & online games, not team-based
Work together on problem solving
Large group discussion in class
N/A

7. How is the course normally delivered?

#	Answer		Response	%
1	Face-to-face		104	93%
2	Online		1	1%
3	Hybrid		7	6%
	Total		112	100%

8. Does this course have a PASS leader?

#	Answer		Response	%
1	Yes		15	14%
2	No		96	86%
	Total		111	100%

9. Does your PASS leader use Collaborative Learning techniques?

#	Answer		Response	%
1	Yes		9	60%
2	No		0	0%
3	Unsure		6	40%
	Total		15	100%

10. Consider your second course.
What is the course prefix?

11. Course Level?

#	Answer		Response	%
1	100		9	13%
2	200		12	17%
3	300		28	39%
4	400		23	32%
	Total		72	100%

12. In a typical semester, I have students in this class:

#	Question	None	1-2	3-4	5-6	7+	Total Responses	Mean
1	Participate in small group discussion(s) in class	22	14	14	7	17	74	2.77
2	Discuss a topic with a partner during class time	32	11	11	8	12	74	2.42
3	Contribute to an online discussion board	59	5	6	0	3	73	1.40
4	Complete small group project(s)	42	21	8	1	1	73	1.60
5	Complete a major group project	43	28	1	0	0	72	1.42
6	Participate in an assigned study group	66	2	2	1	2	73	1.23
7	Compare notes with a partner during class	45	13	6	5	5	74	1.81
8	Deliver group presentations	43	24	4	0	1	72	1.50
9	Participate in a debate	54	8	6	0	5	73	1.55
10	Respond with clickers, to stimulate class discussion	67	0	0	3	3	73	1.29
11	Participate in team-based games	55	12	3	1	1	72	1.35
12	Participate in team-based educational simulations or role play	54	11	4	0	3	72	1.43
13	Other collaborative activity	20	2	2	1	3	28	1.75

Other collaborative activities:
Peer review
Large-group discussion
Essay exam prep (optional but strongly encouraged and additionally supported in office hours)
Critiques
Practicum w/business
Whole-class discussion (15 students)
Large class discussion

13. How is the course normally delivered?

#	Answer		Response	%
1	Face-to-face		67	91%
2	Online		2	3%
3	Hybrid		5	7%
	Total		74	100%

14. Does this course have a PASS leader?

#	Answer		Response	%
1	Yes		3	4%
2	No		70	96%
	Total		73	100%

15. Does your PASS leader use Collaborative Learning techniques?

#	Answer		Response	%
1	Yes		0	0%
2	No		0	0%
3	Unsure		3	100%
	Total		3	100%

16. This pattern of questions continues for as many courses as the respondent teaches…And then we close with the following:

17. Please assess the frequency with which you instruct students on each of the following collaborative principles in a typical class:

#	Question	Never	Rarely	Some times	Often	Always	Total Responses	Mean
1	Egalitarian. Everyone is expected to contribute to the ideas shared, emphasizing the value of different knowledge, perspectives, and skill sets.	16	11	26	33	33	119	31.47
2	Discursive. Everyone is expected to both speak and listen, emphasizing the importance of insuring a voice for all within any exchange.	14	14	31	32	26	117	31.36
3	Inquiry driven. Everyone is expected to participate in a process of inquiry, encouraging the consideration of a variety of approaches to questions and problems.	5	13	36	39	27	120	31.58

18. Are there other collaborative activities you use in your classes that were not on our list?

Text Response
Develop a course contract for discussion, attention, "safe" environment, confidentiality, etc.
I use whole class case-based learning and small group case-based learning at the graduate level and integration of the "flipped classroom" method.
Peer reviewing each other's submissions
case studies with group discussion
I mentioned them in the "Other" box for each class.
Class critiques
Student teams each work on a project with a local business or nonprofit. Students evaluate each other's contributions.
Socratic method Q & A Literary prompts - details from text readings
Establishing assessment rubrics for papers through group discussion
Language classes involve extensive amounts of pair and group work including conversations, role playing, and completing tasks of many kinds.
No
No
No
Working on the group projects; preparing and instructing the classes as individuals and as two-three student teams
No
Current International Business events and issues Article Analysis, Sharing, and discussion. Research competitions in groups. Research Results Group Presentations.
evolving case studies
Individual presentations. This is incorporated with the use of Panopto.
Discuss solutions to questions/worksheets. Work together on worksheets
Students are doing on-line file-sharing of notes and observations, for example via google drive. We also have inappropriate collaboration on a regular basis, and I have concerns that the emphasis on more collaboration between students will increase the opportunities for students to acquire work that is not their own and to submit that for a grade.
Students could learn extra credit by contributing to a common Wiki providing extra explanations of course topics.

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