

WORKING WITH STUDENTS AND PARENTS TO IMPROVE THE FRESHMAN RETENTION

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Abstract — The transition from high school to college can be very difficult for many students. The authors believe that students can advocate on their own behalf by educating themselves on challenges they may potentially face, as well as establishing realistic educational and social goals. Concurrently, parents can assist their children by becoming more aware of the transition issues, and learning how to help anticipate transitions. This paper will acquaint the reader with three key transitional challenges new college students face, as well as offer an approach to productive interactions with both students and their parents. As evidenced in steadily improving persistence rates, the University of Pittsburgh has found by educating new students and parents in realistically anticipating first year challenges, students are able to productively work through their freshman year university experience.

I. INTRODUCTION

Numerous studies document the importance of educating parents and family members as well as the students themselves in the process of acquainting all with the new academic setting. Education of this sort can create a positive transition experience for first year students [1 - 5]. Indeed, helping students anticipate and understand life changes can help the university realize a significantly higher first-year student persistence rate [6]. For many years, university programs have incorporated these components via the implementation of pre-college orientation programs.

However, in addition to explaining the new policies and procedures to the students it is also important to involve the first year student's parents in the educational process. Moreover, the expanded objectives of all effective orientation programs should include:

1. Raising the knowledge level of first-year undergraduate students and parents with regard to lifestyle changes that can occur in moving to a campus environment [7].
2. Developing an awareness of the services offered by the university is crucial in the creation of a productive adjustment process [8].
3. Expanding new students' and parents' knowledge of changes in status, residence, failure, relationships, and authority through both interactive discussions and written materials documenting success strategies [9].
4. Helping parents and students develop a positive attitude toward their first year at the university.

This paper is designed to provide a brief overview of pertinent issues encountered by students and their families during the transition from high school to college. Additionally, important discussion concepts used at the University of Pittsburgh (Pitt) during the initial student/parent education workshops held during the summer orientation will be introduced. The primary objective of such workshop interactions is to establish a proactive, empathetic family interaction that is designed to ease transition stress and encourage first year student persistence. It should be noted since implementing student/parent discussions, Pitt has experienced a steady decline in first year engineering student attrition, from a high of nearly 30% eight years ago to the current rate of only 17%. Many reasons can be factored into these impressive retention figures; however, the authors believe the concepts in this paper are one of the main reasons students persist through their first year in engineering.

II. TRANSITIONS

"Dear Mom and Dad:

You know, the more I think about this college thing, the more I am starting to realize we are probably all in this together. It seems like you always have the right answers (even if I don't act like I think you do), but anytime the issue of college comes up you usually seem as puzzled and as confused as I am".

Making transitions is an integral part of life. It is important that all participants in the student's life, including, parents, faculty and university staff, understand that during the transition from high school to college, students often experience a sense of loss for what has changed in their life or despair over relationships that have changed or have been replaced [10]. The first year college adjustment embodies both a loss experience as well as an exciting set of new opportunities [11]. These

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changes can affect the students' first year experience, including their performance in the classroom and their desire to stay in school. The culminations of such experiences are recognized within three major areas of transition:

- Academic Transitions
- Family Transitions
- Personal Transitions

Academic Transitions

The first transition that many engineering students encounter is within the academic milieu, which is often compounded by the additional challenges these changes elicit. As a student moves from high school to college he/she is channeled through the high school highly structured daily schedule of planned activities. Upon entering college, the same student is now in charge of creating and implementing their own schedule that is typically different each day, may include night classes, and also has free time throughout the day. In addition to time management, other changes that potentially add to transition frustrations are: different teaching styles from high school teachers, walking across campus and going from building to building as opposed to walking through hallways of the same building, being the best student back home is different than competing with all the top students at the university, etc.

Previous studies indicate that a student's first semester success can lay the groundwork for engineering program completion and/or degree attainment [12 & 13]. Therefore, appropriate support systems must be activated during the very first interaction students and their families have with the university. Several positive outcomes have been realized when students and parents are provided with workshop (educational) time with members of the university community who will continue to work with the first year students. Examples of positive outcomes are:

- Students develop more realistic expectations for their upcoming year that translates into lower frustration levels for ideals unrealized [14],
- Participating in educational exchanges increase student/parent perceptions as relative equals by the university, and are therefore more likely to become engaged in ongoing open communications [15],
- Early awareness of campus resources strengthens and developing a student's potential to persist through a four-year college program [16].

Given the three outcomes listed above, it can be hypothesized that an educational program that attends to the needs of both students and parents will assist in creating a more successful academic transition experience for both groups.

Family Transitions

For most first year students, arriving on campus initiates the progression from family and compliance, to residence hall living and independence. Being away from home for the first time is typically a period when college neophytes test their freedom, and begin apprehensively enjoying their challenging new environment. Simultaneously, parents may be either celebrating the departure of their child or trying to convince the student to come home every weekend. Additionally, parents might encourage the student to make new friends, or afraid of losing their child, they might prevent the student from making many university-related connections.

In our student and parent workshops, both parties are told that the entire family is going through a change and is experiencing both excitement and sadness. It is okay and natural for the student to feel homesick and have doubts. Therefore, it is important to communicate both spontaneously and on a regular basis with their family by mail, phone, or visits, or the most popular method by email.

Interestingly, what a family may not realize is research has discovered that leaving home often fosters improved relationships with parents via the compilation of new-found freedom to express affection while the student has begun individuating into an adult [17]. Furthermore, as a young person evolves into adulthood, they come to consider themselves to be more equal to their parents, and therefore more open to respecting each other's viewpoint. Recognized as mutual reciprocity, this developmental transformation of student/parent relations can lead to a positive family transitional experience [18].

An additional benefit of the student/parent educational workshops is discovered when parents find they are able to confidently share relevant university information with their daughter/son. Since parents are important to a student's perception formation, it seems likely open and accurate communications can lead to realistic expectation formation between the two groups [19]. The assumption is a satisfied student equals a happy family, which translates directly into the efficacy of the family's transitional success.

Personal Transitions

Being at a university means being a newcomer in a strange, and possibly lonely community. Some days students may want to fly, run, walk, or drive home. There will be days where the student feels they cannot stand one more day in the residence

halls, in the large lecture, with their roommate, with their professors and teaching assistants, or their load of courses. These personal transitions can consume a first year student's thoughts if they are unable to seriously focus on why the university experience is important to their career goals. Insights from parents, professors, or other students (upper classmen) can be very helpful. There may be what appear to be insurmountable personal changes during the first year, and research on student persistence supports the importance of linking students to appropriate support personnel to assist with these challenges.

According to Greenberger (1982) psychosocial maturity, an important element in college student success development, is the capacity of an individual to function without the influence of parents [20]. Consequently, it would seem natural to assume a student functioning without parental supervision is developing psychosocial maturity. However, eliminating parents from a student's life is neither possible nor productive. Therefore, the challenge a university faces is establishing clear boundaries with parents, without cutting them from the communication loop completely. College educational workshops for parents have the potential to establish an environment that reinforces the existing student support system.

FIGURE 1 STUDENT/PARENT SUCCESS TIPS: KEY DISCUSSION AREAS

		Student		Parent	
Academic Transitions		<i>Establish Academic Goals.</i>	<i>Learn policies & resources for reliable information.</i>	<i>Establish communication of basic academic goals.</i>	<i>Learn policies & resources for reliable information.</i>
	WHY?	- Goals can motivate and drive performance. - Get a feeling for how the material you are learning fits into the selected major	- Worst possible scenarios may occur.	- Parents need to know their students goals so appropriate encouragement is provided.	- When worst -case scenarios occur, parental support is imperative.
	HOW.	- Realistically assess each class, select a goal to work towards in each class.	- Get to know an advisor and learn where such information is available for quick reference.	- Ask questions. - React carefully. - Provide feedback when asked. - Get web addresses of classes	- Get to know an advisor and learn where such information is available for quick reference.
Family Transitions		<i>Maintain family ties.</i>	<i>Learn to manage your time and money wisely.</i>	<i>Communicate, with specific boundaries.</i>	<i>Establish a trusting relationship.</i>
	WHY?	- Family is going through the same change and is also experiencing excitement and sadness - Prevents potential parental misunderstandings.	- Both are limited resources.	- Getting news from home, however mundane, can really help maintain those family ties.	- A trusting environment invites open discussions. - Controlling parents often become ignored parents
	HOW.	- Share academic progress, and personal activities. - Communicate on a regular basis by mail, phone, visits, or email	- Free time = Study Time - Establish/follow a day planner - Maintain a budget and balance your check book - Be a wise consumer	- Learn names of new friends, professors, etc. - Decide day/time for weekly phone calls. Keep emails to an established number.	- Allow for decisions to be made without your input. Be supportive with consequences.
Personal Transitions		<i>Become involved in the campus activities.</i>	<i>Remain true to personal aspirations.</i>	<i>Become interested in campus life.</i>	<i>Learn to empathetically interact.</i>
	WHY?	- Makes a university campus feel more like home, because students find they have nothing in common with all their old friends that chose paths that did not include college	- Experiences are more valued when beliefs about issues such as sex, drug and alcohol use are not compromised.	- Provides a basis for supportive, non-defensive discussions.	- Imposed opinions and actions are rarely welcome.
	HOW.	- Make new friends - Attend sporting events and/or orientation activities, etc.	- Invite clear, confident dialogue with old/new college friends. - Make your own choices before someone else selects for you. - Do not let <u>your decisions</u> be distorted by alcohol or the emotions of the moment.	- Respect student's independence by planning visits on mutually accepted days/events.	- Actively LISTEN <i>how/why</i> a message is conveyed. Share reflections of your perceptions.

III. Programming Implementation: The Concept of Student/Parent Success Tips

The best way to promote student retention success is to begin the first year with educational programs for both the students and parents that address key concerns by providing realistic advice on how to cope with typical challenges. To begin the educational process at the University of Pittsburgh, student/parent programs are conducted to provide a consistent message

regarding new student expectations and strategic actions worth considering/implementing throughout the course of the upcoming academic year. Although the delivery of the basic concepts has varied year to year, the common approach framework has always remained a candid, highly personal discussion within homogeneous faculty/parent, student/student and student/faculty groups. Separating the students from their parents is recognized as the best environment to address discussion items because it encourages new interactions for both parties that is free of guilt, resentment, and anxiety. Moreover, since the school imposes separate discussions, participants are free of the conflictual independence that can potentially distort participant perceptions and limit productive workshop dialogue [21].

Pitt has discovered that having a separate faculty/parent program that discusses their involvement in the transitions listed above, and simultaneously shares what the students are hearing is more beneficial than redundant. A fact supported by numerous research studies citing the relevance of mutual reciprocity as an important transitional variable [22]. Topics that are discussed in the faculty/parent workshop include: A) Be prepared for anything, and we mean anything, B) Communicate with them (but don't expect much in return), C) Be involved and visit (but not too often), D) Know the rules, E) Remember that it's okay not to know what you want to be when you grow up, F) Budget, G) Grades, H) Know the services available on campus, I) Be there for them no matter what, and J) Trust them [35]. Additionally, a list of the "Top 50 Pitt Parent Tips" is given to each parent. This list is included in this paper's Appendix. Handouts such as this inject humor into an otherwise serious discussion.

During the student/faculty dialogue (with Faculty and Academic Advisors), the first message the student receives is that their entire family is going through change as well as experiencing excitement and sadness along with them [23]. Students must understand that they can rely on their family for stability, but they must also give their family freedom. The faculty also gives a similar presentation discussing the topics shared with the parents to the students [36 – 38]. Throughout all the discussions, it is explained that by avoiding family quarrels over both parties' newfound freedoms, a mutual respect is instilled [24].

An important auxiliary discussion item addressed with both the student and parent populations is the Family Equal Rights and Protection Act of 1974 (FERPA). FERPA's legislation assures all students over the age of eighteen that a university cannot (by law) keep their parents updated on their academic progress [25]. Therefore, to keep the family unit involved, the students are advised to keep their parents apprised of academic successes and failures. Doing so not only perpetuates trust, but it also avoids unpleasant end of the semester surprises



Listed in Figure 1 is a summary of material distributed that illustrates a number of vital topics that are shared during the student/student, student/faculty, and faculty/parent group discussions.

IV. Key Concerns

In addition to the challenges students and families face within the three key transition areas of Academic, Family, and Personal Transitions, a number of common concerns also span these areas. These key concerns are briefly discussed with both the students and the parents. Typically this material is shared with the parents during the on campus summer registration workshops and with the students during their student/student Fall semester mentoring course.

Authority (Control to Freedom)

It takes very little time for a college freshman to understand and embrace their newfound freedom. For many it is the first time in their lives students encounter the challenge of prioritizing their activities. Table 1 shows some of areas and type of decisions they will make, such as clothes, classes, dating, drinking, eating, drugs, money, sleep/wake up times, religion, and communication with parents, roommates and friends. Unfortunately, an individual may begin exercising their freedom at the expense of their academic performance, as well as supply a parent with countless worried moments.

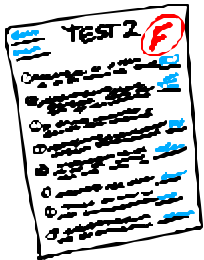
Table 1 Areas of Authority Changes from Control to Freedom Students can do whatever they want	
Issues <ul style="list-style-type: none"> •Clothes •Classes •Sleep/Wake Up •Dating •Drinking •Eating •Fraternity/Sororities 	Issues <ul style="list-style-type: none"> •Drugs •Money •Religion •Communication <ul style="list-style-type: none"> –Parents –Roommates –Friends 

Although addressing the authority issue for both students and parents can be a sensitive subject, we have found statistics and facts can productively drive the discussion. For example, during the summer registration workshop with the student group, the advisors share anecdotes of both successful first year decisions – as well as poor decisions. Additionally, we often have upper class engineering students join in this discussion in an effort to lend validity to the stories shared. This material is then further reinforced during the Fall semester mentor courses. We have found the concept of learning from another student’s past mistakes as an effective way of establishing a pointed discussion involving the effective usage of new freedoms, without appearing condescending to the audience. The parents decidedly have a difficult concept to embrace: begin allowing their student to make their own decisions, and perhaps make a few mistakes. This approach is especially important because it begins changing the attachment bonds between children and parents, and moves the relationship into the direction of separation-individuation, an important element of psychosocial maturity [26].

We try to explain during the parent workshop that the best way for parents to avoid surprises is to keep a line of communication open at all times, but be careful of their reaction. If every time the student tells their parent something they are going to do and the parent says “NO”, it is not going to take the student long to figure out that they do not have to do some thing their parents do not want them to do if they never tell them what they are doing. So instead of saying "no" parents are advised to use words like "no kidding", "that's interesting", "well it would not be my first choice", "ha", or if they want feedback "let me know how it turns out". Therefore, while it is important for parents to trust in their children’s decisions, it will then become equally important they comprehend the results of such actions. Thus, a conversation on the potential and effects of failure always follow the segment on freedom and consequences.

Failure (Reactive to Proactive Approach)

Table 2 lists some of the problems and solutions we discuss with both groups regarding failure. For many, failure comes in many different forms. For some students, it is dealing with grades, and not necessarily poor grades. Many students find getting a “B” means failure, since they are accustomed to only getting an “A”. For others it is dealing with different learning and teaching styles, or dealing with previously developed study skills and habits that now do not work in college. Dealing with failure is difficult for anyone to handle. Failure, coupled with the additional pressures of the first year, can have a major impact on a student’s personal perceived potential. The most compelling argument we can supply to both students and parents is to simply understand the policies and procedures, and know where they can be obtained for quick reference. Understanding options can open doorways otherwise perceived as closed. Additional discussions on grade or program options can provide fuel to a student/parent conversation, which inevitably fuels the productive mutual reciprocity loop [27].

Table 2 Issues regarding Failure Students must Take Control of Their Life	
Cause of Failures ? Grades ? Study Skills ? Internet abuse ? TV/Video games ? Different Learning Styles	<div style="text-align: center;">  </div> <ul style="list-style-type: none"> •Get Help from <ul style="list-style-type: none"> –Student Organizations –Counselors –Academic Advisors –TA’s –Professors –Hall Managers –Roommate –Friends –Boyfriend/Girlfriend

Relationships (Old to New Friends)

One of the most painful and enjoyable experiences of the first year of college deals with personal relationship issues. The two major adjustments we are concerned with are shown in Table 3. Students must deal with all the relationships with people back home as well as at school. Most close relationships will be with people that are back home with their parents, brothers/sisters, neighborhood friends or boyfriends/girlfriends. Yet, as we have asserted in this paper, to be successful in school, students must connect with the new people around them. The objective then, is to assist first year students in moving on to new relationships.

Termed ‘friend sickness’, due to preoccupations with thoughts of friends and pre-college relationships, how the student deals with this transition can have long-term personal effects, and can potentially ruin a first year at college academically and socially [28]. Drawing from contemporary grief and bereavement theory, the best wisdom to share with a student is: expect to experience both physical and emotional separation from longtime friends, value past experiences with these individuals, but do not be afraid to move forward and find equally fulfilling relationships with new college friends [29]. Parental advise is

grounded in the knowledge that any student may experience friend sickness to some degree, and parents should be prepared to assist a student in moving on by providing plenty of time to talk and welcoming new college friends.



Table 3 Issues regarding Personal Relationship Problems Old to New friends	
Concerns	Solutions
<ul style="list-style-type: none"> ? Nothing in Common with Friends Back Home ? Boyfriend/Girlfriend Back Home Making new friends Boyfriend/Girlfriend issues 	<ul style="list-style-type: none"> ? Stay at school first month ? Join Student Organizations ? Get to know your Counselors, Academic Advisors, TA's, and Professors ? In the Residence Halls meet the Hall Mangers and RA ? Respect your Roommate ? Make Friends with your classmates

The biggest concern of all parties should be to make sure the fear of a lost relationship does not impact the future career choices of the student. The areas of concern we discuss are when two students that are close friends from high school come to school and one selects engineering and the other does not. By having the peer mentors discuss the differences in study habits and time commitment between different degrees, we can quickly ask the student to answer the question if your friend is out playing "do you study or go play"? Another issue the peer mentors discuss is "should you go home on weekend to be with your old friends, or stay here and make new ones"? We address all these issues with the parents and advise them on how to get their daughter/son to discuss these questions. We have found that if the parent and student can discuss these issues before the start of school, many of the tough choices and tough decisions can be made before the issue creates academic problems.

Residence (Home to Residence Hall)

The new environment can take its toll on many students. The changes, although they may appear obvious and/or trivial, can be very significant. The student will be experiencing a number of important lifestyle changes. For example, the student will experience changes related to lavatory facilities, eating arrangements, diet, roommates, laundry, and major changes in the people they interact with each day.

Each student must establish a positive relationship with his or her new roommate, it should be remembered, this is not their life partner, but only someone they are sharing a room with. She/he may become a best friend, but before waiting for the friendship to develop each student must make an agreement about stereos, TV, food, neatness, etc. An important agreement that must be reached is an understanding about guests (especially the overnight variety and those of the opposite sex).

Table 4 Issues regarding Residence Home to Residence Hall New Environment	
<ul style="list-style-type: none"> •Lifestyle change •Bathroom usage •Cafeteria vs. Kitchen •Roommates <ul style="list-style-type: none"> -Problems -New Person -Overnight guests 	<ul style="list-style-type: none"> •Doing Laundry •Food <ul style="list-style-type: none"> -Late night meals •Change in Relationships w/ <ul style="list-style-type: none"> -Parents -Brothers/Sisters -Neighborhood friends 

Universities are basically safe places to live. However, students should still treat their room as a new home, and lock their door when they leave, even for a moment, and all valuables should be kept out of sight. When they go out at night, they would be wise to remember there is safety in numbers, and do not be in the wrong place at the wrong time.

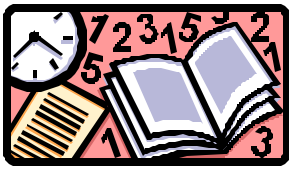
Stay healthy and get enough sleep. Each student should remember that smoking is not wise, but brushing their teeth, eating good food, drinking six to eight glasses of fluid every day, and washing themselves and everything they wear will help promote wellness. Late-night pizza is not the fifth basic food group, so they should practice moderation and find time for

exercise. Think prevention. No ailment is less expensive to treat than the one that's avoided. Many social activities do not begin until late at night, so one helpful tip is to take a nap before going out at night.

Our advice to parents is to assume their child is in college at least 6 months before they leave. Make them perform the same functions at home that they will need to perform at college. By doing this parents can teach the student some basics, such as laundry, cooking, shopping for food, and waking up on time.

Status (Top Dog to Rookie)

For many students, entering college means starting over in their academic classes, many times from the bottom up. When the reality that nearly all of their peers were top of his or her respective graduating classes, it is not easy accepting a perceived lowering of academic status. Many students find it difficult if not impossible to make this adjustment. Table 5 lists the status topics that we use in our discussions with parents and students.

Table 5 Concerns regarding Status Changes from Top Dog to Rookie Students are Starting Over from the Bottom	
Issues <ul style="list-style-type: none"> •Everyone is on top •Not Important Anymore •Trouble in Classes •Workload 	Signs of Problems <ul style="list-style-type: none"> •Class Size •Homework •Culture •Homesickness 

Warning signs are when the student talks about not being important anymore, starts having trouble in classes, complains about the workload, class size, amount of homework, the changing culture, or complains about homesickness.

Students should be made aware that feelings of inadequacy are not unusual. Instead, the university should make sure a student has access to information on multiple resource levels so they know exactly where to turn in a time of need. As students begin to perceive the university community is advocating for their success, studies have demonstrated they too will refocus and strive for positive outcomes as opposed to giving up [30]. We remind the students that they come here to get a degree and follow their life long career plans, so our advice to them is GO TO CLASS!! Doing homework is not dumb, but a wise policy to follow for all courses. Students should expect to spend more time on their homework than they consider normal. If they spent 4 -5 hours a week on homework in high school, they should expect to spend 4 - 5 hours a day in college. Students should also take advantage of the wide range of diverse opportunities in and out of the classroom. We suggest they find a student organization that fills their interest and get involved.

A supportive family environment will also help a student through this time of self-doubt and inner reflection. Therefore, parents are encouraged to listen carefully to conversations with their student, and provide empathetic feedback.

V. Results

In addition to the summer workshops, we also have a required peer-mentoring program throughout the first year, where the students are given weekly feedback on all the transition issues they encounter. The Freshman Program produces at least two newsletters that are sent home to the parents that describe general activities and functions that they can get involved in with their son/daughter. We have a parent's weekend during the fall semester where we encourage the parents to attend a football game with their student. Finally, during the first year there are a number of writing assignments that are assigned to help the student explore "what engineering is all about". We encourage the students to share these papers with their parents and we also invite the parents to the student's oral presentations at the end of the spring semester.

With all the interaction between the students and the parents that we are producing we were concerned that the students might view this as a negative influence. Thus, to monitor this we survey the students at the beginning and end of the first year. Two of the questions we ask are: "My parent(s) are making me study engineering" and "My parent(s) want me to be an engineer". On a scale of 1 to 5 (Strongly disagree to Strongly Agree) the score on these two questions has been 1.4 and 3.0 respectively. Thus, even with all the interaction we are producing between the parent(s) and the student, the student does not feel they are being forced into engineering by their parent(s) and are neutral on the issue of their parent(s) wanting them to stay in engineering. The feeling the students are expressing is their parents are concerned about their future, but their parents trust the student in their decisions.

We started working with students and parents and discussing the various transition issues at a time when we were also making a number of changes in the freshman curriculum, thus it is difficult to isolate one change that has produced the results we have observed. However, we believe the addition of parent and student workshops on the transition issues has had a large impact on the following results.

Table 6 lists the academic results for the end of the first semester for the past 7 years. The table lists the percent of students that made honors, were placed on probation, and the first semester GPA. As a result of these changes, the performance of the freshman has been greatly improved. As the table below shows, the changes to the Freshman Curriculum have increased the percentage of students on first semester honors by almost 35%, reduced the number of students on first semester probation and the number of students with a GPA below 1.5 by 40%, increased the GPA by almost a half a point (C+ to a B-) and reduced the number of students leaving engineering.

Table 6
Comparison of Student Performances

					Before				After
	1997	1998	1999	2000	Average	2001	2002	2003	Average
Fall Term Starts	329	366	390	407		382	378	394	
Transfers Out	7.60%	8.74%	9.74%	14.99%	10.46%	9.95%	7.14%	10.15%	9.10%
Term Honors	19.76%	19.40%	20.26%	24.32%	21.05%	22.77%	34.66%	27.41%	28.25%
Term Probation	20.36%	16.94%	20.00%	21.62%	19.77%	12.83%	8.99%	12.94%	11.61%
Total QPA, 1.5 or below	8.21%	8.74%	12.82%	10.07%	10.05%	6.02%	4.50%	7.61%	6.07%
Average QPA	2.44	2.70	2.58	2.65	2.59	2.85	2.98	2.87	2.90

A final method of assessing the impact of discussing the various transition issues with the students and parents is to survey the student attitudes regarding their choice of engineering at the end of the freshman year. The method used was the Pittsburgh Freshman Attitudes Survey [32 - 34]. The survey is based on a scale of 1 to 5 (Strongly disagree to Strongly Agree). Table 7 gives an example of some of the results from that survey.

Table 7
Comparison of Student Attitudes

Question	Score
I expect that engineering will be a rewarding career	4.54
I expect that studying engineering will be rewarding	4.30
The advantages of studying engineering outweigh the disadvantages	4.15
The future benefits of studying engineering are worth the effort	4.35

We believe the positive response on these questions further supports the concept that the students are happy with their choice of careers and are making a positive transition from high school to college.

VI. Summary and Conclusions

The purpose of this paper was to acquaint the reader with documented challenges first year students face, as well as to provide a proverbial toolbox of discussion items, which can prepare educators on effectively addressing such challenges.

Academic research indicates as student and parent awareness of potential pitfalls rise, communication, cooperation, and ultimately student retention increases. Simply stated, if the academic community embraces the family unit, transitions on the academic, family, and personal levels become more manageable [31].

Pitt's assertion that a heightened level of familial support leads to an increased level of student adjustment/success is supported by our increasing freshmen persistence rates. Although these discussions were one of many new actions taken by the Freshmen Engineering Program over the course of the past seven years, the workshops are most often followed by a flurry of positive feedback from parents and students alike. This fact is substantiated throughout the academic year, as both parties often refer to materials and resources shared during such workshops.

Additional avenues of program growth include continuing formal parental contact throughout the academic year. Currently, the workshop content detailed in this paper is not formally revisited with either group unless participants contact academic advisors with questions. Surveying participants on additional concerns is also a viable action item that could contribute to the overall efficacy of the interactions.

Adolescence is indeed a tenuous period for all students. Recognizing the many challenges young adults arrive to a university with is only part of the pre-college preparation process. Familial support systems must be educated on transitional

challenges and information on university resources must be clearly conveyed. Actions such as those stated above have been documented to ease awkward transitions, as well as creating discussion moments that address such concerns and can potentially strengthen participant relationships. Essentially, when a communication continuum is fostered that encourages students and their parents to begin proactively planning for college; student persistence is often the result.

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APPENDIX

TOP 50 PITT ENGINEERING PARENT TIPS

50. Give some lessons on doing laundry.
 49. Teach them how to cook.
 48. Spend some quality time together as a family.
 47. Discuss money – how much you will contribute and how often.
 46. Learn to use E-mail.
 45. Get the phone number of the residence hall office.
 44. Pack an extension cord, masking tape, hangers and an alarm clock.
 43. Give them a small tool kit.
 42. Teach them how to sew, give them a sewing kit.
 41. Pack some care package surprises.
 40. Teach them how to be organized, for example filing.
 39. Be sure your son/daughter has medical insurance and an identification card in case she/he needs to use it.
 38. Get immunization records so student can register for classes.
 37. Arrange a "Going to College" party for student and friends.
 36. Obtain your students full, correct address, phone number, email address and class schedule.
 35. Learn how to feed their fish or other pets.
 34. Decide whether or not you will routinely receive collect calls.
 33. Get your student a calling card.
 32. Do not call them early in the morning!
 31. If your student wears glasses, be sure he/she has a copy of the prescription.
 30. Continue to be supportive and encouraging.
 29. Set up any local bank accounts during a visit to campus.
 28. Teach your son/daughter to balance a checkbook.
 27. Teach the responsibilities of credit cards and checking accounts; they can only be used when there is something (or someone) backing them up.
 26. Buy yourself a PITT sweatshirt.
 25. Listen to your young adult; hear what is being said *and what is not being said*.
 24. Recognize that you may experience some loneliness too.
 23. Frame a family picture.
 22. Have a frank discussion about all aspects of personal relationships.
 21. Be alert and use "teachable moments" to have meaningful discussions about alcohol use, new religious commitments, life-style changes, etc.
 20. Plan to attend a volleyball match or football game in the fall.
 19. Buy them college clothes: jeans, T-shirts, shorts, lots of underwear.
 18. Make sure they are ready for winter.
 17. Get a good pair of walking shoes.
 16. Remember an umbrella.
 15. Discuss proper hygiene.
14. Accept the fact that change is inevitable...But some of it will be positive. You will get your car back, there will be less laundry to do, you can watch what you want on television, and your food bill will probably decrease.
 13. Continue to promote independent decision-making and accept responsibility for any consequences of those decisions.
 12. Have faith in them.
 11. Begin letting go.
 10. Obtain copies of prescriptions for medication and copies of important medical records.
 9. Supply of over the counter medicines: for headaches, colds, flu, allergies, band-aids, etc.
 8. Prepare an address book, which includes addresses of family and friends.
 7. Learn to program your VCR, boot-up your computer, and use any other equipment that your son/daughter monopolized.
 6. Learn how to cut your own grass and take out the garbage.
 5. Check your homeowner's/renter's insurance for coverage of property while on campus.
 4. Don't rent out their room yet...
 3. Learn your son's/daughter's school/major and phone number for the counseling office.
 2. Take a ride on the Cathedral of Learning elevators.
 1. RELAX